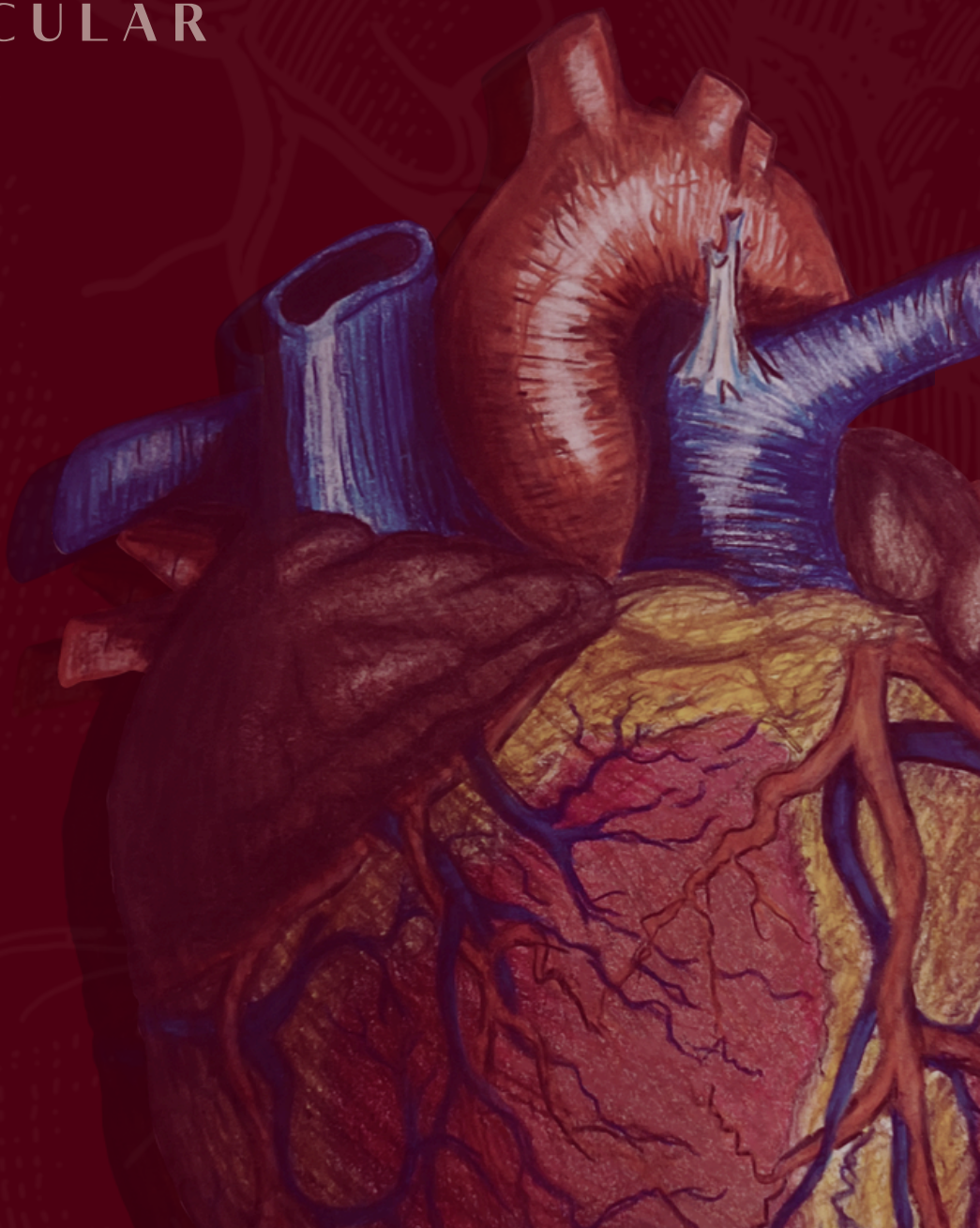
OSCON

OSIJEK STUDENT CONGRESS

# PULSE OF PROGRESS:

## SHAPING THE FUTURE OF CARDIOVASCULAR HEALTH



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# BOOK OF ABSTRACTS

OSCON


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7TH INTERNATIONAL TRANSLATIONAL MEDICINE CONGRESS OF STUDENTS AND YOUNG PHYSICIANS

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# GENERAL INFORMATION

## DATE

April 3rd - April 5th, 2025

## MAIN VENUE

Faculty of Civil Engineering and Architecture Osijek

Vladimira Preloga 3, Osijek

## TOPIC

PULSE OF PROGRESS:

Shaping the Future of Cardiovascular Health

## GUEST ATTENDANCE POLICY

All registered participants are welcomed to all events and lectures.

Wearing official conference badges is obligatory for entering any events.

## LANGUAGE

English

# COMMITTEES

## I. ORGANIZING COMMITTEE

**PRESIDENT:** Matea Smajić

**VICE PRESIDENT:** Katarina Vuković

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**PRESIDENT** : Luka Medić

**VICE PRESIDENT :** Marija Magdalena Purgar

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**VICE PRESIDENT:** Tamara Stanojlović

### II. I. Lectures and Abstracts Evaluation Subcommittee

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### II. II. Workshops Subcommittee

**PRESIDENT** : Aishe Vejseli

**VICE PRESIDENT**: Ivan Sladoja

**MEMBERS**: Lea Radić, Marissa Bura, Lorena Duvnjak

**MENTORS:** Prof. Marija Heffer, MD, PhD, Prof. Lada Zibar, MD, PhD, Prof. Ines Drenjančević, MD, PhD

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# WELCOME MESSAGES

April 3rd - April 5th
2025

## MATEA SMAJIĆ
President of the Organising Committee



*Dear colleagues,*
It is with great honour and a touch of bittersweet emotion that I welcome you to the seventh edition of OSCON – Osijek Student Congress.

The focus of this year's OSCON is cardiology and cardiovascular surgery, a field that encompasses innovative treatments, cutting-edge research, and the latest advancements in both prevention and intervention. This congress provides a valuable opportunity for students, young doctors, and healthcare professionals to deepen their cardiology knowledge and gain practical experience through our engaging lectures and workshops.

What began as a smaller gathering has now evolved into a renowned event, attracting experts and participants from around the world. Therefore, I would like to thank all the members of the Organising and Scientific committee as the progress of this congress is a reflection of your collective effort, passion, and dedication, and I am confident that it will continue to thrive in the years to come.

I hope you will make the most of this congress, connect with colleagues, expand your knowledge, and have a rewarding time!

## MATEA LUKIĆ
President of the Scientific Committee



*Dear colleagues,*
On behalf of the Scientific Committee, it is my great pleasure to welcome you to the seventh edition of the OSCON Congress. This year, we focus on the ever-evolving field of cardiovascular health under the theme Pulse of Progress: Shaping the Future of Cardiovascular Health.

With 11 expert-led lectures spanning cardiology, cardiac surgery, vascular surgery, and pediatric cardiology, as well as 17 diverse hands-on workshops, this year's program, our largest and most diverse yet, is designed to provide cutting-edge knowledge and practical experience that will shape the future of cardiovascular medicine. We are also excited to introduce Breakfast & Talk, a new addition to OSCON that offers a unique space for relaxed and meaningful discussions. Don't miss this opportunity to connect and engage in a more personal way. Our mission remains the same—to foster education, collaboration, and innovation in medical sciences. This Congress is not just about learning but about creating lasting professional connections and pushing the boundaries of knowledge together.

I look forward to meeting you all and witnessing the enthusiasm and passion that make OSCON truly special. Wishing you an inspiring and successful Congress!

## LUKA MEDIĆ
President of the Student Council



*Dear participants, colleagues, and friends,*
For the past few years, I have written these opening remarks in my capacity as President of the Student Council. While I still hold that position, this time, for my final OSCON, I am addressing you as a member of the Organizing Committee.

It has been a great honor and pleasure to be part of a project that, for the seventh consecutive year, has brought top scientists, doctors, and students to Osijek. Through our efforts, OSCON has continuously reached new heights, attracted more participants, and pleasantly surprised not only you but also ourselves. I would like to take this opportunity to congratulate all my colleagues and friends on the excellent work they have done over the years. To our young talents and successors, I wish the best of luck, hoping that the next OSCON - where I will certainly participate as an attendee - will be even bigger and better!

To all of you, our participants, I wish for another OSCON filled with success, wonderful memories, newly acquired knowledge, and valuable connections. Medicine is a never-ending story, and OSCON is a chapter we are always happy to return to!  Welcome to OSCON.

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CONGRESS OF STUDENTS AND YOUNG PHYSICIANS

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# ABOUT US

April 3rd - April 5th
2025

## FACULTY OF MEDICINE OSIJEK



The Faculty of Medicine of University of Osijek is the youngest medical faculty in Croatia. It was officially opened in 1968 as a branch of the School of Medicine in Zagreb, and in 2018 it celebrated 20 years as the independent medical faculty.The largest and main base of the faculty is the University Hospital Centre Osijek. The Faculty of Medicine in Osijek is the only medical faculty in Croatia that shares the same campus with its main teaching base, which is located within the University Hospital Centre complex.

Apart from a three-year undergraduate programme and two-year graduate study programmes (Biomedical-Laboratory Technologies) and a six-year long first-degree study programme in Medicine, the Faculty of Medicine offers several postgraduate specialist study programmes and doctoral study programme.

The aim is to provide students the highest level of knowledge and training adequate for the professions they are pursuing. In addition, the Faculty of Medicine Osijek has defined main research areas and has been profiled by several interdisciplinary groups that link basic and clinical studies (translational medicine). We would also like to point out that, our two professors' emeriti Antun Tucak and Savo Jovanović contributed to the faculty with their work and effort.

## UNIVERSITY OF OSIJEK



The Josip Juraj Strossmayer University of Osijek is a university located in Osijek, making it the flagship institution of higher education in Slavonia, and one of the largest and oldest universities in Croatia. It was founded in 1975 and it is organized in 12 faculties, 4 departments and one academy. University is a medium-size in comparison to other European Universities. It is ranked as the Croatia's fourth best university among the 49 ranked institutions of tertiary education from the country.

University of Osijek has been developing into a modern European institution of higher education, and it is becoming a regional centre of knowledge, research and excellence. All efforts are directed towards the constant increase of teaching and studying quality.

The University offers a high student standard concerning accommodation, learning facilities and other student services.

Since over 20 000 students study at University of Osijek, did you know that the city itself is known as the City of Students?

## CITY OF OSIJEK



Osijek is a modern Central European city with 17 city parks and gardens which make Osijek one of the greenest cities in Croatia. The City of Osijek is also famous for secession (a variation of art nouveau). The promenade along the Drava river is one of the longest walking trails in Croatia. Given the city of Osijek's long history, there's a variety of sights such as Tvrda, a fortified part of the city from the 18th century.

Some of the most valuable examples of Baroque architecture in Croatia, such as the statue of Holy Trinity and General's-headquarters are located in Tvrđa and were printed on 200 kuna bills, which was Croatia's official currency prior euro.

The tradition of higher education in Osijek exists since 1707 and today our university with its 17 faculties and departments is one of the most important scientific centres in Croatia.

## CROATIA



Croatia is a country on the north-western edge of the Balkan peninsula and has a population of 4,05 million people and covers an area of 56,594 km². Five countries border Croatia: Bosnia and Herzegovina, Hungary, Montenegro, Serbia, and Slovenia, and it shares a sea border with Italy. The country offers a long coastline with over a thousand islands along its coast at the Adriatic Sea (Mediterranean Sea), a variety of medieval towns and villages, and a pleasant Mediterranean climate.

The capital of Croatia is Zagreb, placed in the northwest of the country. Croatia's second-largest city is Split, situated on a peninsula in the southern part of Adriatic Sea. Remaining two largest cities are the Port of Rijeka located on the northern shore of the Adriatic Sea and Osijek in the far east of Croatia. Other well-known towns include Dubrovnik, Makarska, Poreč, Rovinj, Opatija and Zadar. Croatia has declared its independence of Socialist Federal Republic of Yugoslavia (SFRY) in 1991.

The Croatian War of Independence started right after that, ending four years later with Croatia as a victor. Despite Croatia's hard history that has left enormous consequences on the country, it could not affect on Croatia's natural beauty that contains some of the prettiest natural wonders in the world! Alongside with its natural beauty, culture. Cultural Heritage and beautiful coastline are only some of the reasons why Croatia is certainly worth visiting.

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# PROGRAMME

April 3rd - April 5th

2025

# THURSDAY
## APRIL 3RD

**09:00 - 11:00** — REGISTRATIONS — Lobby (G)

**11:00 - 11:30** — OPENING CEREMONY — 0.3 Hall (G)
CROATIAN LANGUAGE OPENING SPEECH

**11:45 - 13:15** — LECTURE SESSION I. — 0.3 Hall (G)

11:45 - 12:15
PROF. DAVOR MILIČIĆ, MD, PHD
*Advanced Heart Failure - State of the Art*

12:15 - 12:45
PROF. KRISTINA SELTHOFER-RELATIĆ, MD, PHD
*The Role of Echocardiography in Diagnosing Cardiomyopathies*

12:45 - 13:15
MATIJA MARKOVIĆ, MD
*Electrophysiology: Sculpting the Heart to Make the ECG Beautiful*

**13:15 - 14:00** — APPETIZERS BREAK — Lobby (G)

**13:15 - 14:00** — STUDENT SESSION (1) — Lobby (G)
PRINTED POSTER SESSION

**14:00 - 15:45** — STUDENT SESSION I. — 0.2 Hall, II.48 (G)
E-POSTER PRESENTATIONS

**16:00 - 19:15** — WORKSHOPS I.

16:00 - 17:30 — SESSION I.
- ECG LEVEL 1: WHERE TO START? III.43 (G)
- ECG LEVEL 2: BEYOND THE WAVES III.44 (G)
- FROM SYMPTOMS TO SOLUTIONS III.45 (G)

17:45 - 19:15 — SESSION II.
- STAYIN' ALIVE III.46 (G)
- HIDDEN STORIES OF THE HEART Department of Cardiology (H)
- AIRWAY UNLOCKED Skills Cabinet (M)

**20:30** — SOCIAL PROGRAMME — Campus Caffe
Pub Quiz

**A** - *Faculty of Agrobiotechnical Sciences Osijek*
**G** - *Faculty of Civil Engineering and Architecture Osijek*
**M** - *Faculty of Medicine Osijek*
**H** - *University Hospital Centre Osijek*

# FRIDAY
## APRIL 4TH

**08:45 - 10:30** — **STUDENT SESSION II.** — 0.2 Hall, II.48, II.49 (G)
E-POSTER PRESENTATIONS

**10:00 - 10:45** — **STUDENT SESSION (2)** — Lobby (G)
PRINTED POSTER SESSION

**11:05 - 12:00** — **LECTURE SESSION II.** — Aula Magna (A)

11:05 - 11:30 — ZSOLT PRODÁN, MD
*3D Reconstruction in Congenital Heart Surgery*

11:30 - 11:45 — ASSIST. PROF. TOMISLAV IŠTVANIĆ, MD, PHD
*Hybrid Procedures on the Aortic Arch*

11:45 - 12:00 — VEDRAN FARKAŠ, MD
*Up to Date Treatment of Acute Aortic Syndrome*

**12:00 - 13:00** — LUNCH BREAK — Lobby (G)

**13:00 - 16:15** — **WORKSHOPS II.**

13:00 - 14:30 — **SESSION I.**
14:45 - 16:15 — **SESSION II.**
MISSION EVAR II.48 (G)

**13:30 - 14:30** — **LECTURE SESSION III.** — Aula Magna (A)

13:30 - 14:00 — DORIS TAYLOR, PHD, FACC, FAHA, FESC, FAIMBE
*Biomanufacturing Cardiovascular Therapies in 2025* — ZOOM

14:00 - 14:30 — MATEJ KATAVIĆ, MD
*Advanced Echocardiography in Pediatric Population*

**14:30 - 15:00** — **STUDENT SESSION (3)** — Lobby (G)
PRINTED POSTER SESSION

**15:00 - 18:15** — **WORKSHOPS II.**

15:00 - 16:30 — **SESSION I.**
- STITCHING HEARTS III.43 (G)
- LUNG LAB III.44 (G)
- CONNECTING PEOPLE III.45 (G)

16:45 - 18:15 — **SESSION II.**
- KEEP IN TOUCH III.46 (G)
- VENI, VIDI, VENIPUNCTURE! Skills Cabinet (M)

**22:00** — SOCIAL PROGRAMME — Pivnica Bure Bar
OSCON Party

**A** - *Faculty of Agrobiotechnical Sciences Osijek*
**G** - *Faculty of Civil Engineering and Architecture Osijek*
**M** - *Faculty of Medicine Osijek*
**H** - *University Hospital Centre Osijek*

# SATURDAY
## APRIL 5TH

**10:00 - 11:30** — BREAKFAST & TALK — 0.2 Hall (G)

*Big Heart for a Small Heart Association*

**11:45 - 13:15** — LECTURE SESSION IV. — Aula Magna (A)

**11:45 - 12:15** — PROF. IGOR RUDEŽ, MD, PHD

*From the First Beat to the Future: The Story of Heart Transplantation*

**12:15 - 12:45** — ASSIST. PROF. GRGUR DULIĆ, MD, PHD

*Surgical Treatment of Complications of Myocardial Infarction, Ventricular Septal Defect, Myocardial Rupture, and Left Ventricular Aneurysm*

**12:45 - 13:15** — ASSOC. PROF. TOMISLAV LETILOVIĆ, MD, PHD

*Interventional Cardiology: From Basics to Key Concepts in Clinical Practice*

**13:15 - 13:45** — STUDENT SESSION (4) — Lobby (G)

PRINTED POSTER SESSION

**13:15 - 13:45** — COFFEE BREAK — Lobby (G)

**13:45 - 16:00** — WORKSHOPS III.

**13:45 - 14:45** — SESSION I.

- PRINT. PLAN. OPERATE. III.43 (G)
- LAP IT UP! III.44 (G)
- CRITICAL ACCESS III.45 (G)

**15:00 - 16:00** — SESSION II.

- HEAL & SEAL III.46 (G)
- ULTRASOUND DETECTIVES Department of Othorhinolaryngology (H)

**16:15** — CLOSING CEREMONY — 0.2 Hall (G)

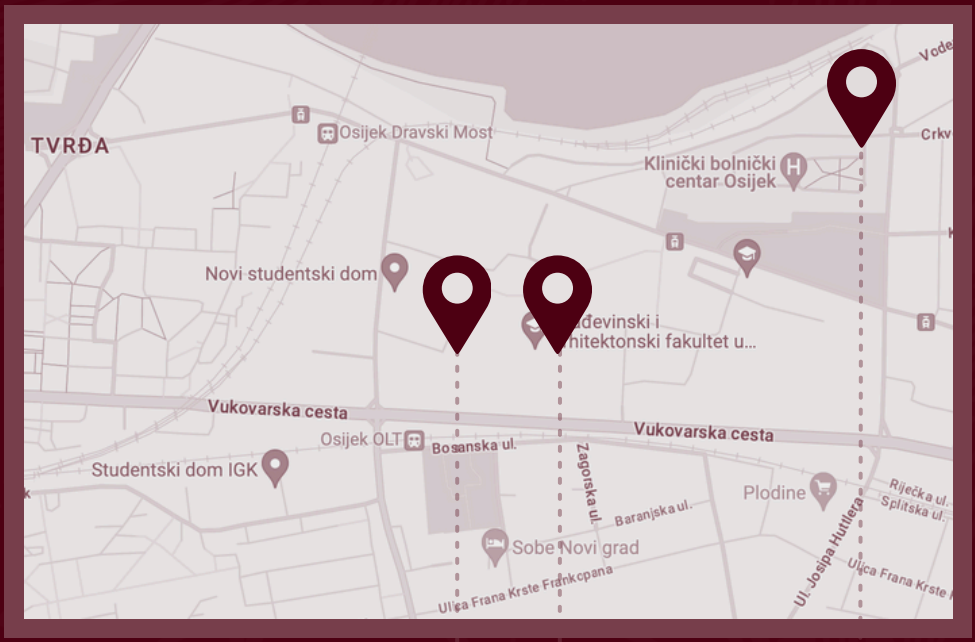
**19:00** — SOCIAL PROGRAMME — Hotel Materra, Čepin

GALA DINNER

**A** - *Faculty of Agrobiotechnical Sciences Osijek*
**G** - *Faculty of Civil Engineering and Architecture Osijek*
**M** - *Faculty of Medicine Osijek*
**H** - *University Hospital Centre Osijek*

# VENUE LOCATIONS

## OSCON 2025




**Faculty of Agrobiotechnical Sciences Osijek**

VLADIMIRA PRELOGA 1,
OSIJEK

**Faculty of Civil Engineering and Architecture Osijek**

VLADIMIRA PRELOGA 3,
OSIJEK

**Faculty of Medicine Osijek**

JOSIPA HUTTLERA 4,
OSIJEK

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# SPEAKERS

April 3rd - April 5th

2025

## DORIS A. TAYLOR, PHD, FACC, FAHA, FESC, FAIMBE



LECTURE TITLE

### Biomanufacturing Cardiovascular Therapies in 2025

Doris Anita Taylor, PhD, is an American scientist working in regenerative medicine and tissue engineering. She was the Director of Regenerative Medicine Research and the Center for Cell and Organ Biotechnology at the Texas Heart Institute in Houston until March 2020. She also cofounded Miromatrix Medical, Inc. and Organamet Bio, Inc. Dr. Taylor earned a B.S. in Biology and Physical Sciences from Mississippi University for Women and a PhD in Pharmacology from UT Southwestern. She completed postdoctoral research at Albert Einstein College of Medicine, focusing on tissue engineering and heart muscle cell growth. She was a faculty member at Duke University (1991–2007), the University of Minnesota (2003–2012, later adjunct), and Texas Heart Institute (2012–2020). She also held an adjunct position at Texas A&M University until 2020. Dr. Taylor is credited with the first functional scientific repair of an injured heart with stem cells in 1998. Her group further transformed the field of organ transplantation science in 2008 by developing a unique cell removal (decellularization) method that makes un-transplantable organs into usable scaffold frameworks for building new organs with stem cells. This was recognized as one of the "Top 10 Research Advances" by the American Heart Association and Taylor was nominated as one of "100 most influential people in the world" by Time magazine. Organamet Bio, where Dr. Taylor currently works, specializes in bioengineering whole organs for transplantation using advanced tissue engineering and regenerative medicine techniques. Their research focuses on developing personalized, lab-grown organs by recellularizing decellularized scaffolds with patient-specific cells, minimizing the risk of rejection.

## PROF. DAVOR MILIČIĆ,MD, PHD

LECTURE TITLE

### Advanced Heart Failure - State of the Art



Prof. Davor Miličić, MD, PhD, was born in 1962 in Zagreb, where he graduated from the University of Zagreb Medical School. At 27 years old, he earned his doctorate and specialized in internal medicine and cardiology. Since 1994, he has been active at the School of Medicine in Zagreb, where he became a full professor in 2012, and he has also gained international experience at prestigious institutions in Europe – the University of Hamburg, the University of Vienna, and the USA. In 2000, he became the head of the Department for Coronary Intensive Care and Arrhythmias at the Clinical Hospital Center Zagreb, and under his leadership, the department evolved into the Institute for Intensive Cardiac Care, Arrhythmias, and Transplant Cardiology, with the establishment of two national referral centers. He is the head of the heart transplantation program and has continuously served as the head of the Clinic for Heart and Vascular Diseases since 2007. He served as the Dean of the School of Medicine in Zagreb from 2009 to 2015, was the President of the Deans' Conference, and actively participated in numerous professional and ethical bodies. He has published around 250 scientific papers with approximately 2300 citations, led various research projects, mentored eight dissertations, and delivered over 200 international lectures. As the President of the Croatian Society of Cardiology since 2003, he has significantly advanced cardiology in Croatia by launching a national interventional treatment program for myocardial infarction.

## PROF. KRISTINA SELTHOFER-RELATIĆ, MD, PHD



LECTURE TITLE

### The Role of Echocardiography in Diagnosing Cardiomyopathies

Prof. Selthofer-Relatić was born in 1978 in Osijek, Croatia, where she graduated from elementary and high school. In 1996, she enrolled in the Faculty of Medicine, University of Zagreb. In 2002, she graduated from the same University. Continuing her academic career, she enrolled in postdoctoral studies in the field of Medicine and Health. Not long after, she was employed at the Clinic for Internal Medicine at the University Hospital Center Osijek. In 2006, she finished her postgraduate studies at the University of Josip Juraj Strossmayer in Osijek. She has continued to explore the relationship between hypertension, cardiovascular diseases, the effect of adipokines, and obesity ever since. In the year 2010, she became a specialist in Internal Medicine, with an immediate interest in echocardiography. Five years later, she subspecialized in the field of cardiology. Today, Professor Selthofer-Relatić is a respected cardiologist at UHC Osijek, where she works as the head of the Division for Cardiovascular Diseases. She enjoys facing challenges at her workplace and later joyfully shares her experiences with students at the Faculty of Medicine Osijek, where she currently works as Head of the Department of Pathophysiology. She's a member of the European Society for Cardiology, Society for Echocardiography and Imaging, and editor of Cardiologia Croatica. She shares her knowledge and discoveries with her colleagues as a speaker, coordinator, and organizer at many conferences, congresses, and related events in Croatia, Europe, and abroad. She continues to publish in indexed magazines, participates in literature authorships, and mentors students finishing their medical degrees.

## ASSOC. PROF. IGOR RUDEŽ, MD, PHD

LECTURE TITLE

### From the First Beat to the Future: The Story of Heart Transplantation



Zagreb-born Assoc. Prof. Igor Rudež, MD, PhD, heads the Department of Cardiac and Transplant Surgery at Dubrava University Hospital. His path to becoming one of Croatia's leading cardiac surgeons began when he completed his secondary education at the V. Gymnasium and enrolled at the School of Medicine in his hometown. He became an MD in 1991 and got his M.Sc. in Biomedical Sciences in 1998 from the University of Zagreb. In 2001 and 2002 he further sharpened his skills and widened his knowledge as a visiting surgeon at University Medical Center Hamburg-Eppendorf. By earning a PhD in 2005, from the University of J.J. Strossmayer in Osijek, he achieved his highest level of formal education, but, of course, continues to learn every day. His many areas of interest include: aortic valve, root and arch surgery, mitral valve repair surgery, beating heart surgery (OPCAB), minimally invasive coronary surgery, and, for which he is best known, heart transplant surgery. He is the director of the heart transplant program at Dubrava University Hospital and has personally transplanted over one hundred human hearts. Many of his patients get their new chance at life with Led Zeppelin playing in the background. He is a member of: the Cardiothoracic Surgery Network, European Association for Cardio-Thoracic Surgery, Heart Valve Society, International Society for Minimally Invasive Cardiothoracic Surgery, The Society of Thoracic Surgeons and Rotary Club Zagreb Medvedgrad.

## ASSIST. PROF. TOMISLAV IŠTVANIĆ, MD, PHD



LECTURE TITLE

### Hybrid Procedures on the Aortic Arch

Assist. Prof. Tomislav Ištvanić, MD, PhD, was born on September 21, 1968. He attended elementary school in Harkanovci and Valpovo and completed his secondary education at the Medical School Osijek. He graduated from the Faculty of Medicine in Osijek in 1996 and passed the state exam in 1998, which granted him the right to work independently. Since 2002, he has been employed at the Vascular Surgery Department of the Clinic for Surgery at KBC Osijek, where he began his career after passing the specialist exam in General Surgery. In 2010, he successfully completed the subspecialty exam in vascular surgery. During the academic year 2010/2011, he enrolled in postgraduate doctoral studies in Biomedicine and Health, which he completed in 2017. Since 2019, he has also served as an Assistant Professor at the Department of Surgery, Urology, Orthopedics, and Physical and Rehabilitation Medicine. He is the author or co-author of numerous scientific papers and has actively participated in both international and domestic scientific conferences. His clinical areas of interest include open, endovascular, and hybrid procedures on supra-aortic arteries, the aortic arch, the thoracic and abdominal aorta, as well as the iliac and peripheral arteries.

## VEDRAN FARKAŠ, MD

LECTURE TITLE

### Up to Date Treatment of Acute Aortic Syndrome



Vedran Farkaš was born on January 19th, 1983. He attended elementary school in Osijek and completed his secondary education at the First Gymnasium High School in Osijek. In 2001, he was accepted into the Faculty of Medicine in Osijek, graduating in 2008. In the same year, he passed the state exam and gained the license to work independently. In 2009, he worked in the Emergency Medicine Department. From 2010 to 2015, he worked at CHC Osijek as a General Surgery resident and passed the exam in 2016. In 2016, he was employed at the Vascular Surgery Department of CHC Osijek, where he began his Vascular Surgery subspecialty rotation. In 2018, he passed the subspecialty exam in Vascular Surgery. Since then, he has actively participated in numerous domestic and international scientific conferences and attended and held hands-on workshops. In 2019, he spent one month in Poznań, Poland, training in the field of Endovascular Surgery. His clinical areas of interest include open, endovascular, and hybrid procedures on supra-aortic arteries, the aortic arch, thoracic and abdominal aorta, as well as iliac and peripheral arteries.

## ASSIST. PROF. GRGUR DULIĆ, MD, PHD



LECTURE TITLE

### Surgical Treatment of Complications of Myocardial Infarction: Ventricular Septal Defect, Myocardial Rupture, and Left Ventricular Aneurysm

Assist. Prof. Grgur Dulić, MD, PhD, was born in Subotica on March 11, 1972. He completed primary school and the Mathematical Gymnasium in Subotica. In 1991, he enrolled in the Faculty of Medicine in Zagreb, where he graduated in 1998. During his military service in the Croatian Army in 1999, he achieved the rank of First Lieutenant. In 2000, he began his career at Merkur University Hospital in Zagreb, where he started his internship. In 2001, he commenced his specialization in general surgery at the Clinic for Surgery, Osijek University Hospital. During the 2001/2002 academic year, he enrolled in scientific postgraduate studies at the Faculty of Medicine, Josip Juraj Strossmayer University of Osijek. In 2005, he passed the specialist exam in general surgery. That same year, he began his subspecialization in cardiac surgery and completed the subspecialist exam in 2008. He has been working as a cardiac surgeon in the Department of Cardiac Surgery since its establishment in 2007. He was appointed as an assistant to the Department of Surgery at the Faculty of Medicine in Osijek.

## MATEJ KATAVIĆ, MD

LECTURE TITLE

### Advanced Echocardiography in Pediatric Population



After graduating from the Classical Gymnasium in 2004, Dr. Matej Katavić enrolled at the University of Zagreb's School of Medicine, where he earned his degree in 2010. He completed his internship at the Clinical Hospital Center Zagreb in 2011. After passing his professional exam, he began working at the Teaching Institute for Emergency Medicine in Zagreb. In late 2012, he began his specialization in pediatrics at the Teaching Hospital Sisters of Charity in Zagreb. In 2018, Dr. Katavić passed the pediatric specialty exam and, that same year, received the "Radovan Marković" award from the Croatian Pediatric Society for his scientific paper, "Immunization of Children with Congenital Heart Defects: A Clinical and Critical Review," published in Liječnički vjesnik. In 2023, he completed his subspecialty exam in pediatric cardiology. He continued his career as a staff physician at the Department of Cardiology, Rheumatology, Nephrology, and Clinical Immunology at the same-named clinic. Throughout his career and education, Dr. Katavić has completed numerous courses, developing expertise in pediatric cardiology, with a focus on pediatric echocardiography. He has authored or co-authored several professional and scientific papers. His specific areas of interest in pediatric cardiology include advanced echocardiographic techniques, cardiomyopathies, and channelopathies.

## ZSOLT PRODÁN, MD



LECTURE TITLE

### 3D Reconstruction in Congenital Heart Surgery

Dr. Zsolt Prodán is a renowned pediatric cardiac surgeon and the Head of Congenital Heart Surgery at the Kids Heart Center in Budapest. He also holds a key position at the György Gottsegen National Institute of Cardiology, contributing significantly to the advancement of pediatric heart care. Specializing in pediatric cardiac surgery, Dr. Prodán has dedicated his career to treating children with complex heart conditions. His expertise is built on extensive international experience, having trained and worked in leading medical centers in the United States, Paris, and Munich. Bringing this knowledge back to Hungary, he has played a crucial role in developing pediatric heart transplant and artificial heart programs. Dr. Prodán is a strong proponent of modern medical technologies and international collaboration, ensuring that Hungary remains at the forefront of pediatric cardiac care. His contributions have been recognized with honors such as the Szent-Györgyi Albert Medical Lifetime Achievement Award. In addition to his work in Hungary, Dr. Prodán has collaborated with medical teams in Croatia, performing surgeries and sharing expertise to enhance pediatric cardiac care. Through his dedication to innovation and excellence in patient care, Dr. Prodán continues to shape the future of pediatric heart surgery in Hungary and beyond.

## MATIJA MARKOVIĆ, MD

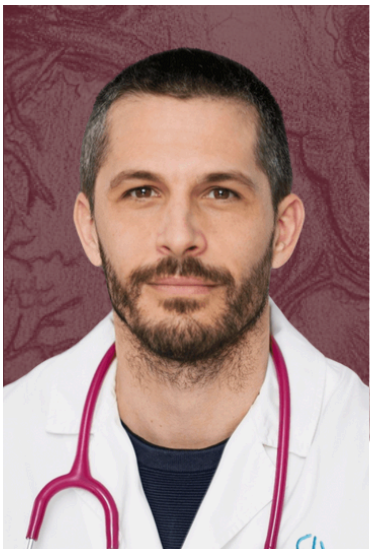
LECTURE TITLE

### Electrophysiology – Sculpting the Heart to Make the ECG Beautiful



Matija Marković, M.D., is a specialist in cardiology working at Electrophysiology and electrotherapy ward at Zagreb University Hospital Merkur. He was born in Pula and moved to Zagreb for his studies, earning his degree from the University of Zagreb School of Medicine in 2010. During his studies, he was a member of the European Medical Students Association (EMSA Zagreb) and Students section of Croatian Physicians Association (SS HLZ). Dr. Marković participated in organizing numerous international congresses, workshops, summer schools, and courses. Dr. Marković completed his specialization in clinical cardiology in 2018 and has since been working as a cardiology specialist at the Merkur University Hospital. His primary professional interests include electrophysiology and arrhythmology. For years, he has been involved in teaching the Fundamentals of Medical Skills at Zagreb School of Medicine. Dr. Marković engaged in medical book authorship and development of books in the field of Cardiology and Emergency medicine, scientific papers, and congress publications.

## ASSOC. PROF. TOMISLAV LETILOVIĆ, MD, PHD



LECTURE TITLE

### Interventional Cardiology: From Basics To Key Concepts in Clinical Practice

Associate Professor Tomislav Letilović, MD, PhD, is a distinguished specialist in Internal Medicine and a sub-specialist in cardiology. He earned his medical degree from the University of Zagreb's School of Medicine in 2000. Following graduation, he served as an assistant and junior researcher in the Department of Pathophysiology at the same institution. In 2007, Dr. Letilović completed his specialization in internal medicine at Merkur University Hospital in Zagreb, where he further advanced his expertise by obtaining a sub-specialization in cardiology in 2010. Since 2013, Assoc. Prof. Letilović has been leading the Department of Interventional Cardiology at Merkur University Hospital. Concurrently, he pursued academic endeavors, earning his doctoral degree in 2013. His commitment to medical education is evident through his roles at the University of Zagreb's School of Medicine, where he began as an assistant at the Department of Internal Medicine in 2010 and was appointed as an associate professor in 2016. Assoc. Prof. Letilović is an active member of both the Croatian and European Societies of Cardiology. He has contributed extensively to the medical community, authoring numerous scientific and professional articles and delivering invited lectures at national and international conferences. His primary areas of interest include interventional cardiology, echocardiography, cardiology in patients before and after solid organ transplantation, and sports cardiology. Throughout his career, Assoc. Prof. Letilović has been recognized for his dedication to patient care, medical education, and research, solidifying his reputation as a leading figure in the field of cardiology.

7TH INTERNATIONAL TRANSLATIONAL MEDICINE
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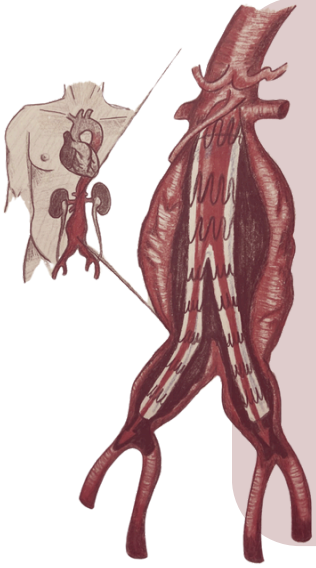
OSCON

# WORKSHOPS

April 3rd - April 5th

2025

# MISSION EVAR



**WORKSHOP:** A JOURNEY INTO MINIMALLY INVASIVE VASCULAR REPAIR

**LEADERS:** Marko Perić, MD; Jacek Sokol, W.L.Gore and associates

**INTRODUCTION:** This workshop introduces medical students to Endovascular Aneurysm Repair (EVAR), a minimally invasive procedure for treating abdominal aortic aneurysms.

**DESCRIPTION:** Participants will explore the fundamentals of EVAR, including patient selection, imaging techniques, and procedural steps. Through interactive lectures, case studies, and hands-on simulations, students will gain practical insights into stent graft deployment, vascular access, and complication management. By the end, students will understand the benefits and limitations of EVAR compared to open surgery, as well as emerging trends in endovascular technology. No prior experience is required, making this an ideal opportunity for medical students to enhance their knowledge of vascular interventions and patient care.

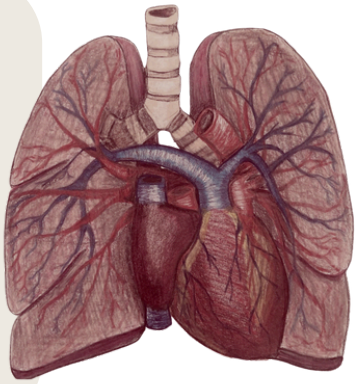
# LUNG LAB

**WORKSHOP:** BRONCHOSCOPY & ACID-BASE DISORDERS CRASH COURSE

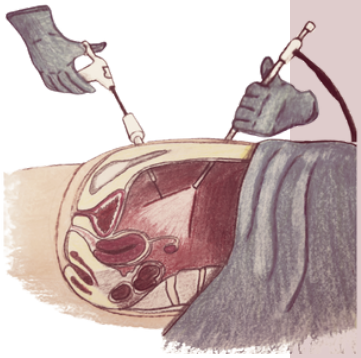
**LEADERS:** Ana Posavi, MD; Renata Božinović, MD

**INTRODUCTION:** This workshop is designed for students who want to acquire new bronchoscopy skills while perfecting their knowledge of acid-base disorders.

**DESCRIPTION:** Test and develop your dexterity by practicing bronchoscopy on a custom-made 3D model under the supervision of a pulmonologist. Locate and collect samples from a suspect mass hidden within the bronchial tree. Additionally, refresh and deepen your understanding of acid-base disorders in a small group setting, led by an expert.



# LAP IT UP!



**WORKSHOP:** LAPAROSCOPY WORKSHOP ON SIMULATOR AND BASIC SUTURING

**LEADERS:** Zdenko Boras, MD, PhD; Ivan Vlahović, MD

**INTRODUCTION:** Are you passionate about surgery and eager to sharpen your skills? If you're ready to enhance your hand-eye coordination with laparoscopic instruments and explore the world of minimally invasive surgery, this workshop is tailor-made for you!

**DESCRIPTION:** Join us for a hands-on experience where you'll practice essential laparoscopic techniques. From basic instrument handling to advanced suturing skills, this session will help you develop the precision, dexterity, and confidence needed in modern surgery. We'll start with an introduction to laparoscopy, learning this technique's fundamentals, benefits, and real-world applications. Hands-on training will allow you to practice instrument handling, suturing, and coordination on laparoscopic simulators, sharpening your precision and skills.

# KEEP IN TOUCH

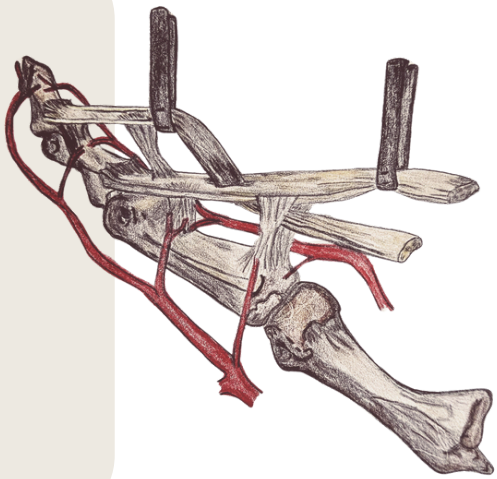
**WORKSHOP:** SIMULATION OF FLEXOR TENDON RUPTURE

**LEADERS:** Assist. Prof. Ivan Koprivčić, MD, PhD; Vjekoslav Kopačin, MD, PhD

**INTRODUCTION:** Flexor tendon rupture is a condition where the tendons that control finger movement tear or snap, often resulting from trauma or repetitive strain. This injury can lead to difficulty bending the affected finger or fingers, impacting daily activities and requiring prompt medical attention for proper treatment and rehabilitation.

**DESCRIPTION:** In this simulation of flexor tendon rupture, participants will have the opportunity to gain hands-on experience in repairing torn tendons through suturing techniques on a 3D-printed finger model and actual tendons. Through guided practice and expert supervision, students will develop crucial surgical skills essential for addressing this intricate injury in clinical settings.

**NOTE:** Only 5th and 6th year students with previous experience in surgical suturing may apply.



# AIRWAY UNLOCKED




**WORKSHOP:** BASIC INTUBATION AND ADVANCED VIDEO LARYNGOSCOPY

**LEADERS:** Sonja Škiljić, MD; Josipa Glavaš Tahtler, MD

**INTRODUCTION:** Endotracheal intubation is a vital skill that every doctor should master, as it can be a life-saving procedure in critical situations. Proper technique and precision are essential to ensure the airway is secured correctly, as misplacement of the tube in the esophagus instead of the trachea can have serious consequences. Mastering both direct laryngoscopy and video laryngoscopy allows clinicians to handle even the most challenging airways with confidence.

**DESCRIPTION:** This hands-on workshop will provide participants with the opportunity to practice endotracheal intubation using both traditional laryngoscopy and advanced video laryngoscopy techniques. Under expert guidance, attendees will learn how to identify correct tube placement, troubleshoot common challenges, and ensure patient safety. Whether you are a beginner or looking to refine your skills, this workshop will give you the confidence and experience needed to perform intubation effectively in real-life clinical settings.

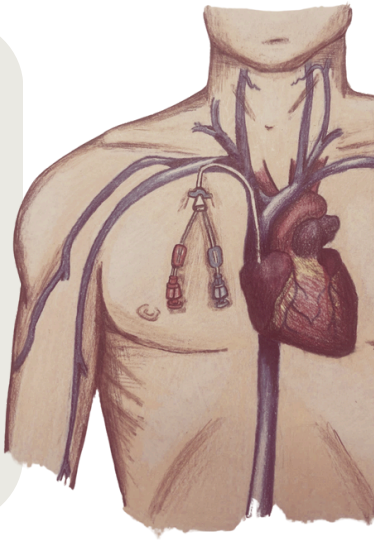
# CRITICAL ACCESS

**WORKSHOP:** CENTRAL VENOUS ACCESS AND PERCUTANEOUS TRACHEOSTOMY

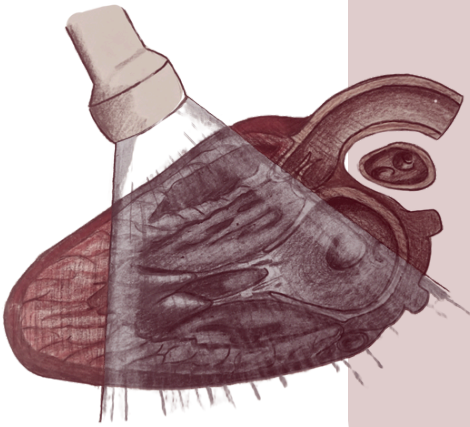
**LEADERS:** Assist. Prof. Damir Mihić, MD, PhD; Ivan Bjelousov, MD

**INTRODUCTION:** Are you ready to elevate your clinical skills and master two of the most essential life-saving procedures in modern medicine? Welcome to Central Venous Access and Percutaneous Tracheostomy - the backbone of critical care in emergency and intensive settings.

**DESCRIPTION:** In this interactive workshop, you won't just observe; you'll actively engage in the techniques that make a real difference when every second counts. Central venous access is key for medication delivery, fluid management, and life-saving monitoring, while percutaneous tracheostomy provides crucial airway support in critically ill patients. In this workshop, participants will, with expert guidance, attempt to perform these two techniques on a mannequin and on models that simulate human tissue.



# HIDDEN STORIES OF THE HEART



**WORKSHOP:** ECHOCARDIOGRAPHY

**LEADERS:** Assist. Prof. Sandra Šarić, MD, PhD

**INTRODUCTION:** Echocardiography is more than just imaging—it's a window into the heart's function, structure, and pathology. This workshop will take you beyond the basics, diving into advanced techniques and hands-on applications. Whether you're a beginner or an experienced practitioner, this session will boost your skills and confidence in using echocardiography. We invite you to deepen your understanding of the heart's inner workings, revealing its complexity through advanced imaging techniques.

**DESCRIPTION:** Through hands-on experience and expert demonstrations, you'll learn how to visualize and interpret the heart's structure, motion, and blood flow. This session will cover the fundamentals of echocardiographic imaging and help you develop a comprehensive understanding of cardiac mechanics, ensuring you leave with valuable skills for assessing heart function.

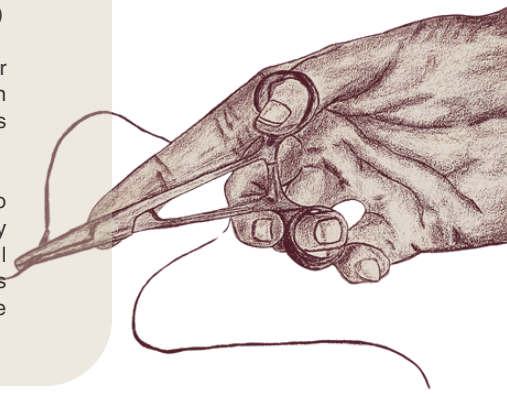
# HEAL AND SEAL

**WORKSHOP:** PRIMARY WOUND CARE

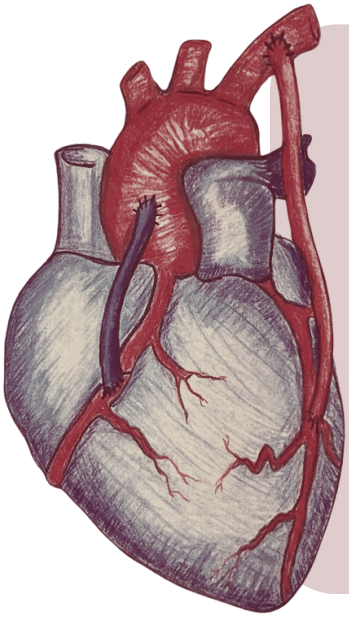
**LEADERS:** Student Society for Surgery "INCISIOS" (Faculty of Medicine Osijek)

**INTRODUCTION:** Made by students – for students. Whether you're taking your first steps in suturing or looking to refine your technique, this hands-on workshop will equip you with the necessary skills needed to manage wounds requiring suturing.

**DESCRIPTION:** Got a wound in front of you? What's next? Learn how to approach a wounded patient, determine which wounds need suturing, and apply the principles of asepsis. Build confidence in handling essential surgical instruments and administering local anesthesia. Finally, master basic sutures and the surgical knot – critical skills you'll need when you step into the emergency room with your white coat on.



# STITCHING HEARTS



**WORKSHOP:** The CABG Challenge

**LEADERS:** Matija Drinković, MD; Stjepan Cvetković, MD; Ema Grba, MD

**INTRODUCTION:** Wouldn't it be great if we could give you a chance to become a cardiac surgeon for a day? Could you imagine bringing the operating room to you? During this workshop, our cardiac surgeons will guide you through the creation of proximal anastomosis of the coronary artery bypass grafting using a saphenous vein.

**DESCRIPTION:** To make this workshop as realistic and useful as possible, we will be using swine hearts with a part of the aorta still attached and human saphenous veins as a graft. You will see microvascular surgical instruments specifically used for such procedures, and it is up to you to try and save your patient.

**NOTE:** Only 4th, 5th, and 6th year students with previous experience in surgical suturing may apply.

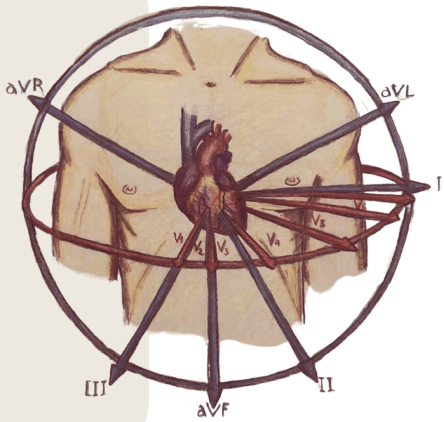
# ECG LEVEL 1: WHERE TO START?

**WORKSHOP:** ELECTROCARDIOGRAM BASICS WORKSHOP

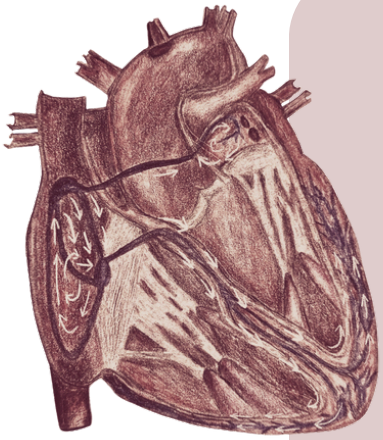
**LEADERS:** Mirna Đukić, MD; Student Society for Physiology and Immunology „FIZIOS“ (Faculty of Medicine Osijek)

**INTRODUCTION:** ECG is an important diagnostic method in clinical practice. It helps us evaluate patients with chest pain, a feeling of rapid heartbeats, difficulty breathing, and more. But when we take the ECG in our hands, where do we start? What exactly are we looking at when we "read" an ECG? What does each wave, interval, and segment represent? Why are they important, how do they change, and what do these changes signify?

**DESCRIPTION:** This workshop aims to present ECG in a slightly different way; from the basics and physiology to how to recognize specific changes, describe them, and interpret them. We will go through the procedure of recording an ECG, and how to identify various conduction disturbances, ischemic changes, and other specific conditions commonly encountered in clinical practice.




# ECG LEVEL 2: BEYOND THE WAVES



**WORKSHOP:** ADVANCED ECG AND TREATMENT WORKSHOP

**LEADERS:** Jerko Arambašić, MD; Assist. Prof. Marko Stupin, MD, PhD

**INTRODUCTION:** This workshop is designed for medical students who want to deepen their knowledge of electrocardiography (ECG) and its role in managing cardiac conditions. Participants will focus on advanced ECG interpretation and its integration with pharmacotherapy for rhythm disturbances and ischemic events.

**DESCRIPTION:** Through case-based discussions and hands-on analysis of many ECG examples, students will tackle complex arrhythmias, ischemic patterns, and conduction abnormalities. Emphasis will be placed on recognizing such conditions and choosing the appropriate pharmacological treatment. This workshop is ideal for students looking to refine their ECG skills and expand their understanding of cardiovascular pharmaco-therapy.

**NOTE:** Only 4th, 5th, and 6th year students with previous experience in ECG reading may apply.

# CONNECTING PEOPLE

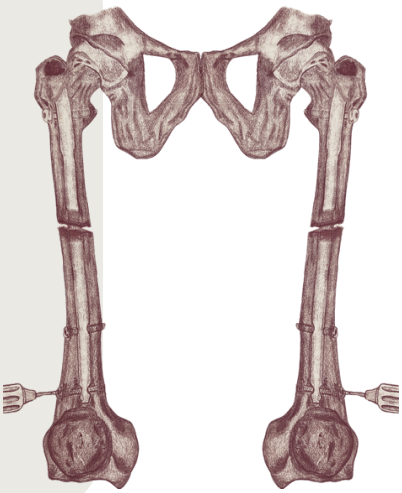
**WORKSHOP:** OSTEOSYNTHESIS SIMULATION

**LEADERS:** Assist. Prof. Vjekoslav Wertheimer, MD, PhD

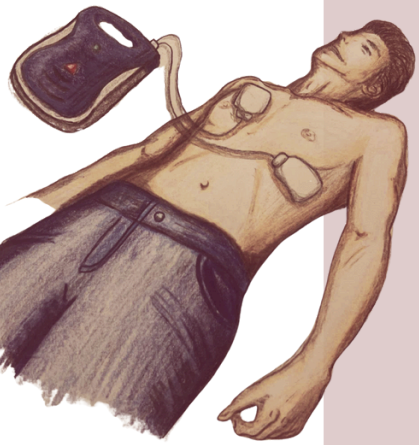
**INTRODUCTION:** Osteosynthesis is a crucial surgical procedure used to stabilize fractures and promote proper bone healing through the use of screws, plates, and other fixation mate-rials. Mastering this technique is essential for ensuring optimal patient outcomes, particularly in orthopedic and trauma surgery. Precision and stability are key factors in successful fracture fixation, making hands-on training indispensable for future surgeons.

**DESCRIPTION:** In this osteosynthesis simulation workshop, participants will have the opportunity to gain hands-on experience in performing fracture fixation using screws, plates, and other osteosynthetic materials on bone models. Under expert supervision, students will practice essential techniques to achieve stable and precise fracture repair. Through guided training, participants will develop critical surgical skills necessary for managing fractures in clinical settings.

**NOTE:** Only 5th and 6th year students with prior knowledge may apply.



# STAYIN' ALIVE



**WORKSHOP:** ADVANCED LIFE SUPPORT (ALS)

**LEADERS:** Assist. Prof. Jelena Kovačević, MD, PhD; Tomislav Prša, BSN, RN; Ivon Matić, MD

**INTRODUCTION:** Do you think you know everything about ALS? Now it's time to test your skills! How to perform cardiopulmonary resuscitation? How to defibrillate? What rhythms are suited for defibrillation? What medication can be used? When? Are there some reversible causes of cardiac arrest? If any of the questions caught your attention, don't miss this workshop!

**DESCRIPTION:** Medical professionals from the Institute of Emergency Medicine of Vukovar-Srijem County will guide you through real-life scenarios and show you how to approach them as medical personnel using ALS skills. To make the workshop as realistic as possible, teams will be formed - each with three participants: a doctor, a medical technician, or an ambulance driver - just like in the real world! Improve your skills by giving chest compressions, ventilating the patient, and recognizing which cardiac rhythm is suitable for defibrillating and which medication is ideal for use!

**NOTE:** Only 4th, 5th, and 6th year students with prior knowledge may apply.

# ULTRASOUND DETECTIVES



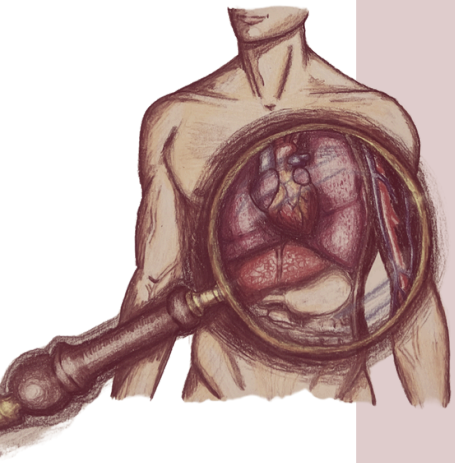
**WORKSHOP:** HEAD AND NECK ULTRASOUND

**LEADERS:** Vladimir Bajtl, MD

**INTRODUCTION:** This workshop introduces medical students to head and neck ultrasound, emphasizing its clinical application in surgical treatment planning. Participants will discover how ultrasound enhances precision, improves diagnostics, and supports surgical decision-making.

**DESCRIPTION:** After a brief introduction to ultrasound principles, students will focus on image acquisition and interpretation of key head and neck structures through hands-on practice. The session covers the thyroid, salivary glands, lymph nodes, and vascular anatomy. No prior experience is required, making this an ideal opportunity to enhance diagnostic skills and improve the understanding of ultrasound in surgical planning.

# FROM SYMPTOMS TO SOLUTIONS



**WORKSHOP:** INTERNAL MEDICINE CASE SOLVING

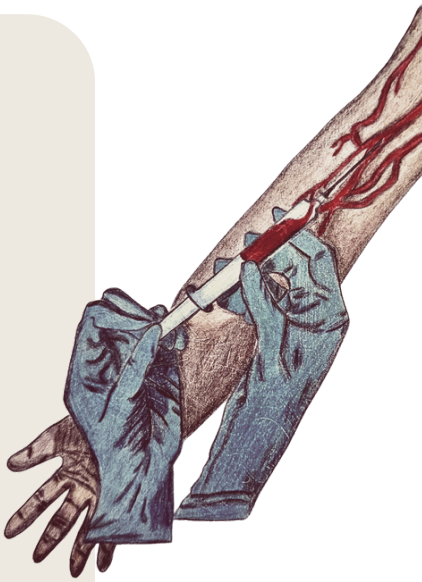
**LEADERS:** Lucija Klobučar, MD; Assist. Prof. Marko Stupin, MD, PhD

**INTRODUCTION:** This workshop is designed for students who want to enhance their clinical reasoning skills, with a special focus on cardiology cases. Participants will practice the step-by-step approach to diagnosing and managing different patient scenarios, combining clinical knowledge with problem-solving strategies. This workshop is designed for students who want to acquire new bronchoscopy skills while perfecting their knowledge of acid-base disorders.

**DESCRIPTION:** Through interactive case-based discussions, students will tackle real-life internal medicine cases, with an emphasis on cardiology. They will analyze laboratory results, assess imaging findings, and solve cases involving arrhythmias, heart failure, ischemic heart disease, and more. The session will focus on differential diagnosis, decision-making, and formulating management plans. This workshop is perfect for students aiming to improve their clinical intuition and internal medicine expertise.

**NOTE**: Only 4th, 5th, and 6th year students with previous experience in internal medicine may apply.

# VENI, VIDI, VENIPUNCTURE!



**WORKSHOP:** EVERYTHING ABOUT VENIPUNCTURE IN ONE PLACE

**LEADERS:** Student Society for Anesthesiology “ANEZIOS” (Faculty of Medicine Osijek); Hrvoje Vinković, MD

**INTRODUCTION:** Introducing an intravenous cannula into a vein is one of the basic medical procedures used daily in medicine. By opening the intravenous route, we can easily obtain a blood sample for diagnosis and apply the medicine. Although it may seem simple at first glance, have you ever wondered how you would react in an emergency where someone's therapy – or even life – depends on your precision and speed? Are you sure you could recognize the complications of improper cannula insertion or choose the right cannula size depending on the patient's condition? At the workshop, we will show the accessories we need to set up an intravenous cannula. We will go through the entire procedure of inserting an intravenous cannula into a vein in detail. We will explain how to choose the right size i.v. cannulas, contraindications and complications of improper cannula insertion. Don't wait for the opportunity to practice on a real patient - acquire the knowledge and skills now, join us, and take your competence to the next level!

**DESCRIPTION:** Intravenous access workshop through placement of an intravenous cannula on an artificial arm and application of i.v. solution after placement.

# PRINT. PLAN. OPERATE.



**WORKSHOP:** HOW CAN 3D PRINTING HELP YOU BECOME A BETTER SURGEON?

**LEADERS:** Lovro Jančić, Bruno Ban

**INTRODUCTION:** Imagine that you are a cardiac surgeon facing a complex case. Wouldn't it be great if you could have a true-to-size, patient-specific heart model in your hand before the patient even reaches the operating room? Guess what - combining radiology with 3D printing allows you just that. These models provide cardiac surgeons with a tangible, accurate representation of a patient’s anatomy, allowing for more precise surgical planning and risk reduction. Also, trainees can use these models to practice complex procedures, improving their skills in a controlled, hands-on environment before working with real patients.

**DESCRIPTION:** We will explore how radiological data such as CT and MRI scans can be transformed into patient-specific 3D-printed heart models. Through interactive demonstrations and hands-on exercises, you will gain insights into the entire workflow, from imaging to 3D printing, and discover how this technology is revolutionizing personalized medicine and surgical education. You can become a cardiovascular surgeon for a day and experience multiple real-life cases where 3D models were made to improve surgical procedures and help you become a better doctor. Let’s dive into the future of cardiac surgery together!

**NOTE**: Recommended for 5th and 6th year medical students but all surgery and tech lovers welcome.

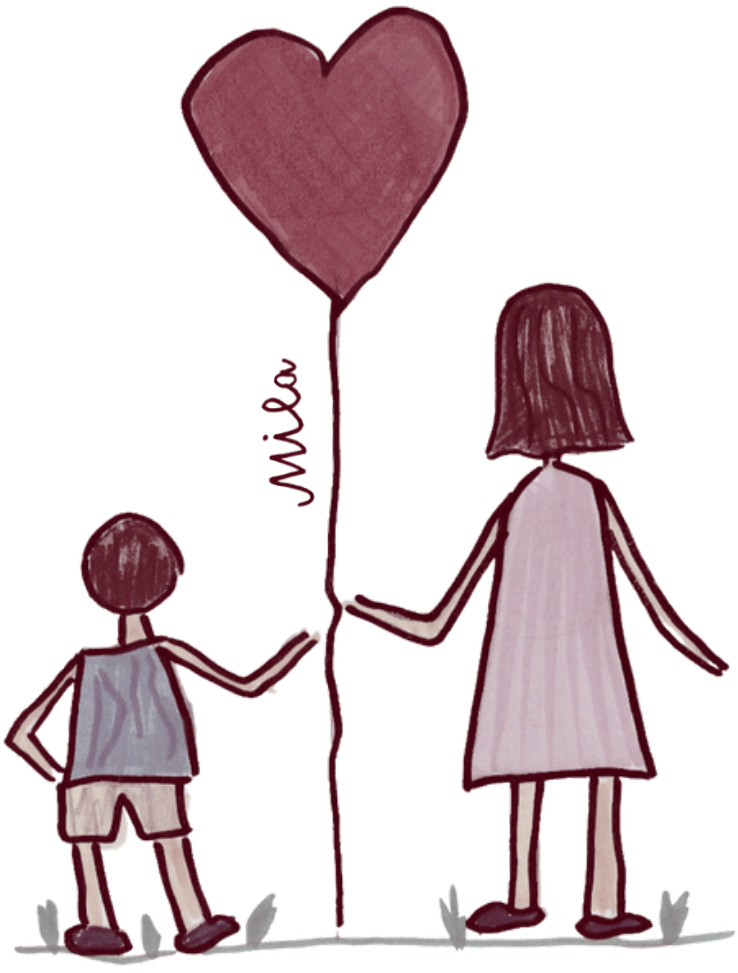
# BREAKFAST & TALK:

# BEYOND DIAGNOSIS

## REGENERATION INSTEAD OF TRANSPLANTATION IN PEDIATRIC CARDIOLOGY

**LEADERS:** Mirela Dežman, *Big heart for a small heart* association; Dražen Belina, MD, specialist in pediatric surgery, specialist in surgery, subspecialist in cardiac surgery

**DESCRIPTION:** This roundtable will address the intersection of patient experience, medical expertise, and the role of support organizations in pediatric cardiology. One of the speakers, both a mother of a child with a congenital heart condition and a representative of Big heart for a small heart association, will share her personal experience of navigating her child's diagnosis. The discussion will also highlight the significance of diagnostic imaging, focusing on ultrasound findings, before transitioning to a clinical perspective presented by Dr. Belina, who will provide insights from the field of pediatric cardiac surgery. The session will conclude with an open Q&A, fostering engagement among students, physicians, and other attendees.



7TH INTERNATIONAL TRANSLATIONAL MEDICINE
CONGRESS OF STUDENTS AND YOUNG PHYSICIANS

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# POSTER PRESENTATIONS

April 3rd - April 5th

2025

# EVALUATION BOARD

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EMA KUNA, MD

NIKA PUŠELJIĆ, MD

ELEONORA STRUJIĆ, MD

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## BASIC SCIENCE

**BS01** How lysosome transport is controlled in membrane nanotubes

*Bernadett Babirák, Edina Szabó-Meleg*

**BS02** How low is too low? Levels of 25-hydroxyvitamin-D3 and symptoms of its deficiency

*Sara Bonet, Ivona Hlaj, Stipe Vidović, Sven Viland, Tatjana Bačun*

**BS03** Novel Therapeutic Approach for Duodenocolic Fistulas in Rats – Insights into Genetic and Cytoprotective Mechanisms of Stable Gastric Pentadecapeptide BPC 157

*Dorian Dulčić, Lucija Dumančić, Nika Miladin, Jelena Marušić, Alenka Boban Blagaić*

**BS04** Characterization of Hemodynamic Events Associated with Ketalar Overdose in Rats and Their Alleviation Mediated with Stable Gastric Pentadecapeptide BPC 157

*Lucija Dumančić, Dorian Dulčić, Anamarija Tubikanec, Andrej Vrdoljak, Alenka Boban Blagaić*

**BS05** Hippocampal FOS and FOSB/ΔFOSB (re)activity during ageing in rat stress models

*Abolfazl Golgol, László Ákos Kovács*

**BS06** Sleep quality and use of sedative-hypnotic drugs among medical students in Osijek, Croatia: a cross-sectional study

*Mihael Kolar, Goran Dabić, Nenad Čekić, Stipe Vidović, Marija Heffer*

**BS07** Seroprevalence of cardiotropic echo and coxsackie viruses in patients with myocarditis

*Lukas Librić, Jelena Jakšić, Maja Bogdanić, Tatjana Vilibić Čavlek, Mislav Nedić*

**BS08** Inhibition of the fractalkine chemokine receptor CX3CR1 reduces osteoarthritic spontaneous pain and histopathological damage in mice

*Péter Pápai, Valéria Tékus, Éva Borbély, Zsuzsanna Helyes, Ádám István Horváth*

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# ABSTRACTS

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# BASIC SCIENCE

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# BS01

## How lysosome transport is controlled in membrane nanotubes

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**Introduction:** Membrane nanotubes are thin, thread-like projections that connect cells, enabling long-distance communication and material exchange, and providing direct cell-to-cell connections. A specialized type, tunneling nanotubes (TNTs), forms open-ended tunnel-shaped channels between cells. These structures are rich in cytoskeletal filaments, essential for their formation, stability, and transport functions. Actin filaments are critical for maintaining TNT integrity and play a key role in transporting materials. Microtubules, although not always present whether it is, extend the lifespan of TNTs and contribute to certain transport processes.

**Materials and methods:** This study focuses on lysosome transport within TNTs. Lysosomes are typically involved in degrading cellular waste and neutralizing pathogens, but they may also facilitate the spread of certain viruses between cells. To investigate how lysosomes move through TNTs, during the research we applied inhibitors targeting actin, microtubules, and motor proteins involved in intracellular transport. These inhibitors—nocodazole, ispinesib, ciliobrevin-D, para-nitroblebbistatin, myoVin-1, and 2,4,6-Triiodophenol—were applied individually, with DMSO-treated cells serving as controls. Lysosome movement in TNTs connecting monkey kidney cells was tracked using laser scanning confocal microscopy.

**Results:** Time-lapse imaging showed that lysosome transport depends on both actin- and microtubule-based motor proteins. Blocking kinesin and myosin V significantly reduced lysosome transport speed, demonstrating that lysosome movement is a complex, coordinated process relying on multiple components.

**Conclusion:** These findings contribute to understanding how lysosomes move between cells via TNTs, emphasizing the importance of cytoskeletal elements and motor proteins. This deeper insight helps clarify the molecular mechanisms of TNT-mediated transport, which may play a role in pathogen spread and cellular communication.

**Keywords:** Lysosomes; Tunneling Nanotubes

# BS02

## How low is too low? Levels of 25-hydroxyvitamin-D3 and symptoms of its deficiency

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**Introduction:** A great number of epidemiological studies suggest an increasing presence of hypovitaminosis D in general population. The aim of this study was to evaluate serum levels of 25-OH D3 and its influence on occurrence of symptoms associated with hypovitaminosis D.

**Materials and methods:** Concentrations of 25-OH-D3 were measured using Liquid chromatography-tandem mass spectrometry (LC-MS/MS) procedure on Shimadzu LCMS 8050, and RECIPE kit for serum levels of 25-OH-D3 and 25-OH-D2. Based on the levels of 25-OH-D3, subjects were categorized as sufficient (>20 ng/mL), deficient (<20 ng/mL) and extremely deficient (<10 ng/mL). T-test was performed to assess the correlation between gender and 25-OH-D3 concentration, the $^2$ test to analyze the relationship between types of symptoms and levels of 25-OH-D3 and Mann-Whitney U test to analyze number of symptoms in relation to 25-OH-D3 levels.

**Results:** 45 respondents participated in this study, 13 of which were male and 32 female. Mean value of 25-OH-D3 concentration was calculated to be 11,27 ng/mL. All participants showed 25-OH-D3 deficiency, while 20% (9) were classified as extremely deficient. No correlation between 25-OH-D3 levels and gender was found. Despite being deficient, 45% of participants had no symptoms, while 22% reported experiencing at least one symptom. Menstrual cycle irregularities (13,92%), fatigue (13,92%) and depressed mood (12,66%) were most reported. The number of reported symptoms does not differ significantly between groups and there is no statistically significant difference in the types of symptoms between groups.

**Conclusion:** These results suggest that the number and type of symptoms are not directly related to vitamin D levels, which may indicate the role of other factors (eg. general health) or individual susceptibility to vitamin D deficiency.

**Keywords:** Avitaminosis; Epidemiology; Vitamin D

# BS03

## Novel Therapeutic Approach for Duodenocolic Fistulas in Rats – Insights into Genetic and Cytoprotective Mechanisms of Stable Gastric Pentadecapeptide BPC 157

**Dorian Dulčić[1]; Lucija Dumančić[1]; Nika Miladin[1]; Jelena Marušić[1]; Alenka Boban Blagaić[2]**

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**Introduction:** Duodenocolic fistulas typically require complex reconstructive surgery, which is highly invasive and challenging for many patients. This study explores an alternative approach, where a gastric pentadecapeptide classified as BPC 157 is administered to rats with surgically induced fistulas in order to assess its therapeutic viability. BPC 157 enhances cytoprotection and wound healing through NO modulation and vessel stabilization.

**Materials and methods:** In male albino Wistar rats, a 4 mm long fistula was surgically created using the single-layer junction technique between the duodenum (1 cm aborally from pylorus) and the colon (2 cm aborally from ileocecal valve). Rats were anesthetized with ketamine (100 mg/kg) and sacrificed 5 minutes after intragastric application of saline (5 mg/kg) for the control group (consisted of 6 rats) or BPC 157 (10 ng/kg) for the experimental group (consisted of 6 rats). Post-sacrifice, the fistulas were dissected and frozen using liquid nitrogen. RNA was isolated from the fistular tissue and its concentration was measured. Gene expression was quantified by TaqMan assays using *ActB* as the reference gene and expression differences were calculated using the 2**(*-ΔΔCt*) method.

**Results:** Relative to the controls, experimental groups showed downregulation of *NO-Synthase 2* (encodes the inducible NO-Synthase that generates NO radicals) and upregulation of genes associated with gastrointestinal healing or angiogenesis (*Cyclooxygenase 2* – facilitates (sub)mucosal healing, *Vascular Endothelial Growth Factor A* – facilitates neovascularization, *NO-Synthase 1*/*NO-Synthase 3* – supports vascular function by non-radical NO generation, *Nuclear Factor Kappa B* – supports fibroblast activation) in both the colon and the duodenum.

**Conclusion:** By promoting the expression of genes that support cytoprotection and by limiting free radical generation, BPC 157 offers a conservative therapeutic alternative for intestinal fistulas that could potentially avoid risks associated with surgical procedures.

**Keywords:** BPC 157; Cytoprotection; Intestinal Fistula; Pharmacology; RNA

# BS04

## Characterization of Hemodynamic Events Associated with Ketalar Overdose in Rats and Their Alleviation Mediated with Stable Gastric Pentadecapeptide BPC 157

**Lucija Dumančić[1]; Dorian Dulčić[1]; Anamarija Tubikanec[1]; Andrej Vrdoljak[1]; Alenka Boban Blagaić[2]**

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**Introduction:** Ketalar, a commercial type of ketamine, is a dissociative anesthetic used predominantly for its analgesic, sedative and amnestic effects. Ketalar also influences the autonomic nervous system, increasing inotropic activity while elevating blood pressure. High Ketalar doses can lead to severe and potentially fatal hemodynamic disturbances. This study investigates stable gastric pentadecapeptide BPC 157 as a potential therapeutic for rescue from hemodynamic failure present in Ketalar overdose.

**Materials and methods:** Ketalar (30 mg/kg) was administered intraperitoneally to male Wistar albino rats, and they were assigned at six rats per either a control or an experimental group. The experimental group received BPC 157 (10 μg/kg) intraperitoneally one minute after Ketalar administration, while the control group received a 1 mL saline solution intraperitoneally. Fifteen minutes post-Ketalar administration, the rats were deeply anesthetized and underwent laparotomy for pressure measurement via catheterization at selected anatomical sites. Pressure readings were measured in the superior sagittal sinus (SSS), portal vein (VP), inferior vena cava (VCI) and the aorta (AO) using a cannula connected to a pressure transducer.

**Results:** In the control group, a rapid onset of intracranial, portal and caval hypertension was observed along with progressive aortic hypotension (mean blood pressure: 6.3 mmHg - SSS, 14.7 mmHg - VCI, 15.1 mmHg - VP, 46.8 mmHg - AO). Conversely, in the experimental group, intracranial, portal and caval hypertension, as well as aortic hypotension, were significantly less pronounced (mean blood pressure: -1.5 mmHg - SSS, 7.2 mmHg - VCI, 8.1 mmHg - VP, 69.3 mmHg - AO).

**Conclusion:** BPC 157 successfully alleviated hemodynamic disturbances induced by Ketalar overdose across all selected anatomical sites, making it a viable therapeutic of consideration for rescue from hemodynamic failure associated with Ketalar overdose.

**Keywords:** Anesthetics; Hemodynamics; Ketamine; Pharmacology

# BS05

## Hippocampal FOS and FOSB/ΔFOSB (re)activity during ageing in rat stress models

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**Introduction:** The hippocampus plays a critical role in stress regulation and undergoes significant morphological and functional changes with aging. Understanding these age-associated changes is vital. Neural (re)activity in the hippocampus is often studied using FOS, FOSB, and ΔFOSB detection, but there is limited knowledge about how dorsal hippocampal neurons respond to acute restraint stress (ARS) or chronic variable mild stress (CVMS) across different ages.

**Materials and methods:** In the ARS model, eight Wistar rat groups (1-month-old [M], 1.5M, 2M, 3M, 6M, 12M, 18M, 24M) were selected, while six groups (2M, 3M, 6M, 12M, 18M, 24M) were used with their age-matched controls in the CVMS model. Stress efficacy was confirmed by measuring total body, thymus, and adrenal gland weights. Coronal sections of the dorsal hippocampus were analyzed via diamino-benzidine FOS or FOSB/ΔFOSB immunolabelling.

**Results:** ARS increased FOS expression in CA1, CA2, and CA3 regions of 2M, 3M, and 6M animals, while FOSB/ΔFOSB remained unaffected. CVMS elevated FOSB/ΔFOSB in the CA1 during late young adulthood (6M) and in the CA2 at early senescence (18M), while the FOSB/ΔFOSB almost persisting throughout life. FOS levels increased significantly until the adolescence, but declined in adulthood to the senescence.

**Conclusion:** Dorsal hippocampus exhibits age-sensitive stress responses. It seems late adolescence and young adulthood being critical periods. FOS and FOSB/ΔFOSB demonstrate distinct patterns under ARS and CVMS. Further research is needed to uncover how these changes influence synaptic homeostasis during aging.

**Keywords:** Aging; Hippocampus; Stress, Psychological

# BS06

## Sleep quality and use of sedative-hypnotic drugs among medical students in Osijek, Croatia: a cross-sectional study

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**Introduction:** Meta-analyses reveal a high prevalence of insomnia and poor sleep quality among student populations worldwide. This study aims to assess the quality of sleep and the use of sedative-hypnotic drugs among medical students in Osijek, Croatia, with the hypothesis that poor sleep quality and the use of sedative-hypnotic drugs are highly prevalent in this population.

**Materials and methods:** The study was conducted in November 2024 among medical students at the Faculty of Medicine in Osijek. A two-part questionnaire was used: the first part collected socio-demographic data, while the second part assessed sleep quality using a validated Croatian translation of the Pittsburgh Sleep Quality Index (PSQI). Ethical approval for the study was obtained from the Ethics Committee of the Faculty of Medicine, Osijek (No: 2158-61-46-24-186).

**Results:** The study included 198 participants, comprising 150 females and 48 males. According to the PSQI, 69.2% (n=137) of participants demonstrated poor sleep quality, indicated by a total PSQI score greater than 5. The average self-reported sleep duration was 6.47±1.01 hours, with a mean time to fall asleep of 15.94±12.96 minutes. Sex-specific comparisons revealed that women had significantly poorer sleep quality, with a higher total PSQI score (7.7±3.2) compared to man (6.0±5.6) (t=2.99, p=0.003). Additionally, 12.6% (n=25) of participants reported using sedative-hypnotic drugs to enhance sleep quality.

**Conclusion:** The study confirmed the hypothesis, demonstrating a high prevalence of poor sleep quality and a significant proportion of sedative-hypnotic drug use among medical students. These findings emphasize the need for conducting further large-scale, longitudinal studies to identify risk factors associated with poor sleep quality within this subgroup.

**Keywords:** Hypnotics and Sedatives; Sleep Quality; Students

# BS07

## Seroprevalence of cardiotropic echo and coxsackie viruses in patients with myocarditis

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**Introduction:** Enteroviruses, most commonly coxsackie viruses (COXV) and less frequently echoviruses (ECHOV), are responsible for up to 25% of viral myocarditis cases, which may progress to dilated cardiomyopathy (DCM). This study aimed to analyze the prevalence of ECHOV and COXV antibodies in patients with myocarditis/DCM.

**Materials and methods:** Patients with clinical diagnoses of myocarditis/DCM (N=62) tested during 2022 were included. Individuals tested as a part of the routine immune status determination (N=60) represent the control group. Specific ECHOV and COXV IgM/IgG antibodies were detected using a commercial indirect immunofluorescence assay (Euroimmun, Lübeck, Germany).

**Results:** ECHOV IgM antibodies (acute/recent infections) were detected in 5 (8.1%) patients with myocarditis while the control group tested negative (0%). Four patients (6.4%) tested positive for COXV IgM, as well as one individual in a control group (1.6%). The overall ECHOV and COXV IgG seroprevalence were noted in 44 (70.9%) and 60 (96.8%) in patients with myocarditis, and 36 (60.0%) and 57 (95.0%) control group subjects. There was no statistically significant difference in the IgG seropositivity between males and females in both myocarditis patients and the control group. Comparing the seropositivity by age, there was no significant difference in the seroprevalence in patients with myocarditis and control group subjects older than 30 years, however, a statistically significant difference in the ECHOV IgG seropositivity was observed in myocarditis patients of less than 30 years (patients 88.2%, controls 40.0%, p=0.008). All study participants in this age group were COXV IgG seropositive.

**Conclusion:** Cardiotropic COXV are widespread in both patients with myocarditis/DCM and controls. A significantly higher seroprevalence of ECHOV in young patients indicates their possible role in the etiology of myocarditis.

**Keywords:** Coxsackievirus Infections; Echovirus Infections; Myocarditis; Seroprevalence

# BS08

## Inhibition of the fractalkine chemokine receptor CX3CR1 reduces osteoarthritic spontaneous pain and histopathological damage in mice

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**Introduction:** Fractalkine chemokine receptor 1 (CX3CR1) is primarily expressed on immune cells (e.g. monocytes, macrophages, T cells), synoviocytes, osteoclast precursors and microglia. Its activation mediates inflammatory processes in both the peripheral and central nervous system and is involved in the sensitization of brain areas responsible for pain perception. As few data are available on its role in osteoarthritis, this is the focus of our present study.

**Materials and methods:** Osteoarthritis was induced by injection of monoiodoacetate (MIA) into the right knee joint of male C57BL/6J mice. Mice were treated with CX3CR1 antagonist AZD8797 (2x1 mg/kg/day, i.p.) or vehicle during the 21-day experimental period. Weight distribution of the hind limbs was determined by dynamic weight bearing apparatus, paw withdrawal thresholds by aesthesiometer, knee edema by digital caliper, neutrophil myeloperoxidase (MPO) activity by in vivo luminescence imaging, structural bone alterations by micro-CT, histopathological damage by semiquantitative scoring.

**Results:** MIA induced 10% dynamic weight bearing decrease, 40% paw withdrawal threshold decrease (hyperalgesia), 70% knee diameter increase, neutrophil MPO activity increase, structural bone alterations such as resorption and cortical erosions, and histopathological damage such as structural disorganization, hypocellularity, decreased matrix staining and synovial hyperplasia in vehicle-treated mice. Daily AZD8797 treatment reduced the dynamic weight bearing decrease, the bone resorption and the histopathological damage damage ($g>0.8$). No difference was found regarding mechanical hyperalgesia, knee edema, MPO activity increase and cortical erosions.

**Conclusion:** Inhibition of CX3CR1 may provide a new analgesic and disease-modifying perspective in osteoarthritis.

**Keywords:** Analgesia; CX3C Chemokine Receptor 1; Osteoarthritis; Pain

# BS09

## Mental health and life satisfaction of medical students: a multicentric cross-sectional study

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**Introduction:** Studies indicate a global increase in life dissatisfaction and mental health disorders among student populations. This study aims to examine life satisfaction and levels of depression, anxiety, and stress among medical students, with the hypothesis that medical students experience high levels of negative affective emotions and life dissatisfaction.

**Materials and methods:** This cross-sectional study was conducted in November 2024 among medical students from the Faculty of Medicine in Osijek and the Faculty of Medicine in Split. Mental health was assessed using the Depression Anxiety and Stress Scale 21 (DASS-21), while life satisfaction was evaluated with the Satisfaction with Life Scale (SWLS). The study was approved by the Ethics Committees of the Faculties of Medicine in Osijek (No:2158-61-46-24-186) and Split (No:2181-198-03-04-25-0004).

**Results:** A total of 388 participants were included, comprising 98 males and 290 females. Symptoms of depression, anxiety, and stress were reported by 37.9%, 45.4%, and 39.9% of participants, respectively. Extremely severe and severe levels of depression, anxiety, and stress were observed in 15.2%, 20.3%, and 15.7% of participants, respectively. According to the SWLS, 16.7% of participants were dissatisfied with their lives. Sex-based comparison revealed that females exhibited higher stress levels (U=12195, p=0.035). Additionally, univariate analysis demonstrated statistically significant negative correlation between SWLS scores and depression (r=-0.49, p<0.001), anxiety (r=-0.324, p<0.001), and stress scores (r=-0.354, p<0.001).

**Conclusion:** The results confirmed the hypothesis of the study, indicating that medical students exhibit high levels of depression, anxiety, stress, and life dissatisfaction, with female students exhibiting higher levels of stress. Furthermore, higher levels of these negative affective emotions were associated with lower life satisfaction.

**Keywords:** Anxiety; Depression; Students

# BS10

## Age-related changes in dopaminergic areas of the mesencephalon in wild type and PACAP gene knockout mice

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**Introduction:** The neuroprotective effect of pituitary adenylate cyclase-activating polypeptide (PACAP) has been demonstrated in several Parkinson's disease models, and its absence accelerates aging in PACAP gene knockout (KO) mice. In previous studies, we investigated dopaminergic regions in wild-type and PACAP KO mice up to 8 months of age. In the substantia nigra (SN), we observed no dopaminergic cell loss but noted an increase in microglia, whereas in the ventral tegmental area (VTA), significant dopaminergic cell loss was seen with aging, particularly in KO mice, along with a continuous decrease in microglia until 8 months.

**Materials and methods:** In this study, we compared the SN and VTA regions in 4-month-old and 1.5-year-old wild-type (n=5-5) and PACAP KO (n=8-9) mice. Dopaminergic neurons were labeled with tyrosine hydroxylase (TH) and microglia with Iba1, categorizing their activity based on morphology. Additionally, we assessed the expression of the PACAP-specific PAC1 receptor.

**Results:** Our results showed a significant age-related reduction in dopaminergic cells in the SN, with notably fewer TH+ cells detected in both regions of 1.5-year-old KO mice compared to wild-type controls. The number of microglia increased significantly in aged KO mice, while in wild-type mice, age-related microglial increases were confined to the VTA. Expression of the PAC1 receptor was minimal in all groups.

**Conclusion:** The significant loss of dopaminergic cells in aged PACAP KO mice suggests increased vulnerability to age-related neurodegenerative changes, similar to those seen in Parkinson's disease. Increased microglial numbers and activity in aged KO mice may result from the loss of PACAP's immunosuppressive effects, contributing to dopaminergic cell death. These findings suggest that a deficiency in endogenous PACAP accelerates age-related Parkinson's-like changes, underscoring its potential role in the disease's pathogenesis.

**Keywords:** Aging; Dopamine; Microglia; Neurodegenerative Diseases; Pituitary Adenylate Cyclase-Activating Polypeptide

# BS11

## Stress symptoms and IgG N-glycome: a cross-sectional study among medical students

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**Introduction:** Contemporary high-throughput glycan analyses have enabled systematic glycome profiling in preclinical and clinical research, revealing abnormal glycan structures as features of numerous diseases. Recent studies suggest altered N-glycan structures in mental disorders such as major depressive disorder and post-traumatic stress disorder. This study aims to assess stress levels among medical students and determine whether students differ in their IgG N-glycome depending on their stress levels.

**Materials and methods:** This cross-sectional study was conducted in January 2024 among first- and second-year medical students at the Faculty of Medicine in Osijek, Croatia. The Depression, Anxiety, and Stress Scale 21 (DASS-21) was used to assess stress symptoms. Immunoglobin G (IgG) was isolated from plasma samples and its N-glycan composition was assessed by capillary gel electrophoresis. A total of 27 IgG N-glycan peaks were obtained.

**Results:** The study included 82 participants (23 males and 59 females), with a median age of 19 years. Of these, 44 were first-year students, and 38 were second-year students. According to the DASS-21, 33% of participants exhibited stress symptoms, with 8% showing extremely high levels of stress symptoms. Comparing chromatographic IgG N-glycome peaks between students with stress symptoms and those without revealed significant differences in seven peaks. Students with stress symptoms had higher levels of monogalactosylated, monosialylated biantennary (U=1100, p=0.006) and core-fucosylated, digalactosylated biantennary (U=1105, p=0.005), while they had lower levels of monogalactosylated, monosialylated biantennary (U=578, p=0.03), core-fucosylated, agalactosylated biantennaryn (U=588, p=0.038), core-fucosylated, agalactosylated biantennary (U=549, p=0.014), and digalactosylated biantennary with branching N-acetylglucosamine (U=477, p=0.002).

**Conclusion:** A high prevalence of stress symptoms was observed among medical students, and differences in IgG N-glycans were noted depending on the students' stress levels.

**Keywords:** Immunoglobulin G; Glycomics; Students



# CASE REPORT

OSCON

# CR01

## Unexplained Tachycardia in a Young woman: Diagnosing and Managing IST

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**Introduction:** Inappropriate sinus tachycardia (IST) is a rare arrhythmia characterized by an elevated resting heart rate (greater than 100 bpm at rest and mean heart rate exceeding 90 bpm over 24 hours) and/or an exaggerated response to minimal exertion. It is not caused by underlying pathology or external stimulus. Symptoms are an essential component of the definition, with palpitations being the most common, as well as chest discomfort, fatigue, dizziness, syncope, and shortness of breath.

**Case report:** A 22-year-old woman presented to her endocrinologist with palpitations, shortness of breath, fatigue, and persistent resting tachycardia for six weeks. Her medical history included an autoimmune thyroid disorder (Graves' disease) which had been treated successfully. Physical examination revealed a resting heart rate of 125 bpm and blood pressure of 117/75 mmHg. Cardiovascular and systemic examinations were otherwise unremarkable. An electrocardiogram showed sinus tachycardia with no additional abnormalities. Laboratory tests showed normal levels of free T3, free T4, and thyroid-stimulating hormone, excluding exacerbation of Graves' disease. Complete blood count, inflammatory markers, and electrolyte panels were within normal limits. A 24-hour Holter monitor demonstrated a mean heart rate of 117 bpm, pronounced tachycardic responses to minimal exertion, and a drop in mean heart rate during sleep. Echocardiography confirmed structurally normal cardiac anatomy and preserved ventricular function. With secondary causes excluded, a diagnosis of IST was confirmed. On a follow-up examination, the patient's symptoms improved with lifestyle modifications.

**Conclusion:** IST is a challenging diagnosis due to its nonspecific symptoms and the necessity to exclude secondary causes. A multifaceted approach to diagnosis and management in patients with suspected IST is recommended, and regular follow-up is essential to monitor progress and potential need for further treatment.

**Keywords:** Arrhythmias, Cardiac; Heart Rate; Tachycardia, Sinus

# CR02

## A close call: The Power of Persistence and Precision i Prostate Care Diagnosis

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**Introduction:** Early detection of prostate cancer is crucial for timely treatment and better outcomes. We present a case where an initial biopsy missed the diagnosis, but the General Practitioner's(GP) persistence led to accurate diagnosis. This highlights the importance of clinical intuition and MRI-guided biopsy in improving diagnostic accuracy.

**Case report:** 53-year-old male underwent prostate-specific antigen(PSA) screening as part of a special early detection program. His initial PSA level was 44.90ng/ml. Referred to a urologist, he reported having ridden a bicycle prior to testing, prompting a repeat of testing. Second PSA test yielded 44.69ng/ml, and a digital rectal examination revealed a slight enlargement. Ultrasound showed prostatoliths, and an empirical 10-day course of ciprofloxacin was prescribed under the suspicion of prostatitis. Despite antibiotic treatment, the total PSA remains significantly elevated at 46.60ng/ml, well above the normal range for his age. Free-to-total PSA ratio is 6.44%—values below 10% are associated with a high malignancy risk, warranting further evaluation. Magnetic Resonance Imaging(MRI) performed in a private clinic revealed a Prostate Imaging Reporting and Data System 5 lesion (2.6x1.8 cm), highly suspicious for malignancy. However, the first "blind" biopsy, performed without MRI guidance, was negative for malignancy. Despite this result, the GP urged the patient to seek a second opinion at a university hospital, where MRI-guided fusion biopsy was performed. The final diagnosis was acinar adenocarcinoma, Gleason score 7 (3+4), GG2.

**Conclusion:** This case underscores the critical role of clinical persistence in ensuring accurate diagnosis. Initial negative biopsy could have delayed treatment, but the GP's insistence on further evaluation enabled timely intervention. Additionally, this case highlights the superiority of MRI-guided fusion biopsy over traditional blind biopsy, emphasizing its role in detecting prostate cancer.

**Keywords:** Biopsy; Magnetic Resonance Imaging; Primary Health Care, Prostatic Neoplasms; Ultrasonography

# CR03

## Beyond Morphology: Identifying the primary site of metastatic cancer through genomic profiles

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**Introduction:** Sarcomas are heterogeneous malignant tumors of mesenchymal origin that most often metastasize hematogenously, while lymphogenic dissemination is rarely seen. In breast cancer (BC), however, nearby lymph nodes (LN) are usually affected first. We describe a patient whose metastatic BC was proven by tumor gene profiling, although axillary LN metastases were initially attributed to a previously treated sarcoma.

**Case report:** A 38-year-old woman presented with a tumor mass on her left elbow. Biopsy confirmed a poorly differentiated, high-grade angiosarcoma. Computed tomography scan identified enlarged left axillary LN, without other signs of cancer spread. Atypical mesenchymal cells suggestive of sarcoma were found on LN biopsy. She received neoadjuvant chemotherapy, followed by extra-articular resection of the left elbow and left axillary LN dissection. Although a pathological complete response was achieved in the elbow, poorly differentiated atypical cells, probably mesenchymal, were found in the axillary LN. Postoperative positron emission tomography scan showed multiple metastases in the bones, liver, left axilla, and a lesion in the left breast. A breast biopsy confirmed the diagnosis of triple-negative breast cancer (TNBC). Comprehensive genomic profiling of axillary LN metastases revealed *BRCA1* rearrangement and *SMARCB1/INI1* inactivation, which is extremely rare in adult cancers. Immunohistochemical analysis confirmed the loss of INI1 expression in BC tissue as well. Consequently, histopathological reports of axillary LN metastases were reviewed and a diagnosis of TNBC with sarcomatoid differentiation was made. Chemoimmunotherapy was started for PD-L1 positive metastatic TNBC.

**Conclusion:** In axillary lymphadenopathy, it is important to consider the possibility of occult BC, despite another primary malignancy in the same region, especially one that rarely spreads by lymphatics. In unclear cases, comprehensive genomic profiling can help clarify the origin of metastases.

**Keywords:** Genomics; Sarcoma; Sentinel Lymph Node Biopsy; SMARCB1 Protein; Triple Negative Breast Neoplasms

# CR04

## Complete atrioventricular canal defect in an infant with Down syndrome

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**Introduction:** Atrioventricular canal defects (AVCD) include a spectrum of defects which can primarily be classified as complete or partial. Complete AVCD comprises single atrioventricular valve, ostium primum septal defect and variable deficiency of interventricular septum. It's a common type of heart defect in children with trisomy 21. The aim of this case report is to emphasize the early diagnosis and management of this condition to prevent complications later in life.

**Case report:** We present a case of a newborn girl, born 22 days before the due date with a birth weight of 2810g and Apgar score 8. In the 35th week of pregnancy, a fetal heart defect was suspected. After birth, she presented with dyspnea, cyanosis and hypotonia. Down syndrome was confirmed by cytogenetic analysis. Echocardiography showed complete AVCD- balanced type, with wide atrial septal defect-11mm, inlet ventricular septal defect (VSD)-9mm and common atrioventricular valve. VSD resulted in mostly left-to-right shunt. The patient received optimal medical therapy, including furosemide and spironolactone in the first few days of life. Furthermore, at 1 month old therapy was modified: metildigoxin was added and the dosage of spironolactone was increased. At 3 months old she underwent cardiac catheterization prior to surgery. At 6 months old surgery was performed using two patch closure technique resulting in complete correction of the defect.

**Conclusion:** Although they can be found in non-syndromic patients, congenital heart defects such as AVCD are common in patients with trisomy 21. The timely diagnosis is an imperative for early surgery and correction of the defect before the age of one which minimizes the occurance of complications, primarily pulmonary hypertension and congestive heart failure.

**Keywords:** Down Syndrome; Echocardiography; Heart Defects, Congenital

# CR05

## Peripartum Cardiomyopathy Following Twin Pregnancy: A Case of Postpartum Cardiac Deterioration Complicated by Wound Infection

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**Introduction:** Peripartum cardiomyopathy is an uncommon type of heart failure that develops in the final month of pregnancy or the initial months after childbirth. The weakening of the cardiac muscle impacts the heart's ability to pump blood. Symptoms are often dyspnea followed by fatigue and edema. Therefore, it may mimic post-pregnancy fatigue and lead to severe cases.

**Case report:** We present the case of a 33-year-old woman diagnosed with Peripartum cardiomyopathy after giving birth to twins in May 2024. Pregnancy was achieved with In Vitro Fertilization and the delivery was by cesarean section. Six days after childbirth she developed dyspnea. Pulmonary angiography revealed bilateral pleural effusions, and her C-reactive protein was 280 mg/L, but the heart ultrasound and ejection fraction were normal. After two more days, Enterococcus faecalis and Klebsiella pneumoniae were isolated from the wound, and therapy was adjusted. The ejection fraction decreased to 43%, the left atrium was longitudinally dilatated, and the left ventricle was hypertrophic. The patient received oxygen therapy and was prescribed a course of antibiotics: Tazocin, Ciprofloxacin, and Gentamicin, as the wound was regularly cleaned. She reacted positively to treatment, and within the next four days her ejection fraction increased back to 57% and the inflammatory consolidation was nearly resolved.

**Conclusion:** This case highlights the importance of timely diagnosis and intervention in peripartum cardiomyopathy. Early recognition, combined with oxygen therapy and targeted antibiotic treatment, led to significant cardiac recovery and resolution of the inflammatory response, emphasizing the need for vigilant postpartum monitoring and prompt management.

**Keywords:** Cardiomyopathies; Cesarean Section; Stroke Volume

# CR06

## Navigating Complexities in Advanced Heart Failure: A Case of Multi-organ Challenges

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**Introduction:** Patients with advanced heart failure are often challenging to treat, as, in addition to reduced cardiac function, other organ systems frequently exhibit impaired function. This directly impacts heart function but also treatment options, particularly renal insufficiency, which limits the effectiveness of diuretic therapy.

**Case report:** We present the case of a 77-year-old male patient with advanced dilated cardiomyopathy (New York Heart Association class III) that lead to bicaval tricuspid valve implantation and transcatheter tricuspid valve repair. The patient also suffers from permanent atrial fibrillation, for which an implantable cardioverter defibrillator was implanted, and is on apixaban for anticoagulation. Additionally, he is under hematological supervision for thrombocytopenia, which, combined with anticoagulation therapy, places him at high risk for bleeding and requires regular platelet monitoring. Due to advanced heart failure with reduced ejection fraction (30%), the patient receives bisoprolol and vericiguat to maintain heart function, while volume overload is managed with a combination of diuretics (furosemide, chlorthalidone, spironolactone, and empagliflozin). These all reduce potassium reabsorption via the kidneys. With renal insufficiency (estimated glomerular filtration rate estimated at 38 mL/min/1.73m$^2$), the patient is at high risk for hypokalemia, which could worsen heart function, lead to arrhythmias, and potentially result in death. Therefore, the role of the general practitioner is vital for regular potassium monitoring, adjusting diuretic doses, and supplementing with oral potassium as needed.

**Conclusion:** This case highlights the importance of a personalized, day-to-day approach in treating patients with chronic heart failure in primary care, where multiple comorbidities often overlap, and treating one condition can exacerbate another. A tailored and cautious approach is essential.

**Keywords:** Diuretics; General Practitioners; Heart Failure; Hypokalemia

# CR07

## Combined David and Nuss Procedure in a Paediatric Patient with Loeys-Dietz Syndrome: A Case Report

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**Introduction:** Loeys-Dietz Syndrome (LDS) is a rare genetic connective tissue disorder, characterized by a diverse range of vascular, craniofacial and skeletal abnormalities. Vascular pathology, such as aortic aneurysms and congenital cardiac defects are an important cause of morbidity and mortality in these patients, highlighting the need for increased cardiovascular monitoring. Although vascular pathology and skeletal abnormalities often require surgical correction, the combined David and Nuss procedure has been described only in sporadic case reports so far.

**Case report:** We report a case of LDS in a 13-year-old boy who presented with aortic root dilatation, pectus excavatum, kyphoscoliosis, bifid uvula and micrognathia. The family history reveals that the father has pectus carinatum, as well as aortic root dilatation and a thoracic aortic aneurysm. Genetic testing confirmed LDS in both the boy and his father. The boy underwent a combined David procedure and Nuss procedure. Following a median sternotomy, the cardiopulmonary bypass (CPB) was established, and the heart was arrested in cardioplegic arrest. Aorta was incised and the aortic valve was deemed completely competent by inspection and water testing. Aortic valve was reimplanted in a 28mm size Valsalva graft. Vent valve test showed a sufficient valve with a deep coaptation line. After discontinuing CPB, satisfactory haemostasis was achieved, which was crucial to minimize the risk of cardiac arrest, as proper resuscitation would be impossible with the bar in place. The Nuss steel bar was then placed through the bilateral thoracotomies to correct pectus excavatum. Postoperative course was uneventful.

**Conclusion:** While combined David and Nuss procedures are uncommon and carry significant risks due to potential complications, this case study shows that certain individuals might benefit from this approach.

**Keywords:** Aortic Root Aneurysm; Aortic Valve; Heart Arrest; Loeys-Dietz Syndrome

# CR08

## Spontaneous pneumothorax in a patient under general anesthesia complicated by iatrogenic pneumoperitoneum

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**Introduction:** Spontaneous pneumothorax is a rare complication during anesthesia, occurring especially in the elderly and patients with chronic lung diseases. It is treated with chest drainage. This procedure can also have its complications.

**Case report:** A 77-year-old patient with significant comorbidities was scheduled for osteosynthesis of a subcapital fracture of the right humerus. After an analgesic right-sided interscalene block was applied, she was intubated and mechanically ventilated. An alloarthroplasty of the glenohumeral joint was started, and her oxygen saturation dropped to 60%. Her blood pressure was 60/30 mmHg, accompanied by inaudible breathing over her left lungs. An emergency chest X-ray confirmed a large pneumothorax on the left side. A thoracic drain was placed. After the surgery and adrenaline vasoactive support, she was still hypotensive. A pulmonary embolism was suspected. A computed tomography pulmonary angiography confirmed the malposition of the thoracic drain. The drain passed through the diaphragm and caused iatrogenic pneumoperitoneum and acute intraabdominal bleeding. Despite that, she had a subjective feeling of easier breathing because intrathoracic pressure was reduced during the drainage. An emergency laparotomy was performed, and splenic bleeding was stopped by a hemostatic patch. She was discharged for home treatment in good condition, with her arm immobilized. Physical rehabilitation, breathing exercises, and control by an abdominal surgeon were ordered.

**Conclusion:** The recognition of intraoperative complications, both spontaneous and iatrogenic, requires proper clinical monitoring and rapid diagnosis. Modern treatment methods, such as spleen preservation and low-pressure ventilation, can reduce complications and shorten hospital treatment in elderly surgical patients.

**Keywords:** Anesthesia; Humeral Fractures; Intraoperative Complications; Pneumothorax

# CR09

## Ischemic Stroke in a 14-Year-Old Patient: The Role of Persistent Foramen Ovale and Thrombophilia

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**Introduction:** Ischemic stroke is a rare condition in children, with a prevalence of approximately 1.3–13 per 100,000 children annually. Among the risk factors for the development of ischemic stroke are arteriopathies, cardiac diseases and defects, as well as inherited and acquired prothrombotic disorders. In this case report, we present a pediatric patient with combination of two risk factors - persistent foramen ovale (PFO) and inherited thrombophilia, which resulted in paradoxical embolism.

**Case report:** A 14-year-old patient presented with an ischemic stroke, showing symptoms of presyncope and left-side hemiparesis. He underwent an emergency endovascular thrombectomy after which anticoagulant therapy with rivaroxaban was initiated. In the days following the endovascular procedure, he underwent extensive diagnostic workup. The initial heart ultrasound could not find any left to right shunting, but transcranial doppler bubble test, followed by transesophageal echocardiogram confirmed a PFO. In search of etiology of the thrombus, no venous or arterial thrombus were found. Further tests led to genetic testing, which showed mutations in factor II (FII) and 5,10- methylene-tetrahydrofolate reductase (FTHFR) genes, confirming thrombophilia. The patient recovered without neurological or physical deficits. Three months later the PFO was closed percutaneously, and the patient continued with dual antiplatelet therapy for three months, followed by acetylsalicylic acid livelong.

**Conclusion:** This case emphasizes the role of thrombophilia in combination with patent foramen ovale in young patients with ischemic stroke, Thorough diagnostic workup, including transcranial Doppler and genetic testing, is essential for guiding treatment and preventing further undesirable events.

**Keywords:** Foramen Ovale, Patent; Ischemic Stroke; Thrombophilia

# CR10

## Nikaidoh Procedure - Feasibility in Small Cardiac Centers

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**Introduction:** Posterior aortic root translocation or Nikaidoh procedure for complex transpositions of the great arteries with ventricular septal defects and left ventricular outflow obstructions (TGA/VSD/LVOTO) offers a more anatomical biventricular repair by placing heart outflow tracts more straightforwardly. For this very challenging subset of patients, the Rastelli procedure, reparation a l'etage ventriculare, en block rotation of truncus arteriosus, or double root translocation can also offer correction but with known long-run limitations. This report shows that even very complex procedures can be successful in a small national center.

**Case report:** The first patient is a newborn female with TGA, a wide sub-pulmonary VSD, and sub-pulmonary and pulmonary valve stenosis (PS). Due to hypoxia from PS, oxygen saturations were in the 70s range and a modified Blalock-Taussing-Thomas (mBTT) shunt was performed. The procedure was uneventful, but the patient recovered. This was only a palliative measure to improve saturation and later she underwent the Nikaidoh procedure. The operation was uneventful but postoperatively she presented with left-sided hemiplegia. Heart function was normal and 6 weeks later she recovered completely. The second patient is a newborn male with a double outflow right ventricle (DORV), TGA, VSD, and sub-PS. The baby initially underwent the mBTT shunt and later on the Nikaidoh procedure. The operation was uneventful. Post-operatively respiratory insufficiency developed due to a mucous plug in the right bronchus. However, recovery was successful.

**Conclusion:** Despite its complexity, our experience suggests that the Nikaidoh procedure might be successfully performed in a small national center with good mid-term outcomes.

**Keywords:** Heart Septal Defects, Ventricular; Transposition of Great Vessel; Ventricular Outflow Obstruction, Left

# CR11

## Hypersensitivity reaction to a component of an immunochemotherapy protocol in a patient with triple-negative breast cancer

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**Introduction:** Since immunochemotherapy is becoming a frequently used therapy in the world, an increased number of cases with hypersensitivity reaction to its components is to be expected, and doctors must be educated in the field of pharmacogenomics in order to provide the best care to patients.

**Case report:** The 54-year-old female patient was referred to the Institute of Clinical Pharmacology of the University Hospital Centar Zagreb. Due to her diagnosis (triple negative breast cancer), she started immunochemotherapy. The patient received an incomplete first cycle of neoadjuvant paraneoplastic treatment according to the protocol: paclitaxel, carboplatin, pembrolizumab. Premedication consisted of dexamethasone, chloropyramine, famosan and akynzeo. After the initial administration of premedication and pembrolizumab, the application of paclitaxel was started, but it was stopped after 5 minutes since the patient developed symptoms of hypersensitivity in the form of hot flushes, shortness of breath and a feeling of swelling of the lips. Vital parameters and state of consciousness were maintained. After prompt discontinuation of therapy and initiation of saline infusion, rapid (within 15 minutes) and complete clinical improvement occurred. The patient was discharged home after 24 hours, and urgent paclitaxel sensitivity testing was advised so that she could continue her cancer treatment.

**Conclusion:** The patient developed a hypersensitivity reaction to the lifesaving therapy component, so the question that arises is whether the therapy can be continued according to the same protocol after the test. According to the type of symptoms that developed, it can be concluded that the type II infusion reaction occurred. In the case in which therapy will continue, paclitaxel should be administered in a prolonged infusion with an increased dose of premedication so that immunochemotherapy is safe for the patient.

**Keywords:** Breast Neoplasms; Hypersensitivity; Neoadjuvant Therapy

# CR12

## Challenging management of radiation-induced multivalvular disease and porcelain aorta: a case series

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**Introduction:** In the era of rising incidence of malignant diseases, and with radiotherapy being a powerful tool to improve patient survival, iatrogenic heart damage is sometimes an unintended consequence of successful treatment. Radiation-induced cardiovascular disease includes the development of valvular heart disease, porcelain aorta, cardiomyopathy, coronary artery disease, and conduction system abnormalities.

**Case report:** We present two male patients hospitalised for congestive heart failure due to radiation-induced multivalvular heart disease (with aortic and mitral valves affected), porcelain aorta, and stable coronary artery disease. Both patients have a medical history of radiotherapy in their youth. The first patient, a 45-year-old man, presented with dyspnea on exertion, peripheral edema, and mid-range reduced systolic function. As a 13-year-old, he received radiotherapy and chemotherapy for non-Hodgkin lymphoma. He underwent a thyroidectomy and radioiodine ablation therapy for papillary thyroid cancer at the age of 44. Echocardiography revealed multivalvular radiation-induced cardiac disease, moderate aortic valve stenosis (AS) and insufficiency, and moderate mitral valve stenosis and insufficiency therefore, we decided on optimal medical treatment for heart failure and follow-up. The second patient, a 59-year-old man, presented with intolerance to exertion, pleural effusion, and globally significantly reduced systolic function due to severe symptomatic AS. Consequently, transcatheter aortic valve replacement was performed. As a 8-year-old, he received radiotherapy for a neck tumor. In addition, both patients had arterial hypertension as a cardiovascular risk factor and coexisting arrhythmias.

**Conclusion:** Cardiotoxicity after radiation can present decades later, leading to challenging treatment options in multivalvular disease because these patients are not candidates for surgical treatment. New diagnostic and percutaneous methods are emerging that can improve outcomes in this subset of patients.

**Keywords:** Cardiotoxicity; Heart Valve Diseases; Radiotherapy; Transcatheter Aortic Valve Replacement

# CR13

## The Role of Vagus Nerve Stimulation in Transforming Refractory Epilepsy in Children

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**Introduction:** Drug-resistant epilepsy (DRE) poses a significant challenge, particularly in children with myoclonic epilepsy and frequent generalized seizures. Vagus Nerve Stimulation (VNS), an implanted neuromodulation device, has emerged as a promising adjunctive treatment for DRE, offering hope for improved seizure management.

**Case report:** A 14-year-old boy was diagnosed with drug-resistant epilepsy characterized by myoclonic seizures and generalized convulsions. His condition began in August 2023 with his first hospitalization after a generalized tonic-clonic seizure triggered by playing video games, followed by myoclonic jerks on the right side of his face. Despite treatment with levetiracetam, his seizures persisted, leading to the addition of clobazam and later topiramate. During a subsequent hospitalization, a brief trial of valproate caused valproate-induced encephalopathy, with altered consciousness, somnolency, and lethargy, which resolved upon discontinuation. Seizure frequency increased, with daily facial myoclonus, occasional urinary incontinence, and generalized convulsions. Electroencephalogram consistently showed paroxysmal dysrhythmic changes. After multiple hospitalizations and adjustments to antiepileptic therapy, seizures remained poorly controlled, significantly impacting his quality of life. In August 2024, his condition met the criteria for VNS, which was successfully implanted in September. By December 2024, the patient reported a reduction in seizure frequency and intensity, with some seizure-free days. Most residual seizures involved brief head drops or falls, however milder than previous events. His mental state improved as he resumed schooling with adaptations.

**Conclusion:** This case highlights the challenges of managing DRE in pediatric patients and underscores the potential benefits of VNS. The patient demonstrated a marked improvement in seizure control, quality of life, and overall well-being following VNS implantation, confirming its role as a viable treatment for refractory epilepsy.

**Keywords:** Anticonvulsants**;** Epilepsy; Seizures

# CR14

## A Journey with GLUT1 Deficiency Syndrome: From Seizures to Diagnosis and the Role of Dietary Management

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**Introduction:** Glucose transporter 1 Deficiency Syndrome (GLUT1DS) is a rare neurometabolic disorder caused by mutations in the SLC2A1 gene, leading to impaired glucose transport across the blood-brain barrier. This results in epilepsy, developmental delays, and movement disorders. Early diagnosis allows for timely intervention, including the implementation of a ketogenic diet, where ketones serve as an alternative energy source for the brain.

**Case report:** A 16-month-old girl presented to the emergency room in September 2021 with febrile convulsions, which progressed into an epileptic status, leading to hospitalization. Although the initial hospitalization was uneventful, she experienced another seizure two months later in an afebrile state. A comprehensive workup, including electroencephalography and brain ultrasound, showed no significant pathology, and she was discharged with a prescription for levetiracetam. Mild dysarthria and slight attention deficits prompted her enrolment in speech therapy and rehabilitation, but she otherwise progressed normally for her age. Under ongoing neuropediatric care, an epilepsy genetic panel performed in 2023 revealed a SLC2A1-VUS mutation, suggesting GLUT1DS. Lumbar puncture revealed slightly lowered alanine and tyrosine levels which are indicative of GLUT1DS as well. A ketogenic diet and vitamin replacement were then introduced as part of her management plan.

**Conclusion:** This case highlights the importance of early diagnosis and genetic testing in children with unexplained seizures and developmental concerns. Prompt intervention with a ketogenic diet and rehabilitation can improve quality of life and prevent further cognitive and developmental delays.

**Keywords:** Developmental Disabilities; Epilepsy; Glucose Transporter Type 1; Diet, Ketogenic

# CR15

## Unicuspid pulmonary valve in a patient with a known pulmonary stenosis and pulmonary artery aneurysm

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**Introduction:** Pulmonary valve (PV) diseases account for approximately 10% of all congenital heart defects. These diseases cause turbulent blood flow distally, which can lead to the formation of a pulmonary artery (PA) aneurysm, posing a risk of life-threatening complications. A unicuspid PV is a defect with an unknown prevalence that has been described only a few times in modern literature. When combined with a PA aneurysm, it presents a significant treatment challenge, requiring a highly tailored approach.

**Case report:** A 57-year-old male with a known PV stenosis and a 7 cm PA aneurysm was admitted for surgical intervention after the latest evaluation revealed a progression of the stenosis. The procedure was performed via median sternotomy, using extracorporeal circulation on an arrested heart. The pulmonary artery was incised, revealing a unicuspid PV. The valve was resected, along with the aberrant musculature of the right ventricular outflow tract. Resection of the PA aneurysm was performed, followed by reconstruction of the bifurcation area of the pulmonary artery using teflon strips. A dacron graft was then sutured to the PA bifurcation. A biological prosthesis was implanted into the graft, after which the graft was sutured to the outflow tract of the right ventricle. The postoperative course was uneventful and the patient was discharged home on the 9th postoperative day.

**Conclusion:** The rarity of both unicuspid PV and PA aneurysm poses a diagnostic and therapeutic challenge. We hope that reporting such cases and referring patients to centers of excellence will lead to earlier diagnoses, a more tailored approach, and overall better outcomes.

**Keywords:** Aneurysm; Cardiovascular Surgical Procedures; Heart Defects, Congenital; Pulmonary Artery; Pulmonary Valve Stenosis

# CR16

## From Virus to Heart: A Case of SARS-CoV-2-Induced Myocarditis

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**Introduction:** Myocarditis is a rare but significant complication of viral infections, including SARS-CoV-2. The COVID-19 pandemic has underscored the importance of early recognition and diagnosis to prevent severe outcomes, particularly in young, healthy individuals. Early detection is essential, as it enables timely management and reduces the risk of long-term complications such as heart failure or arrhythmias.

**Case report:** A 35-year-old male with no prior medical history presented to the emergency department in October 2024 with fever 38.5°C, chills, cough, shortness of breath, and two episodes of syncope on the fifth day of illness. He reported significant weakness and fatigue but denied chest pain or pressure. Laboratory findings revealed elevated inflammatory markers and high-sensitivity troponin, raising suspicion of myocarditis. Electrocardiography, chest X-ray and ultrasonography were normal, offering no evidence of structural heart abnormalities. A nasopharyngeal swab confirmed SARS-CoV-2 infection, while serological tests excluded other viral etiologies. Computed Tomography coronary angiography ruled out ischemic heart disease. Cardia Magnet Resonance Imaging (MRI) confirmed myocarditis by identifying myocardial inflammation. As a non-invasive diagnostic method, cardiac MRI was of critical importance in this case, providing detailed visualization of myocardial involvement while avoiding procedural risks. The patient received conservative treatment. He improved clinically during hospitalization and was discharged in an afebrile state with significantly better physical condition.

**Conclusion:** This case highlights myocarditis in a healthy young individual with SARS-CoV-2 infection, diagnosed using non-invasive methods that minimized procedural risks. Early recognition and evaluation were essential for a favorable outcome, underscoring the importance of vigilance for cardiac complications in the post-pandemic era.

**Keywords:** Early diagnosis; Inflammation; Myocarditis; SARS-CoV-2

# CR17

## Hypertension in a 13-year-old: unveiling a coarctation of the aorta with extensive collaterals

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**Introduction:** Coarctation of the aorta is a congenital heart disease characterized by a narrowing of the aortic lumen, most commonly between the left subclavian artery and the ductus arteriosus, although it can occur anywhere along its entire length. Clinically, it presents with arterial hypertension in the upper limb and diminished or absent lower limb pulses.

**Case report:** A 13-year-old boy was admitted for further evaluation of elevated blood pressure which had been consistently high for the past month, first noticed on a routine physical examination, reaching 170/100 mmHg. The boy denied any associated symptoms, such as dizziness, headaches, chest pain, or episodes of syncope. A renal Doppler was done, showing a bilateral parvus et tardus waveform which raised suspicion for stenosis. A repeat physical examination by a pediatric cardiologist revealed that the boy had a grade 2/6 systolic murmur at the left sternal border and absent femoral pulses bilaterally. An echocardiography was indicated, showing a severe aortic coarctation, after which a cardiac catheterization and Multislice Computed Tomography) were done. Both diagnostic tests confirmed the diagnosis of severe aortic coarctation, along with a hypoplastic distal arch and extensive collaterals involving intercostal arteries and internal mammary arteries. The boy was started on antihypertensive therapy with enalapril, and a surgical procedure was arranged.

**Conclusion:** The reported case brings awareness to the importance of early recognition of coarctation of the aorta in pediatric patients presented with hypertension. A thorough physical examination along with imaging methods are needed to bring this diagnosis to light.

**Keywords:** Aortic Coarctation; Hypertension; Systolic Murmurs

# CR18

## Hidden in Plain Sight: Adenoid Cystic Carcinoma of the Trachea Complicated by COVID-19

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**Introduction:** Primary tracheal adenoid cystic carcinoma (TACC) is a rare malignancy arising from the minor salivary glands, with an incidence of only 0.1 to 0.26 per 100,000 people. Due to its submucosal origin, TACC grows slowly and infiltratively, leading to delayed symptoms such as dyspnea, cough, wheezing, and hemoptysis, often misdiagnosed as asthma. Surgical resection is the gold standard of treatment, but complete excision is achieved in only about half of cases, often requiring adjuvant radiotherapy. Postoperative complications, including vocal cord paresis and airway edema, can impair recovery.

**Case report:** A 68-year-old female presented with stridor, previously misdiagnosed and treated as asthma for two years. Despite treatment, her symptoms worsened, leading to further evaluation. Bronchoscopy and computerized tomography (CT) revealed a submucosal tracheal tumor, 28×25 mm in size, below the cricoid cartilage that reduced the lumen to a slit. Surgical resection of all macroscopically visible tumor tissue with cricotracheal anastomosis was performed, with histopathology confirming ACC and positive tumor margins, making it a R1 resection. Postoperatively, vocal cord paresis developed but improved with corticosteroid therapy. On postoperative day 10, the patient developed pneumonia with moderate respiratory insufficiency. COVID-19 was confirmed with an antigen test and Remdesivir was ordinated immediately, leading to clinical improvement. She was discharged in good condition, with adjuvant radiotherapy planned due to positive resection margins.

**Conclusion:**Tracheal ACC is rare and often misdiagnosed, leading to delayed treatment. Surgical resection, although effective, frequently requires adjuvant therapy due to infiltrative tumor behavior. Postoperative COVID-19 infections still pose a serious threat and can complicate recovery, underscoring the need for multidisciplinary management to optimize patient outcomes.

**Keywords:** Adenoid Cystic Carcinoma; COVID-19; Dyspnea; Surgical Oncology; Tracheal Neoplasms

# CR19

## Unusual presentation of aortic dissection

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**Introduction:** Aortic dissection is a life-threatening condition which typically presents as a sudden onset, severe chest, upper back or abdominal pain, often described as a tearing or ripping sensation. Prompt diagnosis and emergent surgical or endovascular intervention are needed to achieve a favorable outcome.

**Case report:** A 70-year-old female with diabetes mellitus type 2 and arterial hypertension presented in the emergency department with dizziness, speech difficulties, and vomiting. The patient also complained of mild, stabbing chest pain, localized in the lower part of the left hemithorax, worsening in lying position. Brain-computer tomography (CT) showed a small hypodense zone at the cortico-subcortical junction in the fronto-parietal region, which indicated a recent ischemic stroke. Diffuse ST elevation was detected by an electrocardiogram, and a focused ultrasound examination revealed a small, hemodynamically insignificant pericardial effusion. Together with a history of a recent respiratory infection, the diagnosis of acute pericarditis was established. Elevated inflammatory parameters and normal troponin levels were recorded in the laboratory tests, supporting the diagnosis above. The patient was hemodynamically stable and admitted to the neurology department because of the stroke. On the second day of hospitalization, the patient was referred to a complete transthoracic heart ultrasound, performed by a cardiologist. A mobile, linear formation in the ascending aorta raised suspicion of aortic dissection. CT aortography confirmed aortic dissection Stanford A, Debakey I type. The patient was referred for emergent cardiac surgery.

**Conclusion:** The clinical picture of aortic dissection may vary and present with subtle, unusual signs and symptoms. An awareness of possible various clinical presentations, a high index of suspicion, and a dedicated multidisciplinary approach are necessary for timely diagnosis and treatment.

**Keywords:** Aortic Dissection; Ischemic Stroke; Pericarditis

# CR20

## When STEMI hides an ascending aortic aneurysm dissection in a 48-year-old male patient

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**Introduction:** Dissection of ascending aortic aneurysm is a life-threatening condition requiring urgent surgical repair, yet mortality rate remains high despite intervention. Unfortunately, it is often overlooked in patients presenting with ST elevation myocardial infarction (STEMI).

**Case report:** We present a 48-year-old male who is a long-term smoker with untreated essential hypertension. He presented to emergency room with abdominal pain and hematemesis. He was hemodynamically stable with no other complaints. Electrocardiogram findings were consistent with inferior and anterior wall STEMI. Additionally, laboratory findings were far from favorable. He exhibited severe thrombocytopenia, leukocytosis and elevated C-reactive protein. Also, there were signs of acute kidney injury and liver failure. Initially, hemoglobin and erythrocyte indices were normal, but later showed depletion, alongside elevated D-dimers. Invasive cardiologist was consulted and there was no indication for emergency coronarography. Gastroenterologist was consulted for gastroscopy, but due to profuse vomiting it was unperformable. The following day, echocardiogram revealed severe aortic regurgitation, bicuspid aortic valve, mild right heart dysfunction, and dilated ascending aorta with a suspected intimal flap. Ascending aortic aneurysm dissection was suspected and computed tomography scan confirmed it. Cardiac surgeon was consulted, but due to multiorgan dysfunction and thrombocytopenia, surgery was postponed until patient is sufficiently stabilized. During hospitalization, he received six pools of thrombocytes and underwent hemodialysis three times. Eight days later, he was deemed stable enough

**Conclusion:** Early detection of ascending aortic aneurysm dissection is crucial, as delayed diagnosis significantly increases risk of fatal outcomes. This case highlights importance of considering aortic dissection in differential diagnosis of patients with severe clinical manifestations and multiorgan dysfunction.

**Keywords:** Aneurysm; Myocardial infarction; Multiple organ failure

# CR21

## Post-Traumatic Anisometropia Corrected with Bilateral Intraocular Lens Implantation

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**Introduction:** Anisometropia is a condition characterized by a significant difference in refractive power between the two eyes, which can lead to problems such as reduced binocular vision and impaired depth perception. In patients with high levels of anisometropia, correction with glasses is often intolerable due to optical and prismatic distortions. The aim of this case report is to describe a patient with post – traumatic anisometropia, who successfully underwent surgical intervention with intraocular lens (IOL) implantation, achieving refractive balance and significantly improving his quality of life.

**Case report:** A 57-year-old male had a history of trauma to the left eye at the age of 15, which resulted in a refractive difference of –5.00 diopters sphere (Dsph) between the two eyes, making it difficult for him to tolerate glasses or contact lenses. Ophthalmological examination revealed reduced visual acuity in both eyes (sine correctione 0,1), along with myopia and astigmatism. Early cortical cataracts were also present in both eyes, along with posterior vitreous detachment (PVD). Surgical intervention with IOL implantation was recommended to eliminate the refractive difference. Postoperative results showed refractive correction of –2.25 Dsph / -1.75 diopters cylinder (Dcyl) in the right eye and –2.25 Dsph / -2.00 Dcyl in the left eye. For the first time, the patient achieved binocular vision and normal depth perception.

**Conclusion:** This case highlights the importance of surgical intervention in treating post-traumatic anisometropia that cannot be adequately corrected with glasses or contact lenses. The implantation of IOLs allowed for refractive balance and significantly improved the patient's quality of life.

**Keywords:** Anisometropia; Lens Implantation, Intraocular; Refractive Errors

# CR22

## A rare presentation of papillary carcinoma in a thyroglossal duct cyst – a case report

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**Introduction:** Thyroglossal duct cysts (TDC) result from incomplete obliteration of the duct through which the thyroid gland descends from the tongue to its final position during fetal development. This congenital anomaly is present in about 7% of individuals and may contain thyroid tissue. Malignant transformation occurs in 1% of TDC, with papillary carcinoma of thyroid tissue being the most frequently observed type.

**Case report:** In this case report we present a 38-year-old male with a painless, gradually enlarging submental mass that had been growing for the past year. On examination, the mass was soft in consistency, cystic in form, partially fixed to the underlying tissue, and with no associated skin changes. The patient's medical history was unremarkable apart from type II diabetes. A multislice computed tomography showed a multilocular cystic lesion with septa, measuring 58x39x43mm. Reactive lymph nodes were observed in regions Ia and Ib, as well as in region IIb on the right. A fine needle aspiration biopsy suggested adenocarcinoma. Radical tumor resection and selective neck dissection were performed, and histopathological examination confirmed the presence of papillary thyroid carcinoma within the thyroglossal duct. As part of the treatment plan, radioactive iodine therapy was indicated. However, to proceed with this therapy, a total thyroidectomy was required.

**Conclusion:** This case shows the rare occurrence of malignancy in a TDC. While uncommon, malignant changes should be considered in the evaluation of median neck cysts. A multidisciplinary approach is essential for optimal treatment.

**Keywords:** Carcinoma, Papillary; Thyroidectomy; Thyroglossal Cyst

# CR23

## Perioperative hemodynamic management of conjoined twins with unbalanced cross-circulation

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**Introduction:** The overall incidence of conjoined twins is 1.5 in 100,000 pregnancies. The omphalopagus variant seldom presents with unbalanced cross-circulation through fused liver parenchyma, resulting in hypotension in one twin and severe hypertension in the other. An anesthesiologist faces a unique challenge in the perioperative hemodynamic management of the twins since they require diametrically different vasoinotropic support in the presence of mixed circulations.

**Case report:** Conjoined twins were born via C-section at 33 weeks gestation. Due to unbalanced cross-circulation, twin A became increasingly hypotensive and oliguric, while twin B developed severe hypertension and hypertrophic cardiomyopathy. Urgent separation was scheduled on the 45th day of age with a combined body weight of 4.7 kg. After the induction of anesthesia, arterial and central venous catheters were introduced for close arterial and central venous blood pressure monitoring. Inopressor support with dopamine was initiated for hypotensive twin A. The ideal inotrope for perioperative management of hypertrophic cardiomyopathy in hypertensive twin B would be milrinone, due to its potent inotropic, lusitropic, and vasodilatory effects. However, due to shunting of the blood, there was a significant risk of milrinone crossing to twin A, causing uncontrollable further decline in arterial blood pressure. To avoid this hazard, dobutamine was used. It is an inotrope with less pronounced and shorter-acting vasodilatory effects, which caused no hypotensive consequences for twin A. After the liver separation, milrinone was safely initiated for twin B. The surgical separation was successfully completed without major complications, and both twins had stable hemodynamic parameters postoperatively.

**Conclusion:** Until the separation of the circulations in conjoined twins with diametrically different hemodynamic requirements, vasoinotropes with less pronounced and shorter-acting vasodilatory effects should be used.

**Keywords:** Conjoined twins; Cross Circulation; Vasoinotropic support

# CR24

## Challenges in managing cardiac tamponade after Nuss procedure in pediatric patient

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**Introduction:** The Nuss procedure is a minimally invasive surgery for correcting pectus excavatum that utilizes a substernal bar to reshape the chest wall. Successful, yet it poses difficulty in the management of complications such as cardiac tamponade, a potentially lethal process in which fluid or blood within the pericardial space compresses the heart and decreases function. The case highlights the diagnostic and surgical challenges of tamponade management in the context of the Nuss procedure.

**Case report:** A 14-year-old boy patient presented with chest pain, tachycardia, and hypotension. The patient was status post-Nuss procedure for repair of pectus excavatum. An echocardiogram showed a massive pericardial effusion compressing the heart, for which an emergency pericardiocentesis was performed, draining 500 ml of bloody fluid. The patient was stabilized and discharged after instructions for follow-up. The patient returned the next day with increasing symptoms of severe chest, neck, and shoulder pain. Echocardiography was used to confirm the diagnosis of cardiac tamponade, and emergency surgery was needed. A complete sternotomy was performed, the Nuss bar was removed, and bleeding of the right coronary artery was controlled by direct sutures. The patient recovered well postoperatively and was discharged in stable condition.

**Conclusion:** While cardiac tamponade is unusual in children, it is a life-threatening condition that requires careful consideration, particularly following the Nuss procedure. Surgical intervention in such cases is uniquely challenging due to the complexity of approaching the heart and managing the bar, especially considering the physiological changes of the patient in tamponade during anesthesia. This case highlights the importance of early recognition, timely surgical management, and a tailored approach in these patients for optimal outcomes.

**Keywords:** Acute Care Surgery; Cardiac Tamponade; Funnel chest; Pediatric Emergency Medicine

# CR25

## Recurring Idiopathic Pericarditis: A Case Report of Two Episodes and Comprehensive Diagnostic Approach

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**Introduction:** Pericarditis, an inflammation of the pericardium, can present with chest pain, pleuritic symptoms, and pericardial effusion, which often requires an extensive workup to exclude all the potential etiologies. Idiopathic pericarditis remains a diagnosis of exclusion and it is crucial to investigate it, especially in cases with two or more episodes.

**Case report:** We present a 39-year-old male patient with two episodes of recurrent pericarditis over a 9-month period, diagnosed as idiopathic after thorough investigation. The patient's first episode occurred in March 2024, when he presented with retrosternal chest pain, radiating to both shoulders, aggravated by body position and deep breathing. Initial workup revealed only a minimal pericardial effusion of approximately 3 mm. The patient was treated with an anti-inflammatory dose of a nonsteroidal anti-inflammatory drug along with gastroprotection. His second episode in December 2024 was marked by similar symptoms, leading to his hospitalization. The patient was initially treated again with an NSAID, but this time colchicine was added and he started showing gradual improvement. The patient was then transferred from the Department of Cardiology to the Department of Rheumatology and Clinical Immunology for further evaluation and management. An extensive diagnostic workup was performed, including serology for infectious agents, a paraneoplastic evaluation: computed tomography thorax, abdominal ultrasound, and immunological markers: antinuclear antibody, dsDNA, extractable nuclear antigen along with IgG4 and angiotensin-converting enzyme level testing. Despite comprehensive testing, no underlying cause of pericarditis was identified, leading to a final diagnosis of idiopathic recurrent pericarditis.

**Conclusion:** Although rare, idiopathic recurrent pericarditis is a condition that can occur unexpectedly, often requiring careful evaluation. This case highlights the importance of excluding infectious, neoplastic, and autoimmune etiologies before reaching the diagnosis.

**Keywords:** Colchicine; Pericardial Effusion; Pericarditis

# CR26

## The advancement of cardiac surgery: a case report on a repair of an intraoperative aortic dissection in an elderly patient

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**Introduction:** Aortic dissection is a life-threatening medical emergency, when the layers of the aortic wall get separated because of a tear in the intimal layer, creating two aortic lumina. Dissections are categorized by Stanford and DeBakey classifications, depending on the location of the tear. The condition requires urgent treatment through medication and, depending on the type, surgical or endovascular repair.

**Case report:** A 78-year-old female patient had heart failure symptoms due to severe aortic regurgitation. Surgical valve replacement was indicated. Her EuroSCORE (European System for Cardiac Operative Risk Evaluation), at 5.47%, showed intermediate surgical risk. She underwent elective surgery: through a hemisternotomy, the aortic valve was fully excised and replaced with a bioprosthetic valve. At the end of surgery, the operator noticed a hematoma in the aortic wall, which was thin and fragile. Transesophageal echocardiogram showed Stanford A, DeBakey 1 aortic dissection. The ascending aorta was resected and reconstructed using a supracoronary graft. The following day, during surgical revision of postoperative bleeding, the patient had an acute left main coronary artery dissection with consequential massive left ventricular infarction. An urgent revascularization was done using two venous grafts and a veno-arterial extracorporeal membrane oxygenation device was placed, then removed five days later. After two major cardiac surgeries and several unpredictable complications, the patient was hemodynamically stable, taken off the respirator, extubated, neurologically intact and mobile. Due to sepsis and multiple organ failure, despite intensive therapy, 90 days after surgery, the patient passed away.

**Conclusion:** The management of an intraoperative aortic dissection in the presented case can serve as an example for much-needed official clinical guidelines on prophylactic, diagnostic, therapeutic and postoperative measures for such scenarios.

**Keywords:** Aortic Dissection; Aortic Valve Insufficiency; Myocardial Infarction

# CR27

## Late Respiratory Complications after Pulmonary GVHD in a Patient with Bone Marrow Transplantation

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**Introduction:** Acute myelomonocytic leukemia (AMML) is a severe condition characterized by the uncontrolled proliferation of myeloid cells and monocytic precursors. While standard treatment for AMML involves chemotherapy and bone marrow transplantation, complications like graft versus host disease (GVHD) can occur as a result. Our report demonstrates one such case, in which the patient developed life-threatening pulmonary complications several years after remission had been achieved.

**Case report:** We present a 52-year-old male patient who was diagnosed with high-risk AMML. Remission was achieved by chemotherapy, using induction with the BISHOP (cytarabine, etoposide, daunorubicin) protocol followed by two treatments with the “1+5” and DIA (daunorubicin with intermediary doses of cytarabine) protocols. Following chemotherapy, the patient received an allogeneic bone marrow transplant. One year later, he developed pulmonary GVHD, which was managed with corticosteroids and montelukast. For a period, immunomodulation with azithromycin was also utilized. The patient’s condition was stable for three years before he was admitted due to respiratory deterioration. This was initially recognized as acute mountain sickness as the patient had been at an altitude exceeding 2500 meters. Upon admission, intubation was performed and he was placed on venovenous extracorporeal membrane oxygenation (ECMO) for five days after the diagnosis of atypical pneumonia with severe acute respiratory distress syndrome (ARDS) was made. Currently, the patient is in stable condition, recovering from a lung transplant.

**Conclusion:** This case illustrates long-term complications associated with the treatment of AMML, including pulmonary GVHD and severe ARDS. While pharmacotherapy and ECMO helped stabilize the patient’s condition, a lung transplant remains the only permanent solution to his respiratory complications.

**Keywords:** Graft vs Host Disease; Leukemia, Monocytic, Acute; Respiratory Distress Syndrome

# CR28

## Thrombus in Transit and Mechanical Thrombectomy in Massive Pulmonary Embolism: A Case Report

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**Introduction:** Massive pulmonary embolism occurs when a large embolus blocks the main pulmonary artery or its major branches, leading to acute right heart failure and obstructive shock. This case report underscores the critical importance of rapid recognition, accurate diagnosis, and timely intervention to prevent severe complications.

**Case report:** A 70-year-old female patient presented to the emergency department two weeks after undergoing laparoscopic cholecystectomy with complaints of vomiting, shortness of breath, and generalized weakness. Upon admission, she was hypotensive and tachycardic, and laboratory tests revealed elevated D-dimer levels along with cardiac enzymes. Given the clinical presentation, a diagnosis of pulmonary embolism (PE) was suspected, and a computed tomography pulmonary angiogram confirmed the presence of a massive PE. Echocardiography revealed right ventricular dilation and a 'thrombus in transit', which was found in both the right atrium and ventricle. Due to the patient's contraindications to fibrinolytic therapy, a mechanical thrombectomy was performed, during which a significant amount of thrombotic material was aspirated from the right atrium, right ventricle, and right pulmonary artery. Following the procedure, the patient's vital signs stabilized, and subsequent echocardiography showed normal right heart dimensions. The patient recovered completely and was discharged on dabigatran.

**Conclusion:** The availability of mechanical thrombectomy is crucial for the appropriate treatment of patients with contraindications for fibrinolytic therapy. This case highlights the importance of timely recognition of pulmonary embolism, especially in postoperative patients, and demonstrates how mechanical thrombectomy, combined with anticoagulation therapy, allowed for stabilization and recovery, emphasizing the role of rapid diagnosis and intervention.

**Keywords:** Mechanical Thrombolysis; Pulmonary Embolism; Venous Thromboembolism

# CR29

## Desired and undesired drug interactions in a kidney transplant patient

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**Introduction:** Kidney transplant recipients consume several medications simultaneously, including immunosuppressants and drugs for managing underlying diseases like hypertension. Careful consideration of pharmacotherapy is essential, as drug interactions can lead to serious adverse reactions.

**Case report:** We present a 52-year-old female patient who underwent kidney transplant due to focal segmental glomerulosclerosis in 2019. Following the transplantation, she was prescribed immunosuppressive agents, including tacrolimus. In order to reduce dose of relatively expensive tacrolimus capsules, it is co-administered with diltiazem (2x60 mg), a CYP3A4/5 inhibitor. This combination results in a significant drug-drug interaction, leading to an enhanced effect of tacrolimus. The patient was also given bisoprolol (2.5 mg) to manage hypertension. Due to non-specific chest pain unrelated to exertion, mild exertional intolerance, general weakness with occasional episodes of dizziness and irregular heartbeat that disrupt her sleep, the patient was referred for a cardiological evaluation, including dobutamine stress echocardiography and a 24h Holter electrocardiography (ECG). Stress echocardiography showed no impairment in contractility, however, she had reached a maximum heart rate of only 117 bpm. The 24-hour ECG monitor revealed that she experienced second-degree atrioventricular (AV) block (Mobitz I) several times throughout the day and night. Given the negative chronotropic effect of bisoprolol with diltiazem, cardiologist decided to discontinue bisoprolol. Consequently, the patient's average heart rate increased, she no longer experiences Mobitz I and reports feeling generally better, without dizziness or prolonged fatigue.

**Conclusion:** It is generally advised to avoid combining beta-blockers with non-dihydropyridine calcium channel blockers due to their strong synergistic inhibitory effect on AV node, which may lead to bradycardia or heart block. This combination can result in symptoms such as general weakness, syncope and presyncope..

**Keywords:** Bisoprolol; Bradycardia; Diltiazem; Hypertension; Tacrolimus

# CR30

## Management of advanced heart failure with durable biventricular mechanical support

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**Introduction:** Heart failure (HF) is a clinical syndrome characterized by the inability of the heart to provide adequate cardiac output, or doing so requires elevated filling pressures. Toxic cardiomyopathy, a type of non-ischemic cardiomyopathy, can result from exposure to cardiotoxic medications, often with cancer treatment. This report describes the management of a patient with advanced HF secondary to toxic cardiomyopathy, treated with biventricular circulatory support devices.

**Case report:** A 43-year-old female was diagnosed with left breast invasive ductal carcinoma in September 2020 and treated with chemotherapy (doxorubicin), left mastectomy, hormonal therapy, and radiotherapy. In September 2021, she presented with symptoms of advanced HF secondary to biventricular toxic cardiomyopathy, with a left ventricular ejection fraction of 30%. The patient was not a candidate for heart transplantation, and a left ventricular assist device was implanted. However, due to poor right ventricular function during the procedure, a temporary paracorporeal right ventricular support device was placed. Persistent right ventricular dysfunction necessitated the implantation of a permanent right ventricular assist device. During a period of 3.5 years, the patient significantly improved her functional capacity, as evidenced by 102% of the expected distance achieved during the 6-minute walking test, and good overall quality of life. She ultimately developed recurrent driveline infections, due to which further treatment options will be discussed at a multidisciplinary board.

**Conclusion:** Mechanical support in biventricular HF is still an unmet need. Our case highlights that this therapeutic option could provide favorable outcomes in biventricular HF, particularly in patients who are not candidates for transplantation. Gathering further knowledge on this matter is of the essence.

**Keywords:** Cardiomyopathies; Heart-Assist Devices; Heart Failure

# CR31

## Staphylococcal Sepsis, Endocarditis, And Intramuscular Abscesses In An Intravenous Drug User

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**Introduction:** Infectious endocarditis is the colonization and subsequent inflammation of the endocardium and cardiac valves, most commonly caused by Staphylococcus, Streptococcus, and Enterococcus species. Etiologically, approximately 10 % of the cases are attributable to the inoculation of S. epidermidis and S. aureus in intravenous drug users. Peripheral septic embolization represents a potentially severe complication of this condition.

**Case report:** A 29-year-old woman presented to the emergency department with lower back pain and impaired mobility. She had painful bilateral edema of the upper extremities, accompanied by erythema, minor hematomas, and scabs. The patient's medical history revealed previous alcohol intoxication and intravenous drug abuse. Upon admission, laboratory findings showed elevated inflammatory markers and positive blood cultures for methicillin-susceptible Staphylococcus aureus (MSSA). An abdominal and pelvic computed tomography scan identified multiple abscesses in the following muscles: the right psoas, right iliopsoas, and right gluteus medius. Additionally, a transesophageal echocardiogram revealed significant vegetation on the tricuspid valve and possible vegetation on the aortic valve, confirming infective endocarditis as the primary source of infection. The patient was treated with a combination of flucloxacillin and clindamycin. Ultrasound-guided percutaneous puncture and drainage of the abscesses collection were performed in the right gluteal area. The cardiac surgery team successfully performed a vegetectomy of the tricuspid valve. Following the procedure, the patient received a full 6-week course of antibiotic therapy.

**Conclusion:** Any septic condition accompanied by the presence of multiple abscesses in distant organs should raise suspicion of an underlying primary source of infection.

**Keywords:** Endocarditis; Psoas Abscess; Staphylococcus aureus; Substance Abuse, Intravenous

# CR32

## Cardiovascular manifestations of Loeys-Dietz syndrome

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**Introduction:** Loeys–Dietz syndrome (LDS) is an autosomal dominant disease that affects tumor growth factor beta (TGF-beta) signaling pathway which is important in regulating transcription of extracellular matrix (ECM) components of connective tissue. In LDS the rates of synthesis and posttranslational organization of all ECM molecules are altered. This results in weakening of the vessel walls throughout the entire arterial tree. Other clinical manifestations include skeletal, craniofacial and cutaneous pathology but cardiovascular is the most life-threatening.

**Case report:** We present a case of a 39-year-old male patient who first experienced interscapular pain two years ago and was subsequently initiated on antihypertensive therapy due to elevated blood pressure. Since then he remained completely asymptomatic even during physical exertion. Two months ago his 13-year-old son underwent aortic root reconstruction surgery, raising suspicion of a genetic disorder. Genetic analysis confirmed a mutation in the TGF-beta receptor 2 gene, which the boy had inherited from his father. Based on this information our patient underwent further evaluation and was diagnosed with a chronic Stanford B aortic dissection accompanied by a large aneurysm measuring up to 87 mm in diameter, extending from the proximal descending aorta to the bifurcation of the left common iliac artery. Due to the high risk of rupture a prophylactic surgery was performed which included resection and reconstruction of aortic arch and descending aorta using E-Vita Open stent graft, valve spearing aortic root replacement (David procedure) and closure of opened foramen ovale.

**Conclusion:** This case highlights how major defects can remain asymptomatic and therefore unrecognized. Early detection through genetic analysis in patients with a positive family history allows for timely interventions, such as prophylactic surgery, to prevent serious complications.

**Keywords:** Asymptomatic Diseases; Genetic Testing; Loeys-Dietz Syndrome

# CR33

## Pityriasis Rosea: An Uncommon Cause of a Common Dermatosis - A Case Report

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**Introduction:** Pityriasis rosea is a common papulosquamous dermatosis characterized by large herald patches which appear all over the body. The exact cause is unknown, but potential causes could be viral infections, vaccines or drug-induced reactions. In this case, we present an atypical form of this condition that has resulted as a reaction to a commonly used drug.

**Case report:** : A 42-year-old male was admitted to the dermatovenereology department due to a herald patch that appeared on the trunk 14 days prior to the admission, followed by similar changes on his neck and legs. He denied any accompanying symptoms, but stated that he has been using esomeprazole for chronic gastritis which raised suspicion of a drug-induced reaction. During the physical examination, densely disseminated confluent nummular plaques were noticed in the previously mentioned places, suggesting atypical pityriasis rosea. The patient was referred for skin biopsy and laboratory testing. He was given antihistaminic along with corticosteroid oral therapy and esomeprazole was replaced by another proton pump inhibitor. At the follow-up appointment, the patient showed significant improvement. Laboratory tests did not reveal any significant abnormalities and skin biopsy findings confirmed the diagnosis of pityriasis rosea. Prescribed therapy was continued, the patient fully recovered and still has regular check-ups with a dermatologist.

**Conclusion:** Although it is unusual for a reaction to a drug to be presented with this type of clinical presentation, this potential cause of pityriasis rosea should not be overlooked. Therefore, it is important to take a patient's medical history properly to avoid missing important information about the possible cause.

**Keywords:** Drug-Related Side Effects and Adverse Reactions; Pityriasis Rosea; Proton Pump Inhibitors

# CR34

## Aortic Stenosis in a High-Risk Patient: Insights from a Clinical Case

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**Introduction:** Transcatheter aortic valve implantation (TAVI) has emerged as a highly effective alternative for treating severe symptomatic aortic stenosis, particularly in elderly patients and those at high surgical risk. Certain individuals are considered high risk for surgery due to comorbidities related to aortic anatomy, notably the presence of a porcelain aorta. It is a condition characterized by significant circumferential calcification of the thoracic aorta, associated with severe surgical complications such as uncontrollable bleeding, stroke and aortic dissection.

**Case report:** A 60-year-old female patient with a medical history of hypertension, obesity, and excessive smoking was hospitalized for a diagnostic workup following diagnosis of severe aortic stenosis. Multi-slice computed tomography (MSCT) aortography revealed the presence of a porcelain aorta, an indication for TAVI. During the scheduled procedure in November 2015, a complication arose involving dislocation of the percutaneous aortic valve into the left ventricle, leading to cardiogenic shock. An emergency cardiac surgery was performed, resulting in successful biological aortic valve prosthesis implantation. Subsequently, the patient was placed under regular cardiology follow-up. In February 2024, the patient reported dizziness, fatigue, and significant limitations during mild physical activities. An echocardiographic evaluation verified degeneration of the biological valve with severe aortic stenosis (an effective orifice area [AVA] 0.8 cm² and a maximum pressure gradient [maxPG] 100 mmHg) in addition to a moderate 'patient-prosthesis mismatch' persisting since implantation. A successful percutaneous valve prosthesis implantation was performed using the “valve-in-valve” technique. As of today, the patient remains in good general health, exhibiting no major symptoms.

**Conclusion:** This case underscores the role of an interdisciplinary approach, particularly collaboration between cardiology and cardiac surgery, in the management of rare but life-threatening complications. Applying innovative percutaneous techniques, like “valve-in-valve” TAVI, highlights how comprehensive care strategies can lead to successful results.

**Keywords:** Aortic Valve Stenosis; Cardiovascular Surgical Procedures; Transcatheter Aortic Valve Replacement

# CR35

## Febrile Patient with Pancytopenia: A Case Report on Visceral Leishmaniasis

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**Introduction:** Visceral leishmaniasis (VL) is a parasitic infection caused by Leishmania protozoa. It is transmitted through bites of infected Phlebotomus sandflies and is endemic to tropical and subtropical regions. In Croatia, cases are rare, mainly locally acquired in southern regions. If untreated, VL can lead to significant morbidity and organ dysfunction.

**Case report:** An 80-year-old female arrived to the Infectious Disease Polyclinic with a five-week history of fever following a recent travel to Central Dalmatia. The patient was initially subfebrile with nocturnal fever, which later progressed to a sustained febrile state. Other symptoms included weight loss and general weakness. Physical examination revealed occasional suffusions but no other abnormalities. Laboratory findings revealed pancytopenia (Leukocytes 1.8x109/L, Erythrocytes 3.43x1012/L, Hemoglobin 96 g/L, Thrombocytes 61x109/L), elevated C-reactive protein (115.2 mg/L), lactate dehydrogenase (736 U/L), and liver enzymes. Abdominal computed tomography indicated splenomegaly and mild hepatomegaly without lymphadenopathy. Hematologic assessments did not indicate hematological disorder as the cause of the symptoms, and microbiological cultures for common pathogens were negative. Despite empirical antimicrobial therapy for possible bacterial and intracellular pathogens, no clinical or laboratory improvement occurred. Bone marrow aspirate confirmed Leishmania spp. with polymerase chain reaction, leading to VL diagnosis. The patient was treated with liposomal amphotericin B, resulting in clinical improvement and complete symptom resolution.

**Conclusion:** This case highlights the importance of considering VL, even in regions where it is uncommon. Early recognition is crucial, as the clinical presentation can mimic hematological disorders, leading to misdiagnosis and unnecessary testing. Prompt identification and treatment prevent complications, emphasizing the importance of clinical vigilance in managing uncommon infections with nonspecific symptoms.

**Keywords:** Amphotericin B; Leishmaniasis, Visceral; Pancytopenia

# CR36

## From noise to silence – a case report of a patient with long QT syndrome

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**Introduction:** Congenital long QT syndrome (LQTS) is a genetic disorder affecting ion channels, resulting in prolonged action potential duration and an increased risk of life-threatening arrhythmias. Genotype-specific triggers have been identified as potential causes of cardiac arrest, with auditory stimuli, such as sudden noise, being a known trigger for type 2 LQTS. Here, we present the case of a cardiac arrest survivor who was subsequently diagnosed with type 2 LQTS.

**Case report:** A 39-year-old previously healthy male was admitted following successful resuscitation after an out-of-hospital cardiorespiratory arrest, with ventricular fibrillation as the initial rhythm. According to his wife, he had been awakened in the middle of the night by his baby crying, after which he went into cardiac arrest. A coronary angiogram revealed normal coronary arteries, and an echocardiogram showed a structurally normal heart. Electrocardiogram tracings demonstrated a significantly prolonged QT interval (>600 ms) with a morphology indicative of type 2 LQTS, leading to the initiation of propranolol therapy in accordance with current guidelines. Following a prolonged stay in the intensive care unit and an optimal neurological recovery, a single-chamber implantable cardioverter-defibrillator was implanted for secondary prevention of sudden cardiac death. Subsequent genetic testing confirmed a *KCNH2* mutation, establishing the diagnosis of LQTS. As a result, the patient's family underwent screening, revealing that his mother also has LQTS.

**Conclusion:** This case highlights the importance of considering LQTS in the differential diagnosis of cardiac arrest, as timely recognition allows for appropriate therapeutic intervention. Given the genetic basis of the condition, genetic testing plays a crucial role not only in confirming the diagnosis but also in identifying at-risk family members, enabling early detection and preventive measures.

**Keywords:** Death, Sudden, Cardiac; Defibrillators, Implantable; Genetic Testing; Long QT Syndrome

# CR37

## Catheter ablation for persistent atrial fibrillation and atypical atrial flutter in a patient with TTN mutation and heart failure

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**Introduction:** Dilated cardiomyopathy (DCM) is a major cause of heart failure and is inherited in many cases, with the titin (TTN) gene being the most affected. DCM complications often involve arrhythmias, particularly atrial fibrillation (AF) and atrial flutter. Catheter ablation is considered the optimal treatment for atrial flutter and for pharmacologically resistant persistent AF. This article highlights the challenges and successes of catheter ablation in a genetically predisposed patient with heart failure, underlining its importance as an effective treatment method.

**Case report:** A 39-year-old male presented with palpitations, exertion intolerance and orthopnea. Electrocardiography showed AF with rapid ventricular response. Echocardiography revealed a mildly abnormal ejection fraction of 45% with moderate mitral regurgitation. The patient was successfully cardioverted on amiodarone. A month later, he was admitted because of worsening heart failure. Electrocardiography showed recurrence of AF, and echocardiography revealed a severely abnormal ejection fraction of 18% with severe mitral regurgitation. Genetic testing identified heterozygosity for the TTN gene mutation. The patient underwent pulmonary vein isolation (PVI) using electroporation (Farapulse), successfully treating AF. Atypical atrial flutter developed post-PVI, which was electrically cardioverted. Five days later, atrial flutter with rapid ventricular response recurred despite antiarrhythmic therapy. Therefore, “ablate and pace” therapy was indicated, involving atrioventricular node ablation, producing atrioventricular block, followed by implantation of a dual-chamber pacemaker. The patient was discharged on guideline-directed therapy for heart failure and the plan for subsequent atypical atrial flutter ablation. After three months, pulse field ablation of the left atrium including mitral isthmus, successfully restored sinus rhythm.

**Conclusion:** Catheter ablation remains the most reliable treatment for pharmacologically resistant AF and atrial flutter, improving quality of life in patients with heart failure and DCM.

**Keywords:** Atrial Fibrillation; Atrial Flutter; Cardiomyopathy, Dilated; Catheter Ablation; Heart Failure

# CR38

## Penetrating Atherosclerotic Ulcer (PAU) – Managing a Complicated Course

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**Introduction:** PAU is the ulceration of an aortic atherosclerotic plaque penetrating the internal elastic lamina into the media. It can progress into intramural hematoma (IMH), dissection (AD), and/or rupture. All these diagnoses present as acute aortic syndrome.

**Case report:** A 65-year-old woman with a history of coronary artery bypass grafting done 1 year prior presented with chest pain. During the evaluation, an echocardiogram revealed a double-lumen formation above the sinotubular junction, measuring 90×94 mm. Computed tomography angiography showed a break in the continuity of the wall located at the site of the proximal venous graft anastomosis and contrast extravasation into the aortic wall. These findings were consistent with PAU that progressed into the IMH and subsequently to the AD. The patient underwent urgent surgery and the Stanford A dissection was confirmed. The surgical procedure involved the replacement of the aortic root and ascending aorta with reimplantation of the coronary arteries sec. Bentall along with replacement of the aortic arch in zone 2. Weaning from the extracorporal circulation was complicated by hypocontractile right ventricle and a decision to create a bypass to a right coronary artery was made. The patient was transferred to the Intensive Care Unit hemodynamically stable. The postoperative course was complicated by pericardial effusion requiring resternotomy and hemostasis. The rest of the postoperative course was uneventful. The patient was discharged to the peripheral hospital on the 15th postoperative day and remains in regular follow-up.

**Conclusion:** This case highlights the complexities of managing a rare and emergent diagnosis like PAU, especially when involving the ascending aorta in a patient with significant comorbidities and prior cardiac surgery. Timely surgical intervention and management of complications were critical for a favorable outcome.

**Keywords:** Acute Aortic Syndrome; Dissection; Penetrating Atherosclerotic Ulcer

# CR39

## Endocarditis, Regurgitation, Fistula and Block: The Complex Journey of a Bicuspid Aortic Valve

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**Introduction:** Infective endocarditis (IE) is an infection of the inner lining of the heart chambers and valves with potentially fatal consequences. Patients with congenital defects, such as bicuspid aortic valve (BAV) disease, are at increased risk of IE. Early diagnosis and timely intervention are crucial for the management of these patients.

**Case report:** We present a 32-year-old male patient who initially presented with fever and malaise. His blood tests showed elevated inflammatory markers, and he was initially treated with broad-spectrum antibiotic therapy. A heart murmur and persistent fever led to further evaluation; Echocardiography revealed a BAV with suspected vegetations indicative of IE and suspected atrioventricular fistula. Additionally, severe aortic regurgitation, moderate mitral regurgitation, and mild to severe tricuspid regurgitation were noted. Blood cultures identified Streptococcus oralis, so targeted antimicrobial therapy was initiated. Computed tomography (CT) angiography of the aorta confirmed a left ventricle-right atrium fistula. The patient underwent successful aortic valve replacement surgery with mechanical prosthesis and fistula closure. Subsequently, positron emission tomography CT showed no infection of the mechanical prosthesis. However, postoperatively, he developed a second-degree atrioventricular block, requiring the implantation of a permanent pacemaker.

**Conclusion:** This case emphasizes the critical role of a collaborative, multidisciplinary approach in managing cases of IE. Effective coordination between cardiologists, cardiac surgeons, infectious disease specialists, microbiologists, and other specialists is vital for successful outcomes, particularly in patients with congenital defects and severe complications, ensuring timely diagnosis, appropriate treatment, and optimal surgical intervention.

**Keywords:** Atrioventricular Block; Bicuspid Aortic Valve Disease; Endocarditis

# CR40

## Ventricular septal rupture as a complication of acute myocardial infarction: a case report

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**Introduction:** Ventricular septal rupture (VSR) as a complication of myocardial infarction occurs due to the rupture of the septum between the ventricles leading to acute right heart overload. This rare but severe complication typically arises within the first 3 to 7 days after infarction. The incidence of VSR following myocardial infarction (MI) is approximately 0.3%.

**Case report:** We present an 87-year-old female patient who was admitted to the emergency room due to chest pain persisting for the past 4 days. The patient's oxygen saturation was 88% along with pressure 95/65 mmHg, whereas clinically, the patient was dyspneic with bibasilar lung crackles and peripheral edema indicating acute heart failure. Cardiac auscultation revealed a systolic murmur above Erb's point graded as 4/6 suggestive of VSR. Electrocardiogram was notable for ST elevation of 5 mm in V3-V6. Laboratory analyses identified a significant increase in high-sensitivity troponin I. Furthermore, the patient underwent echocardiography, where a 10 mm defect and akinesia of the septum were visible with a left-to-right shunt, and the ejection fraction was reduced to 35 %. Coronarography revealed subacute occlusion of the left anterior artery. The patient was admitted to the Department of Cardiac Surgery for emergency VSR repair. After medial sternotomy, placing the patient on extracorporeal circulation, and administering the cardioplegic solution, left ventriculotomy was performed and VSR was closed with bovine pericardium. After removal from extracorporeal circulation, the patient was placed on a central extracorporeal membrane oxygenation device, and the chest was closed.

**Conclusion:** This case report highlights the impact of early recognition and management of MI on patient outcomes. Despite VSR's infrequency, clinicians should consider it in differential diagnosis even when facing symptoms of MI.

**Keywords:** Cardiac Surgical Procedures; Myocardial Infarction; Ventricular Septum

# CR41

## Case of Early Intervention and Vitamin Supplementation in the Management of Myopic Choroidal Neovascularization

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**Introduction:** Choroidal neovascularization (CNV) is a pathological process consisting of the formation of new blood vessels in the choroid most frequently associated with age-related macular degeneration but also occurs in myopic eyes. The aim of this report is to show the importance of starting early noninvasive treatment with an easily accessible medicine to postpone the need for invasive anti-vascular endothelial growth factor therapy.

**Case report:** We present a case of a 49-year-old woman with chronic high myopia and low vision on the left side who was developing degenerative changes in the left macula. The patient reported occasionally seeing black spots on a light background. A diagnosis of CNV was made. The patient underwent checkups every two to three months where optic coherence tomography (OCT) imaging method was used to monitor disease progression. The first OCT showed degenerative changes and subretinal formation of amorphous material. OCT taken at the second check up showed disease progression and deformation of the neurosensory retina. At that point, therapy with Resvega capsules was introduced. These capsules contain ten times larger concentrations of eye-beneficial vitamins than usual (Age-Related Eye Disease Study 2). The final checkup showed no further progression and degeneration meaning the disease was successfully put under control.

**Conclusion:** Therapy with Resvega capsules proved to be a very effective way of preventing CNV from progressing thus making it a very desirable treatment option due to its accessibility, low price and non invasiveness.

**Keywords:** Choroidal Neovascularization; Macular Degeneration; Myopia

# CR42

## Kugel`s artery - arteria anastamotica auricularis magna

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**Introduction:** Kugel's artery is a rare anatomical variation of the coronary arteries, characterized by an anastomotic connection between the branches of the right coronary artery (RCA) and the left circumflex artery (LCx). This variant has been observed in approximately 6% of the general population.

**Case report:** This case report describes a 66-year-old male patient in whom Kugel's artery was identified through multislice computed tomography (MSCT) coronary angiography. The patient presented to the emergency department with chest pain. After the evaluation, which included ECG recording and laboratory blood analysis an acute event was ruled out. Coronary angiography was then recommended. The procedure revealed right coronary artery dominance with no significant stenosis, as well as a fistula of unclear etiology originating from the proximal RCA and the proximal LCx. Following this finding, MSCT coronary angiography was performed. The MSCT angiography showed a 70% stenosis in the proximal segment and complete occlusion of the distal part of the left anterior descending artery (LAD), while the LCx and RCA showed no significant stenoses. Notably, in the proximal segment of the RCA, the origin of the sinoatrial nodal artery was visible, connecting with both the proximal and distal segments of the LCx through a network of blood vessels. This represents an anatomical variation known as Kugel's artery.

**Conclusion:** In this case report, Kugel's artery was identified using MSCT coronary angiography. Detecting this coronary artery variant is crucial, particularly when planning and performing recanalization of coronary chronic total occlusions.

**Keywords:** Coronary Angiography; Coronary Artery Disease; Coronary Vessels

# CR43

## Vascular Ehlers-Danlos Syndrome: a presentation of the affected family and new therapeutic strategies

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**Introduction:** Ehlers-Danlos syndrome is a genetic disorder of connective tissue with 13 identified clinical types. Vascular Ehlers-Danlos syndrome (vEDS) is the most severe type, which can cause potentially life-threatening complications such as spontaneous ruptures of blood vessels and hollow organs. Approximately 50% of the mutations are inherited in an autosomal dominant pattern, whereas the others are de novo mutations.

**Case report:** We present a family with three affected members, a young boy who was referred to the geneticist due to hyperextensible skin, easy bruising and a family history. The father had hyperextensible skin, easy bruising, characteristic facial features (large eyes, small chin, thin nose), spontaneous muscle ruptures, and early-onset varicose veins. The patient's paternal grandmother had similar symptoms. Genetic testing revealed a heterozygous pathogenic variant of the COL3A1 gene, which confirmed the diagnosis of vEDS. After consulting the family, celiprolol was introduced in adults, with good tolerance at the target dosage of 400 mg per day. Celiprolol, a third-generation β-blocker, may reduce arterial wall stress by lowering heart rate and pulsatile pressure. It is also thought to strengthen the arterial wall by enhancing collagen synthesis via the TGF-β pathway.

**Conclusion:** This report highlights the importance of early genetic diagnosis of vEDS, as many patients are diagnosed only after a severe complication or death. A multidisciplinary approach and avoiding high-risk activities (especially invasive procedures and contact sports) are crucial. Celiprolol, a new therapeutic option as opposed to the previously symptomatic measures and non-invasive approach, provides a protective role in the reduction of arterial complications.

**Keywords:** Celiprolol; Collagen; Ehlers-Danlos Syndrome, Type IV; Genetic Testing

# CR44

## Late metastatic melanoma 12 years after diagnosis: A case report

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**Introduction:** With risk factors such as ultraviolet rays playing a bigger factor in everyday life, as well as more frequent screenings, the incidence of melanoma especially in young people is on the rise. Melanoma carries a high risk of late metastasis to the lymph nodes, lungs, liver, brain, bones.

**Case report:** In 2012, a 24-year-old woman was diagnosed with melanoma after discovering an unusual lesion on her back. The lesion measured 2.3 cm × 1.8 cm, was asymmetrical with irregular borders, variegated pigmentation, slight elevation, and focal ulceration. It was excised, and she was advised to undergo regular follow-ups. However, in 2024 she presented with diffuse abdominal pain localized to the epigastric and left hypochondriac regions. Her gynecologist referred her to the emergency room, where endometriosis—another condition she suffers from—was ruled out as the cause of her pain. On initial examination, breath sounds were absent over the left lung. A multi-slice computed tomography scan of the abdomen, thorax, and pelvis revealed an extensive pleural effusion of the left hemithorax with complete lung atelectasis and a contralateral shift of mediastinal structures. Additionally, numerous soft tissue deposits were observed in the mediastinal, costal, and diaphragmatic pleura on the left side, consistent with malignant pleural effusion with pleural deposits. Blood work showed elevated thrombocytes and neutrophils, along with a low prothrombin time, suggesting possible coagulopathy related to advanced disease. The diagnosis was confirmed with a combination of imaging, histopathology, and molecular testing. The patient is currently receiving radiotherapy and targeted therapy with trametinib.

**Conclusion:** This case highlights the importance of regular oncologic surveillance for melanoma patients, as metastasis can occur even many years after the primary lesion appears successfully excised.

**Keywords:** Melanoma; Neoplasm Metastasis; Pleural Effusion

# CR45

## Cardiac Clues to a Rare Diagnosis: Eosinophilic Granulomatosis with Polyangiitis

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**Introduction:** Eosinophilic granulomatosis with polyangiitis (EGPA), formerly known as Churg-Strauss syndrome, is an autoimmune vasculitis characterized by asthma, eosinophilia, and granulomas. Vasculitis causes ischemia, while eosinophils infiltrate and damage organs, which is especially dangerous when the heart is affected. The aim of this case report is to show that considering EGPA and early detection are particularly important in patients with myocardial involvement.

**Case report:** A 70-year-old female was referred to the hospital for the evaluation of dyspnea and eosinophilia. She presented with asthma, high eosinophilia ($12 \times 10^9$/L), and bilateral lung infiltrates. Parasitic and hematological diseases were excluded. Multi-slice computed tomography and transbronchial lung biopsy findings were consistent with eosinophilic pneumonia. The cardiac evaluation revealed elevated troponin and N-terminal prohormone of brain natriuretic peptide levels. Echocardiography and magnetic resonance imaging discovered ventricular wall thickening due to edema, consistent with acute myocarditis. Endomyocardial biopsy was performed, however, the sample was inadequate. Antineutrophil cytoplasmic antibodies were negative. Based on the 2022 American College of Rheumatology/European Alliance of Associations for Rheumatology criteria, EGPA was diagnosed and treated with intravenous pulse corticosteroid therapy and later with nine cycles of intravenous cyclophosphamide. In eight weeks, complete remission, including echocardiographic, was achieved. Maintenance therapy with azathioprine in a dose of 2 mg/kg/day is planned.

**Conclusion:** EGPA is a rare disease that can affect any organ. Myocarditis can lead to serious heart conditions, such as heart failure, cardiomyopathy, and arrhythmias. This case demonstrates that timely diagnosis and proper management of EGPA prevent these cardiac complications and lead to favorable outcomes.

**Keywords:** Asthma; Churg-Strauss Syndrome; Dyspnea; Eosinophilia; Myocarditis

# CR46

## A rare case of imported typhoid fever in Osijek

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**Introduction:** Typhoid fever is a severe bacterial infection caused by Salmonella typhi, presenting with high fever, abdominal pain and maculopapular rash known as rose spots. This disease is predominantly endemic to low-resource settings and is usually spread by fecal-oral route. In Croatia, typhoid fever is a rare disease and mostly occurs as an imported infection in travellers from endemic areas. We report a unique case of typhoid fever in Osijek, the first documented in several decades.

**Case report:** A 24-year-old male, recently arrived from Nepal and employed in the meat industry, was admitted on the 3rd day of illness with high-grade fever, vomiting, frequent watery stools, and abdominal pain. Clinical evaluation revealed dehydration, hypotension, tachycardia, and abdominal tenderness, while computed tomography imaging showed splenomegaly, pericholecystic edema, and diffuse lymphadenopathy. Laboratory findings indicated anemia, thrombocytopenia, elevated inflammatory markers, and liver enzyme abnormalities. Blood cultures confirmed *Salmonella typhi*. During hospitalization, the patient had a fever for the first four days, followed by an afebrile period and three days of watery diarrhea, remaining hemodynamically and respiratorily stable throughout. Management included antimicrobial therapy with ceftriaxone for 14 days, along with parenteral rehydration, electrolyte correction, and thromboprophylaxis with low-molecular-weight heparin. Upon clinical improvement, the patient was discharged after providing two stool samples for bacteriological analysis. Although scheduled for epidemiological follow- up, he could not attend due to deportation.

**Conclusion**: This rare imported case of significant epidemiological concern underscores the need for screening workers from endemic areas, early infection detection, and transmission prevention. Epidemiological monitoring is essential, as chronic carriers (3–5%) may continue shedding the pathogen through urine and feces even after recovery.

**Keywords:** Epidemiological Monitoring; Salmonella typhi; Typhoid Fever

# CR47

## Metastatic Thymoma as Diagnostic and Therapeutic Challenge

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**Introduction:** Thymoma is a rare epithelial tumor of the anterior mediastinum, with an annual incidence of approximately 1.5 cases per million people. Its clinical significance lies in its association with autoimmune disorders and its often subtle presentation. Thymomas rarely metastasize, occurring in less than 5% of cases, making metastatic thymomas a diagnostic and therapeutic challenge due to their rarity.

**Case report:** We present the case of a 69-year-old patient who initially reported a persistent cough, leading to imaging and diagnostic evaluations, including computed tomography (CT) scans, bronchoscopy, and transthoracic puncture. CT revealed an 8x5x6.5 cm mediastinal mass, and biopsy indicated a thymic neoplasm. A multidisciplinary team recommended surgery, and the patient underwent a thoracotomy with complete tumor excision and mediastinal lymphadenectomy. The pathologist received a 10x7x7 cm tissue fragment, encapsulated with sparse adipose tissue. No lymphovascular invasion was found, but histological examination showed transcapsular invasion into adipose tissue and a positive lymph node. Immunohistochemical analysis (CD20, CD3, PAX5, TdT, CD56, synaptophysin, CD117, p40, CKAE1/AE3, CK19, p63, vimentin, EMA) confirmed a thymoma, type AB. The tumor was staged as Masaoka IIa and pT1N1. The patient recovered well postoperatively, and radiotherapy was recommended. One year later, no further metastases were detected, and the patient remains under oncology follow-up every 4 to 6 months.

**Conclusion:** Early diagnosis and a multidisciplinary approach are crucial in thymoma management, especially with lymph node involvement. Surgical resection followed by systematic surveillance is essential to mitigate recurrence and optimize long-term outcomes.

**Keywords**: Mediastinal neoplasm; Thymoma; Thymus neoplasms

# CR48

## New and improved? A case of obstructive hypertrophic cardiomyopathy treated with mavacamten and a subcutaneous cardioverter defibrillator

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**Introduction:** Hypertrophic cardiomyopathy (HCM) is a primary heart disease characterized by unexplained thickening of ventricular walls leading to impaired cardiac function and increased risk of sudden cardiac death (SCD). Mavacamten is a new drug acting as a selective myosin inhibitor, reducing the hypercontractility of HCM. The subcutaneous implantable defibrillator system (ICD) protects from sudden cardiac death and avoids the risks associated with transvenous leads. The aim of this case report is to describe the contemporary treatments of HCM.

**Case report:** A 37-year-old patient presented with symptoms of chest pain, fatigue, dyspnea, and irregular heart rate. He was diagnosed with HCM with severe obstruction of the left ventricular outflow tract, indicated by a resting gradient of 90 mmHg, heart failure (NYHA II), and paroxysmal atrial fibrillation. Since the patient was still symptomatic following a few months of treatment with a beta blocker, mavacamten was started. Due to a high SCD risk score, he was referred for ICD implantation. Considering the patient's age and absence of conduction disturbances, the patient was implanted with a subcutaneous device. Four months following mavacamten initiation, the patient described improvement in exercise tolerance, and the LVOT gradient was reduced to 35 mmHg, while NT-proBNP normalized. Seven months after initiation, he can climb to the third floor without dyspnea, the LVOT gradient decreased to 10 mmHg, and NT-proBNP remains normal.

**Conclusion:** Contemporary management of hypertrophic obstructive cardiomyopathy includes myosin inhibitors that are potent in the reduction of LVOT gradient and improvement in exercise tolerance. Special care must be given to the prevention of SCD in this patient population by implanting an ICD.

**Keywords:** Cardiomyopathy, Hypertrophic; Cardiovascular Diseases; Death, Sudden, Cardiac; Heart Failure

# CR49

## Occurrence of post-transplant lymphoproliferative disease following simultaneous heart and liver transplantation in a patient with transthyretin amyloidosis

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**Introduction:** Transthyretin amyloidosis is a condition characterized by the abnormal protein transthyretin production in the liver, that accumulates in the myocardium, causing cardiomyopathy and heart failure. Cardiomyopathy is treated by transplantation. Post-transplant lymphoproliferative diseases (PTLDs) may develop because of immunosuppressive therapy given to suppress the rejection of the graft. This case emphasizes the importance of heart and liver transplantation in a patient with this type of amyloidosis while also highlighting the potential occurrence of adverse events such as PTLD.

**Case report:** A 49-year-old male presented in 2021 due to exertion intolerance after COVID-19 infection. An echocardiogram revealed concentric left ventricular hypertrophy and mitral regurgitation, with a low ejection fraction. Scintigraphy showed radiopharmaceutical accumulation in the cardiac septum; the heart/contralateral side ratio suggested a transthyretin form of amyloidosis. In August 2024, the patient underwent heart and liver transplantation. Histopathological analysis of the explanted myocardium showed a Congo-positive eosinophilic deposit displaying green birefringence under polarized light consistent with amyloid. At a post-transplant check-up, severe Epstein-Barr viremia and increased liver transaminases were noted. On a computed tomography scan, an inhomogeneous hypovascular lesion was described in liver segments I and V. A liver biopsy was performed, and the diagnosis of a monomorphic type of PTLD (diffuse large B cell lymphoma) was confirmed. He was discharged in good general condition. Currently, the patient is being treated with chemotherapy and a reduced dose of the immunosuppressive drug.

**Conclusion:** Transplantation is the only treatment for heart failure due to amyloidosis, and it must be followed by immunosuppression. This case highlights the importance of maintaining a balance in immunosuppression with the goal of graft survival while minimizing adverse events such as PTLD.

**Keywords:** Amyloidosis; Heart Transplantation; Immunosuppression Therapy; Lymphoproliferative Disorders

# CR50

## Clinical Recognition of Acute Angle-Closure Glaucoma in the Emergency Department

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**Introduction:** Acute angle-closure glaucoma is a sight-threatening ocular emergency characterized by a rapid increase in intraocular pressure (IOP) due to impaired aqueous humor outflow. It is often presented with sudden onset of severe unilateral ocular pain and headache associated with blurred vision, nausea, and vomiting.

**Case report:** A 51-year-old female presented to the emergency department with a sudden onset of severe frontal headache and right-sided ocular pain, described as “throbbing” and “pounding,” with a severity of 9/10 on the Visual Analog Scale (VAS). Our patient reported blurry vision in the right eye accompanied with photophobia and nausea. Neurological examination was unremarkable, aside from right eye closure, which the patient could open upon request. Pupils were equal and reactive, with no afferent pupillary defect. Blood tests were also normal, and a computerized tomography scan, eventually excluded intracranial pathology. Symptoms persisted despite administration of naproxen and diazepam. Ophthalmologic evaluation revealed significantly elevated IOP in the right eye (78/12 mmHg), corneal edema, a shallow anterior chamber on slit-lamp examination. Right eye angle closure was confirmed by gonioscopy. After final diagnosis of acute angle-closure glaucoma was established, our patient underwent bilateral YAG laser iridotomy to alleviate IOP and prevent recurrence. Intravenous 20% mannitol was administered for acute IOP reduction. She was discharged with Maxidex and Combigan topical medications for inflammation and IOP control. Finally, her IOP was reduced to 10/11 mmHg, and her condition was stable.

**Conclusion:** Suspicion of acute angle-closure glaucoma should not be overlooked when it comes to differential diagnosis in patients presenting with acute headache, particularly in older adults. Early clinical recognition and management are crucial in preventing optic nerve damage and irreversible vision loss.

**Keywords:** Eye Pain; Glaucoma, Angle-Closure; Headache; Intraocular Pressure; Lasers, Solid-State

# CR51

## RYR2 gene mutation associated with catecholaminergic polymorphic ventricular tachycardia and benign epilepsy

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**Introduction:** RYR2 encodes the ryanodine receptor 2 protein (RYR2) that regulates intracellular calcium concentration. It is ubiquitously distributed and highly expressed in the heart and brain.

**Case report:** A 13-year-old boy, with a history of epilepsy, was admitted to the pediatric emergency room after he experienced an epileptic seizure during a football game. The previous therapy with valproic acid was replaced by zonisamide due to the recurrence of seizures despite adequate concentration of the drug. Six months later, the epileptic seizure recurred, and due to weight loss caused by zonisamide therapy, levetiracetam therapy was gradually introduced. Just eleven days after being discharged from the hospital, the patient lost consciousness at school. During this hospitalization, a full cardiac workup was indicated and after ergometric testing, catecholaminergic polymorphic ventricular tachycardia (CPVT) was diagnosed. Despite the beta-blocker therapy, the patient's Holter electrocardiogram continued to record shorter episodes of CPVT, and during exertion on ergometry lasting 20 seconds. Considering the previously recorded syncope and CPVT present with oral therapy, implantation of implantable cardioverter defibrillator was indicated as secondary prevention, and it was done after a few weeks. Due to the suspicion of channelopathy, parents were recommended to do genetic testing, which could prove the etiology of the disease. The patient was positive for *RYR2* mutation.**Conclusion:** In conclusion, this case highlights the importance of neurocardiology as an emerging field that studies the connection between the nervous and the cardiovascular system. Since many pathophysiological interplays connect those two, their understanding can help us better predict our patient's disease development.

**Keywords:** Defibrillators,Implantable; Epilepsy; Genetic Testing; Polymorphic Catecholaminergic Ventricular Tachycardia; Ryanodine Receptor Calcium Release Channel

# CR52

## Complicated lung transplant as a last resort for pulmonary hypertension: a case report

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**Introduction:** Pulmonary hypertension is characterised by a mean pulmonary artery pressure exceeding 25 mmHg, as measured through right-sided heart catheterisation. Treatment options include selective vasodilators, prostacyclin analogues, and endothelin blockers. If none of these options proves effective, lung transplantation is a viable choice, although it is only carried out in specialised centres and requires a high level of expertise.

**Case report:** We report a case of a 52-year-old woman suffering from idiopathic pulmonary hypertension diagnosed back in 1997 at the University Hospital Center Zagreb. For 15 years, she was treated first with sildenafil and later also with bosentan as dual therapy. On her regular yearly checkup in 2015, she was clinically and functionally stable. However, a right-sided heart catheterisation showed a spike in pulmonary artery pressure, and an ultrasound visualised a further dilation of the pulmonary truncus, leading to the addition of treprostinil as a third choice therapy and the beginning of the pre-transplant evaluation. Her status further deteriorated and after a successful bilateral lung transplant in 2018, she was diagnosed with antibody-mediated acute graft rejection. Plasmapheresis, which was used to treat graft rejection, caused a coagulation disorder and an acute heart tamponade. Extracorporeal photopheresis was used as an alternative and the patient recovered well, reached normal lung function and her regular yearly checkups are unremarkable.

**Conclusion:** Lung transplant is a method of treatment used in many untreatable cases of lung disease, pulmonary hypertension included. Even though it involves surgery, a lengthy period of recovery, and complications are frequent, it provides a new opportunity for patients who have a poor prognosis.

**Keywords:** Hypertension, Pulmonary; Lung Diseases; Transplants

# CR53

## Congenital methemoglobinemia: Rare cause of “Blue Baby Syndrome”

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**Introduction:** Cardiopulmonary disorders are the most common cause of central cyanosis in newborns, and methemoglobinemia is often overlooked. Methemoglobinemia can be an acquired or congenital condition. Congenital methemoglobinemia is a rare and potentially life-threatening cause of cyanosis in newborns that can be caused by either cytochrome b5 reductase or hemoglobin variants known as Hemoglobin M. We present a neonate with cyanosis as a result of a congenital deficiency in gene encoding cytochrome b5 reductase 3, CYB5R3 gene. That isoform of cytochrome b5 reductase 3 is present in erythrocytes and functions to reduce methemoglobin to hemoglobin. Prognosis depends on the disease type: type I leads a normal life while most patients with type II succumb to the disease in infancy.

**Case report:** Our patient was found to be blue 2 hours after birth, preductal Sp02 was 92%. Sepsis, structural congenital heart disease, and respiratory distress as a cause of the cyanosis were excluded. Chocolate discoloration of arterial blood provided a clue to the diagnosis. Laboratory findings show increased methemoglobin levels - 22.8%. Red blood cell enzyme activity and deoxyribonucleic acid analysis revealed a heterozygous form of the cytochrome b5 reductase 3 enzyme deficiency, CYB5R3 c.757G>A, p.(Val253Met) which is pathogenic and heterozygous for CYB5R3 c.286C>T, p.(Pro96Ser), which is variant of uncertain significance, both parents are carriers of the gene. Our patient leads a normal life (type I disease) supplemented only with vitamin C every day.

**Conclusion:** Congenital methemoglobinemia could be life-threatening but is a treatable disease and should be considered in the differential diagnosis for newborns with persistent cyanosis in the newborn period.

**Keywords:** Cyanosis; Genes; Methemoglobinemia

# CR54

## Black henna tattoo allergic contact dermatitis

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**Introduction:** Henna, derived from the dried and powdered leaves of Lawsonia inermis, is commonly used today for temporary tattoos, particularly black henna. Black henna is a mixture of natural red henna and p-phenylenediamine (PPD), a chemical added to intensify and darken the color. PPD is a strong sensitizing agent that frequently triggers hypersensitivity reactions. The earliest signs of allergic contact dermatitis (ACD) caused by black henna tattoos typically present as acute or subacute skin reactions around the tattooed area.

**Case report:** We present a 20-year-old female who developed an allergic reaction four days after receiving a temporary henna tattoo. The dermatitis was confined to the tattooed arm area and manifested as erythema, edema, papules, vesicles, and itching. The patient was treated with topical corticosteroids and oral prednisone at an initial dose of 30 mg for one week due to reactive edema. The symptoms subsides following the treatment after a week. The diagnosis was confirmed by a positive patch test reaction to PPD, indicating acute allergic contact dermatitis caused by PPD in black henna.

**Conclusion:** In conclusion, the clinical presentation of ACD caused by black henna tattoos is typically confined to the tattoo site. However, severe systemic reactions such as anaphylaxis including swelling of throat and wheezing, though rare, can be life-threatening. Therefore, with the growing popularity of black henna tattoos, the number of PPD sensitization cases is expected to increase.

**Keywords:** Dermatitis, Contact; Hypersensitivity; Tattooing

# CR55

## Unveiling left ventricular dysfunction following successful thrombolysis in massive pulmonary embolism: a case report

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**Introduction:** Massive pulmonary embolism (PE) is a life-threatening condition characterized by shock, which can lead to cardiac arrest. The mortality rate following heart arrest due to PE is extremely high, ranging from 70% to 95%. Reduced left ventricular (LV) systolic function is observed in up to 10% of patients with massive PE and is typically associated with underfilling of the LV.

**Case report:** A 49-year-old female with a history of arterial hypertension, menometrorrhagia (on oral contraceptives), and a positive family history of cardiomyopathy suffered a massive pulmonary embolism, likely exacerbating preexisting risks and leading to impaired LV systolic function. Upon admission, the patient was in shock (blood pressure 70/45 mmHg, heart rate 160/min, lactate 9 mmol/L). Thrombolysis with alteplase (t-PA) was initiated immediately. However, shortly after starting t-PA, the patient arrested. The initial rhythm was pulseless electrical activity, and cardiopulmonary resuscitation was initiated. There were signs of spontaneous circulation after 10 minutes, 3 mg of epinephrine, high doses of norepinephrine, intubation, and mechanical ventilation. Following the full dose of t-PA, the patient's condition significantly improved. Initial echocardiography revealed severe right ventricular (RV) dilation, severe tricuspid regurgitation, and elevated pulmonary arterial pressure. Follow-up echocardiograms showed recovery of RV function but impaired systolic function of dilated LV (ejection fraction 30-35%), consistent with a diagnosis of dilated cardiomyopathy. This suspicion was confirmed with magnetic resonance imaging. The patient recovered completely during her hospitalization and was discharged on rivaroxaban, nebivolol, eplerenone, and a combination of perindopril, indapamide, and amlodipine.

**Conclusion:** Although LV dysfunction after PE is typically associated with RV dysfunction, preexisting cardiac disease may also play a role. This case highlights the importance of a comprehensive evaluation following massive PE.

**Keywords:** Cardiomyopathy; Cardiac Arrest; Pulmonary Embolism

# CR56

## Walking on thin ice: Massive pulmonary embolism after intracerebral hemorrhage

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**Introduction:** Massive pulmonary embolism occurs when thromboembolus blocks pulmonary artery or its main branches leading to hemodynamic instability. Treatment involves anticoagulants, thrombolysis or surgery, but bleeding risk complicates therapy. In severe cases, extracorporeal membrane oxygenation (ECMO) provides circulatory and respiratory support, though it also increases the risk of bleeding.

**Case report:** A 57-year-old woman was admitted because of shortness of breath and chest pain. She was hypotensive and in respiratory distress. Medical history includes hypertension, spontaneous intracerebral hemorrhage a month earlier, and a recently discovered ovarian mass. Echocardiography revealed a right atrial thrombus and right ventricular dysfunction, highly suggestive of pulmonary embolism. Shortly after, she developed hemodynamic instability and cardiac arrest. Following cardiopulmonary resuscitation and ECMO initiation, she was too unstable to undergo computed tomography (CT) pulmonary angiography. Systemic thrombolysis was contraindicated due to a recent intracranial hemorrhage. Invasive pulmonary angiography confirmed thromboembolus in both main pulmonary artery branches and mechanical thrombolysis was performed. Unfractionated heparin was continued in accordance with ECMO guidelines. The next day the patient was hemodynamically stable and in the process of weaning from ECMO. On the third day, a hypertensive crisis occurred. Bilateral dilated and areflexic pupils were observed and a subsequent CT scan revealed a large intracerebral hematoma and diffuse edema with brain herniation. On the following day the patient died.

**Conclusion:** Managing massive pulmonary embolism presents a significant clinical challenge especially with recent intracerebral hemorrhage. Standard treatment for pulmonary embolism includes anticoagulation and thrombolysis, but when it is contraindicated, it complicates the situation. This case highlights the importance of individualized treatment in managing complex cases and consideration of invasive interventions despite contraindications.

**Keywords:** Anticoagulants; Cerebral Hemorrhage; Extracorporeal Membrane Oxygenation; Pulmonary Embolism

# CR57

## When Asthma Becomes More: A Case of Allergic Bronchopulmonary Aspergillosis

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**Introduction:** Allergic bronchopulmonary aspergillosis (ABPA) is an immune-mediated condition triggered by hypersensitivity to Aspergillus species, most commonly in individuals with asthma or cystic fibrosis. The clinical presentation often resembles an asthma exacerbation, with symptoms including productive cough and general respiratory distress. This case report aims to highlight the importance of early recognition of ABPA in asthma patients.

**Case report:** A 29-year-old male with a history of asthma and prior tuberculosis presented to the emergency room with worsening shortness of breath over the past three days. He reported intermittent difficulty with full inhalation, with occasional central-right-sided chest discomfort with deep inspiration. Radiological imaging showed findings suggestive of pneumonia. Upon admission, laboratory tests revealed a significantly elevated IgE level of 13,600 IU/mL and marked peripheral eosinophilia of 2200 cells/μL. Skin prick testing was mildly positive for Aspergillus species, which, along with the patient's medical history and laboratory findings, raised initial suspicion of ABPA. Chest computed tomography revealed central bronchiectasis and mucus plugging. These findings, in combination with the detection of specific IgG and IgM antibodies to Aspergillus fumigatus, ultimately confirmed the diagnosis of ABPA. The patient was started on oral corticosteroids, specifically prednisone, with the dose gradually tapered over several weeks. Supportive therapy included inhaled corticosteroids, bronchodilators, and long-acting beta-agonists for asthma management. Along with general supportive measures, the patient's condition gradually improved.

**Conclusion:** This case report underscores the importance of considering ABPA in asthma patients with unexplained pulmonary symptoms and suggestive clinical features. Early recognition and a thorough diagnostic approach are essential for guiding treatment and improving outcomes.

**Keywords:** Aspergillosis, Allergic Bronchopulmonary; Asthma; Pneumonia; Prednisone

# CR58

## Precision in Action: Da Vinci Robotic-Assisted Partial Nephrectomy for Tumor Management

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**Introduction:** The da Vinci's surgical system is revolutionary robotic technology that is completely changing how modern surgery is performed. Precise, minimally intrusive procedures promote faster recovery, fewer complications and improved patient outcomes in a large number of cases. The active, meaningful progress in robotics strongly suggests its potential to transform healthcare, providing safer and more efficient treatments.

**Case report:** We present a case of a 70-year-old man with a history of asthma, stable coronary artery disease, hypogonadism, and myocardial infarction. The patient was diagnosed with carcinoma clarocellulare renis. A partial robot-assisted excision of the right kidney was planned. Preoperatively, a computed tomography scan and patohistological diagnostic report were performed. The tumor measured 5.4 x 5.1 x 8 cm and was confined to the kidney, with no evidence of positive margins or lymphovascular invasion. Tumor excision was successful. Histologically, the tumor was identified as a moderately differentiated clear cell renal carcinoma. In addition to the renal neoplasm, pyelonephritis was also diagnosed, which further complicated treatment. The postoperative course was uneventful, with primary wound healing. An ultrasound of the right kidney revealed a well-healed excision site, with no signs of obstruction and normal renal parenchyma. Doppler and duplex imaging showed satisfactory blood flow. Ultrasound of the left kidney, bladder, and right testicle were also normal.

**Conclusion:** Thanks to the precision of the da Vinci robotic system, the patient was able to avoid a total nephrectomy, preserving kidney function. The system's advanced capabilities in enhancing surgical precision and minimizing trauma to surrounding tissues make it a critical tool in modern urological treatments. Further urological treatment and monitoring are planned to ensure the best possible long-term outcome.

**Keywords:** Carcinoma, Renal Cell; Nephrectomy; Robotic Surgical Procedures

# CR59

## Anthracycline therapy leading to cardiac dysfunction – a case presentation

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**Introduction:** Anthracycline-induced cardiac dysfunction (ACD) is a serious side effect of anticancer treatment that can eventually progress to dilated cardiomyopathy. Symptomatic cardiac dysfunction occurs in 3-5% of patients at typical doses of anthracyclines, with the incidence rising to over 25% at higher doses.

**Case report:** A 34-year-old female patient was diagnosed with a Hodgkin lymphoma in 2018 and was treated with 2 cycles of ABVD (doxorubicin, bleomycin, vinblastine and dacarbazine) chemotherapy protocol followed by one cycle of BEACOPP (bleomycin, etoposide, doxorubicin, cyclophosphamide, vincristine, procarbazine and prednisone) chemotherapy protocol. Last year the patient was diagnosed with a diffuse large B-cell non-Hodgkin lymphoma and was treated with CHOEP (cyclophosphamide, doxorubicin, vincristine, etoposide and prednisone) chemotherapy protocol and 6 cycles of immunotherapy with rituximab. In December 2024, after the fifth cycle of the CHOEP chemotherapy protocol, the patient was admitted to hospital with febrile neutropenia. The patient currently complains of poor exercise tolerance and dyspnea on exertion without chest pain or loss of consciousness. Given the medical history and current clinical presentation, a cardiac ultrasound was performed. It showed signs of ACD with reduced left ventricular ejection fraction. There was hypokinesia of the interventricular septum, anterior and lateral wall and a diastolic dysfunction grade 2. An sodium-glucose cotransporter 2 inhibitor, eplerenon, and a beta blocker were prescribed. This proved to be effective, as evidenced by the reduced symptoms.

**Conclusion:** This case presentation highlights a rare but serious side effect of anthracycline therapy. It shows the importance of early detection of ACD through clinical presentation and imaging, as this remains key to mitigating progression to dilated cardiomyopathy.

**Keywords:** Anthracyclines; Cardiomyopathy, Dilated; Dyspnea

# CR60

## A rare cause of recurrent syncope – Catecholaminergic Polymorphic Ventricular Tachycardia caused by a mutation in the RYR2 gene- Case Report

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**Introduction:** Catecholaminergic polymorphic ventricular tachycardia (CPVT) is a rare genetic disorder characterized by stress-induced arrhythmias. It is most commonly inherited autosomal dominant, with mutations in the *RYR2* and *CASQ* gene. Clinically, it presents with syncope, palpitations, and a high risk of sudden cardiac death.

**Case report:** We present the case of a 20-year-old female with a confirmed diagnosis of CPVT and a long-standing history of epilepsy, for which she has been under treatment since the age of seven. A significant family history exists, as her brother died from sudden cardiac death at 15. During adolescence, she began experiencing palpitations and syncopal episodes, prompting further diagnostic workup. Repeated echocardiograms showed preserved left and right ventricle function, with no valvular or structural abnormalities, and her electrocardiogram was consistently normal. Cardiac magnetic resonance imaging demonstrated only mild hypokinesia of the right ventricular free wall apex, with no evidence of fibrosis or morphological criteria for arrhythmogenic cardiomyopathy. Genetic testing revealed a heterozygous pathogenic variant in the *RYR2* gene, confirming CPVT. Following consultation with an electrophysiologist, propranolol therapy was initiated, completely resolving her symptoms. Stress avoidance was strongly advised, and genetic testing of first-degree relatives was recommended.

**Conclusion:** Early recognition of CPVT facilitated by genetic testing and detailed clinical assessment is essential for preventing life-threatening arrhythmias. Beta-blocker therapy can effectively alleviate symptoms and lower mortality risk, underscoring the value of a multidisciplinary approach. Given the genetic basis of this condition, screening of first-degree relatives is recommended to enable timely diagnosis and intervention.

**Keywords:** Death, Sudden, Cardiac; Polymorphic Catecholaminergic Ventricular Tachycardia; Ryanodine Receptor Calcium Release Channel

# CR61

## Steatocystoma Multiplex – should we worry? Case Report of a rare entity

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**Introduction:** Steatocystoma multiplex (SM) is an uncommon disorder of the pilosebaceous unit characterized by the development of multiple benign, sebum-containing dermal cysts. While most cases of SM are sporadic, some can be inherited in an autosomal dominant manner. Patients usually present with yellowish papules up to 3 centimeters in diameter located in regions rich in sebaceous glands such as the chest, neck, arms, and underarms. Steatocystomas typically first appear during adolescence, suggesting a possible hormonal influence.

**Case report:** A 24-year-old male was referred to the Dermatology Clinic due to small papules on his chest and upper back that first appeared in 2020 and have spread since then. His past medical and family history were unremarkable. Upon examination, numerous skin-colored papules were found primarily on the front torso, with fewer present on the back. Additionally, papulopustular lesions, scars, and comedones were observed on the upper back. Given the clinical findings, the initial diagnosis was steatocystoma multiplex, and the differential diagnosis included vellus hair and epidermoid cysts. A skin biopsy was performed accordingly. Microscopic examination showed a dermal cyst lined by stratified squamous cell epithelium with sebaceous gland lobules within the cyst wall. These histological findings were consistent with the diagnosis of steatocystoma multiplex. Upon receiving a benign diagnosis, the patient rejected further treatment.

**Conclusion:** Although rare, steatocystoma multiplex should be considered in the differential diagnosis of multiple asymptomatic cystic lesions. A wide range of treatment modalities exists, but none is proven to be highly effective. Given the benignity of the condition if patients decide to treat themselves, that would be mostly for cosmetic reasons.

**Keywords:** Biopsy; Dermatology; Sebaceous Glands; Steatocystoma Multiplex

# CR62

## Pulmonary embolism and malignancy: reconsidering contraindications for elective surgery

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**Introduction:** Recently discovered pulmonary embolism (PE) carries a significant risk of recurrence in the perioperative period, especially within the first three months. According to guidelines, elective surgery should be delayed during this high-risk period.

**Case report:** A 55-year-old male presented to the emergency room with pain under his rib cage provoked by coughing. Multi-slice computed tomography (MSCT) pulmonary angiography discovered a PE. He was immediately administered the therapeutic dosage of enoxaparin. MSCT of the abdomen revealed a periadrenal lesion measuring 134x92x81 millimeters, which infiltrates the left adrenal and renal vein, extending into the inferior vena cava. The multidisciplinary team reached a consensus that the patient should undergo surgery as soon as possible due to the malignant potential of the described lesion. The patient was hemodynamically and rhythmically stable, with preserved right ventricular function evaluated by echocardiography. Before the surgery, the dose of enoxaparin was reduced, and the patient received intrathecal morphine for postoperative analgesia. Eighteen days after establishing the diagnosis of PE, nephrectomy and adrenalectomy were performed through a combination of open and laparoscopic surgery without untoward events. The pathohistological analysis confirmed the diagnosis of adenocarcinoma. He was extubated five hours after admission to the intensive care unit, where he remained hemodynamically stable without vasopressor support and maintained sufficient spontaneous respiration. On the fourth postoperative day, the patient was discharged to the ward with a therapeutic dosage of enoxaparin.

**Conclusion:** This case demonstrates that in a hemodynamically stable patient with preserved right ventricular function and a high risk of rapid disease progression, PE should not be an absolute contraindication for elective surgery three months after the initial event. This is shown by our patients uneventful recovery.

**Keywords:** Adenocarcinoma; Contraindications; General Surgery; Pulmonary Embolism

# CR63

## Elbow luxation with radial head fracture in 24-year-old female

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**Introduction:** Elbow dislocations combined with fractures of proximal ulna, proximal radius, and disruptions of the proximal radioulnar joint (PRUJ) are often associated with poor treatment outcomes, especially in elderly patients. Combination of elbow dislocation with coronoid process of the ulna and proximal radius fractures are widely known as “terrible triad” with extremely poor treatment outcomes.

**Case report:** 24-year-old female reported to the emergency room after the fall from 2-3 m height during competitive climbing training. On physical exam her right elbow region was significantly swollen and deformed, she was unable to perform movements in the elbow joints but was performing limited movements in wrist and with her fingers. She had normal sensations. X-ray has shown elbow dislocation combined with fracture of the coronoid process, and radial head and neck. After repositioning the elbow dislocation, we performed a computed tomography (CT) which was helpful for determining indications for surgery and during surgery preparation procedures. To treat this injury, two elbow approaches were necessary. Because of the location of the fracture osteosynthesis was performed with two low-profile plates and screws for proximal radius to prevent limited range of motion caused by implants, and to achieve stability in the elbow joint both medial and collateral ligaments were reconstructed with Juggerknot Anchors.

**Conclusion:** Compared to the uninjured after performed physical therapy, the patient achieved range of motion that she is satisfied with. She has almost full extension and flexion (loss of only about 5% compared to the uninjured side), and loss of about 10% in pronation/supination movements.

**Keywords:** Elbow Fractures; Elbow Injuries; Radial Head and Neck Fractures

# CR64

## When Gut Speaks for the Heart: Acute Myocarditis – Case Report

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**Introduction:** Acute myocarditis is an inflammatory heart disease caused by infections such as Enterovirus, Adenovirus, Parvovirus B19, Borrelia spp., Corynebacterium spp., immune activation, or drug exposure. Clinical presentation varies, with most cases resolving spontaneously, though some progress to cardiogenic shock or death.

**Case report:** A 20-year-old man presented with constant, pressure-like pain in the lower abdomen. Six days earlier, he had a fever, of 39.7°C and a four-day sore throat with a subfebrile temperature, of 37.5°C. Physical examination revealed mild pharyngeal hyperemia. Laboratory tests showed leukocytes 13x10$^9$/L, C-reactive protein 87 mg/L, aspartate transaminase 79 U/L, alanine transaminase 112 U/L, and gamma-glutamyl transferase 149 U/L, suggesting an infectious cause. Electrocardiography showed slight ST elevation in inferolateral leads, and Troponin I was elevated, 9567 ng/L. Coronary angiography was normal. Echocardiography revealed mild left atrial and ventricular dilatation with trivial pericardial effusion, 4 mm. Magnetic resonance imaging (MRI) confirmed mild left ventricular dilatation, preserved ejection fraction, edema, and non-ischemic fibrosis of the lateral wall, fulfilling myocarditis criteria. The patient, classified as low risk with probable viral etiology, received pantoprazole 40 mg, ibuprofen 600 mg as needed, and ramipril 2.5 mg. Ibuprofen was initially given due to suspected pericarditis, later ruled out by cardiac MRI. The patient remained asymptomatic and stable until discharged, with follow-up scheduled.

**Conclusion:** Diagnosis, management, and prognostic stratification of myocarditis patients remain difficult. Performing an electrocardiogram in the emergency room is crucial for diagnosis because that's exactly what led to the next step, determining the Troponin value. This case highlights the need to consider complications of viral infections, particularly myocarditis, even when asymptomatic, and how often situations in medicine are not so simple.

**Keywords:** Abdominal pain; Fever; Myocarditis; Virus Diseases

# CR65

## Treatment of a patient with bilateral popliteal artery aneurysms

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**Introduction:** An aneurysm is an abnormal dilatation of an artery caused by weakness in the arterial wall. Popliteal artery aneurysms (PAAs) are the most common peripheral aneurysms. However, PAAs are generally rare and more prevalent in men over the age of 65 with risk factors such as hypertension, smoking and diabetes.

**Case report:** A 48-year-old male was initially hospitalized for acute left limb ischemia and was treated with unfractionated heparin. Multislice spiral computed tomography angiography (MSCTA) revealed a left popliteal artery occlusion caused by a thrombosed aneurysm of the proximal segment of the left popliteal artery. A Right PAA with a diameter of 29 mm was also diagnosed. Treatment of the left popliteal artery occlusion with catheter-directed thrombolysis (CDT) was performed, followed by control digital subtraction angiography (DSA), which revealed no significant change in the occluded segment. Considering no worsening in the sense of motor and sensory deficits and the patient's subjective improvement, treatment was continued with the application of low-molecular-weight heparin (LMWH). Ankle brachial index (ABI) and plethysmography were measured and showed left ABI of 0.64, right ABI of 0.98 and a reduced height of the plethysmographic curves of the left infrapopliteal region. There was no indication for further surgical treatment of the left PAA. An elective surgery of the right PAA was performed.

**Conclusion:** This case shows the importance of recognising different vascular abnormalities and selecting the appropriate treatment. Thrombosed PAAs with poor residual flow despite thrombolysis do not indicate surgery and should be treated with LMWH. Asymptomatic aneurysms greater than 20 mm in diameter should be treated surgically.

**Keywords:** Angiography; Arterial Occlusive Diseases; Heparin, Low-Molecular-Weight; Popliteal Artery Aneurysm

# CR66

## The hidden enemy: postpartum HELLP syndrome with secondary TTP

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**Introduction:** HELLP (hemolysis, elevated liver enzymes, and low platelets) syndrome is a rare but serious complication associated with pregnancy, typically occurring in the third trimester or the postpartum period. In rare instances, it may be complicated by thrombotic thrombocytopenic purpura (TTP), characterized by microangiopathic hemolytic anemia and severe thrombocytopenia due to ADAMTS13 deficiency.

**Case report:** A 38-year-old female was admitted with severe microcytic anemia, thrombocytopenia, and suspected HELLP syndrome. The patient developed preeclampsia during her pregnancy and underwent an emergency cesarean section due to fetal asphyxia. Upon discharge, her condition worsened, and three days later, she presented with general weakness and a low-grade fever. Laboratory findings indicated severe anemia (hemoglobin 55 g/L), thrombocytopenia (platelets $4\times10^9$/L), elevated lactate dehydrogenase (2048 U/L), elevated liver enzymes (aspartate aminotransferase 81 U/L, alanine aminotransferase 30 U/L), bilirubin (30 µmol/L), and proteinuria. Blood product transfusions, corticosteroids, and antibiotics were administered in the intensive care unit. Following therapy, a slight improvement in laboratory findings was noted, suggesting the possibility of thrombotic microangiopathy. Consequently, blood samples were collected for ADAMTS13 protein testing, and plasmapheresis was initiated. Despite these treatment measures, the patient developed multiorgan failure and cardiorespiratory arrest on the third day of hospitalization. Subsequently, immeasurably low levels of ADAMTS13 protein were reported, confirming the diagnosis of TTP.

**Conclusion:** Highlighting this case is crucial as it aids in recognizing rare yet severe postpartum complications such as HELLP syndrome with secondary TTP. Timely diagnosis of microcytic anemia, thrombocytopenia, and laboratory signs of hemolysis, along with early plasmapheresis, can significantly improve outcomes, reduce complications, and enhance patient survival.

**Keywords:** HELLP Syndrome; Postpartum Period; Pregnancy Complications; Purpura, Thrombotic Thrombocytopenic

# CR67

## Hybrid approach in leg ischemia – a case report

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**Introduction:** In the last 10 years the approach to the treatment of vascular patients has changed, which resulted in dramatic improvement in treatment results. Historically, the approach was either open surgery or endovascular treatment. Today, a combination of open and endovascular approaches, called hybrid treatment, is preferred.

**Case report:** A 70-year-old male patient with critical ischemia of left leg was admitted to the Department of Vascular Surgery, Clinical Hospital Centre Osijek, with rest pain for 4-5 days, absence of femoral pulse and big toe ischemic ulcers near the nails. Computed tomography angiography showed mixed atherosclerotic and thrombotic occlusion of common and external iliac artery, subocclusion of common and deep femoral artery and atherosclerotic occlusion of superficial femoral artery. A hybrid procedure was performed. An open endarterectomy of common femoral artery and a semi-closed thrombendarterectomy with a ring stripper of external iliac artery was the first step of the surgery. The next part was endovascular treatment of the occlusion of the common iliac artery. An imaging catheter was used for intraoperative angiography, which showed a subintimal dissection and big atherosclerotic plaque in the origin of the common iliac artery. Consequently, the artery was inadequate for endovascular stenting. Because of this finding, the next step was performing an open aortoilliac endarterectomy using median laparotomy approach.

**Conclusion:** Modern approach to vascular patients demands of the surgeon to be familiar with both open and endovascular techniques. The hybrid approach has proven to have the best results while being the most sparing surgery to patients.

**Keywords:** Conversion to Open Surgery; Endovascular Procedures; Minimally Invasive Surgical Procedures

# CR68

## Extracorporeal Membrane Oxygenation in Cardiogenic Shock in a Postpartum Patient with Dilated Cardiomyopathy

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**Introduction:** Extracorporeal membrane oxygenation (ECMO) is a crucial intervention in patients with severe heart and/or lung failure. It often serves as a bridge in critical and potentially reversible conditions. ECMO is commonly used in cardiogenic shock and/or cardiac arrest. This case report aims to emphasise the role of ECMO in intensive care, its indications, and potential complications.

**Case report:** A 21-year-old patient with undiagnosed peripartum dilated cardiomyopathy and severe preeclampsia was admitted to the intensive care unit after vaginal delivery due to hemodynamic instability, dyspnea, and acute heart and kidney failure. She was intubated, mechanically ventilated, placed on dialysis, and treated with vasopressors. Echocardiography revealed severe global myocardial hypokinesia with an ejection fraction of 25–30%. Despite intensive measures, the patient experienced cardiac arrest. Veno-arterial peripheral ECMO was initiated during cardiopulmonary resuscitation, and converted to central veno-veno-arterial ECMO the following day. During treatment, the patient developed a large pelvic hematoma due to active postpartum hemorrhage, necessitating multiple laparotomies. Hemodynamic parameters gradually improved, and cardiac function recovered, allowing the ECMO support to be gradually weaned and removed after 12 days of intensive care. However, due to incomplete neurological recovery, mechanical ventilation was continued. Unfortunately, the patient's neurological condition deteriorated rapidly, with multiple confirmed intracerebral hemorrhages and the development of diffuse brain edema. Despite all measures, the patient passed away after 23 days of intensive care.

**Conclusion:** This case illustrates the complexity of managing acute heart failure and cardiogenic shock with ECMO. While ECMO is life-saving when conventional therapy fails, it carries significant risks of complications such as haemorrhage and irreversible neurological injury.

**Keywords:** Cardiomyopathies; Extracorporeal Membrane Oxygenation; Heart Failure; Pre-Eclampsia

# CR69

## Pancreatic ascites- a rare complication of hereditary chronic pancreatitis

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**Introduction:** Pancreatic ascites is a rare condition caused by damage to the pancreatic duct that leads to leakage of pancreatic fluid into the peritoneum. Hereditary pancreatitis (HP) is a rare disease characterized by childhood-onset relapsing pancreatitis and chronic pancreatitis (CP).

**Case report:** In August 2024, a 16-year-old girl was hospitalized for acute CP exacerbation presenting with abdominal pain and ascites. In 2018, she first presented with severe abdominal pain, fever, and amylase and lipase elevation. Magnetic resonance cholangiopancreatography (MRCP) revealed numerous calcifications in the pancreas, and a dilated, tortuous main pancreatic duct. Initial workup excluded pancreas divisum and cystic fibrosis, raising suspicion of HP. From 2018 to 2024, she experienced three additional mild acute exacerbations, while MRCP in 2023 identified a 34×26 mm cyst in the pancreatic head, presumably a pseudocyst. Upon admission in 2024, laboratory tests revealed elevated amylase and lipase levels, and significant CA19-9 and CA-125 increase. As ascites persisted despite symptomatic therapy, octreotide was introduced. Endoscopic ultrasound and cyst aspiration suggested a mucinous cystic neoplasm, prompting surgical intervention. Intraoperative findings of significantly reduced pancreatic parenchyma due to calcifications, as well as a ruptured pancreatic duct, led to a total pancreatectomy alongside cyst resection. Moreover, two liters of ascitic fluid were evacuated. Histopathology confirmed pancreatic pseudocyst and chronic inflammation in the pancreas. Genetic testing identified a heterozygous pathogenic variant in the PRSS1 gene, confirming hereditary CP. After the procedure, our patient remains dependent on exogenous insulin application and pancreatic enzyme replacement therapy.

**Conclusion:** This case illustrates the complex clinical course of hereditary chronic pancreatitis, with severe complications necessitating total pancreatectomy. Identifying a PRSS1 mutation highlights the importance of genetic testing in early-onset CP.

**Keywords:** Ascites; Hereditary pancreatitis; Pancreatic Pseudocyst; Pancreatitis, Chronic

# CR70

## Panic Attacks Or Something More: A Case Of Misdiagnosed Focal Epilepsy

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**Introduction:** Epilepsy is a neurological disorder characterized by different types of seizures caused by abnormal, excessive electrical brain activity. Epileptic seizures are broadly classified into generalized and focal types, with clinical manifestations depending on the affected brain region and seizure type. This case report describes a rare presentation of initially focal epileptic seizures, which later progressed into convulsive bilateral tonic-clonic seizures with a non-motor beginning.

**Case report:** We present a 26-year-old female patient with frequent panic attacks, treated with antidepressants and anxiolytics. In October 2023, her family found her unconscious with a bitten tongue. No motor symptoms were observed, and the patient only remembers intense anxiety, a déjà vu, and falling asleep. In December 2023, she was found unconscious again, and she recalls nothing but excessive anxiety. A computed tomography scan performed due to a head trauma revealed no abnormalities, but electroencephalography showed occasional slower, high-voltage, and spiked waves, confirming epileptiform activity. Lamotrigine was initiated at 25 milligrams twice a day. It was later recognized that her seizures initially presented as focal events, manifesting as panic attacks, but the lack of appropriate treatment led to progression into bilateral tonic-clonic seizures. In June 2024, the patient experienced another episode, but this time, the whole seizure was witnessed. Lamotrigine was increased to 50 milligrams twice a day, effectively stopping both panic attacks and general convulsive tonic-clonic seizures.

**Conclusion:** This case illustrates unrecognized epilepsy presented with panic attacks due to focal seizures probably located in the amygdala. The seizures remained focal and atypical for a while, which led to misdiagnosis and mistreatment. Although rare, psychiatric symptoms should be considered in the differential diagnosis of epilepsy to avoid disease progression.

**Keywords:** Amygdala; Epilepsy; Lamotrigine; Panic

# CR71

## Hyponatremia in the new reality

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**Introduction:** Hyponatremia occurs when serum sodium levels fall below 136 mEq/L. Common causes include diuretics, diarrhea, heart failure, liver and kidney disease, and syndrome of inappropriate antidiuretic hormone secretion (SIADH). Symptoms are primarily neurological, especially in acute hyponatremia, and include headache, confusion, and stupor.

**Case report:** This report describes a 71-year-old female who presented to the emergency department with body numbness and general weakness lasting 3 to 4 days. She denied chest pain but reported vomiting several times over the past few days. Her medical history included arterial hypertension and a COVID-19 infection in May 2021. She was being treated with indapamide and bisoprolol. Physical examination was unremarkable. Laboratory findings revealed potassium at 3.1 mmol/L, urine osmolality of 406 mOsmol/kg, and urine sodium at 45 mmol/L. A review of her medical records indicated persistently low serum sodium levels since May, when she was treated for COVID-19. This gradual decline suggested chronic hyponatremia with acute exacerbation, accompanied by neurological symptoms. An endocrinological workup showed no evidence of adrenal insufficiency or hypothyroidism, making SIADH the most likely diagnosis. Hyponatremia was managed using 3% NaCl and restricting fluid intake to 800 mL per day, which led to complete recovery and correction of the electrolyte imbalance.

**Conclusion:** This case report highlights the importance of recognizing hyponatremia in COVID-19 patients. It can result from either SIADH due to non-osmotic vasopressin release or sodium loss from diarrhea and vomiting. Differentiating between these causes is essential for timely and appropriate treatment to prevent severe hyponatremia, which can have fatal consequences.

**Keywords:** COVID-19; Hyponatremia; Sodium

# CR72

## Case report of coronary artery aneurysm

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**Introduction:** Coronary artery aneurysm (CAA) is a rare condition of coronary artery dilatation. It is found in up to 5% of patients undergoing coronary angiography and its clinical presentation varies from acute coronary syndrome to incidental finding.

**Case report:** A 57-year old male patient was admitted for percutaneous coronary intervention (PCI) due to unstable angina pectoris and stenocardia. Electrocardiogram showed signs of ischemia. Coronary angiography revealed a 9 mm fusiform aneurysm in the left anterior descending artery and fixed 60% stenosis distal to the CAA. Stenoses were also found in the anterior circumflex artery and right coronary artery where stents were implanted. While there are several techniques for managing CAA, none of them are reliable. Antiplatelet, antithrombotic, anticoagulation and angiotensin-converting enzyme are possible pharmacological options, but none have been researched in long-term studies. PCI, balloon or stent-assisted coil embolization, percutaneous closure with Amplatzer occluders and stent graft systems are some of the possible percutaneous interventions. Some lack sufficient research, while PCI has shown no promising results. Furthermore, some surgical methods have been tested, but none have been formally studied. Due to limited data on CAA management, the patient received dual anticoagulation therapy and is scheduled for elective coronary angiography in one year.

**Conclusion:** The purpose of this case is to address the lack of randomized trials and large-scale data on CAA, without which patients cannot receive appropriate management. Therefore, until more evidence is available, treatment should be guided by location, morphology and clinical presentation of CAA.

**Keywords:** Coronary Aneurysm; Percutaneous Coronary Intervention; Stents

# CR73

## Successful Pregnancy and Long-Term Management After Heart Transplantation in a Patient with Arrhythmogenic Cardiomyopathy

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**Introduction:** Mutations of desmoplakin (DSP), a desmosomal protein important for cell adhesion in cardiac muscle, cause a specific form of arrhythmogenic cardiomyopathy characterized by recurrent myocardial inflammation, fibrosis, and left ventricular systolic dysfunction associated with high rate of ventricular arrhythmias and sudden cardiac death.

**Case report:** A female patient with a family history of sudden cardiac death was diagnosed with dilatative cardiomyopathy in 2001 at the age of 24 after persistent shortness of breath following pneumonia. Amiodarone arrhythmia treatment induced thyroid dysfunction and was discontinued. Hence, she had an implantable cardioverter defibrillator (ICD) inserted in 2007. Ventricular tachycardias have since caused multiple ICD activations with syncope. In 2016, following successful outpatient resuscitation after recorded pulseless electrical activity, genetic testing revealed a DSP mutation. Severe arrhythmias led to heart failure (HF) and emergency heart transplantation in December 2016. Post-transplant monitoring showed sustained graft function and no rejection. Right coronary artery 30% stenosis was monitored by angiography. In 2018 she wanted to become pregnant, thus mycophenolate was withdrawn, and tacrolimus increased. Despite multiple complications during pregnancy, including anemia, elevated N-terminal prohormone of brain natriuretic peptide (NTproBNP) levels, and renal failure due to tacrolimus hypersaturation, a healthy male infant was successfully delivered via cesarean section. In late 2024, immunosuppressive therapy was adjusted again for planning a second pregnancy.

**Conclusion:** Advances in medicine have enhanced our understanding of the genetic causes of cardiomyopathies and introduced successful treatment options such as heart transplantation. This development has enabled patients not only to survive but also to achieve their desire to become pregnant, with individualized use of immunosuppressants during pregnancy.

**Keywords:** Cardiomyopathy, Dilated; Desmoplakins; Heart Transplantation; Pregnancy

# CR74

## Surgical Simulation for Complex Heart Defects via Three-dimensional Printing

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**Introduction:** Complex transposition of the great arteries with ventricular septal defect and obstruction of the left ventricular outflow tract (TGA/VSD/LVOTO) can have variable and complex intracardiac morphology. With advances in modern technology, three-dimensional (3D) printing arose as a game changer in the perception of surgical anatomy. 3D printing offers an easy understanding of surgical morphology for complex congenital heart diseases (CHD) and its utility in congenital heart surgery is indisputable. However, it is difficult to prove the impact of its use on surgical outcomes.

**Case report:** We report on a baby girl born at 39 weeks of gestation with complex CHD. Her echocardiography revealed a double outlet right ventricle, TGA/VSD/LVOTO. Initially, her oxygen saturation was in the 80's range and improved on oxygen therapy. Her appearance revealed malformation of the viscerocranium which is amenable to repair. The baby was feeding and thriving so she was discharged home in good clinical condition. Before discharge, a multi-slice computed tomography (MSCT) of the heart was performed as a foundation for creating a 3D printed model, because her intracardiac morphology was very complex with very wide VSD starting from the inlet part of the septum and coming up and twisting towards the sub-pulmonary area. Echocardiography also raised suspicion of the straddling atrioventricular valves.

**Conclusion:** 3D printing is a useful, practical tool for surgical decision-making and simulation of the direction, position, and dimension of the proposed VSD patch, "intraventricular baffle" in this complex congenital heart disease. We believe an exact and thorough understanding of the intracardiac morphology can positively influence surgical outcomes, the created model allowed step-by-step detailed planning of the entire surgical procedure.

**Keywords:** Congenital Heart Defects; Heart Septal Defects; Transposition of Great Vessels

# CR75

## Silent Myocardial Infarction in a Diabetic Patient: Challenges and Interventions

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**Introduction:** People with type 1 diabetes mellitus (T1DM) face a 9-fold higher risk of myocardial infarction (MI) as well as greater mortality. One of the reasons for this is that MIs in this population often go unrecognized, as typical symptoms such as chest pain are frequently absent due to diabetic autonomic neuropathy.

**Case report:** A 68-year-old female patient, diagnosed with T1DM at the age of 24 and arterial hypertension at 53, presented to primary care with a 4-day history of dyspnea, cough, and orthopnea. Despite otherwise excellent glycemic control, 6 weeks ago for a few days she was unable to regulate glucose levels. Bilateral basal crackles and perimalleolar edema prompted a referral to the emergency department for suspected cardiac decompensation. An electrocardiogram revealed an anterior wall scar and an initial echocardiogram showed an ejection fraction of 40%, a significant reduction from 64% 10 months ago. These findings suggested a previous myocardial infarction. Coronary angiography after 2 days identified calcified stenosis: left anterior descending artery (LAD) 90-95%, right coronary artery (RCA) 85-90%. A stent was successfully placed in the mid-segment of the LAD. However, RCA stenting required predilatation and two follow-up angiographies over 2 weeks, resulting in two drug-eluting stents. The patient was discharged with chronic heart failure and antiplatelet therapies. A painful 8x3 centimeters groin hematoma at the access site was treated with heparin gel.

**Conclusion:** Patients with T1DM often experience atypical presentations of MI such as sudden difficulty regulating glycemia. Advances in cardiology like multi-stage stenting have improved outcomes and quality of life of diabetic patients with complex coronary artery disease.

**Keywords:** Anterior Wall Myocardial Infarction; Coronary Artery Disease; Diabetes Mellitus, Type 1; Diabetic Neuropathies; Drug-Eluting Stents

# CR76

## Unrevealing the Mystery of Pericarditis: A Case with an Unexpected Twist

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**Introduction:** Pericarditis is an inflammatory condition with diverse etiologies. This case report highlights an interesting diagnosis made while searching for the underlying cause of pericarditis.

**Case report:** A 68-year-old man presented to the emergency department with fever, chest pain, and dyspnea. Heart and lung auscultation were unremarkable, but leg edema was noticed. Chest X-ray indicated a minor lower left lobe pneumonia. The electrocardiogram showed sinus tachycardia without ST-T segment changes. Lab results showed normocytic anemia, renal impairment, elevated N-terminal pro-b-type natriuretic peptide and C-reactive protein levels, and normal troponin I level. Echocardiography found a large, up to 35 mm, pericardial effusion without cardiac tamponade. Diagnosis of acute pericarditis was made. The patient was admitted and treated with a combination of ceftriaxone and azithromycin, along with ibuprofen. Colchicine was omitted due to renal injury. Pericardiocentesis was done. Chest and heart computed tomography confirmed an inflammatory etiology of pericarditis without pulmonary or mediastinal pathology. Further workup, including the exclusion of leading infectious, neoplastic, metabolic, and autoimmune causes of pericarditis, revealed a large retroperitoneal tumor infiltrating the right kidney, causing grade 4 hydronephrosis. Biopsy confirmed diffuse large B-cell lymphoma. Immunophenotyping of the pericardial effusion showed no malignant lymphatic cells, suggesting that the initial presentation of pericarditis could be of viral etiology. The patient´s condition improved with treatment, and repeated echocardiography showed resolution of the pericardial effusion. Chemotherapy for the lymphoma was initiated.

**Conclusion:** This case report describes a patient hospitalized with acute pericarditis, during which an incidental diagnosis of diffuse large B-cell lymphoma was discovered. The case highlights the importance of comprehensive diagnostic evaluation to identify the potential cause in patients with pericarditis.

**Keywords:** Echocardiography; Hydronephrosis; Lymphoma, Large B-Cell, Diffuse; Pericardial Effusion; Pericarditis

# CR77

## Torrential tricuspid regurgitation treated with transcatheter heterotopic tricuspid valve

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**Introduction:** Tricuspid regurgitation (TR) if left untreated, causes irreversible right ventricular (RV) dysfunction and poor prognosis. This case explores TR presentation, diagnosis, and treatment options

**Case report:** A 70-y old male was in the follow up due to asymptomatic severe TR and permanent atrial fibrillation (AFib), on amiodarone therapy. He was referred to our hospital due to symptoms of fatigue, shortness of breath, precordial oppression and hot flashes with sweating. On clinical examination dilated jugular veins, systolic murmur along the left edge of the sternum, palpable liver (1 cm) and leg oedema were found. Echocardiography revealed a markedly dilated RV (192ml) with poor function, severely dilated tricuspid valve annulus with wide coaptation gap of 30 mm and torrential TR. On cardiac magnetic resonance there were no signs of Ebstein anomaly. Right heart catheterization revealed normal pulmonary artery pressures (mean 24mmHg). Laboratory findings revealed hyperthyroidism due to long-standing amiodarone therapy, so corticosteroid therapy was initiated. Radionuclide octreotide scan was performed to exclude carcinoid syndrome. The patient was presented to Heart team, but due to poor RV function, surgery was denied, while transcatheter TV repair was not possible due to large coaptation gap. Transcatheter heterotopic TV (caval valve) implantation was performed, with good result. In the follow up the patient was without symptoms of heart failure and diuretic dosage was reduced.

**Conclusion:** Possible causes of severe TR are left side heart diseases, pulmonary artery hypertension, Ebstein anomaly and carcinoid syndrome, which were all excluded. In the cases of right heart failure, TV surgery is often contraindicated, but new percutaneous interventions can help with symptomatic relief and reduce heart failure complications. Multidisciplinary and individualized approaches are mandatory in such complex cases.

**Keywords:** Atrial Fibrillation; Echocardiography; Tricuspid Valve Insufficiency

# CR78

## The suicide left ventricle

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**Introduction:** Suicide left ventricle (SLV) is a rare but life-threatening complication that can occur after transcatheter aortic valve implantation (TAVI). It typically presents as a hemodynamic instability due to obstruction of the left ventricular outflow tract following a sudden decrease in the afterload. The main risk factors include female sex and a small left ventricular (LV) cavity with asymmetric septal hypertrophy. In order to minimize the possible occurrence of SLV, volume and beta-blocker administration is recommended preoperatively.

**Case report:** An 88-year-old female was brought in by ambulance due to the sudden onset of dyspnea on physical exertion. Her medical history included severe aortic stenosis, syncopal episodes, arterial hypertension, hyperlipoproteinemia, asthma and breast cancer surgery. Upon arrival, her blood pressure was 220/120 mmHg, oxygen saturation 62% and the electrocardiogram showed LV hypertrophy with sinus tachycardia 145/min. The patient was admitted to the Department of Cardiology and treated for hypertensive pulmonary oedema. After clinical improvement, the TAVI procedure was indicated. With echocardiography showing small and hypertrophied LV, the possibility of SLV was considered. Following successful valve placement the patient experienced hemodynamic collapse. Mechanical complications were ruled out, the echocardiography showed a „kissing walls“ pattern. Boluses of fluids were administered, as well as vasopressor support. Despite all life-sustaining measures, hemodynamic instability was refractory to the treatment leading to the patient's passing.

**Conclusion:** Post-TAVI SLV is a complicated clinical phenomenon that requires a detailed approach not only after, but also before the procedure, where echocardiography plays a key role. In high-risk patients measures to promote left ventricular filling should be employed before and during TAVI, posing a clinical challenge in patients admitted for pulmonary oedema.

**Keywords:** Aortic Valve Stenosis; Hypertrophy; Transcatheter Aortic Valve Replacement

# CR79

## Atrial Septal Defect Hiding in Plain Sight: Uncovering an Undetected Heart Defect

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**Introduction:** Conception through in vitro fertilization (IVF) and multiple pregnancies are both associated with an increased risk of congenital heart defects, which may remain undiagnosed until adolescence or adulthood. Early detection is crucial for timely intervention and optimal health outcomes.

**Case report:** A 15-year-old female patient was referred to a cardiologist after a routine sports screening revealed frequent ventricular ectopy. She reported occasional presyncope symptoms like lightheadedness and blurred vision with exertion and had experienced a few syncopal episodes without seizures. Transthoracic echocardiography revealed a 12×22 millimeters ostium secundum atrial septal defect (ASD) with a significant left-to-right shunt. Given its size, transcatheter closure was not an option, and surgical intervention was recommended. Two months later, she underwent successful defect closure via right anterior minithoracotomy using an autologous pericardial patch. She recovered well postoperatively, and follow-up echocardiography confirmed full correction without residual shunting. Since the patient was born from a triplet pregnancy conceived via IVF, her siblings were also evaluated as a precaution. One of them was completely healthy, while the other one was found to have a smaller asymptomatic ASD of the same type without significant shunting, so conservative management with regular follow-up was recommended.

**Conclusion:** This case highlights the importance of cardiovascular screenings in detecting unrecognized congenital heart defects, especially in individuals born from IVF multiple pregnancies. Congenital heart defects can have a genetic component, hence family screening is suggested. Timely diagnosis, appropriate management, and regular follow-ups can lead to excellent long-term outcomes.

**Keywords:** Cardiac Surgical Procedure; Fertilization in Vitro; Heart Defects, Congenital; Heart Septal Defects, Atrial

# CR80

## Omphalocele with associated cardiac anomalies in a newborn

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**Introduction:** Omphalocele is a rare congenital abdominal wall defect where abdominal organs herniate through the umbilical ring, covered by a thin membrane. It is often associated with other congenital anomalies, particularly cardiac defects. This case report describes a newborn with an omphalocele and associated ventricular and atrial septal defects, highlighting the importance of a multidisciplinary approach in diagnosis and management.

**Case report:** We present a case of a female newborn delivered via planned cesarean section at 38 weeks of gestation with a prenatal diagnosis of omphalocele. At birth, a 5cm omphalocele containing intestinal loops and part of the liver was observed, covered by an intact membrane. Echocardiography revealed a ventricular septal defect (VSD) and an atrial septal defect (ASD). The omphalocele was initially covered with a sterile, saline – soaked dressing to prevent dehydration and infection. After stabilization, the pediatric surgical team decided on primary surgical repair. The operation was successful, with full organ repositioning and abdominal wall closure. Postoperative recovery was uneventful, and the newborn remained under neonatal intensive care for monitoring of cardiac anomalies. Pediatric cardiologists recommended conservative management with regular follow – up. After four weeks, the patient was discharged in stable condition. Long – term follow – up was planned to monitor the cardiac defects and overall development.

**Conclusion:** This case underscores the significance of prenatal diagnosis and a multidisciplinary approach in managing omphalocele with associated anomalies. Early intervention and individualized treatment strategies are crucial for optimizing outcomes and improving the quality of life in affected infants.

**Keywords:** Heart Defects, Congenital; Hernia, Umbilical; Infant

# CR81

## What can cause cerebrovascular accident (CVA) in a 33-year-old?

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**Introduction:** Myxoma is a benign cardiac tumor. Although uncommon, it is one of the most common primary cardiac tumors. It has a special predilection for the left atrium. The classic triad of myxoma clinical presentation is intracardiac obstruction with congestive heart failure, signs of embolization, systemic or constitutional symptoms of fever, weight loss, or fatigue, and other immunologic manifestations.

**Case report:** A 33-year-old male patient presented to the emergency room with only the clinical picture of somnolence and disorientation. Heteroanamnestically, there is no serious or chronic disease. The patient was admitted to the neurological intensive care unit with a suspected CVA and venous sinus thrombosis. Lumbar puncture and biochemical and microbiological analysis of cerebrospinal fluid were performed, which ruled out any inflammatory disease of the central nervous system. The neurovascular examination was unremarkable. Brain computed tomography and magnetic resonance imaging confirmed venous sinus thrombosis. Given the rarity of CVA in young individuals, further investigation was required because the causes differ from those typically seen in older patients. Due to the embolic nature of the cerebral infarcts, an echocardiogram was performed, revealing a suspected tumor in the left atrium. The tumor measured 40x20 mm, attached by a stalk to the atrial apex near the interatrial septum, and protruded through the mitral valve during systole. A diagnosis of myxoma was suspected. Extirpation of the tumor was performed, and histopathological analysis confirmed the diagnosis of myxoma.

**Conclusion:** CVA in young individuals is rare, and its causes differ from those typically seen in older populations. While myxoma is an uncommon diagnosis, it should always be considered as a potential cause of CVA in young patients due to its embolic potential.

**Keywords:** Myxoma; Neoplasms; Stroke

# CR82

## RAD51C gene mutation as a cause of breast cancer: a case report

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**Introduction:** Breast cancer is a complex disease often caused by mutations in various genes, including *RAD51C*, a gene involved in DNA repair. Mutations in RAD51C are found in approximately 1% of hereditary breast cancer cases, increasing the risk of breast and ovarian cancer.

**Case report:** A 58-year-old woman discovered a lump in her right breast during self-examination, which led her to seek medical attention. A mammogram revealed clusters of microcalcifications, and an ultrasound detected a suspicious mass near the nipple and altered lymph nodes. On examination, she had a palpable 2x3 cm mass in the right breast and a 1.5 cm lymph node in the right axilla. A core biopsy confirmed invasive carcinoma of no special type, luminal B, HER2-negative. Staging classified the tumor as T2N1, and the patient was started on neoadjuvant chemotherapy with paclitaxel. Given her family history—her mother had breast cancer at 56 and uterine cancer at 75—genetic testing was recommended. Sequencing identified a pathogenic *RAD51C* mutation, significantly increasing her cancer risk. As a preventive measure, she'd been advised to undergo a bilateral mastectomy and prophylactic adnexectomy after chemotherapy. Due to the hereditary nature of the mutation, her adult children were encouraged to undergo genetic testing.

**Conclusion:** Although luminal B breast cancer has only a 5% probability of a pathogenic mutation, genetic testing was crucial due to her family history. Identifying the *RAD51C* mutation provided important information for treatment and emphasized the importance of preventive surgery. This discovery also allowed her children to make informed decisions about their health through early genetic screening and risk-reduction strategies.

**Keywords:** Breast Neoplasms; Genetic Testing; Mastectomy; Mutation; Neoadjuvant Therapy

# CR83

## Infection as a complication of conduction system pacing – what's next?

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**Introduction:** Conduction system pacing (CSP) is a contemporary method of cardiac electrostimulation based on direct stimulation of the heart's conduction system – for example left bundle branch area pacing (LBBAP) or His bundle pacing. The goal is to achieve a physiological cardiac stimulation which leads to synchronized contraction of both ventricles. Due to stimulation of the conduction system, exceptional precision is required for electrode placement. In contrast to CSP, leadless pacing, another modern pacing method, eliminates the need for electrodes and a subcutaneous pacemaker – it is implanted directly into the heart chambers via a catheter. The procedure is minimally invasive and the risk of infection is significantly lower.

**Case report:** 71-year-old male presented with an infection of CSP pacing system which was implanted for a 2:1 atrioventricular block. There were no complications with the implantation of the system. Redness and swelling at the implantation site with purulent discharge were observed as well as elevated inflammatory markers. Urgent surgery with explantation of the whole cardiac stimulation system was indicated. After receiving the wound culture results the initial vancomycin therapy was switched to flucloxacillin. Leadless cardiac pacing system, that allows synchronization and monitoring of atrial and ventricular activity without the need for traditional electrodes, was implanted. This procedure was also completed without complications.

**Conclusion:** CSP and leadless pacing are modern cardiac electrostimulation tehniques that have many advantages over traditional pacemakers. Leadless pacing significantly reduces the risk of infection since it requires minimally invasive implantation method and lacks electrodes and subcutaneous components. CSP also reduces the risk compared to traditional systems but requires electrodes and invasive implantation procedure, increasing the potential for infections compared to leadless pacing.

**Keywords:** Atrioventricular Block; Electric Stimulation Therapy; Electrodes

# CR84

## A big heart is not always a good thing – a case of faulty genetics or something else?

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**Introduction:** Abnormal thickening of the myocardium is mostly caused by uncontrolled hypertension. However, some inheritable genetic conditions such as hypertrophic cardiomyopathy (HCM) or hemochromatosis can also cause myocardial thickening, with clinical presentations ranging from asymptomatic cases to severe heart failure or sudden cardiac death.

**Case report:** A 40-year-old male foreign worker underwent a routine occupational medicine check-up. During the examination, his blood pressure was measured at 170/80 mmHg, and an electrocardiogram (ECG) revealed signs of left-heart strain and hypertrophy with inverted T-waves in leads V3-V6 and left-oriented axis. Since the patient's father had died in his forties due to a myocardial infarction, a suspicion of genetic HCM was raised. Within a week, the patient underwent an urgent cardiological workup. An echocardiogram confirmed concentric left-heart hypertrophy, but 24-hour ECG monitoring showed no abnormalities besides occasional ventricular extrasystole. An exercise stress test revealed a hypertensive type of reaction, with a maximum blood pressure of 220/120 mmHg. Lab workup revealed a ferritin level of 438 µg/L, sometimes indicative of hereditary hemochromatosis, but urgent genetic testing showed no *HFE* gene mutations responsible for this condition. It was concluded that the patient was suffering from cardiac hypertrophy due to hypertension. A combined antihypertensive therapy with 10 mg of amlodipine and 10 mg of perindopril once daily was introduced. At the one-month follow-up, blood pressure was within normal range.

**Conclusion:** This case highlights the importance of timely cardiovascular assessment, especially for foreign workers who may lack regular medical care. Prompt evaluation and intervention allowed for the rapid identification of left-heart hypertrophy due to uncontrolled hypertension, ruling out suspected genetic conditions.

**Keywords:** Cardiomyopathies; Electrocardiography; Hypertension; Myocardial Infarction

# CR85

## Inguinal Intrigue: Managing a Growing Mass

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**Introduction:** Observing abnormalities in a complex anatomical region, such as the groin, can be challenging due to similar clinical features. Main considerations include tissue origin, size, tenderness, mobility, and systemic symptoms. Differential diagnoses range from hernias and lymphadenopathy to vascular or soft tissue abnormalities. Proper diagnosis is the key to guiding further management.

**Case report:** A 72-year-old male was admitted due to an inguinal mass that had been present for years but had rapidly enlarged in a few days. Upon admission, a computed tomography) scan confirmed a 14 cm diameter femoral pseudoaneurysm as an indication for urgent surgical intervention. Also, the patient underwent an aorto-bifemoral bypass 13 years ago. After preoperative preparation, digital subtraction angiography guidance was used to place a balloon occluder in the external iliac artery via the transbrachial approach for proximal vessel control. Surgical exploration of the left common femoral artery (CFA) revealed an inflamed pseudoaneurysm containing purulent material, which was drained during the aneurysmectomy. The distal portion of the previously implanted graft was separated from the vessel and shortened by 5 cm. A termino-terminal graft-to-graft anastomosis was performed using a polyester arterial graft, and a termino-terminal anastomosis was created distally with the CFA. The aneurysmal sac was resected, and the balloon occluder was removed. Two drains were placed: one subcutaneously and the other adjacent to the graft.

**Conclusion:** This case highlights the importance of careful evaluation and imaging in diagnosing groin abnormalities, emphasizing common pitfalls such as premature assumptions or delayed imaging. Clinicians should be alert when differentiating between benign and life-threatening conditions and consider past surgical history to improve patient outcomes and minimize diagnostic errors.

**Keywords:** Aneurysm, False; Femoral Artery; Groin; Vascular Grafting

# CR86

## From Electrocardiogram Findings to Life-Saving Interventions: Brugada Syndrome

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**Introduction:** Brugada syndrome (BrS) is an inherited condition related to cardiac sodium channel gene mutation, characterized by abnormal electrocardiogram (ECG) findings, predisposing individuals to ventricular tachyarrhythmia and sudden cardiac death (SCD). The ECG shows a characteristic ST-segment elevation in the anterolateral leads (V1 to V3). This case demonstrates the risk stratification and management in suspected BrS.

**Case report:** A 61-year-old male was referred from a cooperative institution to evaluate suspected BrS further. His medical history included hypertension and dyslipidemia, with no personal or family history of SCD. The patient experienced intermittent, short-lasting chest discomfort and fluttering sensations. His ECG revealed ST-segment elevation in leads V1 and V2 with negative T waves, consistent with a type 1 Brugada pattern. Echocardiography showed borderline left ventricular hypertrophy without contractility abnormalities, and the left ventricular ejection fraction was preserved. Coronary computed tomography angiography showed approximately 50% stenosis of the right coronary artery and left anterior descending artery. An electrophysiological study was subsequently performed in which polymorphic ventricular tachycardia (VT) was induced, triggering ventricular fibrillation, which was successfully defibrillated, confirming the diagnosis of BrS type 1. Given the high risk of SCD, the patient underwent implantation of an implantable cardioverter-defibrillator for primary prevention. While genetic testing can be beneficial, it was unnecessary in this case, as ECG and VT induction confirmed the diagnosis and obstructive coronary disease was excluded. He was discharged in stable condition, with no device activation during follow-up.

**Conclusion:** This case highlights the importance of a prompt BrS diagnosis and early intervention. Genetic testing has limited sensitivity, so clinical evaluation remains key. Early ECG screening of first-degree relatives is crucial to identify at-risk individuals and prevent SCD with ICD implantation.

**Keywords:** Brugada Syndrome; Death, Sudden, Cardiac; Defibrillators, Implantable; Electrocardiography

# CR87

## A Rare Twist of Fate: Inferior STEMI in Early Post-Transplantation Period

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**Introduction:** Kidney transplantation, the preferred treatment for end-stage renal disease (ESRD), improves quality of life and survival, but poses challenges like perioperative complications and increased cardiovascular risk. A variety of risk factors, both traditional and non-traditional, contribute to the incidence of acute myocardial infarction in kidney transplant recipients.

**Case report:** We present a 53-year-old female with ESRD secondary to IgA nephropathy. Medical history included 10 years of essential arterial hypertension, hypertensive angiopathy grade I-II and smoking. The patient had been undergoing chronic hemodialysis three times weekly since 2021 via a left-arm arteriovenous fistula. In 2024, the patient was admitted to the Department of Urology for planned cadaveric kidney transplantation. Pre-transplant evaluation revealed no abnormalities, and the transplantation was uneventful. However, delayed graft function (DGF) required two hemodialysis sessions during hospitalization. Consequently, laboratory findings demonstrated declining blood urea and creatinine levels. Three days post-discharge, the patient presented with nausea, diarrhea, vomiting and newly developed chest pain. An electrocardiogram revealed inferior ST-elevation myocardial infarction (STEMI). Coronary angiography identified subocclusive stenosis of the mid-right coronary artery (RCA) and a mildly calcified distal stenosis. Percutaneous coronary intervention of the RCA and drug-eluting stent implantation was performed. Persistent diarrhea prompted stool testing, which was negative for infectious agents. Due to residual gastrointestinal symptoms, immunosuppression therapy adjustments were made: azathioprine replaced mycophenolate mofetil (MMF) and cyclosporine replaced tacrolimus. After the modification, the patient's symptoms resolved completely. She remains under regular follow-up with no further complications.

**Conclusion:** This case highlights the complexity of early post-kidney transplantation management. Initially seen only as immunosuppression side effects, gastrointestinal symptoms also masked inferior STEMI signs. Multidisciplinary care, prompt intervention and tailored immunosuppression are crucial for optimizing patient outcomes.

**Keywords:** Cardiovascular Diseases; Immunosuppression Therapy; Kidney Transplantation; ST Elevation Myocardial Infarction

# CR88

## Assessment of swallowing after medullary carcinoma surgery

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**Introduction:** Medullary carcinoma of the thyroid is an uncommon malignancy, accounting for approximately 5% of all thyroid cancers. Patients typically present with a thyroid nodule or gland enlargement, often accompanied by symptoms of compression on adjacent structures. The primary treatment modality involves total thyroidectomy, with neck dissection performed as necessary.

**Case report:** A 77-year-old female patient presented with thickening on the right side of her neck, dysphagia for solids, and stridor during exercise. Ultrasound-guided fine-needle aspiration revealed a nodular mass in the right lobe of the thyroid gland (7.6x3.3x3.8 cm) extending retrosternally and displacing trachea slightly to the left. Cytological analysis confirmed the diagnosis of medullary carcinoma. Computed tomography of the chest demonstrated a significant mass effect on the trachea and esophagus. The patient underwent total thyroidectomy, and due to the retrosternal extension of the tumor, a sternotomy was necessary for complete resection, which included excision of the right recurrent laryngeal nerve. Postoperatively, the patient exhibited bilateral vocal cord paresis, necessitating tracheostomy. Due to swallowing difficulties, a nasogastric tube was initially placed, followed by percutaneous endoscopic gastrostomy (PEG) placement. After two months, the left vocal cord demonstrated recovery, leading to improved swallowing and respiratory function. Ultimately, the patient was decannulated, and PEG was removed. She is currently under surveillance by a nuclear medicine specialist.

**Conclusion:** Despite preserving the left recurrent laryngeal nerve during surgery, temporary paresis of the left vocal cord remains a possibility. This resulted in bilateral vocal cord paresis, which was not anticipated to cause swallowing difficulties. However, given that the recurrent laryngeal nerve innervates cervical segments of esophagus, dysphagia was present. With subsequent recovery of the nerve function, the patient's swallowing ability also improved.

**Keywords:** Carcinoma, Medullary; Thyroidectomy; Tracheotomy

# CR89

## Heart Under Siege: A Case of Chemotherapy-Induced Cardiomyopathy in a Patient with Invasive Breast Cancer

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**Introduction:** Cardiotoxicity and heart failure (HF) are among the most serious side effects of systemic cancer treatment. The development of new chemotherapeutic agents has significantly improved cancer survival rates but has also raised the incidence of cardiac toxicity, which has become the leading cause of morbidity in these patients.

**Case report:** A 42-year-old woman with invasive breast cancer was hospitalized due to symptoms of acute HF including severe dyspnea, orthopnea, leg edema, gallop rhythm, and low blood pressure. A month before hospitalization, she received a final dose of neoadjuvant chemotherapy alongside dual HER2 blockade. Chest radiography revealed a slightly enlarged heart along with bilateral pleural effusion. N-terminal pro-B-type natriuretic peptide (NT-proBNP) was markedly elevated at 1643 ng/L. Echocardiography showed a marginally dilated left ventricle with an ejection fraction (LV EF) of 16-18%. The patient was transferred to the intensive care unit due to an episode of non-sustained ventricular tachycardia (nsVT), which was treated with continuous magnesium infusion and amiodarone. She was treated with dobutamine, furosemide, eplerenone, digitalis, and ivabradine. Cardiac magnetic resonance imaging (MRI) showed mild myocardial edema without fibrosis, so cardiotoxicity was classified as type II. Considering that LV function is expected to recover and that nsVT has not reoccurred, the patient wasn't given a cardioverter defibrillator. The patient was discharged with clinical improvement and a significant decrease in NT-proBNP levels.

**Conclusion:** This case highlights the importance of early diagnosis and a personalized approach in the treatment of cardiotoxicity in oncology patients. Despite severe LV dysfunction and an episode of nsVT, early diagnosis and aggressive therapy enabled significant cardiac function recovery. Cardiac MRI findings indicated the reversible nature of the damage, which was crucial for further treatment decisions.

**Keywords:** Breast Neoplasms; Cardiotoxicity; Doxorubicin; Interdisciplinary Communication

# CR90

## Subcutaneous vs. Transvenous ICD in Young Patients: A Safer, Effective Alternative

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**Introduction:** An implantable cardioverter-defibrillator (ICD) is a device that detects and terminates life-threatening arrhythmias. We distinguish transvenous ICD (TV-ICD), which carry a risk of infectious and mechanical complications, and subcutaneous ICD (S-ICD) which is implanted extrathoracically to avoid venous access and reduce these risks. Complications associated with TV-ICDs are more commonly observed in long-term recipients.

**Case report:** 14-year-old boy was admitted to the pediatric clinic following cardiopulmonary arrest, with ventricular fibrillation as the initial rhythm. After successful resuscitation and intensive care treatment, he made a full recovery, and brain magnetic resonance imaging (MRI) revealed no significant abnormalities. Upon admission, electrocardiography showed a mildly prolonged QTc interval, while echocardiography indicated slightly impaired cardiac contractility with no other abnormalities. A follow-up cardiac MRI ruled out myocardial disease. A 24-hour Holter monitor recorded significant monomorphic ventricular ectopy originating from the right ventricular outflow tract (RVOT), leading to an electrophysiological study and successful ablation of RVOT ventricular extrasystoles. During the procedure, an isoproterenol test was performed to rule out arrhythmogenic right ventricular cardiomyopathy. Further on, for secondary prevention of sudden cardiac death, a S-ICD was implanted. Genetic testing for long QT syndrome did not reveal any causative mutations to explain the patient's clinical presentation. He was discharged in good general condition with restrictions on contact sports and was advised to undergo regular follow-ups.

**Conclusion:** The S-ICD is an excellent alternative to the TV-ICD for young patients who do not require bradycardia or anti-tachycardia pacing. It effectively terminates malignant arrhythmias through defibrillation while minimizing the mechanical and infectious complications associated with transvenous devices, which are more commonly observed in long-term recipients.

**Keywords:** Defibrillators, Implantable; Heart Arrest; Ventricular Fibrillation; Ventricular Premature Complexes

# CR91

## Extirpation of calcified pulmonary conduit and Melody valve after infectious endocarditis

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**Introduction:** Endocarditis represents inflammation of the endocardium and heart valves. The Melody valve is a transcatheter prosthetic pulmonary valve primarily used for leaking or stenotic pulmonary valve conduits and surgical valves. It has an endocarditis rate of 2% to 10%, with surgery required in 40% to 75% of cases. This case report shows the importance of early identification and treatment, limiting mortality and morbidity.

**Case report:** We present a case of a 24-year-old man born with Tetralogy of Fallot with agenesis of the pulmonary valve (PV), who underwent a complete surgical correction of the congenital defect at the age of 2. Nine years later, the patient developed PA stenosis, which was surgically treated by replacing the stenotic pulmonary conduit with a Contegra conductor via medial sternotomy. Over time, a severe stenosis of the pulmonary conduit valve developed, which was treated by the placement of the Melody valve. At the age of 24, he developed endocarditis accompanied by the expectoration of whitish content and elevated inflammation markers. Echocardiography revealed calcified stenosis of the Melody valve. A computed tomography (CT) scan of the lungs showed septic emboli and lung infarction. Consequently, Staphylococcus epidermidis endocarditis was confirmed in microbiological samples. Ceftriaxone was initiated, followed by gentamicin and ampicillin. The calcified pulmonary conduit and the Melody valve were extirpated, and a 25 mm aortic homograft was implanted in the pulmonary position. Postoperative recovery proceeded smoothly without any further incidents.

**Conclusion:** Without early identification and treatment of Melody valve endocarditis, a myriad of intracardiac and far-reaching extracardiac complications can develop. Therefore, careful evaluation, including a thorough history and physical exam, can help diagnose cases and guide management, limiting mortality and morbidity.

**Keywords:** Endocarditis; Pulmonary Embolism; Pulmonary Valve Stenosis; Tetralogy of Fallot

# CR92

## Solving Syncope's Mystery – a Case Report

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**Introduction:** Patients with unexplained syncope may suffer from recurrent disability. Syncopal episodes are often infrequent and unpredictable for detection with conventional ambulatory monitoring techniques. This report emphasizes the importance of advanced diagnostic tools in identifying life-threatening conditions and guiding appropriate interventions.

**Case report:** We present the case of a 58-year-old man who experienced brief episodes of loss of consciousness lasting 5 to 10 seconds without urinary incontinence or tongue biting. Upon waking, he was fully oriented but appeared pale and sweaty. Before fainting, he noted a buzzing sensation in his head and pressure on both temples. An extensive diagnostic workup was performed to uncover the cause of these episodes. This included Color Doppler ultrasonography of neck arteries and transcranial arteries, electroencephalogram, Magnetic Resonance Imaging of the brain, polysomnography, autonomic nervous system testing, tilt-table testing, electrocardiogram, echocardiography, coronary angiography, Holter monitoring, and 24-hour ambulatory blood pressure monitoring. Despite this thorough investigation, no specific abnormalities were found, leaving the patient disheartened. Determined to uncover the underlying cause, a Loop Recorder was implanted for continuous cardiac monitoring. After some time, it showed unexpected findings: five episodes of ventricular tachycardia (VT) and one episode of complete heart block with sinus arrest lasting a remarkable 70 seconds. Therefore, the patient underwent the implantation of an implantable cardioverter-defibrillator due to VT followed by sinus arrest, and the syncopal episodes ceased entirely.

**Conclusion:** This case demonstrates that the solution to unexplained syncope may not always be immediately apparent, yet persistence in searching for the cause is crucial. Advanced diagnostic tools like Loop Recorders are indispensable in uncovering hidden, life-threatening conditions, highlighting the importance of medical innovations to improve patient outcomes.

**Keywords:** Arrhythmias, Cardiac; Syncope; Tachycardia, Ventricular

# CR93

## Potential Link Between Semaglutide Therapy and Ischemic Optic Neuropathies: A Case Highlighting Vascular and Glycemic Risks

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**Introduction:** Ischemic optic neuropathies (ION) are among the most common causes of irreversible vision loss, arising from reduced blood flow to the optic nerve. Diabetes mellitus (DM) amplifies the risk of ION due to chronic hyperglycemia, which induces systemic vascular damage, including endothelial dysfunction and impaired autoregulation of blood flow. Semaglutide, a glucagon-like peptide-1 (GLP-1) receptor agonist, has been implicated in ocular complications, including non-arteritic anterior ischemic optic neuropathy (NAION). These events may stem from rapid glycemic changes, alterations in vascular tone, or exacerbation of pre-existing microvascular pathology.

**Case report:** A 55-year-old woman with a history of type 2 DM, hypertension, and hyperlipidemia presented with progressive blurred vision and optic disc swelling four months after starting semaglutide (Ozempic). Initially misdiagnosed with diabetic papillopathy, her condition rapidly advanced to NAION. Partial vision recovery was achieved following treatment with corticosteroids and stricter glycemic control. Diagnostic evaluations, including optical coherence tomography (OCT), fluorescein angiography, and visual field testing, confirmed the diagnosis and highlighted significant microvascular compromise affecting the optic nerve.

**Conclusion:** This case emphasizes the potential link between semaglutide therapy and ischemic optic events, underscoring the critical role of vascular health in maintaining optic nerve function. Semaglutide's effects on the vascular system, potentially mediated by alterations in endothelial function or regional blood flow, may aggravate microvascular damage already present in individuals with diabetes and associated comorbidities. Regular ophthalmologic monitoring is crucial for patients receiving GLP-1 receptor agonists, particularly those with a history of vascular risk factors such as hypertension and dyslipidemia.

**Keywords:** Diabetes Complications; Diabetes Mellitus; Glucagon-Like Peptide-1 Receptor Agonist

# CR94

## Autoimmune Retinopathy in a Patient with Small Cell Lung Cancer: A Case Report

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**Introduction:** **C**ancer-associated autoimmune retinopathy (CAR) is a rare paraneoplastic syndrome resulting from cross-reactivity between tumor antigens and retinal proteins. This case report highlights the diagnostic challenges encountered in a patient with CAR and underscores the importance of early recognition of ophthalmological symptoms in the context of systemic malignancies.

**Case report:** A 64-year-old female, a long-term smoker with a history of hypertension and hyperlipidemia, presented with a persistent, non-progressive cough and chest pain. Radiological imaging revealed a 5 cm left suprahilar mass. Fiberoptic bronchoscopy and histopathological analysis confirmed the diagnosis of small cell lung cancer (SCLC). Computed tomography (CT) of the chest and abdomen showed an expansive mass in the right lower lobe of the lung (66 × 39 × 60 mm), accompanied by mediastinal lymphadenopathy and suspected hepatic metastases. During her oncological evaluation, the patient developed progressive ophthalmological symptoms, including floaters and vision loss. Despite multiple ophthalmological and neurological assessments, her condition was initially misdiagnosed as retrobulbar neuritis. Subsequent ophthalmological examination revealed dense posterior vitreous detachment (PVD), vitreous opacities, and chorioretinal infiltrates. A-scan ultrasonography and ultrasound biomicroscopy (UBM) detected thickening of the optic nerve and chorioretinal junction. Magnetic resonance imaging (MRI) of the eyes and orbits showed nonspecific changes in the optic nerve sheath. Clinical findings eventually pointed to paraneoplastic retinopathy, consistent with CAR.

**Conclusion:** This case underscores the critical importance of a multidisciplinary approach in diagnosing and managing rare paraneoplastic syndromes such as CAR. Early identification of CAR can enable timely treatment of the underlying malignancy, potentially preventing further complications and preserving vision.

**Keywords:** Autoimmunity; Interdisciplinary Communication; Paraneoplastic Syndromes, Ocular; Small Cell Lung Carcinoma

# CR95

## A complex cardiovascular puzzle: stroke in a patient as first presentation of severe aortic stenosis in bicuspid aortic valve

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**Introduction:** Stroke is the most prevalent cause of mortality and morbidity among cardiovascular diseases. Conditions such as atrial fibrillation, aortic stenosis, cardiomyopathy, and arterial hypertension significantly increase the risk of stroke and other cardiovascular events, further complicating management and outcomes. These interrelated pathologies contribute to a heightened burden on healthcare systems, emphasizing the need for early detection, prevention, and comprehensive care.

**Case report:** A 58-year-old male patient presented to the emergency service with sensorimotor aphasia, plegia of the right hand, severe paresis of the right leg, and ipsilateral supranuclear facioparesis. Additionally, the heart examination revealed a systolic murmur, and the electrocardiogram revealed atrial fibrillation. In the emergency department, a brain computed tomography was performed with angiography, which verified the occlusion of the middle cerebral artery. The patient received parenteral therapy with alteplase, followed by a mechanical thrombectomy with complete recanalization. Additionally, transthoracic echocardiography revealed severe aortic stenosis and a bicuspid aortic valve and severely impaired systolic left ventricular function, left ventricle ejection fraction of 37%. Furthermore, there was significant mitral regurgitation because of chordal rupture of the anterior mitral leaflet. It should be pointed out that coronary artery disease was excluded by angiography. The heart team decided that surgical replacement of the aortic valve and repair of the mitral valve were indicated. The surgery was postponed for four weeks after the ischemic stroke.

**Conclusion:** This case emphasizes the importance of comprehensive evaluation and management of stroke patients, particularly in those with significant cardiovascular comorbidities. Early diagnosis and appropriate interventions can improve outcomes, but careful risk-benefit analysis is crucial when navigating the challenges of coexisting conditions.

**Keywords:** Aortic Valve Stenosis; Atrial Fibrillation; Cardiovascular Diseases; Stroke; Thrombectomy

# CR96

## Balancing high ischemic and bleeding risks: recurrent intracerebral hemorrhage, LAAC, and antithrombotic therapy

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**Introduction:** Percutaneous left atrial appendage closure (LAAC) is a procedure involving the implantation of a closure device in the left atrial appendage (LAA), the main site for thrombus formation. Its primary objective, as per guidelines, is to prevent ischemic stroke in patients with atrial fibrillation (AF) who have a high stroke and/or major bleeding risk due to contraindications for oral anticoagulant (OAC) therapy or due to recurrent ischemic stroke while on OAC. This case report aims to highlight the challenges of determining appropriate treatment for patients at high risk of both bleeding and ischemic events.

**Case report:** We present a case of a 74-year-old woman with persistent AF, ischemic cardiomyopathy, hypertension, hyperlipidemia, and cerebral amyloid angiopathy. In December 2023, the patient suffered an intracerebral hemorrhage (ICH) while receiving edoxaban 60 mg for AF. OAC was discontinued, low-molecular-weight heparin (LMWH) was initiated, and LAAC was recommended. Following a non-ST-elevation myocardial infarction in September 2024, the patient underwent a complex percutaneous coronary intervention for multivessel disease (five drug-eluting stents, 8,5 cm in length, were implanted). In October 2024, LAAC was successfully performed, and dual antiplatelet therapy (clopidogrel 75 mg, aspirin 100 mg) with LMWH was prescribed. 45 days later, transesophageal echocardiography showed no device-related thrombosis or significant peri-device leak, and LMWH was discontinued. After three days, despite the antithrombotic therapy de-escalation, the patient had suffered another ICH. Clopidogrel was discontinued, and aspirin was reduced to 75 mg as a destination therapy.

**Conclusion:** In cases with prohibitive bleeding risk, all antithrombotic therapy can be discontinued after the LAAC. However, in patients with high ischemic risk due to other significant comorbidities, the choice of treatment must be assessed individually.

**Keywords:** Atrial Fibrillation; Factor Xa Inhibitors; Left Atrial Appendage Closure

# CR97

## Prophylactic Mastectomy in Recurrent Benign Phyllodes Tumors: A Case Study

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**Introduction:** Phyllodes tumors (PT) are rare fibroepithelial breast tumors consisting of epithelial and stromal components that may progress to malignancy. They are categorized as either benign, borderline or malignant. Most behave benignly, with cases of local recurrences. PTs are treated by surgical excision but when conservative measures prove ineffective, prophylactic mastectomy becomes a consideration.

**Case report:** A 40-year-old female patient initially presented with a palpable lump in her left breast lower quadrants. Suspicious cytopuncture results led to surgical extirpation and the tumor was confirmed to be a PT, most likely benign with borderline features. Recurrent PT occurred multiple times at the same site. These recurrent tumors posed a clinical challenge due to their persistence and recurrence potential. Other breast and axillary lymph nodes remained normal in findings. Given the recurrent nature of the tumors and the managing challenges, a multidisciplinary team recommended prophylactic subcutaneous mastectomy with skin and nipple-areola complex preservation. The procedure was successful and postoperative recovery proceeded uneventfully. The patient remained tumor-free during subsequent follow-up appointments.

**Conclusion:** Recurrent benign PT in the breast can present a complex management dilemma. In this case, the patient's persistent recurrences despite repeated excisions prompted the decision to perform subcutaneous mastectomy and reconstruction. This case shows the importance of individualized treatment strategies and the role of prophylactic mastectomy in select cases to achieve long-term relief and prevent further recurrences. The successful outcome in this case demonstrates the potential benefits of a proactive surgical approach in managing recurrent benign PT in the breast.

**Keywords:** Mastectomy; Neoplasms; Phyllodes Tumor

# CR98

## The Surprising Diagnosis of Primary Serous Peritoneal Tumor: A Clinical Dilemma in a Young Patient

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**Introduction:** Primary peritoneal serous borderline tumor (PPSBT) is a rare peritoneal entity that mimics reactive lesions and ovarian neoplasms, posing a diagnostic challenge. In this case, it was an incidental finding during laparoscopic surgery for an unrelated indication, a scenario often seen in similar procedures.

**Case report:** A 25-year-old female patient underwent a routine gynecological examination, during which a paraovarian cyst was suspected based on ultrasound findings. Her chronic therapy included oral hormonal contraception due to suspected polycystic ovary syndrome. Her family history included ovarian cancer, and because of this her gynecologist had a tumor marker panel done. Tumor markers CA 19-9, CA 125, CA 72-4, and CEA were within normal limits. Gynecological examination revealed a mobile mass adjacent to the uterus on the left side. A transvaginal ultrasound was performed, identifying a solid-cystic mass in the same location. Given family history and ultrasound findings, laparoscopic surgery was indicated. The procedure included excision of the abdominal tumor and adhesiolysis. A sample was then sent for histopathological analysis, which confirmed a serous papillary cystadenofibroma. Following surgery, the patient was scheduled for reoperation soon.

**Conclusion:** Although rare, this type of tumor should not be overlooked during routine examinations. Early suspicion and timely intervention are crucial for proper diagnosis and management. In this case, prompt surgical treatment allowed for accurate histopathological confirmation and appropriate follow-up planning, highlighting the importance of vigilance in similar clinical scenarios.

**Keywords**: Cysts;Carcinoma,AcinarCell;Laparoscopy

# CR99

## Hiatal Hernia Complicated by Gastric Volvulus in a Patient with Multiple Cardiological Comorbidities

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**Introduction:** Hiatal hernia is a common condition, particularly among the elderly. It can lead to severe complications such as gastric volvulus, as observed in a 75-year-old patient with multiple cardiological diseases. This case report aims to demonstrate how a timely and cooperative approach to such an emergency can result in a favorable outcome.

**Case report:** Patient with a history of chronic kidney disease, hypertension, persistent atrial fibrillation, ventricular septal defect, severe aortic stenosis, and chronic heart failure presented to the emergency department with nausea, vomiting, dull epigastric pain, and weight loss. Abdominal computed tomography revealed a hiatal hernia with the stomach and duodenal bulb displaced into the thoracic cavity. A smaller portion of the stomach remained in the abdomen, rotated around the transverse axis, indicating volvulus. The patient underwent an urgent median laparotomy, during which the stomach and duodenum were freed from the hernia sac, followed by Nissen fundoplication and closure of the diaphragmatic defect. During the postoperative period, the patient developed chest pain with elevated troponin levels and bilateral pleural effusions. These complications were assessed and successfully addressed by a team of doctors. The patient recovered and was discharged with recommendations for continued follow-up.

**Conclusion:** To conclude, this case shows the importance of prompt, accurate diagnosis of volvulus, especially in patients with additional comorbidities. An interdisciplinary approach, including intensive perioperative care, surgery, and management of complications, is essential for a good patient outcome.

**Keywords:** Heart Failure; Hernia, Hiatal; Laparotomy; Perioperative care; Stomach Volvulus

# CR100

## A Needle in a Haystack: The Diagnostic Dilemma of Pulmonary Artery Angiosarcoma

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**Introduction:** Angiosarcoma is an aggressive type of cancer characterized by abnormal growth of endothelium. It most commonly occurs in the skin, soft connective tissue, spleen, liver, or breast, but in this case, it developed in a pulmonary artery.

**Case report:** A 63-year-old woman was admitted to the cardiological department at Clinical Hospital Center Zagreb under suspicion of pulmonary artery embolism. She reported difficulty breathing, dull left hemithorax pain and a bothersome dry cough, along with a poor appetite and a 10 kg weight loss. Computed tomography (CT) angiography, positron emission tomography-CT (PET-CT), and cardiac magnetic resonance imaging (MRI) showed a mass in the main and left pulmonary arteries raising suspicion of angiosarcoma. Afterwards, the patient underwent bronchoscopy with transbronchial biopsy, which confirmed the presence of mesenchymal-origin cells, confirmative of angiosarcoma. Tumor resection margins were assessed based on PET-CT and MRI findings and subsequently the patient underwent surgery during which the main and left pulmonary arteries with the pulmonary valve were resected and replaced with a homograft and a left-sided pneumonectomy was done. Following recovery, adjuvant chemotherapy according to the gemcitabine–docetaxel protocol was initiated. After the first dose of chemotherapy was administered, the patient developed febrile neutropenia and was hospitalized. Unfortunately, the patient declined any further treatment and passed away due to disease progression.

**Conclusion:** Pulmonary artery angiosarcoma is extremely rare and its symptoms, if any, are common to many other conditions making it a needle in a haystack to even consider such a diagnosis. However, cases such as this one serve as a reminder not to disregard potential diagnoses on account of their rarity.

**Keywords:** Chemotherapy, Adjuvant; Febrile Neutropenia; Hemangiosarcoma; Mesenchymal Stem Cells; Vascular Neoplasms

# CR101

## Prolonged waves, profound impact: a case report on Ion Channel Diseases of the Heart

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**Introduction:** With an incidence of 2 in 2000 people, the long QTc interval syndrome is a significant cause of sudden cardiac death in young individuals. Although discovering this disorder is challenging, timely detection and treatment can ensure a normal life for the patient.

**Case report:** We present the case of a boy who was born 10 days premature due to “weak heart rate”. At the age of two, after an emotional distress he lost consciousness. At 3.5 years old, while playing, he experienced similar symptoms. He was taken to the hospital, where he was examined by a neurologist. A normal electroencephalogram (EEG) was recorded and the diagnosis of occasional affective seizures was made. No therapy was introduced. Over the next three years, the boy had eight seizures. His EEG and magnetic resonance imaging were both normal. An electrocardiogram (ECG) was performed for the first time, revealing a prolonged QTc interval of 550 ms, despite a structurally healthy heart. ECGs were also done on other family members, and a prolonged QTc interval was detected in his mother, though she had never experienced any symptoms. Treatment with propranolol was started, and for the next 3 years he did not experience any symptoms. Along with pharmacotherapy, an implantable cardioverter-defibrillator was placed. Recently, a genetic testing was performed, and a mutation in the *KCNQ1* gene was identified. The same mutation was found in his mother.

**Conclusion:** Early detection of inherited channelopathies is crucial. The long QTc interval syndrome can be identified on the ECG and while genetic testing has enabled us to monitor inheritance patterns the first step remains a thorough medical history, physical examination, and cardiac diagnostics.

**Keywords:** Channelopathies, Long QT Syndrome; Propranolol

# CR102

## Catheter thrombosis during routine coronary artery angiography

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**Introduction:** Coronary artery disease is a leading cause of morbidity and mortality in the 21st century with many methods being developed to diagnose and treat illness. Minimally invasive methods using catheters such as coronary angiography and percutaneous coronary intervention (PCI) are important diagnostic and treatment tools. Still, these methods pose a risk for the patient. This case presents a patient with acute-onset catheter thrombosis during elective invasive coronary assessment.

**Case report:** The patient has a history of coronary artery disease with multiple previous myocardial infarctions and coronary stenting. Heart failure with mildly reduced ejection fraction (HFmrEF) is present. Echocardiogram shows hypokinesia in the inferior and lateral walls with mild mitral regurgitation. Other comorbidities include hypertension and chronic kidney disease. Current treatment includes beta-blockers, ACE inhibitors, diuretics, double antiplatelet therapy, statins, and symptom-relieving medications. Coronary artery angiography was performed 1.12.2023 with fractional flow reserve and constant resistance ratio (FFR-cRR) to evaluate the need for PCI of left anterior descending artery (LAD). Heparin dose was 10 IU/kg. Due to the prolonged duration of the procedure, catheter thrombosis developed followed by hemodynamic instability. Because of the occlusion of LAD and circumflex (Cx) coronary arteries, the vascular approach was changed, and new catheter was used to approach the occluded arteries. After unsuccessful aspiration, the thrombi were removed with multiple dilations followed by placement of two drug eluding stents and infusion of eptifibatide. Postprocedural recovery was adequate.

**Conclusion:** This case highlights the importance of adequate monitoring during catheter procedures, because of their thrombogenic properties. During such complications change of catheters, aspiration, mechanical removal of thrombi with stent placement is key to successful procedure outcome.

**Keywords:** Coronary Angiography; Drug-Eluting Stents; Fractional Flow Reserve, Myocardial

# CR103

## Innovative approach to severe mitral regurgitation: a case of successful transcatheter mitral valve replacement (TMVR)

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**Introduction:** The mitral valve complex is dynamic anatomofunctional structure, and mitral valve regurgitation is condition where treatment may involve pharmacological management, surgery, or percutaneous intervention. In general, a repair approach is more favourable if possible, and replacement is more common as surgical technique but new percutaneous interventions are emerging.

**Case report:** A 76-year-old female was admitted for a cardiological reevaluation of severe mitral regurgitation. On physical examination, a systolic murmur (III/VI) was heard over the apex. Transthoracic and transesophageal echocardiography showed a mildly dilated and eccentrically hypertrophied left ventricle with preserved ejection fraction (65%). The mitral valve was sclerotic, and the posterior leaflet was dominantly degenerative calcified, resulting in severe mitral regurgitation. The multidisciplinary team reviewed the indications for valve replacement, and, considering the high surgical risk, a percutaneous approach was selected. A transapical implantation of a Tendyne LP 35 M biological mitral valve was performed under transesophageal echocardiographic and fluoroscopic guidance. Post-procedure, the patient was monitored with serial echocardiograms, which consistently demonstrated a well expanded implanted valve without any signs of paravalvular leak. The patient was started on warfarin therapy with regular International Normalized Ratio monitoring. The patient recovered successfully and remained without signs of heart failure.

**Conclusion:** TMVR is an evolving field that holds significant promise for improving the management of mitral regurgitation in the future, with the potential to enhance clinical outcomes. Echocardiography plays a crucial role in the process, contributing to improved procedural success and patient monitoring.

**Keywords:** Echocardiography; Heart Valve Prosthesis Implantation; Mitral Valve Insufficiency

# CR104

## A Coronary Conundrum: Incomplete Kawasaki Disease in a 4-Month-Old Infant

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**Introduction:** Incomplete Kawasaki disease (IKD) is an acute vasculitis affecting medium-sized arteries, primarily in children under five. IKD often presents with prolonged fever and some, but not all, of the classic features of Kawasaki disease, including rash, conjunctivitis, oral changes, limb swelling, and lymphadenopathy. If unrecognized and untreated, IKD can lead to coronary artery aneurysms, myocardial infarction, and sudden death.

**Case report:** A 4-month-old male was admitted to Children's Hospital Zagreb with respiratory symptoms, diarrhea and 4-day fever. He was initially treated with ceftriaxone for suspected bacterial infection following acute bronchiolitis and gastroenterocolitis caused by Norovirus and Astrovirus and was discharged upon improvement. However, he was readmitted a week later due to prolonged fever and elevated inflammatory markers, prompting further diagnostic workup. During this second hospitalisation, Rhinovirus was isolated. Physical examination revealed a mild conjunctival injection, red lips and a fine pinpoint rash in the diaper area. Echocardiography showed coronary artery dilations of both coronaries, primarily right, with the formation of an aneurysm up to 4 mm (Z-score 8.4) with preserved left ventricular function, leading to the diagnosis of IKD with cardiac involvement. The infections were likely a trigger for KD in this patient. He was treated with intravenous immunoglobulins and high-dose acetylsalicylic acid during the acute phase, transitioning to low-dose aspirin to prevent coronary thrombosis. Follow-up revealed a regression of aneurysm size. The patient remained asymptomatic on low-dose aspirin.

**Conclusion:** This case highlights the importance of early recognition and treatment of IKD to prevent severe cardiac complications. Long-term follow-up is essential to manage potential complications.

**Keywords:** Coronary Aneurysm; Infant; Mucocutaneous Lymph Node Syndrome

# CR105

## Transthyretin Amyloidosis: Early Diagnosis, Treatment, and the Importance of Routine Cardiological Follow-ups

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**Introduction:** Transthyretin amyloidosis is a rare, progressive disorder caused by the misfolding of transthyretin, *TTR* protein, leading to amyloid fibril deposition in various tissues and organs. There are two forms of *ATTR*: hereditary which is caused by mutations in the *TTR* gene, inherited in an autosomal dominant pattern, and wild-type which is associated with aging. Clinical manifestations can vary widely, including peripheral neuropathy, autonomic dysfunction, restrictive cardiomyopathy, and carpal tunnel syndrome. Disease progression can result in serious complications across multiple organ systems.

**Case report:** A 45-year-old male with *TTR* gene mutation, *c.1674T>A*, *p.Asp38Glu*, confirmed in 2020, presented for cardiology evaluation. His family history included *TTR* amyloidosis and cardiovascular disease, with several relatives succumbing to cardiac conditions. His medical history included arterial hypertension, hypertriglyceridemia, and hyperuricemia. He was also experiencing chronic pain, and tingling in his hands and feet, with bilateral carpal tunnel syndrome. The patient was clinically stable with New York Heart Association functional class I-II and no episodes of acute heart failure. Echocardiography revealed left ventricular hypertrophy with preserved systolic function with an ejection fraction of 60%, diastolic dysfunction, and reduced global longitudinal strain of -9.7%. Cardiac magnetic resonance imaging showed concentric left ventricular hypertrophy, severely increased myocardial extracellular volume, and global patchy late gadolinium enhancement. These findings, together with a positive 99mTc pyrophosphate scintigraphy confirmed cardiac amyloidosis. Laboratory results showed mildly elevated N-terminal prohormone of brain natriuretic peptide level of 600 ng/L. The vutrisiran therapy was initiated, which was later replaced by tafamidis. Additionally, chronic heart failure therapy with regular cardiology follow-ups was advised.

**Conclusion:** Early diagnosis, ongoing treatment, and routine follow-up cardiology examinations are crucial for preserving stability, slowing progression, and mitigating complications of transthyretin amyloidosis.

**Keywords:** Amyloidosis, Hereditary, Transthyretin-Related; Echocardiography; Heart Failure; Magnetic Resonance Imaging; tafamidis

# CR106

## Simultaneous Atherosclerosis and Venous Thrombosis in a Young Patient: A Rare Clinical Presentation and Familial Hypercholesterolemia Insights

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**Introduction:** Atherosclerosis, characterized by plaque accumulation in arterial walls, is prevalent among older adults, with carotid arteries being a primary site for plaque development. Conversely, coagulation disorders can lead to thrombosis, most commonly observed in deep vein thrombosis, while thrombosis in the upper extremities is exceedingly rare. This case report describes a 20-year-old male patient exhibiting both conditions concurrently.

**Case report:** The patient presented to the emergency department with cold sensations in his right hand and shivering in the forearm. Although appearing healthy, a notable absence of pulsation in the right forearm was identified during examination. The patient's medical history revealed a childhood trauma to the right upper arm, resulting in the use of a saphenous vein graft to restore blood flow after injury to the brachial artery. Initial concerns of thrombus formation within the graft were substantiated by color Doppler imaging, which confirmed thrombosis. Additionally, significant atherosclerotic plaques were detected both proximally and distally to the graft site. Laboratory analyses indicated elevated D-dimer levels and an low-density lipoprotein (LDL) cholesterol level of 6.9 mmol/L, while total cholesterol levels remained within normal limits.

**Conclusion:** This case underscores the atypical coexistence of atherosclerosis and venous thrombosis in a young patient, potentially linked to familial hypercholesterolemia, as suggested by a lipid profile indicating a significant risk. The interplay of reduced blood flow and the presence of atherosclerotic plaques within the graft necessitates further investigation into the patient's familial predispositions.

**Keywords:** Atherosclerosis; Cholesterol; Thrombosis

# CR107

## Cardiac amyloidosis secondary to multiple myeloma

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**Introduction:** Cardiac amyloidosis is a heart disease caused by the deposition of β-pleated amyloid proteins in heart tissue. Amyloid light chain (AL) amyloidosis can be secondary to multiple myeloma and may lead to restrictive cardiomyopathy and terminal heart failure. In cases of terminal heart failure, heart transplantation is the recommended treatment.

**Case report:** A 50-year-old male was admitted for cardiological evaluation due to progressive dyspnea and bilateral lower extremity edema over the past two years. His B-type natriuretic peptide was significantly elevated (3500 ng/L). Echocardiography revealed restrictive cardiomyopathy with preserved left ventricular systolic function and signs of amyloidosis, which were further confirmed by magnetic resonance imaging. Additional diagnostics confirmed light-chain multiple myeloma. Multiple myeloma was managed with chemotherapy (cyclophosphamide, bortezomib, dexamethasone protocol) and autologous stem cell transplantation, followed by maintenance therapy with bortezomib. During maintenance therapy, the patient developed progression of heart failure symptoms. Right heart catheterization revealed a severely reduced cardiac index (1.3 L/min/m²). After thorough evaluation, it was concluded that the patient was a candidate for heart transplantation. Therefore, six years after autologous stem cell transplantation, heart transplantation was performed. The patient is currently well, without complications, and in remission.

**Conclusion:** Cardiac amyloidosis, as a potential complication of multiple myeloma, can lead to severe cardiac dysfunction and heart failure if left untreated. Proactive identification and management of cardiac amyloidosis in this population can prevent disease progression and ultimately improve survival rates. In advanced cases of cardiac amyloidosis where standard therapies fail, heart transplantation may be a life-saving option. Regular cardiac screening and multidisciplinary care for multiple myeloma patients are crucial for optimizing outcomes in this high-risk population.

**Keywords:** Amyloidosis; Heart Transplantation; Multiple Myeloma

# CR108

## Unseen danger: cardiac arrest caused by interarterial left coronary artery anomaly in a young woman

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**Introduction:** An interarterial course of the left coronary artery occurs when it originates from the right coronary sinus and passes between the aorta and pulmonary artery. This condition is considered "malignant" due to the higher risk of myocardial ischemia or sudden cardiac death, especially during intense exercise in young adults.

**Case report:** An 18-year-old female was admitted to the hospital following an out-of-hospital cardiac arrest. Previously healthy and active in sports, she had a history of childhood chest pain and recent presyncope, which led to cardiological evaluations that found no underlying issues. On the day of admission, while running, she experienced cardiac arrest. Resuscitation was initiated promptly, and upon arrival of emergency services, her initial rhythm was ventricular fibrillation, which was successfully corrected with defibrillation. In the Coronary Care Unit, the patient was sedated and intubated. Therapeutic hypothermia was applied, and two days later, she was extubated. Echocardiography showed normal left and right ventricular function and no valvular disease. These findings without signs of myocardial injury were confirmed by cardiac magnetic resonance imaging. However, coronary computed tomography angiography revealed an anomalous left main coronary artery originating from the right coronary sinus, with an interarterial course between the ascending aorta and main pulmonary artery, which explained the cardiac arrest. The patient was transferred to the Clinic for Cardiac Surgery where the unroofing of the left main coronary artery was performed. Post-operatively, she was doing well.

**Conclusion:** This case highlights the life-threatening risks associated with an interarterial course of the left coronary artery, which can lead to sudden cardiac arrest, particularly during physical activity. Early recognition and prompt intervention, including surgical correction, are crucial in preventing further life-threatening events.

**Keywords:** Coronary Vessel Anomalies; Myocardial Ischemia; Out-of-Hospital Cardiac Arrest

# CR109

## Genicular artery embolization for the treatment of knee osteoarthritis

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**Introduction:** Knee osteoarthritis (KOA) is a progressive inflammatory musculoskeletal disease with an estimated global prevalence of 16%. It develops due to repeated mechanical damage and subsequent chronic inflammation that results in sensory neoinnervation and angiogenesis. Symptoms include stiffness, decreased range of motion and muscle weakness, with pain being the main factor impacting quality of life and driving individuals to seek medical care. Recently, a minimally invasive intra-arterial procedure known as transcatheter genicular artery embolization (GAE) has shown promise.

**Case report:** A 75-year-old male presents with a history of knee pain caused by osteoarthritis. Magnetic resonance imaging of patient's left knee revealed characteristic findings of Kellgren and Lawrence grade IV KOA including significant degradation of articular hyaline cartilage, multiple osteophytes and synovial hypertrophy. Following the lack of improvement with conservative treatments, such as physical therapy and pain medications, a total knee arthroplasty was recommended. Due to the patient's reluctance to undergo surgery, GAE was offered as an alternative treatment. During the procedure, an angiographic catheter was advanced to the left superficial femoral artery to identify the appropriate genicular branches supplying the regions of hyperemia. A microcatheter was then advanced into the target genicular arteries to deliver embolization microspheres. Six months later patient reported improved mobility and pain relief.

**Conclusion:** The pain caused by knee osteoarthritis can be debilitating and is becoming more prevalent in aging population. When conservative treatment fails, patients often require total knee arthroplasty to alleviate pain and regain knee function. GAE is a minimally invasive alternative that postpones the need for arthroplasty in patients who are either ineligible for or unwilling to undergo surgical treatment.

**Keywords:** Inflammation; Interventional radiology; Knee Osteoarthritis; Therapeutic embolization

# CR110

## Post-Traumatic Diaphragmatic Rupture with Intrathoracic Herniation: A Case Report

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**Introduction:** Diaphragmatic rupture is a rare but serious consequence of blunt thoracoabdominal trauma. It often remains undiagnosed initially due to its subtle clinical presentation. Early detection and surgical intervention are crucial to prevent life-threatening complications. This case report describes a patient who sustained a left-sided diaphragmatic rupture with intrathoracic herniation following a motor vehicle accident.

**Case report:** A 35-year-old female presented to our emergency department as an accompanying person to an injured child after a motor vehicle collision. She was a restrained front-seat passenger and had been evaluated at the emergency department. Initially, she presented as stable, with no pain. The next day, she complained of pain in the left chest, left upper quadrant, left hip, and coccyx. On examination, she was hemodynamically stable, fully conscious, and oriented. There was localized tenderness over the lower left ribs, a 7×4 cm hematoma on the left hip, and multiple contusions on the left upper limb. Respiratory examination revealed pain in deep inspiration but no significant distress. A contrast-enhanced computed tomography scan of the thorax, abdomen, and pelvis revealed a 7×7 cm defect in the left hemidiaphragm with intrathoracic herniation of the stomach, splenic flexure of the colon, part of the pancreatic tail, and cranially displaced spleen, consistent with post-traumatic diaphragmatic rupture. The patient was transferred to the surgical department for urgent operative repair.

**Conclusion:** This case highlights the importance of considering diaphragmatic rupture in patients with blunt abdominal trauma. Prompt imaging and surgical intervention are essential to prevent severe complications such as respiratory distress and bowel strangulation.

**Keywords:** Acute Care Surgery; Diaphragm; Rupture

# CR111

## Extracorporeal carbon dioxide removal (ECCO2R) in the treatment of acute exacerbation of COPD

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**Introduction**: Extracorporeal carbon dioxide removal (ECCO2R) is an advanced method that increasingly finds its place in intensive care units and is based on the removal of excess carbon dioxide (CO2) from the blood via extracorporeal circuits. The aim of this case is to present this technology as a better treatment alternative that allows less use of mechanical ventilation in acute respiratory insufficiency.

**Case report:** We present the case of a 68-year-old man with long-standing chronic obstructive pulmonary disease (COPD). After being treated in the emergency department for an acute exacerbation of COPD and pneumonia (which triggered the exacerbation), his respiratory function deteriorated, prompting the initiation of non-invasive mechanical ventilation in the intensive care unit in addition to other chronic therapy. Despite this, hypercapnia and respiratory acidosis developed, leading to endotracheal intubation and mechanical ventilation. After several attempts to discontinue mechanical ventilation, extracorporeal carbon dioxide removal was indicated. The patient's sedation was slowly reduced, after which he was extubated after spontaneous breathing. In the continuation of the treatment, oxygen therapy is administered at 2-4 L/min. Following the treatment measures, the patient's clinical condition improved with normalized inflammatory parameters and stable arterial blood gas analysis values. After nine days, the patient was discharged for home treatment.

**Conclusion:** In our case, this treatment method showed promise for controlling COPD exacerbations and stabilizing hypercapnia accompanied by respiratory acidosis. Although it is still an under-researched area, the ECCO2R treatment shows potential for remarkable success, but further research is needed to better understand and routinely implement ECCO2R as an advanced life support model.

**Keywords:** Extracorporeal Membrane Oxygenation; Pulmonary Disease, Chronic Obstructive; Symptom Flare Up

# CR112

## Granulomatosis with polyangiitis featuring digital necrosis

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**Introduction:** Granulomatosis with polyangiitis (GPA) is a rare clinicopathological entity characterized by anti-neutrophil cytoplasmic antibody-positive (ANCA-positive) vasculitis of small blood vessels. The disease is characterized by necrotizing vasculitis and granulomatous inflammation. The respiratory system and kidneys are most affected. Involvement of the muscular arteries is a rare case presented in this paper.

**Case report:** A 60-year-old patient is presented with ischemic changes of the multiple fingers and toes, as well as respiratory symptoms. A physical examination revealed cyanosis and necrosis of the left first and second toes, right first toe, and left fifth fingertip. A Color Doppler of the limb arteries was performed, showing a normal result. Subsequently, the amputation of the second toe of the left foot and the tip of the first left toe was performed. Due to obstructive respiratory symptoms, therapy with inhaled corticosteroids, long-acting beta agonists, and long-acting muscarinic antagonists was initiated. Following this, multi-slice computed tomography revealed multiple bilateral pulmonary infiltrates. A bronchoscopy was performed, resulting in negative cytological findings for malignant disease and microbiologically negative samples. A transthoracic puncture revealed samples extensively infiltrated with necrotic tissue and a predominant neutrophil inflammatory infiltrate. Immunological testing was positive for antinuclear antibodies, anti-cytoplasmic antibodies, cytoplasmic (c-ANCA), rheumatoid factor, and monoclonal IgG lambda. Among these, the presence of c-ANCA was particularly important, as it is strongly associated with GPA. Further evaluation confirmed the diagnosis of GPA.
**Conclusion:** GPA typically presents with pulmonary and renal involvement. Vasculitis affecting the small arteries of the limbs is a rare manifestation, highlighting the atypical nature of this case. This paper underscores the importance of immunological testing that led to diagnosis.

**Keywords:** Amputation, Surgical; Granulomatosis with Polyangiitis; Necrosis; Vasculitis

# CR113

## Primary ciliary dyskinesia: a case report

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**Introduction:** Primary ciliary dyskinesia (PCD) is a rare autosomal recessive ciliopathy affecting approximately 1 in 20,000 people. It is characterized by immotility or abnormal motility of cilia, which results in chronic oto-sino-pulmonary disease. Additionally, it may cause fertility issues and situs inversus, due to embryonic nodal cilia affectation.

**Case report:** A 54-year-old man was referred to the Otorhinolaryngology Department with suspected PCD. He had a history of severe neonatal distress, chronic cough, recurrent sinusitis, rhinorrhea and one complicated pneumonia. Hypoacusia and situs inversus were also noted in his clinical history. Additionally, the patient suffered from infertility due to immotile sperm but had three children via in-vitro fertilization. Sweat tests and allergy tests were negative, thereby ruling out cystic fibrosis. Thoracic CT revealed peribronchial thickening, bronchiectasis, mucous plugs, and air trapping. A nasal biopsy of the middle turbinate revealed ciliary abnormalities and the presence of Pseudomonas aeruginosa. Electron microscopy revealed microtubule disorganization and absent dynein inner arms in some cells, with the majority of ciliary cells showing slow, uncoordinated movement. Genetic testing revealed a homozygous mutation in the CCDC39 gene, confirming the diagnosis of PCD and Kartagener's syndrome. The therapy of choice was inhaled colistin, which targets the Pseudomonas infection, and respiratory physiotherapy.

**Conclusion:** This case report emphasizes the importance of taking PCD into consideration with patients with chronic rhinosinusitis, hypoacusia and situs inversus, as it is a life-long disease significantly affecting patients' daily lives. Appropriate, tailored therapy is of grave importance to such patients, preventing complications like bronchiectasis and improving long-term outcome.

**Keywords:** Ciliary Motility Disorders; Ciliopathies; Kartagener Syndrome; Otorhinolaryngologic Diseases

# CR114

## Familial hypercholesterolemia + Metabolic syndrome = Early significant asymptomatic multi-vascular atherosclerotic disease

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**Introduction:** Familial hypercholesterolemia (FH) is an inherited cardiometabolic disorder with limited therapeutic options. When accompanied by metabolic syndrome, it can result in asymptomatic, yet life-threatening atherosclerotic changes in multiple arteries.

**Case report**: A 60-year-old obese female patient with a long-standing history of poorly controlled hypertension, diabetes mellitus type 2 and dyslipidemia presented with dyspnea, unregulated blood pressure levels and non-specific discomfort on the left side of the chest that appears unrelated to physical activity. Her estimated cardiovascular risk was very high. Therefore, her therapy needed to be changed - nebivolol, perindopril/indapamide/amlodipine and moxonidine were introduced, in addition to her previous metformin she was given a sodium-glucose co-transporter 2 inhibitor and a glucagon-like peptide-1 receptor agonist, and to the highest dose of atorvastatin esetimibe was added. At the next check-up 7 months later, total cholesterol was 9.0 mmol/L and low-density lipoprotein was 6.7 mmol/L, so the Dutch Lipid Clinic Network Score was calculated to be greater than 8, confirming FH. A carotid doppler ultrasound showed significant stenosis of 80% of the right internal carotid artery, while coronarography revealed multivessel coronary disease. Due to all findings, the patient was a candidate for inclisiran therapy, as well as coronary artery bypass graft surgery which was performed shortly after. A 1.5 year after the surgery, the patient feels great, she has lost 25 kg of body weight, and all risk factors are under control, including her lipid profile.

**Conclusion:** This case highlights the importance of early diagnosis, comprehensive lipid-lowering strategies, and novel therapies such as inclisiran. In this patient, the combination of advanced pharmacological interventions and surgical management led to significant improvement.

**Keywords**: Coronary Artery Disease; Dyslipidemias; Metabolic Syndrome

# CR115

## Melanonychia striata – from constitutional nail pigmentation to melanoma

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**Introduction:** Melanonychia appears as a brownish-black discoloration of the nail plate and is a common cause of nail pigmentation. The aim of this case report is to emphasize the importance of early and systematic evaluation of melanonychia due to its potentially malignant etiology.

**Case report:** A sixteen-year-old girl presented with longitudinal pigmented band extending from the matrix up to the distal part of the nail plate of her left index finger. She was diagnosed with longitudinal melanonychia, also known as melanonychia striata, which is the most common morphological pattern of this condition. The patient was regularly examined using digital dermatoscopy. Histopathological analysis was soon required due to a visible change in size and color. A biopsy of the nail matrix was performed in a bloodless field. In the basal parts of the matrix epithelium, small nests of melanocytes showed a positive immunohistochemical reaction to Melan-A, while the reaction to PRAME (preferentially expressed antigen in melanoma) was negative. It was likely a benign melanocytic lesion. Excision was performed due to an increase in size of the pigmentation. The melanocytes of the new sample showed a positive immunohistochemical reaction to HMB-45 (Human Melanoma Black, a monoclonal antibody), as well as to Melan-A, and a negative reaction to PRAME. There were no signs of atypia or mitotic activity. The histopathological analysis suggested a junctional melanocytic nevus. The patient was scheduled for a follow-up examination.

**Conclusion:** Pathogenesis of melanonychia involves melanocytic activation due to various causes, such as infection, trauma and inflammation, or melanocyte proliferation, which can be either benign or malignant. Early diagnosis of nail unit melanoma is crucial due to its aggressive nature.

**Keywords:** Melanocytes; Melanoma; Nevus

# CR116

## Wild-Type cardiac transthyretin amyloidosis (ATTRwt): a case report

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**Introduction:** Wild-type transthyretin amyloidosis (ATTRwt) is a progressive condition leading to cardiomyopathy and heart failure. It's caused by aggregation of native transthyretin protein prone to misfolding due to one's age. Misfolded proteins – amyloids, deposit mainly in the heart.

**Case report:** We present a case of an 85-year-old patient who was presented with tiredness and exertional dyspnea, who was earlier diagnosed with moderate aortic stenosis and chronic kidney disease, and suffered from arterial hypertension, hypercholesterolemia and prediabetes, with significant family history of cardiac disease. New symptoms required further diagnostics. The electrocardiogram showed first degree atrioventricular block, microvoltages, persistent S wave in V5-6, negative T wave in lead III. Cardiac ultrasonography found left ventricle hypertrophy, reduced global longitudinal strain with apical sparing and preserved ejection fraction. Heart scintigraphy was positive for amyloidosis, with cardiac uptake correlating with Perugini Score 3 – which means that the cardiac muscle uptakes significantly more radioisotope than the surrounding ribcage. Interestingly, laboratory blood tests found monoclonal gammopathy of undetermined significance, commonly connected to light-chain amyloidosis. Definitive diagnosis of transthyretin amyloidosis was made after myocardial biopsy, and hereditary etiology was excluded by gene testing. Eventually, the patient started the treatment with the currently best option – tafamidis, a protein-tetramer stabilizator drug.

**Conclusion:** This case highlights how early recognition is crucial, as distinguishing ATTRwt from other types, like light chain amyloidosis, follows appropriate therapy. Treatment with tafamidis, though effective, is limited by high cost, prompting the exploration of emerging alternatives based on amyloid production blockade mechanism.

**Keywords:** Amyloidosis; Biopsy; Tafamidis

# CR117

## Heterotaxy Syndrome: A Case Report

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**Introduction:** Heterotaxy is a rare condition characterized by abnormal thoraco-abdominal organ arrangement along the left-right axis of the body. Children with this disorder may exhibit multiple organ manifestations, the most common of which is complex cardiovascular malformation. Additional complications can include impaired splenic function, intestinal rotational abnormalities, and biliary atresia. This case report presents the diagnostic and management challenges associated with a newborn diagnosed with this complex disorder.

**Case report:** We present a term male newborn diagnosed with heterotaxy via perinatal ultrasound. The family history was unremarkable, and the pregnancy proceeded without complications. Upon physical examination, the newborn exhibited signs of central cyanosis and was administered a prostaglandin analog. Cardiac ultrasound revealed dextrocardia with L-looped transposition of the great arteries, a right aortic arch, a dysplastic pulmonary valve with subpulmonic stenosis, which prompted the administration of propranolol. Other findings included a double outlet left ventricle, supracardiac total anomalous pulmonary venous return (TAPVR), isomerism of the right atrial appendage, a complete atrioventricular canal with mitral valve atresia, and bilateral superior vena cava. Abdominal ultrasound indicated asplenia, necessitating vaccination against encapsulated bacteria and daily amoxicillin therapy. At four months of age, the patient underwent a bidirectional Glenn procedure and correction of TAPVR. The surgery was successful, and the parents received guidelines for care, especially regarding the importance of recognizing signs of infection and maintaining good hygiene to mitigate risks associated with asplenia**.**

**Conclusion:** This case highlights the complexities of heterotaxy and underscores the importance of coordination among various medical specialties, as well as the proper education of patient caregivers, which is crucial for enhancing the patient's quality of life.

**Keywords:** Heart Defects; Congenital; Heterotaxy Syndrome; Infant, Newborn

# CR118

## When Later Becomes Too Late: Inoperable Atrial Septal Defect

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**Introduction:** Inferior sinus venosus atrial septal defect (SVASD) is a rare congenital heart defect located in the inferior portion of the atrial septum, leading to an overriding inferior vena cava (IVC) and an interatrial connection. These defects have increased risk of anomalous pulmonary venous return (PAPVR).

**Case report:** A 42-year-old female patient with a congenital heart defect was hospitalized for cardiac evaluation. She was diagnosed in childhood but was lost to follow up. She complained of exertional dyspnea and palpitations. Physical examination revealed hypoxemia, tachycardia and a systolic murmur 4/6. The laboratory analysis showed polycythemia with right axis deviation on electrocardiogram. On ultrasound, the left heart chambers were normal size with an extremely enlarged right heart due to volume and pressure overload. Furthermore, an inferior SVASD of 46 mm with predominantly right-to-left shunting, and tricuspid valve insufficiency were revealed. Cardiac catheterization confirmed pulmonary hypertension, with a mean pulmonary artery pressure of 53 mmHg and normal left atrial pressure. Pulmonary vascular resistance was 10 Woods which is consistent with Eisenmenger syndrome. Computed tomography imaging revealed anomalous drainage of the right upper pulmonary vein into superior vena cava, an overriding IVC with drainage of the right middle and lower pulmonary veins into the SVASD. Left pulmonary veins were normal. Since, surgical correction was contraindicated, treatment with pulmonary vasodilator sildenafil was started. Annual flu and COVID and pneumococcal vaccine every five years were recommended as well as antibiotic prophylaxis in case of dental or invasive interventions.

**Conclusion:** Early diagnosis and correction of large inferior SVASD with PAPVR are crucial to preserve quality of life. Inadequate patient follow-ups and non-compliance can lead to right heart decompensation, pulmonary hypertension and Eisenmenger syndrome.

**Keywords:** Congenital Abnormalities; Eisenmenger Complex; Heart Septal Defects, Atrial; Hypertension, Pulmonary

# CR119

## Bicuspid aortic valve infective endocarditis as a diagnostic and therapeutic challenge – a case report

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**Introduction:** Infective endocarditis is a rare but serious condition, commonly caused by Staphylococcus aureus and occasionally associated with a bicuspid aortic valve (BAV). Due to its rarity, clinical suspicion and a multidisciplinary approach are crucial for positive outcomes.

**Case report:** A 43-year-old male presented with a three-day history of fever (39°C), shaking chills, and malaise. Upon admission, he had a painful red-violet lesion on his finger and violet macules on his toes, suggestive of Osler nodes and Janeway lesions. A cardiac examination revealed a discrete systolic murmur, indicating aortic valve involvement. Laboratory tests showed elevated C-reactive protein and procalcitonin levels, normocytic anemia, thrombocytopenia, high N-terminal pro-brain natriuretic peptide (NT-pro-BNP), and high-sensitivity troponin T (hsTnT) levels, along with acute kidney injury. Blood cultures confirmed methicillin-sensitive Staphylococcus aureus. Transthoracic echocardiography indicated mild aortic regurgitation and suspicion of a bicuspid aortic valve, confirmed by a transesophageal echocardiogram showing vegetation. A brain computed tomography (CT) scan revealed multiple ischemic foci. Flucloxacillin was started on the first day of hospitalization, but blood cultures remained positive until day five. The patient was transferred to cardiology, where heart imaging revealed a myocardial abscess. On day 20, a Bentall procedure was performed, due to the progression of aortic regurgitation and ascending aortic aneurysm. Cultures of the valvular vegetation were negative. Post-operative brain CT revealed multiple brain, kidney, and spleen abscesses, treated conservatively. Flucloxacillin treatment continued for six weeks post-surgery due to brain abscesses.

**Conclusion:** One-third of aortic valve endocarditis is linked to BAV, often needing both antimicrobial and surgical treatment. The role of antimicrobial prophylaxis in BAV remains controversial. Early BAV diagnosis, follow-up, dental health, and education for patients and physicians are vital for favorable outcomes.

**Keywords:** Bicuspid Aortic Valve Disease; Bacterial Endocarditis; Brain Abscess; Floxacillin; Staphylococcus aureus

# CR120

## Complex bifurcation percutaneous coronary intervention using the double kissing crush technique in a heart transplant patient

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**Introduction:** Cardiac allograft vasculopathy (CAV) is a major cause of graft failure and mortality after heart transplantation (HTx). Although recipient immune reaction against the donor's antigens is the principal cause, risk factors like diabetes mellitus and hypercholesterolemia also have important impact. CAV is characterized by diffuse coronary artery stenosis due to intimal hyperplasia thus often unamenable to percutaneous coronary intervention (PCI).

**Case report:** A 55-year-old male with a history of type 2 diabetes, arterial hypertension, dyslipidemia and obesity was admitted for regular follow-up visit 5 years after HTx. He has no angina. Echocardiography showed normal graft function. Heart biopsy showed mild acute cellular rejection (1R). Coronary angiography revealed significant stenosis of the left anterior descending artery (LAD) that involves bifurcation with first diagonal branch (D1), diffuse lesions of the left circumflex artery and distal right coronary artery. It was decided to perform bifurcation PCI of LAD and D1 using double kissing (DK) crush technique. This technique involves stenting the side branch (SB), crushing the stent with a balloon in the main vessel (MV), followed by rewiring of SB, first kissing balloon inflation, MV stent deployment, rewiring of SB and second kissing balloon inflation. The angiographical success was confirmed with optical coherent tomography.

**Conclusion:** Due to the graft denervation, CAV is unlikely diagnosed based on typical symptom of angina. Although CAV is typically diffuse coronary disease, some patients may present with focal lesions amenable to PCI. Some bifurcation lesions may need complex PCI technique like DK crush stenting that ensures optimal lesion coverage and minimal restenosis risk.

**Keywords:** Angioplasty, Balloon, Coronary; Graft Rejection; Heart Transplantation; Vascular Diseases

# CR121

## Association of autism spectrum disorders with microdeletion involving neurexin-1(NRXN1) gene

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**Introduction:** Autism spectrum disorder (ASD) is defined as a neurodevelopmental condition characterized by difficulties in social communication, interaction, as well as limited and repetitive patterns of behavior, interests and activities. Microdeletions involving neurexin-1 (*NRXN1*) gene are associated with neurodevelopmental disorders, including autism.

**Case report:** A 12-year-old patient was referred for initial examination in March 2024 at the genetics clinic due to the diagnosis of an ASD. He has an older brother with intellectual disability. The first stereotypic actions presented at the age of 4. Psychological evaluation confirmed the diagnosis of ASD. Language and speech difficulties, deviations in social communication and echolalia are present. In the physical examination, the only significant finding is macrocephaly. Comparative Genomic Hybridization (CGH) revealed a heterozygous interstitial microdeletion at 2p16.3 with a size of 400.8 kb, the same was confirmed in his older brother. In the deleted region there are two genes, including exons 1 – 7 of *NRXN1* gene. *NRXN1* gene is described as pathogenic in the Online Mendelian Inheritance in Man database. There are several reports in literature showing that microdeletions involving *NRXN1* gene are associated with developmental delay, speech delay, abnormal behaviour including autism spectrum disorder and some degree of dysmorphism.

**Conclusion:** A thorough genetic evaluation is important in children presenting with ASD. Our patient with ASD had positive family history of intellectual disability and macrocephaly which indicated genetic testing. Array CGH revealed a pathogenic microdeletion in the *NRXN1* gene at 2p16.3 which is associated with ASD.

**Keywords:** Autism Spectrum Disorder; Chromosome Deletion; Comparative Genomic Hybridization

# CR122

## Primarily neurological presentation of myocardial infarction in a diabetic patient - case report

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**Introduction:** Myocardial infarction is one of the leading causes of mortality in developed countries. The most common symptoms associated with a heart attack are chest pain, shortness of breath, sweating, nausea and vomiting. Every fifth heart attack presents with atypical symptoms, mainly in diabetics, the elderly and women. Failure to recognize atypical symptoms may lead to delayed treatment and worse outcomes.

**Case report:** A 76-year-old patient, under treatment for hypertension and diabetes for the past 2 years, presents to his family medicine doctor with an unusual sensation in the back of the neck, a feeling of postural instability and feeling generally unwell. After a thorough examination, during which he showed no signs of pathology, the patient was referred to a neurologist. He was admitted to the emergency room 4 days later due to the persistence of symptoms accompanied by chest pain, as well as shortness of breath independent of exertion and nausea. The electrocardiogram shows signs of subacute myocardial infarction. Vital parameters as well as physical and neurological examination still show no signs of pathology. Laboratory analysis showed elevated troponin levels. A coronary angiography was performed, which showed significant stenoses of several blood vessels, and circulation was restored. Echocardiography showed hypocontractility and a significantly reduced ejection fraction (40%). The patient continues to receive treatment, but the subjective symptoms of weakness and shortness of breath persist.

**Conclusion:** The outcomes of myocardial infarction treatment are closely related to timely intervention. Diabetics should be given additional attention if presented with symptoms that could be of coronary origin due to the frequent absence of subjective symptoms, even if diabetes is newly discovered..

**Keywords:** Diabetes Mellitus; Myocardial Infarction; Neurologic Manifestations

# CR123

## The Art of Ear Reconstruction

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**Introduction:** Traumatic soft tissue injuries represent significant medical challenges, particularly when they involve complex anatomical structures like the human ear. Physical altercation-related ear injuries can result in significant functional and cosmetic difficulties, necessitating the employment of sophisticated reconstructive surgical procedures.

**Case report:** A 43-year-old male patient presented with a severe ear injury sustained during a violent confrontation, where a significant portion of his ear was traumatically removed through biting. To restore both form and function, the patient's medical team concluded that autologous rib cartilage repair would be the best option. The surgical team strategically selected the patient's seventh rib cartilage as the optimal grafting material. This selection was based on the rib's superior structural integrity and its immunologically compatible properties, which significantly minimized the risk of graft rejection during the reconstructive procedure. In a notable single-stage procedure, surgeons meticulously reconstructed the patient's ear, crafting a complex three-dimensional architecture that precisely replicated the natural anatomical structure. The surgical approach prioritized two critical objectives: preserving essential functional elements and restoring complete anatomical symmetry. An advancement flap technique was employed to provide appropriate soft tissue coverage for the newly constructed cartilage framework. Following the comprehensive ear reconstruction procedure, the post-operative results were exceptional, achieving a fully restored and symmetrical ear profile that met both aesthetic and functional requirements. Crucially, no functional deficits were found that affected rib cage mechanics or respiratory functioning.

**Conclusion:** This example advances our understanding of reconstructive medical therapies by highlighting the significance of surgical techniques in helping patients with severe injuries regain both their physical appearance and psychological well-being.

**Keywords:** Bites, Human; Costal Cartilage; Transplantation, Autologous

# CR124

## Management of pregnancy in a woman with an ascending aortic aneurysm: A Case Report

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**Introduction:** *FLNA* (filamin A) gene mutations are associated with connective tissue disorders that predispose individuals to congenital heart disease, aortic aneurysms and valvular abnormalities. Pregnancy in women with aneurysm of ascending aorta presents a high-risk scenario due to the increased risk of aortic dissection or rupture caused by the hemodynamic stress of pregnancy. The risk of dissection and rupture increases with gestational age, being highest during vaginal delivery.

**Case report:** A 37-year-old woman was admitted to a hospital for planned cesarean section due to aneurysm of ascending aorta. After two previous pregnancies which ended in miscarriages at 13 weeks and 6 weeks of gestation, it was discovered that the patient is heterozygous for *FLNA* mutation. She reported a lifelong heart murmur and a family history of aortic dissection—her mother died from it at the age of 50. The patient has been monitored for the past 4 years and echocardiography performed at 29 weeks of pregnancy found that the diameter of ascending aorta was 4.7 centimeters. Ejection fraction was 60% and slight aortal and mitral regurgitation was observed. The patient was maintained on bisoprolol therapy throughout pregnancy. At 34 weeks of gestation, a planned cesarean section was performed and a healthy male infant was delivered without complications. The patient's postoperative course was uneventful, and echocardiography showed stable findings. She was discharged on the 9th postoperative day with heferol and bisoprolol therapy.

**Conclusion:** Careful multidisciplinary management is essential for pregnant women with an ascending aortic aneurysm to balance maternal and fetal risks. Close monitoring, management of blood pressure and well-timed cesarean section are crucial for favorable outcomes in such high-risk pregnancies.

**Keywords:** Filamins; High-Risk Pregnancy; Thoracic Aortic Aneurysm

# CR125

## Tc-99-MIBI Myocardial Perfusion Imaging in Diagnosing Stent Restenosis Following Coronary Stent Implantation – A Case Series

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**Introduction:** Myocardial perfusion imaging (MPI) is a diagnostic method that provides insights in myocardial blood flow and perfusion abnormalities. This case series investigates MPI with Tc-99m-MIBI in patients following coronary stent implantation.

**Case report:** Two male patients were referred from their cardiologists due to angina symptoms after stent implantation. The first, a 67-year-old male, experienced shortness of breath, chest pressure at rest, and exertional chest pain relieved by sublingual nitroglycerin. He had undergone multiple coronary angiograms since 1990 with stents implanted in all three main coronary arteries. The second, a 64-year-old male, had an inferior ST-elevation myocardial infarction (STEMI) and had three right coronary artery stents implanted nine months earlier. He reported recurrent shortness of breath and chest pain during minimal activity. Both patients underwent MPI with 740 MBq of Tc-99m-MIBI (methoxy-isobutyl-isonitrile) following a pharmacological stress test using regadenoson, a selective A2A receptor agonist. Imaging was performed 30 minutes post-injection on a dedicated cardiac gamma- camera. The 67-year-old patient showed a reversible defect of Tc-99m-MIBI accumulation in the distal anterior wall and basal lateral myocardium, indicating ischemia. A repeat coronary angiogram confirmed in-stent stenosis in the left anterior descending (LAD) and left circumflex (LCX) arteries. The second patient had a partly reversible defect in the basal inferior wall, consistent with ischemia in scar tissue after myocardial infarction.

**Conclusion:** MPI is a safe and sensitive method in diagnosing coronary artery disease and stent restenosis. Its ability to evaluate ischemia, perfusion and myocardial viability makes it essential in the follow-up and long-term management of patients undergone coronary stent implantation.

**Keywords:** Angina Pectoris; Coronary Restenosis; Ischemia; Myocardial Infarction; Myocardial Perfusion Imaging

# CR126

## A Family Affair: The Critical Role of Genetic Testing in Brugada Syndrome Management

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**Introduction:** Brugada syndrome is a genetic disorder most commonly caused by mutation of *SCN5A* gene, consequently affecting the function of sodium channels in myocardial cells. Although very rare, this syndrome predisposes patients to fatal cardiac arrhythmias. Here we present a case of a timely diagnosis and early intervention.

**Case report:** A 6-year-old male patient presented with a fever maximum 39°C, and intense central chest pain. The pain started at rest and showed no signs of radiation to other parts of the body. He was admitted to the pediatric department at University Hospital Centre Sestre milosrdnice due to abnormal electrocardiogram (ECG) findings that showed coved-type of ST-elevation and negative T waves in right leads indicating a Brugada type 1 diagnosis. Transthoracic echocardiogram showed no structural cardiac disease, in 24-hour holter ECG and, during an exercise stress test, no cardiac arrhythmia was registered. He was then tested positive for *SCN5A* mutation. Loop recorder was later implanted in order to detect any potential arrhythmia.

**Conclusion:** Clinical presentation of this syndrome ranges from a complete absence of any symptoms to sudden cardiac death. In this case a mild fever, acting as a trigger, potentially saved, not one, but four lives altogether. Patients mother, brother and aunt were all tested positive for *SCN5A* mutation and treated accordingly: the brother had a loop recorder, whereas patient's mother and aunt got an implantable cardioverter-defibrillators. All four patients continue to be routinely checked and had no problems so far. Through this case we would like to emphasize the importance of familial genetic testing and prompt assessment of such conditions thus preventing potential fatal outcomes.

**Keywords:** Brugada Syndrome; Cardiac Arrhythmias; Pediatrics

# CR127

## Severe megaloblastic anemia caused by vitamin B12 deficiency in pediatric patient with short bowel syndrome (SBS)

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**Introduction:** Vitamin B12 deficiency is a major cause of megaloblastic anemia. However, vitamin B12 deficiency is an extremely rare condition in childhood. It is mostly caused by malnutrition and malabsorption due to surgical removal of the stomach and terminal ileum, ultimately leading to short bowel syndrome (SBS). Unrecognized vitamin B12 deficiency could lead to severe cognitive, neurological and cardiac complications with possible fatal outcomes.

**Case report:** A 13-year-old boy with a condition after gastroschisis and multiple resections of large and small intestines, including terminal ileum, was admitted for treatment of malnutrition. His stools were dominantly watery, and yellow in colour, his appetite was weaker. He got tired quickly and couldn't participate in regular school activities. On admission, an extremely low body mass index (14.4kg/m2) was noticed. Laboratory findings showed severe macrocytic anemia and unmeasurably low vitamin B12 levels. Due to his serious malnutrition, he developed an electrolyte imbalance in the form of metabolic acidosis and hypernatremia. There were no signs of neuropathy related to vitamin B12 deficiency but difficulties in attention and working memory were revealed. He received parenteral vitamin B12 and electrolyte imbalance was corrected, which in time led to clinical recovery and normalization of laboratory findings. Diet adjustment resulted in weight gain and stool improvement. Upon discharge, the family was educated about proper nutrition in SBS and future B12 parenteral replacement.

**Conclusion:** Close follow-up and nutritional management of patients with extensive small bowel resection is mandatory. We emphasize that in children with SBS, a cognitive disability could be the first symptom of micronutrient deficiency.

**Keywords:** Anemia, Megaloblastic; Short Bowel Syndrome; Vitamin B 12 Deficiency

# CR128

## The role of inflammation in the presentation of heart failure - a case report of a patient with HFimpEF

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**Introduction:** Heart failure with improved ejection fraction (HFimpEF) is a clinical phenomenon in which patients with an initially reduced ejection fraction improve it by ≥ 10 points over a follow-up period.

**Case report:** We present a 59-year-old diabetic man with known lower extremity arterial disease (LEAD) and signs of cardiac decompensation due to heart failure with reduced ejection fraction (HFrEF) complicated by fever and bilateral pneumonia. Coronary angiography ruled out coronary artery disease. A few months later, his left leg was amputated due to advanced LEAD and necrosis of the foot. Recovery was complicated by recurrent upper urinary tract infections and neurological seizures suspected to be epilepsy, which were not confirmed. Since there were no signs of malignant arrhythmias and blood pressure was normal, a clinical pharmacologist was consulted who clearly stated that fluoroquinolone therapy was a possible cause of the seizures. After sodium-glucose transporter protein 2 inhibitors and fluoroquinolones were excluded from therapy, the patient was no longer susceptible to urinary tract infections and there were no recurrent neurological seizures. Repeated echocardiography confirmed an increase in EF from 38% to 49%, which allowed the patient to undergo prosthetic therapy.

**Conclusion**: The prevalence of HFimpEF in the population of patients who initially belonged to the HFrEF phenotype is about 23%. The possibility of improving or recovering the ejection fraction is influenced by the causal mechanisms of heart failure, treatment methods and patient compliance. Although in our case the causal mechanisms of HF were multifactorial, the improvement of systolic function occurred only after the resolution of inflammatory processes, with the fact that all other risk factors were well regulated at all times.

**Keywords:** Diabetes Mellitus; Heart Failure; Inflammation; Peripheral Arterial Disease

# CR129

## A 16-year-old with Mobitz I and II AV blocks – a case report

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**Introduction:** Atrioventricular (AV) blocks are a common cause of arrhythmias, most commonly caused by idiopathic AV-node or His-Pukinje system fibrosis and ischaemic heart disease. They are easily diagnosed, however, because of their usual causology, they are often overlooked in younger patients. While the I. degree AV blocks are relatively harmless, II. degree (Mobitz I and II) and III. degree blocks can cause life-threatening arrhythmias, such as bradycardia or ventricular tachycardia (VT).

**Case report:** A 16-year-old male patient was admitted to the hospital because of an AV block registered on his electrocardiogram monitoring. Earlier, he had experienced 3 syncopes. The AV block was characterized as Mobitz I and II, having a 2:1, 3:1 and 4:1 rhythm. Serology for B. burgdorferi was negative and ergometry showed an appropriate chronotropic response. Due to the fact that the patient had a preserved systolic function, no symptoms and no wide QRS complexes, there were no indications for a pacemaker implantation. During his next check-up, apart from the AV block, the Holter electrocardiogram registered a VT that lasted 9 seconds with a frequency of 181/min. During his hospital stay, his minimal registered heart rate was 18/min, and the maximal was 160/min. Magnetic resonance imaging showed a focal thinning of his left ventricle, which was followed up on with a coronarography, which showed no restriction in coronary blood flow. Because of the extremely low minimal registered heart rate, low average heart rates and registered unstable VT, a pacemaker was implanted and the patient made a full recovery.

**Conclusion:** This case highlights the importance of ECG use in all syncope patients, especially in teenagers and children, as even they can have, although, rarely, unrecognised serious heart conditions.

**Keywords:** Cardiology; Heart Block; Pediatrics

# CR130

## Use of antihypertensive therapy in an HIV-positive patient

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**Introduction:** Hypertension is a common comorbidity in patients living with HIV (Human Immunodeficiency Virus) , often requiring careful selection of antihypertensive therapy to avoid drug interactions with antiretroviral treatment (ART). This case report presents the management of hypertension in a 52-year-old male patient diagnosed with HIV. The patient was diagnosed with HIV five years ago and has been on a stable ART regimen consisting of tenofovir, lamivudine, and dolutegravir. He also has a history of well-controlled type 2 diabetes mellitus and hyperlipidemia, both of which further increase his cardiovascular risk.

**Case report:** The patient presented to the cardiology department for routine follow-up, reporting occasional headaches and dizziness. His blood pressure was measured at 160/95 mmHg on multiple occasions, confirming stage 2 hypertension. Laboratory tests showed normal kidney function, eGFR (estimated Glomerular Filtration Rate) 95 mL/min/1.73m², and mild dyslipidemia. An ECG (electrocardiogram) showed no signs of left ventricular hypertrophy. Given the patient's HIV status and potential drug interactions, an antihypertensive regimen was carefully selected. Treatment was initiated with an angiotensin-converting enzyme (ACE) inhibitor, enalapril 10 mg daily, and a thiazide diuretic, hydrochlorothiazide 12.5 mg daily. The choice of medications was based on their efficacy, metabolic neutrality, and minimal interaction with ART. Over the following three months, his blood pressure stabilized at 125/80 mmHg, and he reported no significant side effects.

**Conclusion:** This case underscores the importance of a personalized approach to antihypertensive treatment in HIV-positive patients. The combination of an ACE inhibitor and a thiazide diuretic proved effective, well-tolerated, and safe in this patient. Given the increased cardiovascular risk in people living with HIV, regular monitoring and an interdisciplinary approach are crucial for optimizing long-term outcomes.

**Keywords:** Angiotensin-Converting Enzyme Inhibitors; Antiretroviral Therapy; Highly Active; HIV

# CR131

## Learning Through Setbacks: The Importance of Early FH Detection

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**Introduction:** Familial hypercholesterolemia (FH) is an autosomal dominant disorder affecting 1 in 250 individuals globally. It is characterized by markedly elevated low-density lipoprotein cholesterol and an increased risk of premature atherosclerotic cardiovascular disease. Mutations in low-density lipoprotein receptor, apolipoprotein B, or proprotein convertase subtilisin/kexin type 9 (PCSK9) contribute to its pathogenesis, necessitating early diagnosis and intensive lipid-lowering therapy.

**Case report:** A 33-year-old morbidly obese male and heavy smoker was referred for cardiology evaluation after a thromboembolic event in the right superficial femoral artery. His hospital course was complicated by sepsis, and imaging incidentally revealed a prior infarction of the right kidney, leaving only 30% functional parenchyma. His extensive cardiovascular history prompted a thorough assessment. In 2015, he developed myopericarditis, resolving without complications. In 2017, he suffered an anterior ST-elevation myocardial infarction (STEMI), requiring percutaneous coronary intervention and drug-eluting stent placement in the left anterior descending artery, leading to ischemic cardiomyopathy with a 30% ejection fraction. A transient ischemic attack occurred in 2018, though thrombophilia was excluded. During the current evaluation, echocardiography identified a left ventricular apical thrombus, necessitating a switch from a non-vitamin K oral anticoagulant to warfarin for enhanced anticoagulation. Persistent dyslipidemia despite high-intensity statin therapy led to DUTCH Lipid Clinic Network scoring, confirming FH five years post-STEMI. Management included a PCSK9 inhibitor for lipid control and liraglutide for weight loss. Heart failure therapy was optimized with quadruple pharmacologic therapy, and an implantable cardioverter-defibrillator was placed for sudden cardiac death prevention.

**Conclusion:** Early FH detection is critical, as timely intervention can mitigate cardiovascular morbidity and mortality. As of 2023, mandatory cholesterol screening for first-grade children facilitates early diagnosis.

**Keywords:** Atherosclerosis; Cardiovascular Diseases; Dyslipidemias; Hyperlipoproteinemia Type II; Receptors, LDL

# CR132

## Alarm clock headache - an unusual headache that knows when the patient is sleeping

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**Introduction:** Hypnic headache (HH), also known as “alarm clock headache”, is a rare primary headache disorder characterized by frequently-recurring headache attacks developing only during sleep and last up to 4 hours, without cranial autonomic symptoms. There is no restlessness accompanying the headache, but HH causes waking, thereby resulting in poor sleep quality. This case report aims to raise awareness about this state in order to manage patients suffering from HH properly.

**Case report:** A 67-year-old woman has suffered from exclusively nocturnal headaches for the past three years. Headaches occur regularly at 2 or 3 AM and are characterized by dull and intense pain, causing arousal from sleep. They last about an hour, and often spontaneously regress afterwards. These disturbances occur 3 times a week on average. She was followed through a headache clinic in University Hospital Center Osijek. Visually evoked potentials, electroencephalography, and brain magnetic resonance imaging were performed and didn't show secondary disorders. Blood pressure and glucose levels were normal during the onset of headache. Anamnesis showed no signs of potential parasomnia or obstructive sleep apnea. The diagnosis has been made by excluding the underlying disease. The most commonly used treatments for HH are caffeine, lithium, indomethacin, and melatonin. The patient didn't tolerate coffee as a prophylactic therapy before sleeping because of its antihypnotic properties. However, indomethacin at a dose of 25 mg a half hour before sleeping reduced her headaches to once per two weeks.

**Conclusion:** In differential diagnosis of nocturnal headaches it is paramount to consider HH. Examinations must be made to exclude secondary conditions that could cause headaches. Precise diagnosis of HH is important because of the possibility of effective acute and prophylactic treatment.

**Keywords:** Caffeine; Headache Disorders, Primary; Indomethacin

# CR133

## Survival Of Twin Delivery Before 24 Weeks Of Gestation – A Unique Case In Croatia

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**Introduction:** Twin pregnancy is rare, accounting for only 2% of all pregnancies. A preterm infant is defined as any infant born after 22 weeks but before 37 weeks of gestation. In this case, we present the survival of extremely preterm infants (born before 28 weeks of gestation) from a twin pregnancy achieved through assisted reproductive technologies.

**Case report:** The patient is a 34-year-old pregnant woman with a known diagnosis of myotonic dystrophy type 1. This pregnancy was achieved after the fourth attempt of in vitro fertilization/intracytoplasmic sperm injection. She presents for the first time at the Pregnancy Pathology Clinic at 18 weeks of gestation due to cervical insufficiency. The ultrasound reveals a Y-shaped cervix measuring 27 mm in length. Following normal cervical swabs, a cervical cerclage is placed at 19 weeks of gestation. At the first regular check-up, a prolapsing amniotic sac approximately 1.5 cm in length is observed. Laboratory findings are normal. Urine culture isolated *Escherichia coli*. Antibiotic therapy is administered, along with corticosteroid prophylaxis. On the sixteenth day of hospitalization, premature rupture of membranes occurs for the first twin, and the patient reports contractions. The perinatology team decides to deliver both twins vaginally. The first twin is a male preterm infant with a birth weight of 590 g, followed by the rupture of the second twin's amniotic sac, and the second male preterm infant weighing 587 g. Both twins are born naturally in the vertex presentation. The preterm infants are transferred to the neonatal intensive care unit and are cared for over the next five months. These twins are the first in Croatia to be born at 23 weeks of gestation and were discharged from the hospital without developmental issues and without surgical interventions during hospitalization.

**Conclusion:** The greatest risk associated with twin pregnancy is premature birth due to cervical insufficiency or intra-amniotic infection. Only 20% of extremely premature twins experience no developmental problems and do not require surgical interventions.

**Keywords:** Fertilization in Vitro; Pregnancy; Premature Birth; Twins

# CR134

## Hybrid treatment approach to gigantic pseudoaneurysm of common iliac artery

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**Introduction:** Pseudoaneurysms are vessel aneurysms occurring at the site of arterial injury from trauma or infection, but unlike true aneurysms in which the blood vessel wall balloons, a pseudoaneurysm does not involve the vascular wall. Instead, blood leaks from the injury site and is contained by a fibrous tissue wall developed by the clotting cascade.

**Case report:** We present a case of 72-year-old patient with hypertension, hyperlipidemia and coronary disease who presented with intermittent claudications after 20-meter walkway due to occlusion of left common iliac artery. The patient underwent semiocclusive thrombendarterectomy procedure. In postoperative period he developed retroperitoneal hematoma. Having stable bloodwork, a resorption of hematoma was expected, so there was no need for surgical intervention at that time and the patient was released home. On control computed tomography (CT) there was no signs of extralumination of contrast. One and a half months after he was admitted to the emergency service with pain and swelling of the surgical wound without the drop in the blood count. CT showed common iliac artery pseudoaneurysm inside an old hematoma with dimensions 11x16x10 cm which compressed and occluded the artery. To minimise the risk of massive bleeding, firstly we covered the pseudoaneurysm entry with complete endovascular reconstruction of aortic bifurcation and then made open evacuation of the pseudoaneurysm. The patient fully recovered and was released.

**Conclusion:** Pseudoaneurysms have high bleeding tendency and, if having tremendeous size and malign localisation, can be fatal for patients. For these reasons, knowledge of different operative approaches and possibility of conversion between one another is necessary to optimise the treatment outcome. In this case, hybrid endovascular and open approach was optimal.

**Keywords:** Aneurysm, False; Endarterectomy; Hematoma

# CR135

## Cardiovascular disease in chronic kidney disease

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**Introduction:** Patients with chronic kidney disease (CKD) have an increased risk of developing cardiovascular diseases such as coronary artery disease, heart failure, arrhythmias and sudden cardiac death. Cardiovascular risk increases with the development of CKD, although the cardiovascular risk is significantly higher even in the early stages of CKD compared to the healthy population. In the 5th stage of CKD, mortality from cardiovascular events is higher than mortality from renal failure. This case report aims to show the importance of the early recognition of cardiovascular pathology in CKD patients.

**Case report:** We present a case of a 51-year-old male hospitalised in the Department of Nephrology, University Hospital Centre Osijek, due to shortness of breath, fatigue, and pressure in the chest. He has been under nephrological treatment since 1991 when the treatment started due to failure of the left kidney due to hydronephrosis. His right kidney didn't develop. He has been transplanted three times since. During hospitalisation, a chest x-ray was performed, where cardiomegaly and pulmonary venous congestion were described, indicating heart failure. A heart ultrasound was also performed, which verified diastolic dysfunction of a higher degree, dilatation of the left atrium, severely calcified aortic valve, severe aortic and mitral stenosis, and moderately severe aortic regurgitation. A computed tomography angiography was also performed, where pulmonary hypertension was described. The medical documentation was presented at the multidisciplinary meeting, where it was concluded that surgery was required.

**Conclusion:** Cardiovascular comorbidities are a significant cause of mortality in patients with CKD, which is why prevention, early detection, and adequate treatment are necessary.

**Keywords:** Cardiovascular Diseases; Heart Failure; Renal Insufficiency, Chronic

# CR136

## Timely Intervention in Acute Aortic Syndrome: A Case of Type A Dissection and Penetrating Aortic Ulcer Management

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**Introduction:** Acute aortic syndrome (AAS) encompasses three life-threatening conditions: acute aortic dissection (AAD), intramural hematoma (IMH) and penetrating aortic ulcer (PAU). AAD involves a tear in the aortic wall, creating a false lumen, while IMH results from bleeding within the aortic wall without a tear. PAU arises from atherosclerotic ulceration penetrating the media layer of the aorta.

**Case report:** A 60-year-old male with a significant hypertension and a smoking history presented to the emergency department with severe chest pain. Multislice computed tomography (MSCT) aortography revealed a Stanford Type A dissection extending from the aortic valve throughout the thoracic and abdominal aorta. The patient underwent emergency surgical resection and reconstruction of the ascending aorta and a portion of the aortic arch using a Dacron graft. Four months post-surgery, the patient reported persistent chest pressure radiating to his back. Evaluation revealed a PAU measuring 3.7 cm x 1.1 cm with a 2.4 cm neck located just below the origin of the left subclavian artery (LSA). Thoracic endovascular aortic repair (TEVAR) was indicated, but due to ulcers location there was a risk that TEVAR could compromise blood flow to LSA. To mitigate this risk, a carotid-subclavian bypass was performed first, followed by the successful placement of a stent graft during TEVAR. Digital subtraction angiography confirmed successful stent graft placement between the left common carotid and the LSA. The patient was discharged in stable condition.

**Conclusion:** This case exemplifies the importance of prompt diagnosis and intervention in AAS. It also highlights the diverse management strategies tailored to the specific type of aortic syndrome. Moreover, it emphasizes the efficacy of combining carotid-subclavian bypass with TEVAR as a valuable treatment option in complex clinical scenarios.

**Keywords:** Acute Aortic Syndrome; Aortic Dissection; Endovascular Aneurysm Repair; Penetrating Atherosclerotic Ulcer

# CR137

## Tc-99m-MIBI SPECT myocardial perfusion imaging in a teenage footballer – case report

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**Introduction:** Myocardial perfusion imaging (MPI) is a key diagnostic tool for evaluating coronary artery disease by assessing heart muscle blood flow during rest and stress. Tc-99m-MIBI (methoxy-isobutyl-isonitrile) is widely used in nuclear cardiology for detecting ischemic heart tissue. This report presents the case of a 15-year-old footballer with an incidental cardiac finding during routine evaluation, highlighting the significance of MPI in young athletes with unexplained cardiac abnormalities.

**Case report:** A 15-year-old male patient was referred from the cardiology clinic for occasional incomplete right bundle branch block after exercise. He had no symptoms and complained of no shortness of breath, fainting, or chest pain. Heart ultrasound was within normal limits and, during a stress test, electrocardiogram was reported as normal. He was injected with an age- and weight-adjusted dose of Tc-99m-MIBI of 338 MBq after a stress test by walking on a treadmill, and on the second day in a resting state. Imaging was performed per standard protocol, 30 min post-injection on a dedicated cardiac gamma-camera. A focal reversible perfusion defect was found in the basal third of the anterior heart wall. No irreversible uptake defects were detected. He was scheduled for a coronary angiography and a 50% stenosis of the proximal D1 branch of the left anterior descending artery was found. Given the patient's age and findings, conservative management with close monitoring and further evaluation of potential risk factors has been implemented.

**Conclusion:** MPI is a safe and sensitive method for diagnosing coronary artery disease, even in younger patients with low clinical suspicion. A multidisciplinary approach is crucial for timely diagnosis, appropriate treatment planning, and long-term follow-up to ensure favorable patient outcomes.

**Keywords:** Coronary Artery Disease; Myocardial Perfusion Imaging; Technetium Tc 99m Sestamibi

# CR138

## TUBERCULOSIS MIMICKING LUNG CANCER WITH BRAIN METASTASIS

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**Introduction:** Tuberculosis (TB) is caused by Mycobacterium tuberculosis. It usually affects the lungs, but can also affect other organs.

**Case report:** 62-year-old female, treated with biologicals for ankylosing spondylitis, was first managed in under a presumptive diagnosis of left-sided pneumonia. Her condition worsened and computed tomography (CT) scan and later positron emission - CT revealed left hilar lymphadenopathy with multiple „metastatic“ lesions of the brain. Diagnostic workup suggested granulomatosis without sign of malignant cells. However, TB was not suspected and repeated workup was done in search for cancer. Still, findings were consistent with granulomatosis and finally polymerase chain reaction and cultures confirmed infection with drug-sensitive M. tuberculosis. Therapy with isoniazid, rifampicin, pyrazinamide and ethambutol was started. Two months later, apart from partial regression of lymphadenopathy, her status further worsened with increased number of brain lesions, now 14, and newly developed severe spondylodiscitis. Repeated work-up again showed no signs of malignancy, while no microorganism was cultivated from the liquor. Meropenem - four weeks, and linezolid - eight weeks, were added to the initial therapy. Patient's physical and neurological status gradually improved, with initial regression of spondylodiscitis and further radiological regression on chest CT, and therapy was reduced to isoniazid and rifampicin. At six-month follow-up, brain magnetic resonance finally showed regression of brain granulomas. The patient was kept on therapy for additional 2 months but did develop distal sensory polyneuropathy despite vitamin B6 supplements.

**Conclusion:** The presented case highlights the importance of early recognition of miliary TB, especially in patients under risk, such as patients treated with biologicals.

**Keywords:** Discitis; Linezolid; Lymphadenopathy; Spondylitis, ankylosing

# CR139

## COVID-19-Related Surgical Delay in a High-Risk Cardiac Patient: Sequential CABG and PCI After NSTEMI

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**Introduction:** Cardiovascular diseases are the leading cause of morbidity and mortality, especially in the elderly population. Acute coronary syndrome presents a challenge, especially in patients with previous interventions, and SARS-CoV-2 infection further complicates therapeutic management in these cases.

**Case report:** We present the case of a 74-year-old male patient with a history of acute myocardial infarction. Given his medical status, he was admitted to the cardiology department for further evaluation due to progressive dyspnea. Examinations confirmed significant stenosis of the mid-left main coronary artery (LMCA) with reduced left ventricular systolic function and ejection fraction being 39%, and severe valvular regurgitations. Surgical intervention was planned, but it was postponed due to a SARS-CoV-2 infection. Less than a week after the initial hospitalization, the patient experienced severe chest pain and non-ST-elevation myocardial infarction (NSTEMI) was confirmed. Three days later, he underwent triple coronary artery bypass grafting (CABG) and recovered without complications. However, two months after the procedure, the patient came back with recurrent episodes of chest pain. Coronary angiography was done, which revealed stenosis of one of the bypass grafts. Instead of stenting the bypass, it was decided to directly stent the LMCA, which is a significantly higher-risk procedure. Percutaneous coronary intervention (PCI) procedure was performed using intravascular ultrasound-guided stenting with the deployment of a drug-eluting stent. The patient showed a good clinical response and remains stable one year after the procedure.

**Conclusion:** This case highlights the challenges in treating patients with acute coronary syndrome and multiple cardiac comorbidities when paired with COVID-19. The delay in surgery because of the infection increased the risk of recurrent coronary events, but timely interventions after stabilization led to a favorable outcome.

**Keywords:** Coronary Artery Bypass; COVID-19; Non-ST Elevated Myocardial Infarction; Percutaneous Coronary Intervention

# CR140

## Pneumonitis as a consequence of inappropriate intravenous injections of opioid replacement therapy in a former heroin user

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**Introduction:** The inappropriate administration of opioid substitution therapy (OST) through the dissolution of tablets and their intravenous injection is prevalent among former heroin users. This practice leads to vascular damage, infections at injection sites, and thromboembolism. In lung tissue, which filters injected particles, it can result in chronic inflammation, microembolization, and abscesses. Permanent changes, such as fibrosis and ventilation disorders, are late complications of this malpractice.

**Case report:** A 40-year-old patient, a former heroin user, has been on OST with methadone for the past 12 years. He frequently misused methadone and other tablets through intravenous administration. The patient was admitted to the hospital with dyspnea and chest pain due to intoxication from the abuse of an octane booster and inhalation of air freshener. An electrocardiogram and laboratory tests ruled out acute myocardial infarction. A chest X-ray suggested a potential diagnosis of acute respiratory distress syndrome. High-resolution computed tomography confirmed bilateral cystic lung changes consistent with signs of hypersensitivity pneumonitis. Chronic fibrotic changes in lung tissue, along with emphysema and diminished lung diffusion capacity, were confirmed by positive Anti-Jo-1 serological testing (114 AU/ml). In this patient, pulmonary fibrosis and acute respiratory failure were effectively managed with pulmonary rehabilitation, supportive therapy, bronchodilators, and oxygen therapy.

**Conclusion:** Inappropriate intravenous administration of OST poses a risk of permanent vascular changes in various organs. Recognizing these complications through timely diagnosis and a multidisciplinary approach is vital for reducing morbidity, improving patient outcomes, and increasing awareness about the risks of misuse.

**Keywords:** Disease; Opioid Substitution Therapy; Prescription Drug Misuse; Pulmonary Fibrosis

# CR141

## Percutaneous tricuspid Valve implantation for carcinoid heart disease

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**Introduction:** Cardiac carcinoid is a rare and severe manifestation of paraneoplastic syndrome, resulting from carcinoid tumors that secrete biologically active substances. The prevalence is estimated at approximately 0.005% in the general population, reflecting its extreme rarity. A common complication is tricuspid regurgitation, typically diagnosed through echocardiography. One innovative treatment option is percutaneous transcatheter valve implantation (TricValve).

**Case report:** A 64-year-old male presented in October 2024 with fatigue and dyspnea, accompanied by leg edema. He had been diagnosed with carcinoid syndrome six years prior. Cardiac ultrasound revealed endocardial thickening and reduced valve mobility, consistent with significant tricuspid regurgitation. The paraneoplastic effects of vasoactive substances, including histamine, tachykinins, prostaglandins, and serotonin, secreted by malignant neuroendocrine cells in the terminal ileum, contribute to cardiac symptoms. Activation of serotonin receptors in the heart valves leads to fibroblast proliferation and extracellular matrix deposition, causing valve damage. Given the patient's advanced metastatic cancer and multiple comorbidities, surgical valve replacement was considered too risky. Therefore, heterotopic valve implantation with self-expanding valves was selected. Follow-up echocardiography demonstrated proper positioning and function of the heterotopic artificial valves in the superior and inferior vena cava, indicating a successful procedure. The patient unfortunately passed away four months later due to malignancy-related complications.

**Conclusion:** This case highlights the successful management of tricuspid regurgitation in cardiac carcinoid through percutaneous valve implantation. The percutaneous approach was chosen due to the patient's severe clinical presentation, minimizing heart manipulation, reducing surgical scarring, and lowering the risk of postoperative arrhythmias.

**Keywords:** Carcinoid heart disease; Carcinoma; Tricuspid Valve Insufficiency

# CR142

## Successful Multimodal Heart Failure Management – A Case Study

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**Introduction:** Heart failure is a condition where the heart fails to pump enough blood to meet the body's metabolic needs. The severity of symptoms is expressed on the New York Heart Association (NYHA) scale. This case showcases up-to-date treatment and its effect on clinical improvement.

**Case report:** A 56-year-old female sought further treatment after being diagnosed with reduced functional heart capacity, classified as NYHA Class III. She had a history of dyslipidemia and hypertension, both managed with medication. An electrocardiogram showed a left bundle branch block, while an echocardiogram revealed a slightly dilated left ventricle and atrium, reduced global systolic function of the left ventricle with an ejection fraction (EF) of 35% and mild mitral regurgitation. She was diagnosed with reduced ejection fraction dilated cardiomyopathy. The patient underwent cardiac resynchronisation therapy and started a new regimen of medication; sacubitril/valsartan 49/51 mg, bisoprolol 2.5 mg, and eplerenone 25 mg. After six months, her EF improved to 47% and the dosages were increased; sacubitril/valsartan to 97/103 mg, bisoprolol to 5 mg, and eplerenone to 50 mg. 24 months later, her EF rose to 60% with normal ventricular volume, mild atrial dilation, and mild mitral regurgitation. After an additional 24 months, EF remained stable at 55% with normal ventricular and atrial volumes and mild mitral regurgitation. Lifestyle changes, including adopting the Mediterranean diet and daily walks, further supported her recovery. She is currently classified in the NYHA Class I.

**Conclusion:** This case highlights the importance of proper rhythm control and pharmacological intervention in the treatment of heart failure and showcases an advance in modern medicine and heart failure management, demonstrating substantial clinical improvement and patient recovery.

**Keywords:** Cardiac Resynchronization Therapy; Cardiomyopathy, Dilated; Heart Failure; Stroke Volume

# CR143

## Thyroidectomy as the last solution for ventricular tachycardia treatment

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**Introduction:** Ventricular tachycardia (VT) is a common arrhythmia in patients with non-ischemic dilated cardiomyopathy (DCM). Amiodarone remains the primary antiarrhythmic drug for managing ventricular arrhythmias in this population, although its use carries the risk of iatrogenic hyperthyroidism. This case highlights the complexities of VT management when all therapeutic options have been exhausted.

**Case report:** 79-year-old man was admitted to our Clinic for VT ablation after experiencing repeated implantable cardioverter defibrillator (ICD) activations due to a VT storm. Fifteen years earlier, he had been diagnosed with reduced ejection fraction non-ischemic DCM and a ICD was implanted. During follow-up, the patient developed frequent premature ventricular contractions and non-sustained VT, which were successfully suppressed by amiodarone. However, amiodarone was discontinued due to the development of iatrogenic hyperthyroidism, and the patient was treated with athyrazole until euthyroidism was restored. Upon admission for VT storm, the patient was lightly sedated and treated with intravenous metoprolol, lidocaine and magnesium sulfate, resulting in partial suppression of the arrhythmia. The patient then underwent a successful VT ablation procedure. However, other morphologies of repetitive non-sustained VT were documented. Given the limited treatment options and the presence of hyperthyroidism, amiodarone was reintroduced alongside thyrostatic agents. Subsequently, thyroidectomy was performed, and chronic levothyroxine therapy was initiated. Postoperatively, the patient remained asymptomatic, eupneic, and rhythmically and hemodynamically stable. He was discharged home on continued amiodarone therapy.

**Conclusion:** VT management, in a patient with non-ischemic DCM, complicated by amiodarone-induced hyperthyroidism and recurrent arrhythmias despite VT ablation sometimes requires alternative ways of arrhythmia treatment. In this case, thyroidectomy and reintroduction of amiodarone has been presented as the only feasible solution that allows effective arrhythmia control.

**Keywords:** Amiodarone; Hyperthyroidism; Thyroidectomy; Ventricular tachycardia

# CR144

## Atypical presentation of myocarditis in a twenty-year-old male

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**Introduction:** Myocarditis, or myocardium inflammation, distinguishes between infectious, toxic, and immune-mediated types. The most common viral causes are Coxsackie viruses, adenoviruses, and influenza viruses, while the most common bacterial causes are Corynebacterium diphteriae and Haemophilus influenzae. Toxic and immune-mediated myocarditis occurs in rare cases. Typical symptoms in most patients are dyspnea, chest pain, palpitations, and elevated body temperature. This case report aims to highlight the atypical symptoms of myocarditis that often occur at a younger age.

**Case report:** A 20-year-old patient presented to the emergency department after experiencing dull pressure in his chest for 45 minutes during the night. While discussing the history of presenting complaint patient reported that he had not lost consciousness, had no dyspnea or elevated body temperature, and only reported one bout of diarrhea a few days earlier. He also denied previous infections, travel, or contact with infected individuals. The electrocardiogram showed ST-segment elevation of 0.1 mV in leads V1, aVL, and V4-V6 alongside a descending ST segment depression in aVR, and a negative T wave in leads III and aVF. Laboratory findings showed only a mildly elevated C-reactive protein value, and the cardiac ultrasound was normal. After reviewing the symptoms and performing diagnostic procedures, a diagnosis of myocarditis was made. Dual antibiotic therapy with levofloxacin and cefuroxime was initiated, after which the patient was discharged from the hospital.

**Conclusion:** Myocarditis often presents with nonspecific symptoms, especially in younger people. Therefore, taking a detailed history and performing diagnostic procedures that will enable timely recognition and treatment of myocarditis is imperative.

**Keywords:** Chest Pain; Electrocardiography; Myocarditis

# CR145

## Second chance for TAVI: Overcoming complications after an initial failure and open-heart surgery

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**Introduction:** Transcatheter aortic valve implantation (TAVI) is a minimally invasive procedure used to treat native or bioprosthetic aortic valve degeneration, avoiding open-heart surgery. The technique involves inserting a catheter, most commonly through the femoral artery.

**Case report:** A 73-year-old female underwent surgical aortic root and valve replacement in 2017 due to severe aortic stenosis and coronary artery disease. The procedure involved implanting a 19 mm bioprosthesis (Freestyle, Medtronic) and performing coronary artery bypass grafting (CABG) with a vein graft to the left anterior descending and right coronary arteries. In 2019, due to persistent bradycardic atrial fibrillation, the patient received a pacemaker. Bioprosthetic valve failure, stenosis, was diagnosed by 2022. A workup consisted of computed tomography, revealing severe peripheral artery disease, which contraindicated transfemoral TAVI. However, the patient was deemed too high risk for repeat open-heart surgery. Therefore, a valve-in-valve TAVI was attempted via a percutaneous approach through the left axillary artery. The procedure was complicated by dissection of the left subclavian artery, necessitating the placement of three stents. Additionally, an injury of the left brachial plexus occurred. The valve implantation was unsuccessful. With limited options remaining, the decision was to repeat TAVI via the left common carotid artery using a surgical cutdown approach under general anesthesia. The procedure was successfully completed with the sheetless implantation of a self-expanding TAVI prosthesis (EVOLUT R 23 mm, Medtronic). The postoperative course was uneventful, as were follow-up examinations.

**Conclusion:** TAVI remains a valuable treatment option for high-risk patients, even in cases with limited femoral access. This case demonstrates that TAVI can be successfully performed despite previous failed attempts. Careful planning and use of alternative access sites can lead to excellent outcomes.

**Keywords:** Aortic Valve Stenosis; Heart Valve Prosthesis Implantation; Peripheral Arterial Disease

# CR146

## Massive Pulmonary Embolism During Pregnancy Treated with Catheter-directed Thrombolysis

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**Introduction:** Pulmonary embolism (PE) during pregnancy causes 10-15% of maternal deaths in developed countries. It can appear quickly, with mild symptoms, which makes having high index of suspicion very important. The real challenge of this condition is the treatment plan that needs thorough risk stratification, considering the lives of both mother and the fetus.

**Case report:** We follow a 31-year-old-women who presented in the 26th week of pregnancy complaining of shortness of breath. Physical exam revealed tachycardia (133 bpm), tachypnea (33 rpm) and hypoxemia (SpO2 87%) with normal blood pressure (100/70 mmHg), Kussmaul's sign, tricuspid regurgitation murmur and unremarkable lung exam. Electrocardiogram showed S1Q3T3 pattern. Point-of-Care Ultrasound revealed McConnel sign, D-shape and tricuspid regurgitation. Due to a high suspicion of PE she was started on low-molecular-weight heparin. Computed tomography pulmonary angiography confirmed a saddle PE. Lower extremity Doppler ultrasound showed a left femoral vein thrombosis. After a thorough evaluation by the cardio-obstetrics team it was decided to perform catheter-directed thrombolysis through bilateral ultrasound-enhanced catheters. She received alteplase 2 mg/h through each catheter for 12 hours. Her clinical status improved over the next 72 hours and she was discharged on subcutaneous enoxaparin. One-month follow-up echocardiogram showed a normal right ventricle size and function. She gave birth to a healthy newborn through a cesarean delivery on the 38th week and continued anticoagulation with warfarin without complications.

**Conclusion:** While deciding on the treatment plan for this patient, the cardio-obstetrics team considered her to be on an impending cardiogenic shock status. This approach was chosen as a quickly available option with a good efficacy and lower bleeding risk due to the local delivery of the fibrinolytic agent at a reduced dose.

**Keywords:** Pregnancy; Pulmonary Thromboembolism; Tissue Plasminogen Activator

# CR147

## Accessory soleus presenting as tarsal tunnel syndrome in a young athlete

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**Introduction:** Accessory soleus usually presents as painless or painful mass in the posteromedial part of the ankle. Considering the variable appearance and different places of origin and attachment, this supernumerary muscle can manifest itself with symptoms of the Achilles tendinopathy or tarsal tunnel syndrome. This report presents the case of a young athlete with clinical presentation of tarsal tunnel syndrome caused by an accessory soleus.

**Case report:** A 23-year-old professional basketball player presented with complaints of his left ankle that prevented him from playing sports. The complaints appeared two years ago and were not preceded by injury. He noted that complaints appeared only during training, in the form of spasmodic pain on the medial side of the ankle, which would gradually increase with continued activity and be accompanied by the appearance of tingling and burning. He mentioned that these ailments forced him to stop his activity. Based on patient's history and clinical examination, tarsal tunnel syndrome was suspected. After it was confirmed that the accessory soleus was visible on the magnetic resonance imaging, surgical treatment was suggested. During the procedure, the accessory soleus was removed and the tarsal tunnel was decompressed. Seven months after the procedure, the patient returned to competitive sports, and during the two-and-a-half-year follow-up, he did not complain of any problems with the operated ankle.

**Conclusion:** The differential diagnosis of chronic ankle pain should always include accessory soleus. Removal of the accessory muscle, with or without the tarsal tunnel decompression, as well as the decompression alone are options for the treatment of the tarsal tunnel syndrome caused by an accessory soleus.

**Keywords:** Anatomic Variation; Ankle; Tarsal Tunnel Syndrome

# CR148

## When the Heart Takes an Uncharted Route: A Case of Wolff-Parkinson-White Syndrome

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**Introduction:** Wolff-Parkinson-White (WPW) syndrome is a cardiac arrhythmia caused by an accessory electrical pathway (bundle of Kent) leading to premature ventricular activation. It is typically diagnosed in younger patients. This case highlights the importance of considering WPW syndrome even in older adults.

**Case report:** 69 - year old patient presented to his family physician with chief complain of palpitation that was acompanied by dizziness and intermittent discomfort in his chest. Patien's history revealed arterial hypertension and dyslipidemia, but without previous cardiovascular incidents. He was referred to Cardiology day clinic where electrocardiogram has shown characteristic signs of WPW syndrome (shortened PR – interval, wide QRS complex and delta wave), prompting referral for an electrophysiological study (EPS). EPS was performed via the right femoral vein using the Seldinger technique. Diagnostic catheters were placed in the coronary sinus, right ventricle, and bundle of His region. A persistent foramen ovale was detected and used to access the left atrium with an ablation catheter. Mapping of the mitral annulus induced atrioventricular reentrant tachycardia (AVRT). Radiofrequency ablation was applied to the left atrial mitral annulus, successfully eliminating the accessory pathway. The procedure and recovery were uneventful. The patient was discharged with recommendations for antiarrhythmic therapy and avoidance of heavy exertion.

**Conclusion:** WPW syndrome is commonly diagnosed in younger patients, but this case underscores the need to consider it in older adults presenting with arrhythmic symptoms. Awareness of WPW in this population is crucial to prevent misdiagnosis and ensure timely intervention.

**Keywords:** Adult; Arrhythmias, Cardiac; Electrophysiology; Heart atria

# CR149

## Influenza B-Associated Myopericarditis Leading to Cardiogenic Shock: A Case Report

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**Introduction:** Myopericarditis, an inflammatory condition affecting both the myocardium and pericardium, is often triggered by viral infections. While less commonly linked to cardiovascular complications than Influenza A, Influenza B can cause severe myocarditis, potentially resulting in cardiogenic shock and multi-organ failure. Early detection and aggressive treatment are crucial for improving patient outcomes. This case highlights the transition from Influenza B-associated myopericarditis to cardiogenic shock, underscoring the need for rapid diagnosis and intervention.

**Case report:** A 35-year-old female was transferred from Ogulin General Hospital to Clinical Hospital Center Rijeka (CHCR) for invasive cardiac evaluation due to suspected acute myocardial infarction. Three days before admission, she developed high fever, dry cough, generalized malaise, and neck and interscapular pain, worsening in the evening. An electrocardiogram at the referring hospital showed inferolateral ST-segment elevation, prompting urgent transfer. Upon arrival at CHCR, the patient was hemodynamically stable. Emergency coronary angiography ruled out obstructive coronary artery disease. Given her febrile illness and respiratory symptoms, polymerase chain reaction testing confirmed Influenza B infection. Initial transthoracic echocardiography (TTE) showed a preserved left ventricular ejection fraction (LVEF) of 55% and minimal circumferential pericardial effusion, suggesting myopericarditis. Antiviral therapy with oseltamivir was initiated. On the second day, acute decompensated heart failure developed and despite diuretic therapy and medical management, her condition deteriorated into cardiogenic shock. Repeat TTE showed an LVEF of 15–20%, necessitating mechanical circulatory support. The patient was subsequently transferred to the Cardiac Intensive Care Unit.

**Conclusion**: This case highlights the rapid progression of myopericarditis to cardiogenic shock, emphasizing the importance of early diagnosis, aggressive therapy, and multidisciplinary management. It also reinforces the need for preventive measures like vaccination to mitigate severe outcomes.

**Keywords:** Extracorporeal Membrane Oxygenation, Influenza B virus, Myocarditis, Pericarditis, Shock, Cardiogenic

# CR150

## Ectopic Cushing Syndrome Due To Metastatic Neuroendocrine Carcinoma Of The Breast

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**Introduction:** Ectopic Cushing syndrome (ECS) is caused by adrenocorticotropic hormone (ACTH) secretion from tumors outside the pituitary gland, most commonly from small cell lung cancer. Neuroendocrine carcinoma (NEC) of the breast is a rare diagnosis that scarcely presents with clinical manifestation of ectopic hormone production.

**Case report:** A 43-year-old female presented to the emergency department with abdominal pain accompanied by previous symptoms of palpitations, tremors, and occasional chest pain. She had a history of hypertension managed with perindopril and potassium citrate. She reported having gained 8 kg in the last month, facial swelling, insomnia, frequent urination, sweating, and increased facial hairiness. Physical examination revealed skin thinning, dermatitis, central obesity, facies lunatum, buffalo hump and palpable hepatomegaly. Laboratory results showed elevated ACTH, serum and urine cortisol, alongside abnormal tumor markers. Imaging revealed a necrotic expansive lesion in the right breast, enlarged lymph nodes of the right axilla, liver lesions, and bilateral enlargement of the adrenal glands. A breast biopsy confirmed the diagnosis of NEC with lymphatic metastasis with positive ACTH staining in tumor tissue. ECS was treated with bilateral adrenalectomy and hydrocortisone substitution therapy. Liver biopsies confirmed systemic disease, necessitating chemotherapy. Following complaints of frequent occipital headaches, brain imaging showed a frontoparietal metastasis which was surgically removed. The patient progressed, receiving gamma knife therapy and five lines of chemotherapy, but worsened after an epileptic attack and passed away after 3 years.

**Conclusion:** Early intervention and vigilant monitoring are essential to address complications and improve patient outcomes in cases of ECS associated with rare NEC.

**Keywords:** Adrenocorticotropic Hormone; Breast Neoplasms; Cushing Syndrome; Neuroendocrine Tumors

# CR151

## Mycoplasma pneumoniae-associated pediatric encephalitis

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**Introduction:** *Mycoplasma pneumoniae* infection usually manifests as upper respiratory tract inflammation, acute bronchitis or atypical pneumonia, rarely bullous myringitis. Manifestations outside the respiratory system, including the central nervous system and hematological/immunological manifestations, are rare.

**Case report:** A 13-year-old male patient was admitted due to subfebrility, unconsciousness and prolonged left-sided hemiconvulsions. He had leukocytosis, normal C-reactive protein, discrete inflammatory lung changes, diffusely irregular and slow electroencephalogram. Multislice spiral computed tomography of the brain showed pathological content in the right mastoid, therefore myringotomy was performed. Earlier that week, he had pain in the right ear and a dry cough which resolved after azithromycin. Due to suspected encephalitis, a lumbar puncture was performed and revealed normal cerebrospinal fluid findings and was negative for usual causes of meningoencephalitis. Brain magnetic resonance imaging was normal. Nasopharyngeal and middle ear aspirates were polymerase chain reaction - positive for *Mycoplasma pneumoniae*, while cerebrospinal fluid was negative. Blood serology tests showed positive IgM and IgG antibodies. *Mycoplasma pneumoniae* was successfully cultured from the middle ear aspirate. Therapy included levofloxacin (7 days) and methylprednisolone (5 days). A few days later he was afebrile with normal neurological status and without recurrence of seizures. After 3 weeks, the control electroencephalogram showed left frontocentrotemporal epileptogenic changes. He was referred to pediatric neurology due to suspected postencephalitic epilepsy.

**Conclusion:** The central nervous system manifestations occur in approximately 0.1% of patients with *Mycoplasma pneumoniae* infection, most frequently in children as meningoencephalitis. Lymphocytic pleocytosis can occur but *Mycoplasma pneumoniae* is rarely found in cerebrospinal fluid. Neurological sequelae (headaches or postencephalitic epilepsy) appear in 40 % of cases. Corticosteroids along with antibiotics contribute to faster recovery.

**Keywords:** Central Nervous System Infections; Encephalitis; Mycoplasma pneumoniae

# CR152

## Cocaine Nose and Neurological Consequences: A Complex Case of CIMDL

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**Introduction:** Long-term intranasal cocaine use may cause vasoconstrictive ischemic osseocartilaginous necrosis and perforation of midline structures, the process named cocaine-induced midline destructive lesions (CIMDL) or “cocaine nose”. The prevalence of cocaine use in Croatia is 2.7%, contributing to the public health burden. We present a complex case of CIMDL which required a comprehensive approach of specialists.

**Case report:** A 68-year-old male patient was transferred to our department in a state of confusion with mild left hemiparesis, urinary incontinence, and visual hallucinations, which were treated unsuccessfully for 4 weeks in another hospital. He had a history of head trauma 3 months ago and a bilateral frontal pulsating headache that intensified a month ago. A computerized tomography scan showed bilateral frontal hypodensities with surrounding edema. Laboratory findings indicated normocytic anemia and elevated inflammatory parameters, requiring empiric antibiotic therapy. The patient’s condition deteriorated during the second day of hospitalization. Contrast-enhanced magnetic resonance imaging (MRI) showed bilateral medial vasogenic edema of the frontal lobes and severe inflammation of the local meninges and paranasal sinuses. Cerebrospinal fluid analysis showed no specific signs of a central nervous system infection. Later, the patient reported cocaine consumption. Indirect immunofluorescence showed a high perinuclear antineutrophil cytoplasmic antibody titer, which suggested CIMDL. Pulse corticosteroid therapy was administered, after which the follow-up contrast MRI indicated regression of the edema. Following further physical rehabilitation, the patient’s state significantly improved.

**Conclusion:** This rare case highlights the importance of a multidisciplinary approach to patient treatment and thorough history-taking. Considering the rate of consumption of illegal substances and its consequences, it becomes necessary to raise awareness and act to combat this problem.

**Keywords:** Antibodies, Antineutrophil Cytoplasmic; Cocaine; Cocaine-Related Disorders; Vasculitis

# CR153

## Transmesenteric internal hernia found accidentally during treatment for the carcinoma of the rectum in a 57-year-old female patient: a case report

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**Introduction:** A transmesenteric internal hernia (TIH) is a rare type of an internal abdominal hernia that can occur through a congenital or an acquired defect in the mesentery. It most commonly presents with intestinal obstruction and can lead to volvulus and bowel strangulation. However, TIH may sometimes present with silent symptoms such as nausea and epigastric discomfort or it can even be asymptomatic.

**Case report:** A 57-year-old female patient presented to a general hospital due to blood in the stool. The patient had no other symptoms. Colonoscopy revealed a tumor located 7.6 centimeters from the anocutaneous border. Pathohistological analysis of the tumor biopsy revealed adenocarcinoma of the rectum. After neoadjuvant chemoradiotherapy, the patient was scheduled for surgery. Preoperative computed tomography revealed a transmesenteric internal hernia. During laparoscopic operation, the inferior mesenteric artery and vein could not be located due to the presence of TIH, necessitating conversion to open surgery. In the abdomen, the colon was located in the right hemiabdomen, while all the small intestines were located in the left hemiabdomen and inside a peritoneal sac. The peritoneal sac was dissected, bowel loops were repositioned, and the Hartmann operation was performed with uneventful postoperative recovery. The patient was doing well during follow-up examinations.

**Conclusion:** To conclude, TIH can be difficult to diagnose due to non-specific clinical and imaging findings and can cause life-threatening bowel ischemia. In this case, the patient was asymptomatic, and TIH was discovered accidentally. However, TIH should always be surgically resolved due to possible complications.

**Keywords:** Adenocarcinoma; Internal Hernia; Rectum

# CR154

## Navigating High-Risk Pregnancy: A Case Report on Cervical Insufficiency in a Diabetic Primigravida Vetusta

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**Introduction:** Painless cervical dilatation and subsequent inability of the cervix to retain the fetus is named cervical insufficiency. Cervical insufficiency affects up to 1% of all pregnancies. We present a case of a primigravida vetusta with type II diabetes mellitus (DM) who developed cervical insufficiency.

**Case report:** A 42-year-old primigravida in the 13th week of gestation was admitted to our emergency room because of acute vaginal bleeding without abdominal pain. She has a history of type II DM and a proper glycemic level. A gynecologic examination revealed a scarce amount of fresh blood and a coagulum in the vagina, with a closed and firm cervix. Ultrasound showed a viable fetus intrauterine and a small supracervical hematoma. After the patient was discharged for home treatment, she was readmitted to our department in the 25th week of gestation because of pronounced pelvic pressure and discomfort when sitting. A shortened cervix with protrusion of the fetal membranes to the external os of the cervix was visualized on examination, which required cervical cerclage and hospitalization. During hospitalization, therapy with nifedipine and low-molecular heparin was introduced, after which the patient's condition stabilized, and she was discharged home to rest. Because of fetal macrosomia, the mother's age and comorbidity, it was decided to end the pregnancy by elective cesarean section in the 40th gestation week. Recovery went well and the patient was discharged in good condition.

**Conclusion:** We wanted to emphasize the importance of timely diagnosis of cervical insufficiency for successful pregnancy outcomes. Since there is limited data on the association between cervical insufficiency and type II DM, we think conducting research in this field would be valuable.

**Keywords:** Cerclage, Cervical; Diabetes Mellitus, Type 2; Pregnancy in Diabetics; Uterine Cervical Incompetence

# CR155

## Watch out for the silent killer - a case report

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**Introduction:** There are broad etiologies for heart failure (HF). In some cases, tachycardiomyopathy (TCM) develops, in which the myocardium develops ventricular dysfunction because of a persistently abnormal heart rhythm. This clinical picture poses a significant diagnostic challenge.

**Case report:** We present a case of a 66-year-old male patient referred from the emergency department due to the first manifestation of decompensated heart failure. The patient complained of fatigue, orthopnea, and coughing while lying down, without peripheral edema or nausea. Physical examination revealed an arrhythmic pulse of 130 bpm and bilateral crepitations on lung auscultation. An electrocardiogram (ECG) showed atrial fibrillation with a ventricular rate of 160 bpm. Echocardiography revealed enlarged atria, a moderately reduced ejection fraction (40%), and mild tricuspid and mitral regurgitation. Coronary angiography revealed mild atherosclerotic changes. The patient was scheduled for electrical cardioversion. The initial ECG showed atrial fibrillation (75 bpm), and after the procedure, sinus rhythm was restored (40 bpm). In the second hospitalization, cryoablation of the pulmonary veins was done, after which sinus rhythm was maintained. Follow-up echocardiography showed complete recovery of the ejection fraction (60%).

**Conclusion:** TCM should be considered in a patient with no prior cardiovascular history who presents with new-onset HF in the setting of AF with a rapid ventricular response if other causes were excluded. This case report highlights the importance of early recognition and management of atrial fibrillation, as its often asymptomatic presentation can lead to serious consequences including heart failure.

**Keywords:** Arrhythmias, Cardiac; Atrial Fibrillation; Heart Failure

# CR156

## Unrecognized High-Risk Antiphospholipid Syndrome Presenting with Pregnancy Complications and Ischemic Stroke: A Case Report

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**Introduction:** The aim of this case is to explore a complicated presentation of antiphospholipid syndrome (APS). It is an autoimmune disorder that causes hypercoagulability, considerably increasing the risk of thrombosis and pregnancy complications.

**Case report:** A 28-year-old woman with pregnancy-associated hypertension and hypothyroidism developed a placental abruption at 36+2 weeks and an emergency cesarean section was performed. Two years later, she presented with dysphasia, left-sided facial numbness, and weakness in the left arm, all of which completely resolved within seven days. Magnetic resonance imaging was done and it suggested an ischemic lesion in the right frontal lobe consistent with a stroke, however, no further diagnostics was done. Six months later, she developed hypertension managed with bisoprolol and amlodipine. Given her prior ischemic stroke, thrombophilia testing was recommended. Laboratory results revealed significantly elevated APS markers (β2-glycoprotein 1 IgG: 1409.7 kIU/L, anticardiolipin IgG: 578.1 kIU/L), leading to a diagnosis of high-risk APS. Genetic testing identified mutations in the methylenetetrahydrofolate reductase (MTHFR) and plasminogen activator inhibitor-1 (PAI-1) genes, further increasing the risk of thrombosis. Enoxaparin was initiated as anticoagulation therapy and the patient improved significantly. A follow-up MRI revealed multiple punctate vascular lesions predominantly in the right hemisphere, with one older lesion in the right frontal lobe subcortically and another in the right centrum semiovale. No signs of acute ischemia were present and the patient is now on long-term therapy with warfarin and bisoprolol.

**Conclusion:** Unexplained vascular events require a thorough clinical evaluation and regular follow-ups for an accurate diagnosis. Thrombophilic conditions like APS can affect multiple organ systems and lead to severe, potentially life-threatening complications if not recognized and treated on time.

**Keywords:** Antiphospholipid Syndrome; Abruptio Placentae; Hypertension; Ischemic Stroke; Thrombophilia

# CR157

## The detection of 16p13.11 microdeletion syndrome and Klinefelter syndrome in a patient with epilepsy and cognitive delay

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**Introduction:** 16p13.11 microdeletion syndrome is a rare genetic condition arising from the partial deletion of the short arm of chromosome 16, resulting in a variety of clinical phenotypes depending on the affected genes.

**Case report:** A 12-year-old patient presented for genetic evaluation due to epilepsy and cognitive delay. He experienced his first seizure at the age of 9. During the diagnostic evaluation, an electroencephalogram revealed generalized paroxysmal dysrhythmia, while magnetic resonance imaging showed delayed myelination of the periventricular white matter. Therapy with levetiracetam was started, and the patient responded well to it. In addition to delayed psychomotor development and speech delay, the patient also has delayed puberty markers and dysmorphic features, which include hypertelorism, a saddle nasal bridge, a bulbous nasal tip, elongated philtrum, irregularly shaped ears with otapostasis, clinodactyly, and adipomastia. Chromosomal microarray (CMA) was performed, revealing a duplication of the entire X chromosome, indicating Klinefelter syndrome (KS), which was further confirmed by karyotyping. Additionally, the CMA detected an interstitial deletion at 16p13.11, measuring 1,236 MB, which was inherited from the mother. This region includes 14 genes listed in the Online Mendelian Inheritance in Man database, among which *NDE1* and *MYH11* are considered pathogenic. 16p13.11 microdeletion is associated with epilepsy, learning difficulties, and dysmorphic features. Literature reports describe a variable phenotype in patients due to incomplete penetrance of the genes, which explains the absence of symptoms in patient's mother.

**Conclusion:** A multidisciplinary approach, including a thorough genetic evaluation, is essential in children with neurodevelopmental disorders and dysmorphic features. Our patient has KS and 16p13.11 microdeletion syndrome, and requires endocrinological and psychological monitoring, along with appropriate educational support.

**Keywords:** Chromosome Deletion; Epilepsy; Genetic Testing; Klinefelter Syndrome;

# CR158

## Refractory chronic heart failure stabilized by peritoneal ultrafiltration

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**Introduction:** Chronic heart failure is a leading cause of emergency admissions and hospitalizations, with diuretic resistance increasing mortality risk. Since 2020, our center has used peritoneal ultrafiltration with icodextrin solutions as a complementary treatment to diuretic therapy.

**Case report:** A 70-year-old patient was hospitalized at the Clinic for Heart and Vascular Diseases in June 2020 for dyspnea and anasarca. Since 2018, the patient has been monitored for right-sided heart failure, atrial fibrillation, and severe tricuspid regurgitation, along with chronic kidney disease stage 3. Due to poor response to diuretics, he underwent slow continuous ultrafiltration, followed by intermittent extracorporeal ultrafiltration, removing 12 L during hospitalization and 40 L over 3 months outpatient. Despite ongoing treatments, recurrent hypotension limited effectiveness. Due to the burden of frequent visits, peritoneal ultrafiltration was recommended as the next treatment option. In July 2020, a peritoneal catheter was implanted in the transversus abdominis plane block. Due to liver dysfunction and subsequent congestion, the post-procedural course was complicated by bleeding around the catheter exit site, and anticoagulant therapy was adjusted. During the initial catheter flushing, a significant amount of ascites was evacuated. Daily exchanges of icodextrin were started, with 10-12 hour dwell times, maintaining a satisfactory volume status, and short-term bridging with continuous veno-venous hemodialysis when the patient was hospitalized in late August 2020 for altered consciousness and bradycardia. Following the stabilization of the patient with intensive treatment and the implantation of a cardiac pacemaker, peritoneal ultrafiltration was maintained, performed three times a week, with no further episodes of heart failure.

**Conclusion:** Peritoneal ultrafiltration effectively removes excess fluid and reduces congestion in diuretic-resistant chronic heart failure. Home-based treatment helps maintain quality of life and reduces volume fluctuations.

**Keywords:** Diuretics; Heart Failure; Peritoneal Dialysis

# CR159

## Management of Concurrent Gastrointestinal Bleeding and Acute Myocardial Infarction – Case Report

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**Introduction:** Gastrointestinal bleeding in patients with acute cardiac events requires careful consideration of treatment options. Achieving an optimal patient outcome involves finding a good balance between the need for antiplatelet therapy and the risk of further bleeding. This paper aims to present a complex case and manage concurrent events.

**Case report:** A 75-year-old male was admitted to the emergency room due to hematemesis, and melena, presenting with symptoms of acute posthemorrhagic anemia. He also complained of current chest pain with ST-elevation in the infer posterolateral leads on Electrocardiogram (ECG). The patient has a history of recent acute myocardial infarction (AMI), chronic smoking, and occasional alcohol use. After initial resuscitation with blood transfusion and volume optimization, an esophagogastroduodenoscopy was performed, identifying an ulcer classified as Forest III in the antrum. Optimal medical treatment with low molecular weight heparin (LMWH) and clopidogrel was initiated along with proton pump inhibitor application. While in the Intensive Care Unit (ICU) the patient experienced recurrent chest pain. He was transferred to the cardiology department for a repeat Percutaneous Coronary Intervention (PCI). The response to therapy and PCI was considered adequate, and the patient was discharged.

**Conclusion:** This case emphasizes the complexity of managing patients with both gastrointestinal bleeding and AMI. It highlights the need for finding a balance between introducing an antiplatelet therapy and the bleeding risk, requiring a multidisciplinary approach. Timely diagnostics, treatment decisions, and close monitoring throughout the course of care can greatly improve patient outcomes.

**Keywords:** Gastrointestinal Hemorrhage; Myocardial Infarction; Percutaneous Coronary Intervention; Platelet Aggregation Inhibitors

# CR160

## Simultaneous GI bleeding, Cerebrovascular Event and NSTEMI: Challenges in Acute Management and Treatment Prioritization

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**Introduction:** Multimorbidity poses a challenge in cases requiring urgent yet contradictory treatments. Managing acute coronary syndrome (ACS) requiring percutaneous coronary intervention (PCI), dual antiplatelet therapy, and anticoagulation becomes complex when acute gastrointestinal bleeding and stroke co-occur. These conditions contraindicate essential therapies and increase risks if PCI is performed. This necessitates prioritizing interventions to optimize outcomes.

**Case report:** A 75-year-old male presented with chest pain, vertigo, and melena. His history included hypertension. Electrocardiogram showed atrial fibrillation with diffuse ST changes and elevated high-sensitivity-Troponin-I, indicating non-ST-elevation myocardial infarction. Anemia due to gastrointestinal bleeding (melena, Forrest III duodenal ulcer) was confirmed after erythrocyte transfusion and stabilized with pantoprazole. Vertigo and left-side paresis prompted computed tomography, revealing an acute ischemic stroke in the right frontal lobe. Computed tomography angiography showed occlusion of the right carotid artery but preserved intracranial a. cerebri media. Coronary angiography identified chronic calcified stenoses middle left anterior descending artery, anterior circumflex artery, obtuse marginal arteries 1,2. Echocardiogram showed mild inferoposterior wall hypokinesia with preserved systolic function. The gastrointestinal bleed likely caused anemia, triggering the ACS, while the stroke was attributed to chronic carotid disease or embolization as a result of atrial fibrillation. PCI was postponed for six weeks due to the bleeding and stroke, as stent implantation and dual antiplatelet therapy would be life-threatening. A dual clopidogrel – direct oral anticoagulant regimen was initiated, and the patient was discharged stabilized, with plans for re-hospitalization for PCI, expecting the acute comorbidities to stabilize by then.

**Conclusion:** This case highlights the need for individualized treatment in complex scenarios excluded from clinical trials. Their treatment must be based on an individual approach, guided by common sense and consultation of experts from various medical fields. Expert collaboration and real-time adjustments are crucial for optimal outcomes.

**Keywords:** : Acute Coronary Syndrome; Clinical Medicine; Gastrointestinal Hemorrhage; Multimorbidity; Stroke

# CR161

## A case of posterior reversible encephalopathy syndrome in postpartum eclampsia

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**Introduction:** Posterior reversible encephalopathy syndrome (PRES) is a rare neurological disorder that presents with headaches, seizures, visual disturbances and altered consciousness. This syndrome is associated with several clinical conditions such as hypertension, autoimmune diseases, preeclampsia, eclampsia and chemotherapy. The aim of this abstract is to report a case of PRES in a patient with postpartum eclampsia.

**Case report:** A 21-year-old primigravida had a successful vaginal delivery and gave birth to a healthy boy. Two days later she reported nausea and headache that did not respond to medication. She also complained of pain in the neck and upper back as well as the sense of instability while standing up. A magnetic resonance imaging (MRI) of the brain was performed, but the results were normal. As her condition worsened with visual disturbances, hypertension (200/100 mmHg) and tonic-clonic seizure which was treated with 1500 mg of levetiracetam intravenously, she was transferred to the neurological intensive care unit. A computerized tomography of the brain did not reveal an acute neurological disorder. Cerebrospinal fluid (CSF) analysis ruled out infectious etiology and autoimmune encephalitis. An MRI of the brain was performed again and by comparing it to the first MRI and considering the normal results of CSF analysis, the patient was diagnosed with PRES. She was treated with methyldopa, diazepam and lamotrigine. Twelve days later she was discharged home fully recovered and without any neurological deficits.

**Conclusion:** We have decided to present this case in order to emphasize that PRES should be considered as a differential diagnosis of neurological symptoms during the puerperal period. Early diagnosis and treatment of PRES are crucial for complete recovery.

**Keywords:** Eclampsia; Magnetic Resonance Imaging; Posterior Leukoencephalopathy Syndrome

# CR162

## Severe Staphylococcus aureus Infective Endocarditis in a Patient with Myxomatous Mitral Valve Prolapse: A Case of Multisystem Complications

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**Introduction:** Mitral regurgitation (MR) due to myxomatous mitral valve prolapse (MVP) is a common valvular disorder that increases the risk of infective endocarditis (IE), a serious condition associated with high morbidity and mortality. Staphylococcus aureus is a leading causative organism in IE, often leading to aggressive valve destruction and systemic complications.

**Case report:** A 47-year-old patient with known severe MR due to MVP presented with S. aureus sepsis, leading to multiple complications, including progressive chronic kidney disease, mild congestive heart failure, and reactive arthritis of the left shoulder. Two days before admission, the patient developed a fever of up to 40°C, accompanied by chills, shivering, and general weakness. On the same day, severe pain developed in the left shoulder, followed by macrohematuria the next day. Blood cultures confirmed S. aureus in all four bottles. The patient was initially treated with empirical ceftriaxone and flucloxacillin, later de-escalated to monotherapy based on microbiological findings. Echocardiography confirmed severe MR due to P2 segment prolapse. A follow-up transesophageal ultrasound revealed vegetation and an abscess of the mitral annulus below the posterior leaflet, though no perforation was observed. Left ventricular systolic function monitoring indicated septic cardiomyopathy. After 15 days of targeted therapy, the patient's condition improved significantly, remaining afebrile with sterile blood cultures and a regressive trend in inflammatory markers.

**Conclusion:** This case underscores the importance of early diagnosis, appropriate antimicrobial therapy, and a multidisciplinary approach in managing S. aureus IE in patients with predisposing valvular conditions. Timely intervention is crucial in preventing life-threatening complications and optimizing clinical outcomes.

**Keywords:** Endocarditis; Mitral Valve Prolapse; Sepsis; Staphylococcus aureus

# CR163

## Ischemic heart disease leading to advanced heart failure- the role of durable mechanical circulatory support with left ventricular assist device

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**Introduction:** Ischemic heart disease is one of the leading causes of heart failure (HF), and some patients progress to the stage of advanced HF, when medical therapy has little effect on outcomes and patients may be candidates for advanced HF therapies.

**Case report:** A 60-year-old male was hospitalized for severe advanced heart failure (New York Heart Association (NYHA) IV) due to ischemic heart disease with severely reduced left ventricular (LV) function and apical LV thrombus on echocardiography. His medical history included paroxysmal atrial flutter, hypertension, hyperlipoproteinemia, and previous multiple percutaneous coronary interventions which were done due to severe stenosis of coronary arteries. On admission, clinical examination showed severe cardiac decompensation with low output and signs of congestion, such as dyspnoea, fatigue and peripheral oedema. Due to inadequate response to optimal pharmacological therapy (beta-blockers, mineralocorticoid receptor antagonist, angiotensin receptor/neprilysin inhibitor, sodium-glucose transport protein 2 inhibitor), he was treated with intravenous diuretics and inotropic support with dobutamine and milrinone. Advanced HF therapies were considered, and due to unstable clinical and haemodynamic condition, the patient couldn't wait on heart transplant waiting list, therefore indication for left ventricular assist device (LVAD) implantation was made. The surgical procedure was challenging due to LV apical thrombus which carries high risk of embolization because LVAD's inflow cannula is inserted through LV apex. Following LVAD implantation the patient had no neurological problems, and his cardiac function stabilized allowing cessation of all inotropic and diuretic support. The patient is currently in regular outpatient follow-up, with no complications of the LVAD therapy.

**Conclusion:** This case underscores the importance of a complex multidisciplinary approach in managing patients with advanced heart failure due to ischemic heart disease.

**Keywords:** Cardiomyopathies; Heart Failure; Thrombectomy

# CR164

## Mechanical circulatory support in the treatment of acute myocarditis

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**Introduction:** Postinfective myocarditis is an important cause of heart muscle inflammation that presents diagnostic and therapeutic challenges. Clinical presentation varies from electrocardiographic abnormalities and mild viral illness to acute hemodynamic instability or sudden cardiac death. Therefore, patients may require mechanical circulatory support (MCS) such as extracorporeal membrane oxygenation (ECMO) and left ventricular assist device (LVAD) as a bridge-to-recovery but not without risk of significant complications.

**Case report:** A young male adult with no significant past medical history presented to the department of infectology with a three-weeks history of flu-like symptoms and chest pain. Transthoracic echocardiography (TTE) revealed a pericardial effusion with lowered systolic function. His general condition deteriorated rapidly leading to the intensive care unit transfer where cardiac arrest happened. After achieving return of spontaneous circulation, the patient is hemodynamically highly unstable, and veno-arterial ECMO placement is indicated. New TTE showed a left ventricular ejection fraction of 15% while X – ray indicated „ECMO lungs“ confirmed by right-heart catheterization with elevated left ventricle filling pressure. Therefore percutaneous LVAD (Impella CP) was placed to relieve left ventricle. Due to recovery in cardiac but not in pulmonary function, patient developed Harlequin syndrome requiring reconfiguration of veno-arterial to veno-arterial-venous ECMO, and subsequently to veno-venous ECMO. After 8 days, MCS was discontinued and patient subsequently recovered.

**Conclusion:** Acute myocarditis is one of the most challenging diagnosis in cardiology with a variable clinical presentation and progression. Patients with acute myocarditis often require mechanical circulatory support which enables maintaining the patient alive until cardiac function recovery or heart transplantation.

**Keywords: E**xtracorporeal Membrane Oxygenation; Heart-Assist Devices; Myocarditis

# CR165

## Urgent Liver Transplantation for Pseudoaneurysm of the Hepatic Artery Caused by Septic Embolism after Infective Endocarditis: Managing Multi-Organ Complications

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**Introduction:** Infective endocarditis can lead to severe complications and can be difficult to manage even after successful cardiac surgical treatment. Vascular complications such as hepatic artery pseudoaneurysms can lead to rapid deterioration of liver function necessitating urgent treatment including liver transplantation.

**Case report:** A 28-year old patient was admitted to University Hospital Merkur due to worsening liver function and signs of systemic infection. His past medical history was significant for mechanical mitral valve replacement performed for infective endocarditis one month prior to admission. The patient presented with upper abdominal pain and jaundice, indicative of acute liver failure. An abdominal multislice computed tomography (MSCT) scan revealed a pseudoaneurysm of the hepatic artery, multiple liver abscesses, and signs of portal hypertension due to compression of the portal vein by the pseudoaneurysm. Multiple abscesses of the spleen and the left kidney were also present. Despite conservative treatment, liver dysfunction progressed and an urgent liver transplantation was indicated. 5 days post-admission, the patient underwent a cadaveric liver transplant. Left nephrectomy and splenectomy were also performed. Anticoagulant therapy, required for the mechanical mitral valve, increased the risk of bleeding, particularly in the presence of vascular and hepatic complications. Postoperatively, the function of the liver graft was stable while cardiological monitoring showed proper function of the mitral prosthesis without any further signs of thromboembolic complications. The patient was released three weeks after the transplant in good condition.

**Conclusion:** This case highlights the challenge in managing patients with complications of infective endocarditis. Early diagnosis and a multidisciplinary approach were crucial in the decision making process for this patient presenting with multiple surgical and medical risks. Liver transplantation may serve as a life-saving treatment in the management of patients with hepatic complications of infective endocarditis.

**Keywords:** Aneurysm, False; Endocarditis; Liver Transplantation; Mitral Valve Annuloplasty

# CR166

## Infective endocarditis with high suspicion of sarcoidosis: a complication or a false positive?

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**Introduction:** Infective endocarditis (IE) is a condition that affects both endocardial and valve tissue. It is most commonly caused by gram – positive bacteria. Accompanied by mitral valve prolapse (MVP; displacement of an abnormally thickened mitral valve leaflet into the left atrium during systole), the risk of developing IE increases 7 fold.

**Case report:** A 63 – year – old female patient was referred to the cardiology ward from the emergency department due to cardiac decompensation and myocardial infarction with no ST segment elevation (NSTEMI) that was treated in real time. Coronarography confirmed significant stenosis of the distal segment of the circumflex artery. In November 2023, massive mitral regurgitation (MR) was verified via echocardiography upon admission as a possible complication of MVP. Later in the same month, a transesophageal echocardiogram confirmed the aforementioned alongside a stick – like mass on the anterior cusp of the mitral valve measuring 4 mm. Due to high suspicion of IE pertaining to the findings, hemocultures isolated S. aureus and she underwent antibiotic treatment. With additional diagnostics (magnetic resonance of the heart, positron emission tomography), another mass on the lateral wall of the left ventricle was shown alongside multiple bilateral subpleural nodules with high metabolic activity, alluding to sarcoidosis. Later on, the patient was examined by a pulmonologist: bronchoscopy was unremarkable and chitotriosidase came back negative, fully dismissing sarcoidosis. Her case was presented to the surgical team with the aim to perform valve and cardiac bypass surgery: upon agreement, she was released home and readmitted in May 2024, when surgical treatment was put forward. A follow – up exam after surgery showed regression of both NTproBNP and MR.

**Conclusion:** To summarize, although most cases of IE may be addressed with antibiotics alone, intra-cardiac complications should prompt surgical consultation while excluding other cardiac or connective tissue entities that oftentimes cause atypical symptoms in women.

**Keywords:** Endocarditis; Mitral Valve Insufficiency; Sarcoidosis

# CR167

## 22q11.21 microduplication syndrome – a case report

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**Introduction:** 22q11.21 microduplication syndrome is a rare genetic disorder that involves having an extra copy at position q11.2 on chromosome 22. It is inherited in an autosomal dominant manner, and its clinical phenotype is extremely variable and may include heart defects, urogenital abnormalities, velopharyngeal insufficiency, and ranging from multiple defects to mild learning difficulties. We report on a patient with one variation of this syndrome's phenotype.

**Case report**: A 16-month-old female patient born from the first uncontrolled pregnancy of non-consanguineous healthy parents is presented. Phenotypically, she has a posteriorly flattened neurocranium with facial dysmorphia (orbital hypotelorism, lowered eyelids, saddle-shaped nasal root, anteverted nares, irregularly shaped and low-positioned auricles in otapostasis), short neck and wide thumbs and big toes. Contrast-enhanced voiding urosonography confirmed congenital bilateral vesicoureteral reflux. Magnetic resonance imaging of the brain showed colpocephaly, corpus callosum agenesis and hippocampal malrotation. Neurological examination confirmed that global hypotonia and psychomotor retardation are present. Karyotyping showed no chromosomal abnormalities, but chromosomal microarray analysis revealed three copies of the 2Mb genome in the 22q11.21 region, affecting 82 genes in total, of which 13 are considered pathogenic. The genomic region 22q11.2 contains several large segments of low copy repeats duplications that are mediators of non-allelic homologous recombination and predispose to the occurrence of microdeletions and microduplications.

**Conclusion:** Since less than a hundred cases of this enigmatic genetic disorder worldwide have been reported, and they show great variability among cases, it's extremely important to report on its clinical presentations to help in providing adequate care for patients and their parents.

**Keywords:** Chromosome 22q11.2 Microduplication Syndrome; Microarray Analysis; Segmental Duplications, Genomic

# CR168

## Cardiac Amyloidosis Diagnosed During Cancer Screening - From Diagnostics to Treatment

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**Introduction:** Amyloidosis is a systemic disease caused by accumulation of pathological protein in extracellular space. In heart, accumulation leads to restrictive cardiomyopathy and heart failure. Depending on protein being accumulated, it is classified as amyloid light chain (AL) caused by deposition of misfolded immunoglobulin light chains from abnormal plasma cells, or transthyretin amyloidosis (ATTR), made of either native or variant transthyretin protein. While AL amyloidosis requires specific treatment targeting plasma cells, ATTR amyloidosis is effectively treated with drugs like tafamidis that stabilize transthyretin protein or reduce its overall production, thus preventing formation of deposits.

**Case report:** Amyloidosis is a systemic disease caused by accumulation of pathological protein in extracellular space. In heart, accumulation leads to restrictive cardiomyopathy and heart failure. Depending on protein being accumulated, it is classified as amyloid light chain (AL) caused by deposition of misfolded immunoglobulin light chains from abnormal plasma cells, or transthyretin amyloidosis (ATTR), made of either native or variant transthyretin protein. While AL amyloidosis requires specific treatment targeting plasma cells, ATTR amyloidosis is effectively treated with drugs like tafamidis that stabilize transthyretin protein or reduce its overall production, thus preventing formation of deposits.

**Conclusion:** Despite its significant impact on cardiac function, cardiac amyloidosis remains under-recognized cause of heart failure due to its non-specific symptoms, especially in elderly patients. Accurate diagnosis of ATTR cardiomyopathy and appropriate specific treatment can effectively stabilize cardiac function and improve patient outcomes.

**Keywords:** Amyloidosis; Cardiomyopathies; Tafamidis

# CR169

## Atypical clinical presentation of Stanford A aortic dissection

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**Introduction:** Aortic dissection is a life-threatening condition that requires urgent medical attention and treatment. This condition often presents with typical symptoms such as sudden onset of tearing chest pain, symptoms of shock and cardiovascular instability, tachycardia and hypotension, dyspnea, and, rarely, neurological symptoms.

**Case report:** A 69-year-old female with no known comorbidities reported to the emergency room with the symptoms of rapid onset of short-lasting left-sided neck and shoulder pain and dyspnea. Patient was conscious, afebrile, dyspneic, heart rate 67bpm, blood pressure 140/80mmHg. No other significant findings in clinical status except severe bilateral varicose veins on lower extremities. Diagnosis of heart failure was made based on symptoms, signs and elevated natriuretic peptides level. Patient was admitted and remained hemodynamically stable. Laboratory findings have shown elevated inflammatory parameters, which alongside initially overlooked continuous precordial murmur raised concern of endocarditis. Echocardiogram showed dissection flap above aortic valve extending into the arch causing massive functional aortic regurgitation. Urgent computed tomography aortography confirmed the diagnosis of Stanford A aortic dissection. Patient was emergently transferred to clinical hospital where she underwent complex valve sparing surgical reconstruction of ascending aorta and aortic arch. Postoperative recovery was prolonged because of neurologic sequelae.

**Conclusion:** Cardiac pathologies, such as acute coronary syndrome or heart failure, have overlapping clinical presentations, and aortic dissection is often difficult to recognize, especially when clinical presentation is atypical. Survival of patients with aortic dissection is correlated with timely diagnosis, which is based on clinical examination and imaging findings.

**Keywords:** Aortic Dissection; Cardiovascular Diseases; Emergency Treatment

# CR170

## A case of Lipoprotein (a) induced severe coronary artery disease leading to heart transplantation

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**Introduction:** Lipoprotein(a) [Lp(a)] is a type of low-density lipoprotein (LDL), that is an established independent risk factor for coronary artery disease (CAD) and aortic valve sclerosis, if elevated. Lp(a) levels are largely determined by genetics, and most lipid-lowering drugs have little to no effect on Lp(a).

**Case report:** This case presents a 61-year-old patient with a long-standing history of CAD, including multiple acute coronary syndromes (ACS), treated with multiple percutaneous coronary interventions as well as coronary artery bypass surgery. He had his first ACS with 46 years, and during the same year had multiple cerebrovascular ischemic events, finally requiring carotid artery surgery. Over the years, he developed secondary ischemic cardiomyopathy with severely reduced systolic function and malignant arrhythmias, necessitating the implantation of an implantable cardioverter-defibrillator (ICD). Late during the work-up, laboratory analyses revealed significantly elevated levels of Lp(a). He was treated with alirocumab (PCSK9 inhibitor) in combination with maximum doses of atorvastatin and ezetimibe. Although therapy sufficiently lowered LDL cholesterol, levels of Lp(a) were not affected. Additionally, apheresis to remove excessive Lp(a) was recommended, but not performed due to necessity of heart failure (HF) drug therapy cessation for procedure. The patient's HF progresses, and during the 2024. he had multiple appropriate ICD activations. Finally, he was listed for heart transplantation and successfully transplanted. Post-transplantation Lp(a) levels remain extremely elevated (449 nmol/L), and the apheresis procedure is now ongoing awaiting new drug treatments**.**

**Conclusion:** Lipoprotein(a) is a significant contributor to the early development and early progression of CAD. Given the limited availability of effective medications, it is essential to detect and manage elevated Lp(a) levels early to potentially delay or prevent the severe outcomes.

**Keywords:** Coronary Disease; Heart Transplantation; Lipoprotein(a)

# CR171

## MINOCA from diagnosis to etiology: coronary vasospasm - case report

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**Introduction:** Myocardial infarction with non-obstructive coronary arteries (MINOCA) is a clinical syndrome characterized by the presence of acute myocardial infarction (MI) without significant coronary artery obstruction (stenosis).

**Case report:** We present a patient who was hospitalized in cardiology in 2022 for a myocardial lesion with elevated levels of D-dimer 1302 µg/L and troponin I (TnI) 1842 ng/L. A coronary angiography ruled out obstructive disease of the epicardial arteries. Holter monitoring noted rare non-sustained ventricular tachycardia. Serial follow-up tests revealed a regression of troponin dynamics, with no detectable risk factors and normal blood pressure. Magnetic resonance imaging (MRI) of the heart showed mild changes consistent with a condition following myocarditis. In November 2024, she was again hospitalized with symptoms of acute coronary syndrome without ST-segment elevation. Considering the duration of the pain and progressive TnI dynamics, an urgent coronary angiography was performed, again ruling out obstructive disease of the epicardial arteries. Additionally, there were no morphological elements for Takotsubo cardiomyopathy, fulfilling the criteria for MINOCA. Vasospasm was suspected as the leading mechanism, supported by similar clinical presentations in the past initially interpreted as myocarditis. This was confirmed by a positive acetylcholine test, leading to the introduction of dual antiplatelet therapy alongside calcium antagonists.

**Conclusion:** MINOCA has recently become a more common diagnosis with clearly defined criteria and should not be overlooked, despite the absence of coronary artery obstruction. The wide range of different etiologies of this condition highlights that only cause-specific therapy leads to symptom resolution.

**Keywords:** Acetylcholine; Coronary Vasospasm; MINOCA

# CR172

## Implantation of subcutaneous implantable cardioverter defibrillator for primary prevention in non-dilated left ventricular cardiomyopathy with genetic predisposition

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**Introduction:** Non-dilated left ventricular cardiomyopathy (NDLVC) may be associated with a high risk of sudden cardiac death due to arrhythmias. Some genetic mutations can play an important role not just in diagnostic but also in therapeutic decisions. The aim of this case report is to demonstrate the successful management of NDLVC in a patient with genetic predisposition, emphasizing the significance of genetic testing and preventive techniques like implantation of subcutaneous implantable cardioverter defibrillator (S-ICD).

**Case report:** We present the case of a 57-year-old patient with a family history of cardiomyopathy and sudden cardiac death. In 2008, he was diagnosed with myocarditis with mild hypokinesia, and his left ventricular ejection fraction progressively declined from 63% in 2018 to 44% in 2023. Cardiac magnetic resonance imaging showed non-ischemic late gadolinium enhancement in multiple regions. Asymptomatic non-sustained ventricular tachycardia and ventricular ectopic beats were documented. Genetic testing revealed heterozygous mutations in the *PLN (Phospholamban) and SCN5A (Sodium Voltage-Gated Channel Alpha Subunit 5)* genes, both linked to NDLVC. After multidisciplinary evaluation, S-ICD implantation was recommended for primary prevention. In 2024, the procedure was successfully performed. Following the procedure, the patient continued his therapy with lisinopril/amlodipine, bisoprolol, ezetimibe, and paracetamol/tramadol as needed.

**Conclusion:** This case indicates the role of genetic testing and early intervention in managing patients with familial cardiomyopathy and genetic predisposition to arrhythmias. S-ICD implantation is a valuable preventive strategy, particularly in cases with structural and functional myocardial abnormalities. A multidisciplinary approach is essential for optimizing outcomes in rare cardiac disorders.

**Keywords:** Cardiomyopathies; Defibrillators, Implantable; Mutation

# CR173

## Optic Nerve Head Drusen in Young Individuals - Case Report

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**Introduction:** Optic disc drusen are calcium-containing deposits in the optic nerve head, capable of causing visual field defects and sudden visual loss. They arise from age-related alterations, with cholesterol-containing lipid droplets as their core structure, enabling protein deposition, such as amyloid-beta, apolipoproteins, and complement proteins. Their occurrence in children is rare, approximately 0.4%, typically diagnosed around 12 years of age. The occurrence in the whole population is 1-3%. Optic disc drusen often exhibit a familial pattern.

**Case report:** The case involves a 36-year-old patient who was presented for a routine ophthalmological examination without significant symptoms. The patient has been diagnosed with optic nerve papilla  drusen since birth and was prescribed glasses in 5th grade. She denies any history of eye trauma or inflammation. The family history of drusen is negative. Following a thorough examination, including optical coherence tomography and fundus photography, drusen were identified on the optic nerve papilla. Her visual acuity without correction (VOD/VOS sc) is 0.06/0.04, which improves to 1.0/1.0 with correction. No specific treatment was prescribed, with regular follow-up examinations recommended.

**Conclusion:** In children, optic disc drusen commonly present bilaterally and are prone to misdiagnosis, often confused with optic disc edema, which may necessitate more demanding examinations. It's crucial to include optic disc drusen in the list of potential causes for papilledema, as studies suggest 50 to 55% of children initially diagnosed with papilledema ultimately have optic disc drusen. Early diagnosis can help avoid unnecessary additional investigations and expenses.

**Keywords:** Child; Macular Degeneration; Optic Disc Drusen; Retina

# CR174

## Ischemic heart disease: a young patient's journey from acute coronary syndrome to heart transplantation

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**Introduction:** Myocardial ischemia causes ventricular remodeling, leading to an irreversible loss of myocardial tissue, reduced contractility, life-threatening arrhythmias, and conduction system impairment, the changes that we encompass by the term of secondary ischemic cardiomyopathy (ICM).

**Case report:** We present the case of a 35-year-old male with ischemic cardiomyopathy following an anteroseptal ST-elevation myocardial infarction occurring eight years prior and treated timely with primary percutaneous coronary intervention. The extensive work-up did not reveal specific etiology of very early onset of ischemic heart disease. He received an implantable cardioverter-defibrillator early in primary prevention of sudden cardiac death due to large burden of ventricular arrhythmias. Over the subsequent years, his clinical course was marked by stable moderately reduced systolic function of the left ventricle, almost preserved functional capacity, however with progressive rhythm disturbances. Refractory ventricular tachycardia/ventricular fibrillation episodes in the form of electrical storms occurred despite extensive antiarrhythmic therapy and multiple ablations, including stereotactic radioablation of left ventricular focus. During numerous hospitalizations, he experienced several cardiac arrests requiring resuscitation, which ultimately necessitated intermediary mechanical circulatory support with an Impella 5.5 device and urgent listing for heart transplantation. The patient underwent orthotopic heart transplantation following a challenging hospital stay complicated by sepsis and a fungal infection. The patient was discharged in a stable condition, with excellent cardiac graft function.

**Conclusion:** Ischemic heart disease is one of the main causes of heart failure, in some patients characterized also by intractable ventricular arrhythmias. This case shows different treatment options for these patients, and also remind us that heart transplantation may be the only curative option for selected patients.

**Keywords:** Arrhythmias; Heart Failure; Heart Transplantation

# CR175

## Left ventricular assist device in haemodynamically unstable ST segment elevation myocardial infarction

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**Introduction:** ST segment elevation myocardial infarction (STEMI) is a transmural ischemic injury of the myocardium caused by occlusion of coronary arteries, seen as an elevated ST segment in the electrocardiogram. STEMI can lead to acute heart failure due to dysfunction of the left ventricle. In these cases, a percutaneous left ventricular assist device can be inserted into the left ventricle to provide haemodynamic support during percutaneous coronary intervention and early recovery period.

**Case report:** We present a 59-year-old male with chest pain. The patient's medical history included chronic kidney disease, arterial hypertension and Hashimoto thyroiditis. Although the physical status was unremarkable, the electrocardiogram showed anterior STEMI while the laboratory results showed highly elevated cardiac enzymes. Emergency percutaneous coronary angiography showed a complex lesion of the left main coronary artery and acute occlusion of the left anterior descending branch. Periprocedural haemodynamic instability led to sedation, intubation of the patient and use of a left ventricular assist device (Impella (Abiomed, USA)). The patient underwent successful complex primary coronary intervention. The echocardiography showed reduced ejection fraction, with akinetic anterior and apical septal wall segments of the myocardium. As the patient stabilised the Impella system was removed, analgosedation was discontinued, and he awoke without neurological deficits. The patient was discharged on the 12th day of admission with dual antiplatelet therapy, optimal therapy for heart failure with reduced ejection fraction and a further follow-up plan.

**Conclusion:** This case shows that left ventricular assist devices are needed in periprocedural care of acute myocardial infarction with haemodynamic instability, and can aid in the early recovery period.

**Keywords:** Heart-Assist Devices; Heart Failure; Percutaneous Coronary Intervention; ST Elevation Myocardial Infarction

# CR176

## Multivessel Revascularization in a Polyvascular Patient

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**Introduction:** Polyvascular disease (PVD) is the presence of atherosclerosis in two or more vascular beds, pertaining to coronary, peripheral, or cerebrovascular arteries. PVD is a strong predictor of major adverse cardiovascular (CV) events, including CV death. Such patients require a multidisciplinary approach, and their treatment must be strict and aggressive, with maximum possible control of risk factors.

**Case report:** We present a case of a 68-year-old male, a smoker, with a history of arterial hypertension, type 2 diabetes, dyslipidemia, and tonsil cancer initially presenting with left lower claudication. Doppler examination confirmed peripheral arterial disease, and as part of further evaluation of a carotid bruit, carotid Doppler revealed bilateral subtotal stenosis of the internal carotid artery. Due to prior radiotherapy in the neck region, the stenoses were treated with carotid artery stenting (CAS). Due to claudication worsening and computed tomography angiography-confirmed peripheral arterial disease, revascularization was performed for the occlusion of the left superficial femoral artery (SFA) and significant stenosis of the right SFA using a drug-coated balloon (DCB). 9 months later, due to complaints of stenocardia, along with heart ultrasound findings including regional hypokinesia, coronarography was performed, revealing right coronary artery (RCA) stenosis which led to consequential RCA stenting.

**Conclusion:** The current guidelines clearly emphasize the need for the detection of other atherosclerosis manifestations, and these recommendations must be expanded based on the clinical findings and patient history. The sequence of revascularization in stable patients is guided by symptoms. Polyvascular patients require multidisciplinary care, including cardiologists, radiologists, and vascular surgeons.

**Keywords:** Arterial Occlusive Diseases; Cardiology; Vascular Diseases

# CR177

## Laryngeal Chondrosarcoma: A Rare Cartilaginous Tumor with Distinct Pathological Characteristics

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**Introduction:** Laryngeal chondrosarcoma is a rare malignant tumor, accounting for less than 1% of laryngeal malignancies. It is typically low-grade, with minimal metastatic potential but a high risk of local recurrence. Due to its rarity and nonspecific symptoms, diagnosis can be challenging and requires a multimodal approach.

**Case report:** A 44-year-old male presented to the pulmonology department with hoarseness, a sensation of a lump in the throat, and dyspnea. Bronchoscopy revealed right vocal cord paresis and a tumor formation causing tracheal narrowing. A computed tomography scan showed an expansive process in the right glottis, destroying the right half of the cricoid cartilage, the right arytenoid process, and the caudal edge of the thyroid cartilage. The patient underwent thyrotomy, where a supraglottic tumor mass was visualized and biopsied for histopathological examination. Histological analysis revealed hypercellular areas with hyperchromatic nuclei demonstrating pleomorphism. Some regions contained two nuclei within a single lacuna, a characteristic feature of well-differentiated chondrosarcoma. Following pathological evaluation, a multidisciplinary team recommended total laryngectomy and right thyroid lobectomy. Postoperative histopathology confirmed a 2.5 × 2.5 cm, grade 1 chondrosarcoma with 15% necrosis. The patient underwent adjuvant radiotherapy and remained recurrence-free during follow-up.

**Conclusion:** While laryngeal preservation is ideal, complete excision remains the best option for preventing recurrence in well-differentiated cases. Given the overlapping clinical and radiological features with other laryngeal tumors, definitive diagnosis of laryngeal chondrosarcoma relies exclusively on histopathological evaluation, immunohistochemistry, and molecular profiling in distinguishing it from other neoplastic and non-neoplastic cartilaginous lesions. This case highlights the importance of integrating clinical, radiological, and histopathological findings to determine the optimal treatment approach.

**Keywords:** Chondrosarcoma; Laryngeal Neoplasms; Soft Tissue Neoplasms

# CR178

## Fetal Akinesia Sequence with Pulmonary Hypoplasia- a Case Report

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**Introduction:** Fetal akinesia sequence, also known as type 1 Pena-Shokeir syndrome, is a rare genetic syndrome that almost always ends with intrauterine or neonatal death, with reported incidence of 1/1,000,000 births and autosomal recessive inheritance. The underlying etiology is dysfunction of the neuromuscular system. Antenatal ultrasonographic features include decreased fetal movements, intrauterine growth restriction, joint contractures, short umbilical cord, and pulmonary hypoplasia which is the main cause of death. Here we present a case of a neonate whose symptoms correspond with this disease.

**Case report:** A female neonate was born to parents of Syrian descent in consanguineous marriage. Because of breech positioning, the child was born by C-section at a gestational age of 39 weeks. At birth, several dysmorphic features and malformities which point to a fetal akinesia sequence were noted, including multiple contractures, small receding chin, camptodactyly, pes calcaneus and heel protrusion, as well as hypertrichosis of extremities and ambiguous genitalia. Regarding genetic analysis, Array comparative genomic hybridization and karyotype returned negative for possible causes. Since the second day of life, the child suffered from convulsions which were treated with phenobarbital and controlled with levetiracetam. Since birth, the neonate required ventilatory support, starting with a non-invasive Duo positive airway pressure, then continuing with intubation and mechanical ventilation due to worsening clinical condition.

**Conclusion:** : Pena-Shokeir Syndrome has been described as almost uniformly lethal, with 30% of fetuses being either stillborn or dying within the first month of life. It has been estimated that the recurrence risk varies between 0% and 25%. Therefore, patients who have delivered a fetus with Pena-Shokeir Syndrome should have close fetal surveillance in subsequent pregnancies. This will allow the early recognition of anomalies.

**Keywords:** Contracture; Hypertrichosis; Phenobarbital

# CR179

## Unusual Case of Intrapericardial Sustained Rupture of Subacute Ascending Aortic Dissection – Diagnostic Challenge in the Emergency Department

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**Introduction:** Aortic dissection (AD) is a life-threatening condition characterized by a tear in the aortic wall, creating a false lumen that can compromise vital organ perfusion. Most patients experience acute chest or upper back pain, while subtle presentations often lead to missed diagnoses and fatal consequences. DeBakey type II AD, which involves only the ascending aorta, is the least frequent type of AD, occurring in 10-15% of all cases.

**Case report:** A 69-year-old woman was brought to the emergency department stuporous, hypothermic, tachycardic, and hypotensive. Initially diagnosed with hypovolemic shock and stabilized in the intensive care unit. Symptoms included dizziness, abdominal pain, vomiting, and diarrhea, suggesting gastroenterocolitis. Lab results showed elevated lipases and renal and liver function deterioration. The electrocardiogram, abdominal multi-slice computed tomography and chest X-ray were unremarkable. Initial echocardiography showed circular, mostly well-organized moderate pericardial effusion prompting pericardiocentesis, revealing hemorrhagic fluid. Suspecting an enteroviral infection, the patient was treated accordingly. However, serial ultrasounds showed pericardial effusion progression and moderate ascending aorta dilation. Computed tomography angiography confirmed a contained intrapericardial rupture of DeBakey II AD without signs of vital organ malperfusion. A heart ultrasound revealed a competent aortic valve without signs of aortic regurgitation. Given the subsequently reported occasional chest discomfort two months earlier and the mostly organized pericardial effusion, a subacute AD was suspected. Urgent cardiac surgeon consultation followed.

**Conclusion:** This case highlights the diagnostic challenges of AD. Variability in symptom intensity, unclear findings as well as the absence of typical signs and symptoms often delay diagnosis. Patients with symptoms of shock and hemorrhagic pericardial effusion must be approached with the consideration of AD to ensure early treatment and reduce mortality risk.

**Keywords:** Dissection; Emergencies; Pericardial Effusion; Shock

# CR180

## Quadricuspid aortic valve as a rare cause of aortic insufficiency

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**Introduction:** A four-leafed (quadricuspid) aortic valve is a rare congenital heart defect with an incidence ranging from below 0.05% to approximately 1%. Although it is a congenital anomaly, it is usually identified late, typically in the fifth or sixth decade of life, because the heart's function remains well-preserved for a long time. The most commonly described quadricuspid aortic valve defect is aortic regurgitation, and the most common concomitant anomaly is an aneurysm of the ascending aorta.

**Case report:** : In this case, a 55-year-old female patient was admitted due to heart failure. Diagnostic evaluation revealed left ventricular dilation up to 65 mm at end-diastole caused by significant aortic insufficiency (AI). Further evaluation with transesophageal echocardiography identified a rare congenital malformation of the aortic valve—a quadricuspid aortic valve. Given the presence of heart failure, left ventricular dilation, significant AI, and ascending aortic dilation, further imaging diagnostics were conducted, including coronary angiography, which showed normal results, along with other imaging studies. Although a rare congenital anomaly, the aortic valve was successfully reconstructed using Lansac's annuloplasty without valve replacement. Lansa'c procedure treats severe AI in suitable patients by stabilizing the aortic root with an extra-aortic ring, as in our patient, where two plication sutures were placed. Six months after the procedure, the patient remains completely asymptomatic, with reduced cardiac chamber size and no signs of residual AI.

**Conclusion:** Although a quadricuspid aortic valve is a rare congenital defect, its incidence is rising due to improved diagnostics. Most cases remain undetected until adulthood or later in life, with about one-fifth requiring either repair or valve replacement. In conclusion, patients with a quadricuspid aortic valve need continuous monitoring to ensure timely intervention and proper treatment.

**Keywords**: Aortic Valve Insufficiency; Echocardiography; Quadricuspid Aortic Valve

# CR181

## Rotablation angioplasty in treating triple vessel coronary artery disease – a case report

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**Introduction:** Severe calcified coronary stenoses pose a significant challenge in interventional cardiology, often requiring advanced revascularization techniques. Although beneficial, these techniques present with similar risks of coronary dissection and stent thrombosis, requiring the same level of caution during their application.

**Case report:** A 59-year-old female patient was admitted to the cardiology department to undergo coronary angiography after experiencing chest pain even with slight physical activity. The patient had several cardiovascular risk factors, including hypertension, hyperlipidemia and type two diabetes. Laboratory findings revealed hypercholesterolemia and slightly elevated creatine kinase and lactate dehydrogenase values. Echocardiography revealed that the left ventricle was of normal morphology, and showed no kinetic abnormalities. The systolic function was normal with an ejection fraction of 60%. Coronary angiography revealed significant stenosis ostially and along the proximal segment of the left anterior descending artery (LAD), measuring 95%. The left circumflex artery was stenosed 70%, while the right coronary artery demonstrated a 60% stenosis, with complete occlusion of the posterolateral branch. Coronary artery bypass graft surgery (CABG) was recommended, but the patient refused to undergo the procedure due to fear of open-heart surgery. A decision was made to perform percutaneous coronary intervention, during which the LAD was pre-dilated but without any possibility of passing a balloon through the stenosis due to calcification. Because of this, rotablation angioplasty was performed with 1,5mm burr after which a drug-eluting stent was implanted. During the further course of hospitalization, the patient was cardiopulmonarily compensated and in sinus rhythm.

**Conclusion:** Although triple vessel coronary artery disease is an indication for CABG, in exceptional cases like this one, when the patient refuses the aforementioned intervention, the disease can successfully be treated with rotablation.

**Keywords:** Coronary Angiography; Coronary Artery Disease; Drug-Eluting Stents; Percutaneous Coronary Intervention

# CR182

## Endocarditis after transcatether pulmonary valve replacement in a young patient with Tetralogy of Fallot

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**Introduction:** Tetralogy of Fallot (TOF) is the most common cyanotic congenital heart defect, involving right ventricular hypertrophy (RVH), ventricular septal defect (VSD), overriding aorta, and right ventricular outflow tract obstruction (RVOTO). The severity of TOF largely depends on the degree of RVOTO. Repaired TOF is a frequent diagnosis in adults with congenital heart disease. While long-term survival after childhood repair is excellent, many patients require reinterventions in adulthood.

**Case report:** We present a 24-year-old male born with TOF and pulmonary valve agenesis. At age 2, he underwent complete repair involving VSD closure and a right ventricle/ pulmonary artery conduit placement. The conduit was replaced at age 11 due to stenosis, and at 21, restenosis prompted transcatheter pulmonary valve implantation (Melody valve). Four years later, the patient presented with cough, fever, elevated C-reactive protein, and echocardiographic evidence of pulmonary valve stenosis. Multislice computed tomography angiography revealed septic embolism, pulmonary embolism, and lung infarction, suggesting valvular endocarditis. Blood cultures confirmed Staphylococcus epidermidis. Treatment included ceftriaxone, ampicillin, and gentamicin. Echocardiography revealed right ventricle dilation, a systolic gradient >75 mmHg, and a thrombosed conduit. The surgery involved Melody valve and conduit removal, placement of an aortic homograft conduit, and resection of an obstructive RVOT muscle bundle.

**Conclusion:** TOF patients often require multiple reoperations throughout life. Melody valves delay surgeries for several years by addressing RVOTO but risk endocarditis, leading to further interventions. While there is no perfect solution, homografts generally offer better durability. A strategic approach is essential, and specialized teams of cardiologists and cardiac surgeons should manage these patients.

**Keywords:** Cardiac Surgical Procedures; Endocarditis; Heart Valve Prosthesis; Tetralogy of Fallot

# CR183

## BRCA2 Gene mutation: A case report on early detection and preventive mastectomy

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**Introduction:** BRCA1(BReast CAncer gene 1) and BRCA2 (BReast CAncer gene 2) produce proteins which repair damaged DNA. About 10% of ovarian cancers and 5% of breast cancers have a hereditary background due to BRCA1/2 gene mutations. Indications for bilateral prophylactic mastectomy include patients at high risk due to BRCA gene mutation, a strong family history with no identifiable mutation, and patients with high risk based on breast histology. A breast hamartoma is a benign mass containing fat and glandular tissue which occurs rarely, primarily during the reproductive years.

**Case report:** We report a case of a 37-year-old female patient who presented with a hamartoma of the left breast, first discovered in March 2022. The patient was advised to undergo follow-up ultrasound scans every 6 months for ongoing observation. During one of those medical checkups, it was discovered that the patient's mother and grandmother had breast cancer in their early forties, while her uncle had pancreatic cancer in his fifties. The patient was urged to receive genetic counseling, where she tested positive for BRCA2 gene. Although there is no medical evidence that hamartoma could transform into a malignant variant, in this case it was the reason that the patient discovered the genetic mutation. In September of 2024, she opted for a prophylactic bilateral skin-sparing mastectomy with primary breast reconstruction.

**Conclusion:** This case shows how recognizing a positive family history of hereditary carcinomas is vital for early detection and prevention. Increased awareness empowers individuals to seek appropriate screenings. Informing patients about genetic testing is essential for improving outcomes in families affected by hereditary cancers..

**Keywords:** Genes, BRCA1; Genes, BRCA2; Mammaplasty; Mastectomy

# CR184

## Neurological presentation of Wilson's disease

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**Introduction:** Wilson's disease is a rare autosomal recessive genetic disorder that affects the metabolism of copper. Mutations in the ATP7B gene on 13. chromosome result in impaired binding of copper to ceruloplasmin and reduced excretion of copper. Abnormal copper accumulation in the body mostly affects function of liver, brain and cornea. This case highlights neurological symptoms in the patient with Wilson's disease.

**Case report:** A 25-year-old patient noticed tremor of his arms and was referred to neurologist. After a detailed diagnostic workup, the patient was diagnosed with Wilson's disease. He has negative family history. The patient had no previous symptoms of liver damage, but he had moderately elevated aspartate and alanine aminotransferases, increased copper in 24-hour urine and low ceruloplasmin (9 mg/dL). Atrophy of the cerebellum was present on MRI and liver ultrasound was normal. The patient was initially treated with zinc acetate and diet low with copper, but due to poor clinical response (inadequate copper and hepatic enzymes control), zinc acetate was replaced with d-Penicillamine (300 mg daily) to which he had no progression of disease for almost 15 years. At the age of 40, the patient had progression of disease and adverse effect of d-Penicillamine (rash). His tremor amplified and he complained of joint pain. The disease started to affect his daily activities, so patient was prescribed trientine tetrahydrochloride (150 mg, 3x1, daily) instead of d-Penicillamine.

**Conclusion:** Wilson's disease is a rare cause of neurological impairment in young population, but it is important to recognize it early since it can be well controlled with pharmacological treatment.

**Keywords:** Ceruloplasmin; Trientine hydrochloride; Wilson disease

# CR185

## Cracking the Case: How a vague fever led to a life – saving cardiac intervention

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**Introduction:** Infective endocarditis (IE) is an inflammatory disease caused by microorganisms colonizing damaged endocardium, often due to congenital heart defects or degenerative valvular disorders.

**Case report:** A 51 – year – old man was presented with prolonged vague fever and lumbosacral pain. Multislice computed tomography (MSCT) ruled out spondylolisthesis. Laboratory testing revealed normocytic anemia with elevated inflammatory parameters. Blood culture identified coagulase – negative staphylococcus, initiating flucloxacillin and gentamicin therapy. Echocardiography revealed vegetations on both myxomatous altered mitral cusps with consequent mitral regurgitation and suspected cord rupture. There were suspicions about vegetations present on all three cusps of the aortic valve. Due to large vegetations on mitral valve and computed tomography (CT) scan confirmed septical embolisations in spleen, emergency cardiac surgery was performed. The mitral valve was replaced with a biological prosthesis. Aortic valve was inspected and preventively disinfected, no vegetations were found. Pseudomonas species was isolated intraoperatively, triggering antibiotic change to meropenem for 22 days. Postoperative echocardiography showed paradoxical movements of the interventricular septum, moderate aortic regurgitation and a functional mitral prosthesis. The patient remained hemodynamically stable, afebrile and cardiopulmonary compensated throughout hospitalization and was discharged with adequate pharmacological therapy.

**Conclusion:** This case highlights the importance of identifying patients with endocarditis needing urgent cardiac surgery through clinical assessment and imaging. Recognizing criteria for urgent surgery is crucial to prevent heart failure, irreversible damage and pulmonary embolism.

**Keywords:** Echocardiography; Endocarditis; Mitral Valve

# CR186

## Multidisciplinary approach in acute and long-term management of penetrating cervicofacial injury

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**Introduction:** Injuries caused by power tool usage are a common cause of emergency room (ER) visits. Penetrating power tool-related injuries of the face and neck pose significant risks, thus requiring a multidisciplinary approach (MDA) to prevent life-threatening complications and optimize long-term outcomes.

**Case report:** A 45-year-old male, brought in the ER by the ambulance, sustained severe cervicofacial trauma caused by a broken angle grinder disc. The reported prehospital blood loss was 1 liter. The patient was examined by an anesthesiologist and a maxillofacial surgeon (MFS), identifying an actively bleeding, 15 cm contused lacerated wound extending from the right maxilla to the mid-neck, and a foreign body (FB) in the maxillary region. Tranexamic acid and wide-spectrum antibiotic prophylaxis were administered. Emergency computed tomography scan revealed laryngeal, maxillary and mandibular fractures, a penetrating oropharyngeal wound, internal jugular vein (IJV) laceration and extensive FBs in the soft tissue of the orbit, maxillary sinus, and neck. Surgery included tracheotomy, IJV repair, FB extraction, reconstruction of the oropharynx, tongue base, orbit, maxilla and thyroid cartilage. Finally, surgical drains were placed. Postoperatively, an MDA involving neurologists, radiologists, otorhinolaryngologists, MFS, and speech therapists was implemented to optimize long-term sequelae. Infraorbital and maxillary hypoesthesia, tongue dextroposition and hoarseness were observed, and speech therapy was recommended. A FB was detected in the right maxillary sinus, thus endoscopic removal by an otorhinolaryngologist was proposed to prevent further complications. Revision Z-plasty is planned to improve the cosmetic outcomes.

**Conclusion:** Penetrating cervicofacial injuries pose complex challenges requiring immediate intervention and prolonged multidisciplinary care. In this case, a timely intervention of anesthesiologists and MFS prevented life-threatening complications, while a coordinated MDA ensured optimal recovery.

**Keywords:** Maxillofacial Injuries; Neck Injuries; Wounds, Penetrating

# CR187

## Unmasking Left Atrial Myxoma: A Case of Embolic Stroke in a Young Adult

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**Introduction:** A left atrial myxoma is often asymptomatic, which makes it difficult to diagnose. However, it can be an underlying cause of stroke, especially in younger patients. Without a high level of suspicion, myxomas may be overlooked in cases of unexplained stroke. This case highlights the importance of considering left atrial myxoma as a potential embolic source, as early detection and intervention can improve patient outcomes.

**Case report:** We present a 34-year-old female patient admitted to the Neurology department due to an ischemic stroke caused by an embolism in the left middle cerebral artery. A comprehensive evaluation ruled out atrial fibrillation and other cardiovascular risk factors. Echocardiographic examination revealed a large, floating mass in the left atrium, characterized by filamentous components and partial prolapse through the mitral valve into the left ventricle, without significant obstruction of blood flow. Based on its echocardiographic features, the mass was highly suggestive of a left atrial myxoma. Once the etiology was established, the patient underwent further workup, including coronary angiography, which showed no abnormalities. She was then presented at a cardiothoracic surgery board and deemed a suitable candidate for surgical excision. Three months after the initial stroke, she underwent surgery, during which the tumor was successfully removed. Histopathological analysis confirmed the diagnosis of a left atrial myxoma. At a six-month follow-up, echocardiography confirmed a tumor-free left atrium, and the patient remained asymptomatic.

**Conclusion:** Cardiac myxomas are the most common primary heart tumors and an important cause of ischemic stroke, especially in younger patients without conventional risk factors. This case highlights the need to consider cardiac tumors in cryptogenic stroke to prevent recurrence through timely surgical removal.

**Keywords:** Echocardiography; Embolic Stroke; Myxoma

# CR188

## Pericarditis And Pericardial Effusion With Rheumatological Background

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**Introduction:** Pericarditis is a complex inflammatory condition characterized by chest pain, fever, and pericardial effusion. While its causes are multifactorial, this case report explores the potential link between pericarditis and rheumatological conditions, highlighting the diagnostic challenges and clinical implications.

**Case report:** We present a case of a 71-year-old female admitted to the Clinic for Cardiovascular Diseases in December 2024 with chest pain radiating between the shoulder blades for a month, along with two fever episodes. Her history includes seropositive rheumatoid arthritis (RA) and prior treatment for non-Hodgkin lymphoma. RA was diagnosed in 2014. At that time, corticosteroids were introduced into therapy, while leflunomide was discontinued due to intolerance, and methotrexate was avoided due to prior issues during lymphoma treatment. Recent follow-up showed poorly controlled RA (only sulfasalazine) and patient preference for natural treatments. Laboratory, serological, paraneoplastic and infectious workup were performed, and the only significant result was elevated C-reactive protein level. Further diagnostic processing revealed pericardial effusion, synovial hypertrophy with synovitis (heart and hand ultrasounds) and pleural effusion (high-resolution computed tomography). She was diagnosed with pericarditis and a broad spectrum antibiotic was introduced into therapy. The patient was transferred to the Clinic for Rheumatology and Immunology where smaller smaller doses of corticosteroides were introduced into therapy, but due to unsatisfactory progress, colchicine was also added. The rheumatologist attributed pericarditis to uncontrolled RA and recommended methotrexate initiation. Monitoring of pleural and pericardial effusions with cardiology and pulmonology was advised.

**Conclusion:** This case highlights the importance of multidisciplinary collaboration in ensureing optimal patient outcomes. In addition, it presents how inadequate therapy in systemic autoimmune diseases like RA can lead to severe complications such as pericarditis.

**Keywords:** Arthritis; Methotrexate; Pericarditis

# CR189

## Mutations in coagulation metabolism leading to recurrent embolism and complications in therapy

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**Introduction:** Acute embolism of the femoropopliteal artery in a patient with atrial fibrillation can be complicated by genetic mutations that affect coagulation and the metabolism of anticoagulant drugs. This case highlights the importance of genetic testing in choosing the right anticoagulant therapy, minimizing risks and preventing bleeding complications.

**Case report:** We are presented with a 75-year-old hypertensive patient with a history of atrial fibrillation. He had a history of deep venous thrombosis (DVT), for which he received a 2-month course of warfarin. Eight years after that he suffered an acute embolism in the left femoropopliteal artery. Following an embolectomy, the patient was treated with heparin and then transitioned to warfarin (0.75 mg daily). However, within three days of warfarin therapy, he developed macrohematuria and his prothrombin activity was undetectable. Warfarin was discontinued, and aspirin (100 mg daily) was used for protection. Five months later, the patient had a recurrent embolism in the same artery, which was successfully treated with another embolectomy. Genetic testing revealed mutations affecting the vitamin K-dependent coagulation system (*VKORC1* mutations *C111773T* and *G-11639A*, with homozygote and hemizygote genotypes, respectively) and a *CYP2C9*3* mutation indicating slow warfarin metabolism. As a result, his oral anticoagulant dose was reduced and switched to acenocoumarol (1 mg daily, every 5–6 days), achieving stable INR (international normalised ratio) values (2.5–3) without further bleeding episodes. Seven years later, when vitamin K-independent anticoagulants became available, he transitioned from acenocoumarol to dabigatran.

**Conclusion:** Genetic testing can help adjust anticoagulant therapy to reduce the risk of embolism and bleeding complications in patients with atrial fibrillation.

**Keywords:** Anticoagulants; Embolism; Vitamin K

# CR190

## Chemo-immunotherapy for the treatment of triple-negative breast cancer: a case report

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**Introduction:** Triple-negative breast cancer (TNBC) is an aggressive form of breast cancer (BC) without the expression of estrogen receptors (ER), progesterone receptors (PR), and human epidermal growth factor receptor 2 (HER2). It accounts for about 15% of all BC cases and has the worst prognosis of all subtypes..

**Case report:** A 36-year-old woman with a family history of breast and ovarian cancer palpated a lump in her right breast in January 2024. Breast ultrasonography revealed bilateral lesions (30x15 mm at the 12 o'clock position in the right breast, 30x18 mm at the 1 o'clock position in the left breast) and a 20mm suspicious lymph node in the right axilla. Core needle biopsy showed grade III invasive carcinoma of no special type in both breasts, ER negative, PR negative, and HER2 negative, Ki-67 90%. She received 8 cycles of neoadjuvant paclitaxel and carboplatin chemotherapy, and pembrolizumab. She was found to be breast cancer gene 1 (BRCA1) mutation-positive and was put on the doxorubicin hydrochloride/cyclophosphamide regimen while continuing pembrolizumab. A follow-up ultrasonography in August 2024 showed a significant reduction of lesions the left breast lesion was 4x4 mm, and the right breast lesion was 14x10 mm. She underwent bilateral subcutaneous mastectomy, a right axillary lymph node dissection, and a left sentinel lymph node biopsy. She was indicated 9 cycles of adjuvant pembrolizumab and 43.2 Gy in 16 fractions radiotherapy, and is currently in stable condition.

**Conclusion:** Chemotherapy is still considered the gold standard for TNBC treatment. However, studies have shown that TNBC has a higher programmed cell death ligand 1 (PD-L1) expression than other BC types. This case report shows that combining immunotherapy and chemotherapy can generate an excellent therapeutic response.

**Keywords:** Drug Therapy; Immunotherapy; Triple Negative Breast Neoplasms

# CR191

## Pulmonary Hypertension with Hemoptysis: A Case Report

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**Introduction:** Pulmonary hypertension (PH) is a condition characterized by elevated pressure in the pulmonary circulation, leading to increased vascular resistance over time. It is a serious and progressive disorder with complex etiopathogenesis and pathophysiology, usually accompanied by a poor prognosis.

**Case report:** This case represents a 37-year-old male patient with arterial hypertension, obesity, and a history of recurrent pulmonary embolism due to plasminogen activator inhibitor-1 (PAI-1) 4G/4G polymorphism which indicates a blood clotting disorder and increases the risk of recurrent thromboembolism. The patient was admitted to the emergency department due to hemoptysis and dyspnea. The examination revealed respiratory insufficiency type 1, leukocytosis, vascularly enlarged hili and pleural effusion as part of cardiac decompensation, and inflammatory changes. The patient was transferred to the Intensive Care Unit (ICU) shortly after hospitalization due to worsening respiratory insufficiency despite high oxygen flow. A high-flow nasal cannula therapy was started at the ICU with an improvement in saturation. Oxygen therapy, therapy with low molecular weight heparin (LMWH), antibiotics and supportive therapy were continued. The patient experienced several episodes of hemoptysis which were treated with Cyclocapron, and after the resolution of the symptoms, LMWH therapy was continued. Heart ultrasound showed dilated right ventricles, tricuspid regurgitation, and high-grade PH. Computed tomography of the thorax revealed an enlarged truncus pulmonalis (4.7 cm), chronic pulmonary infarction, and neovascularization as part of chronic thromboembolic PH (CTEPH). Due to hemoptysis, the catheterization of the right heart was postponed, and the patient was referred to Clinic for Lung Disease Jordanovac for further treatment.

**Conclusion:** This case highlights the complexity of pulmonary hypertension in a young individual with multiple comorbidities, where successful treatment can only be achieved through a multidisciplinary approach.

**Keywords:** Dyspnea; Heparin, Low-Molecular-Weight; Hypertension, Pulmonary; Pleural Effusion

# CR192

## Wilson disease in a young male: a case report

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**Introduction:** Wilson disease is an autosomal recessive disorder of transmembrane copper transport caused by *ATP7B* mutation. Excess copper is deposited in the liver, and slowly causes cirrhosis of the liver and a series of disorders of parenchymal organs, especially the brain.

**Case report:** A 19-year-old male experienced weight loss, loss of appetite, swollen abdomen and jaundice. The symptoms developed slowly and progressively over a year. On examination, the young man had massive hepatosplenomegaly and ascites. Laboratory results showed high concentrations of liver transaminases, gamma-glutamyl transferase, and alkaline phosphatase with hypoalbuminemia and hyperbilirubinemia. He had no prior history of alcohol consumption or jaundice. Results of microbiological tests showed no signs of infectious hepatitis. Physicians decided to test patient for infectious diseases such as kala-azar because he was a young man from Dalmatia. However, the tests came back negative. In a series of findings, hypoceruloplasminemia caught the physician's eye. The following day, the optometrist found a Kayser-Fleischer ring in the young man's iris, which is a pathognomonic sign of Wilson disease. The young man was discharged, with zinc and penicillamine as therapy, and dietary instructions to avoid food with a high copper content.

**Conclusion:** This case demonstrates that Wilson disease should be included in differential diagnosis when diagnosing a patient with elevated liver enzymes, hepatosplenomegaly and ascites because if it is diagnosed early enough, further complications can be prevented with appropriate therapy and dietary instructions.

**Keywords:** Ascites; Hyperbilirubinemia; Jaundice

# CR193

## Reconstruction of scaphoid nonunion and osteonecrosis using free medial femoral condyle flap

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**Introduction:** Nonunion and osteonecrosis following scaphoid fractures are persistent problems that continue to occur from unrecognized injuries, inadequate immobilization techniques, or insufficient treatment time, and remain some of the most difficult problems in wrist reconstructive surgery. The medial femoral condyle (MFC) is an excellent source of well-vascularized bone and results in minimal donor site morbidity, making it an attractive option for reconstruction of scaphoid nonunion.

**Case report:** The patient is a 35-year-old male who reported with wrist stiffness and pain following a left-hand scaphoid fracture from 10 years ago. X-ray reading revealed a multifragmented fracture with an osteonecrotic segment on the neck of the scaphoid bone and a mild, uneven articular surface of the radius in terms of degenerative changes next to the fracture. Scaphoid reconstruction after debridement was performed by harvesting the MFC flap from the knee, securing the bone block to the scaphoid with a wire, and repairing the transferred blood vessels to the vessels in the wrist. Postoperatively, the patient underwent a period of immobilization followed by physical therapy. The procedure provided a favorable outcome, with the patient achieving full functional recovery of the left hand.

**Conclusion:** Surgical strategies become more complex based on time from injury to treatment. The MFC flap provides a highly versatile and reliable option, with high rates of bone union and short time to healing, making it an excellent choice for reconstruction of scaphoid nonunion and osteonecrosis.

**Keywords:** Bone Transplantation; Osteonecrosis; Plastic Surgery Procedures; Scaphoid Bone

# CR194

## Stent thrombosis and reinfarction in a patient with non-adherence to post-infarction care

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**Introduction:** ST-elevation myocardial infarction (STEMI) is a transmural ischemic injury of the myocardium caused by occlusion of coronary arteries posing a serious threat to the patient's health and later life. This case highlights the importance of post-infarction pharmacotherapy, lifestyle changes, and out-of-hospital care program.

**Case report:** We present a 60-year-old female smoker with chest pain radiating to the jaw. Fourteen days ago she was treated at the Rijeka Clinical Hospital Center, at the Cardiology Clinic for inferior STEMI, complicated with cardiac arrest. She underwent primary percutaneous intervention on the occluded left circumflex artery (LCx). Her medical history included ischemic heart disease, prior myocardial infarction in 2017., arterial hypertension, chronic obstructive pulmonary disease, type 2 diabetes, and hyperlipoproteinemia. The patient did not take the prescribed therapy regularly and continued to smoke. Upon arrival to the emergency room, she was compensated, hypertensive, tachycardic, and had lung cracklings, which correlated with mild pneumonia diagnosed on previous hospitalization. The electrocardiogram showed inferior STEMI. Laboratory findings showed elevated cardiac enzymes. Emergency coronary angiography was performed and revealed thrombotic occlusion in the previously stented LCx. Successful balloon dilatation of the occlusion was made. The echocardiogram showed reduced ejection fraction, with the same segmental wall abnormalities seen in the previous hospitalization. The patient was discharged home on the 11$^{th}$ day after admission with a strict recommendation to adhere to her chronic therapy and further follow-up plan.

**Conclusion:** Nonadherence to dual antiplatelet therapy leads to early stent thrombosis and reinfarction. It is crucial to adhere to prescribed chronic therapy and minimize risk factors such as smoking, hypertension, diabetes, and hyperlipoproteinemia to prevent reinfarction.

**Keywords:** Percutaneous Coronary Intervention; Platelet Aggregation Inhibitors; ST Elevation Myocardial Infarction

# CR195

## Impella-Assisted Resuscitation in Cardiorespiratory Arrest During Percutaneous Coronary Intervention

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**Introduction:** Percutaneous coronary intervention (PCI) involves placing a stent in a narrowed coronary artery due to atherosclerotic disease. Although generally safe, complications can occur. Studies show that less than 2% of patients experience cardiac arrest during the procedure. This is associated with poorer outcomes and higher rates of cardiogenic shock, often due to prolonged ischemia and inadequate perfusion.

**Case report:** We present the case of a 59-year-old woman with a history of hypertension, type 2 diabetes, and hyperlipidemia. She complained of chest pain and shortness of breath on exertion, typical of angina. A computed tomography coronary angiogram revealed multiple plaques, and PCI confirmed significant stenosis in the left main, left anterior descending, left circumflex, and right coronary arteries, with five drug-eluting stent (DES) placements. During the procedure, the patient experienced cardiorespiratory arrest with pulseless electrical activity (PEA), requiring immediate cardiopulmonary resuscitation. Mechanical circulatory support was provided with an Impella Cardiac Power heart pump, inotropic and vasopressor support with dobutamine and noradrenaline, and respiratory support with invasive mechanical ventilation to stabilize hemodynamics. Laboratory tests showed a significant rise in high-sensitive troponin and natriuretic peptide, while moderate elevation of inflammatory markers led to the introduction of vancomycin and meropenem. By the third day, all circulatory support was withdrawn, and the patient remained stable, showing improvement and eventually being discharged after a full recovery.

**Conclusion:** Although rare, such complications must be considered during interventional cardiology procedures. Prompt, coordinated efforts from an experienced medical team, including circulatory, pharmacological, and respiratory interventions, can improve patient outcomes and survival rates.

**Keywords:** Coronary Artery Disease; Heart Arrest; Heart-Assist Devices; Percutaneous Coronary Intervention

# CR196

## Thyroid Crisis After PCI: A Case of Iodine-Induced Thyroiditis

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**Introduction:** Destructive thyroiditis is a self-limited condition characterized by the acute release of preformed thyroid hormones. It can present as painful or painless acute thyroiditis, often causing hyperthyroidism with symptoms such as heart rhythm disturbances, weight loss, and adrenergic manifestations. Common causes include autoimmune thyroid diseases, toxic goiters, and iodine-induced inflammation from contrast media used in procedures like percutaneous coronary intervention (PCI).

**Case report:** A 76-year-old male developed acute painful thyroiditis following PCI for NSTEMI. He experienced severe neck pain, elevated free thyroid hormones (fT3, fT4), and increased inflammation markers post-procedure. Thyroid ultrasonography revealed inhomogeneous focal changes, and a fine-needle biopsy indicated a mixed nodular goiter. Treatment with prednisone and thiamazole was chosen based on the patient's clinical presentation and underlying thyroid pathology. Prednisone, a corticosteroid, was used to reduce inflammation and alleviate pain, characteristic of painful thyroiditis. Thiamazole was administered to manage hyperthyroidism by inhibiting thyroid hormone synthesis, despite the transient nature of destructive thyroiditis. This approach addressed both inflammation and hyperthyroidism, providing comprehensive care. The condition likely resulted from iodine overload (80 g iodine administered) during PCI, exceeding typical dietary iodine intake. Excessive iodine can disrupt thyroid function, leading to conditions like the Jod-Basedow phenomenon, particularly in older individuals with nodular thyroid disease. While uncommon, iodine-induced thyroid dysfunction after PCI can be severe, as demonstrated in this case.

**Conclusion:** This case emphasizes the importance of awareness among interventional cardiologists regarding potential thyroid dysfunction after iodine-based procedures. Routine thyroid monitoring may be beneficial for high-risk groups, such as elderly patients with pre-existing thyroid issues undergoing elective procedures. Preventive measures should be considered in selected cases

**Keywords:** Thyroiditis, Subacute Hyperthyroidism; Iodinated Contrast Media; Percutaneous Coronary Intervention; Thyrotoxicosis

# CR197

## A case of an Acute Motor Sensory Axonal Neuropathy

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**Introduction:** Acute Motor and Sensory Axonal Neuropathy (AMSAN) is a rare and severe variant of Guillain-Barré syndrome (GBS), characterized by extensive axonal degeneration of both motor and sensory fibers. Unlike demyelinating forms of GBS, AMSAN is associated with a poorer prognosis, often leading to delayed and incomplete recovery. It is typically preceded by an infection, with an autoimmune response, resulting in rapid and progressive neurological decline. Early recognition and intervention are critical to improving outcomes.

**Case report:** A 39-year-old female presented with ascending paraesthesia in the extremities, extending from the toes to the knees and from the fingers to the elbows. She also reported dysgeusia and impaired temperature sensation. The neurological examination initially revealed only weakened plantar reflexes, with otherwise normal findings. She had a history of an acute sinusitis one month prior. As the disease progressed, she developed flaccid tetraparesis, bilateral peripheral facioparesis, dysphagia, and dysautonomia with blood pressure fluctuations and urinary retention. Lumbar puncture revealed albuminocytologic dissociation. The diagnosis of AMSAN was suspected. She was treated with intravenous immunoglobulins and intensive physical therapy. Three weeks later, she showed gradual improvement and was transferred to a rehabilitation facility with residual mild bilateral peripheral facioparesis and mild limb weakness. Follow-up electromyoneurography (EMNG) confirmed acute polyradiculoneuritis with predominant sensory and motor axonal degeneration.

**Conclusion:** This case highlights the importance of early diagnosis and prompt treatment of AMSAN. Initial symptoms may be mild, and neurological examination can be unremarkable. However, it progresses fast and can potentially be fatal. Therefore, thorough anamnesis followed by lumbar puncture and EMNG can be very powerful tool in diagnosing this rare and severe disease.

**Keywords:** Guillan-Barre syndrome; Acute inflammatory; Polyneuropathy

# CR198

## For the First Time in Croatia - MEK inhibitor as Treatment for Hypertrophic Cardiomiopathy in RIT1 Mutated Noonan Syndrom

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**Introduction:** Noonan syndrome is a genetic disorder characterized by multisystem anomalies, caused by mutations in the RAS-MAPK pathway. *RIT1* mutations are particularly associated with cardiovascular disease, including hypertrophic cardiomyopathy. Research has shown that hypertrophic cardiomyopathy in patients with *RIT1*-mutated Noonan syndrome can be treated with an MEK inhibitor.

**Case report:** A 1.5-year-old female child, with Noonan syndrome, was hospitalized due to the sudden onset of respiratory deterioration after a previously recovered respiratory infection. The child was monitored from birth due to severe hypertrophic cardiomyopathy of both ventricles, minor left ventricular outflow tract obstruction, major right ventricular outflow tract, and valvular and supravalvular obstruction. Upon admission, she was oxygenated with 5L of oxygen. Ultrasound has shown right pleural effusion along with radiologically confirmed pneumonia and signs of cardiac volume overload. Microbiological analysis revealed the isolation of *Rhinovirus* and *Streptococcus pneumoniae* in the nasopharyngeal swab. Diuretic therapy was initiated alongside parenteral antibiotic treatment for 7 days. After the treatment, clinical improvement was noted, with the regression of the effusion. Since the patient is a candidate for MEK inhibitor therapy because of the *RIT1* mutation, parents were advised that the child should avoid large gatherings. She will be the first patient in Croatia to receive an MEK inhibitor for the treatment of hypertrophic cardiomyopathy and by that prevent all disadvantages of heart transplantation surgery.

**Conclusion:** This case highlights the potential of MEK inhibitor therapy in treating hypertrophic cardiomyopathy in patients with *RIT1* mutated Noonan syndrome. The main drawback of this type of therapy is that treatment can be useful only for patients with *RIT1* mutation before the onset of irreversible cardiac remodeling.

**Keywords:** Cardiomyopathies; Congenital Abnormalities; MEK inhibitor

# CR199

## Strabismus surgery in a patient with poor visual acuity: does it make sense?

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**Introduction:** Strabismus refers to the misalignment of the eyes and is primarily divided into two variants: convergent (inward deviation) and divergent (outward deviation). We will present a case of a 60-year-old male patient with multiple comorbidities in the left eye (LE) who underwent surgery to correct divergent strabismus of the right eye (RE).

**Case report:** The patient had a bilateral high myopia, amblyopia and a visual acuity of the RE 6/600 and 6/60 in the LE. In 2016, he was treated for fungal keratitis of the LE, leading to perforating keratoplasty. In 2022, pars plana vitrectomy for rhegmatogenous retinal detachment of the LE including cataract surgery and intraocular lens implantation was performed. In 2024, the patient visited a strabismus clinic for evaluation due to worsening of strabismus of his RE. An orthoptic examination revealed a divergent strabismus with the LE fixating, measuring 60 prism diopters according to Krimsky and a pronounced right head turn. Motility testing disclosed normal horizontal ductions. Optic biometry of the RE measured a significantly high axial length (35,05 mm), anterior chamber depth 3,71 mm, lens thickness 4,49 mm (indicating a cataract formation), white-to-white 12,5 mm, flat corneal meridian 38,2 D and steep corneal meridian 39,36 D, all consistent with high myopia. In January 2025 the patient underwent surgery with 8 mm medial rectus muscle resection and 7 mm lateral rectus muscle recession of the RE. Postoperatively, his visual acuity was unchanged with normal motility and orthotropic in primary position.

**Conclusion:** Even with the patient's poor visual acuity, strabismus surgery resulted in satisfactory improvements in ophthalmological status and cosmetic appearance.

**Keywords:** Amblyopia; myopia; strabismus; visual acuity

# CR200

## Convergent strabismus caused by venous thrombosis of the sigmoid sinus and jugular vein bulb due to mastoiditis: A case report

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**Introduction:** Cerebral venous sinus thrombosis, though rare today due to effective antimicrobial therapy, is a potential cause of increased intracranial pressure (ICP) and visual disturbances. It requires special attention, particularly in head and neck infections that may spread to the intracranial space. Timely recognition, combined with thorough ophthalmological examination and imaging diagnostics, is essential to avoid delayed diagnosis and ensure effective treatment, preserving patient outcomes and quality of life.

**Case report/review:** An 8-year-old girl presented, accompanied by her parents, due to the onset of double vision and left-sided convergent strabismus. Medical history revealed that she had been treated with parenteral antibiotic therapy during the previous month for left-sided mastoiditis. Magnetic resonance imaging (MRI) of the brain and orbits was indicated, revealing thrombosis of the left sigmoid sinus and bulb of the internal jugular vein, along with bilateral optic disc edema (papilledema) and intraocular prominence of the optic nerve head. Ophthalmological examination identified a positive cover test with left-eye convergence, while fundus examination revealed papilledema with indistinct margins, nerve elevation, hyperemia, and tortuosity of the veins. Treatment was initiated with intravenous low-molecular-weight heparin for anticoagulation, along with anti-edema therapy consisting of mannitol and dexamethasone. With this treatment and regular ophthalmological follow-up, orthophoria was achieved after 40 days, and the double vision resolved. Follow-up MRI showed gradual regression of the thrombosis within the bulb of the jugular vein and the left sigmoid sinus.

**Conclusion:** Patients with septic head and neck infections are at increased risk of developing venous sinus thrombosis and a consequent rise in ICP. Early suspicion and the initiation of appropriate diagnostic procedures are crucial for a favorable treatment outcome and the preservation of patients' quality of life

**Keywords:** Cranial sinus thrombosis; Mastoiditis; Strabismus

# CR201

## Branch Retinal Artery Occlusion: A Case of Successful Therapy with Nd:YAG Laser and Hyperbaric Oxygen

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**Introduction:** Branch retinal artery occlusion (BRAO) is a condition caused by the blockage of a branch of the central retinal artery, leading to sudden vision loss in the affected area of the retina. The aim of this case report is to investigate the effectiveness of combining Neodymium-doped Yttrium Aluminium Garnet (Nd:YAG) laser therapy and hyperbaric oxygen therapy (HBOT) in treating BRAO and achieving complete retinal revascularization.

**Case report:** A 17-year-old female patient presented to the Department of Ophthalmology in Rijeka with the sudden onset of vision loss in the upper and nasal parts of her left eye. The patient had no significant medical history except for smoking and using combined third-generation hormonal contraceptives. Upon admission, her visual acuity was 20/20 and intraocular pressure was measured at 18/17 mmHg. The anterior segment examination was normal, but the fundus examination of the left eye showed BRAO in the lower arcade with a pale retina extending to the macula confirmed by fluorescein angiography. Blood work revealed mildly elevated levels of mean corpuscular hemoglobin concentration, homocysteine and C-reactive protein. Genetic testing revealed several variants associated with thrombotic risk, including the homozygous form of *MTHFR C677T*, the variant form of *MTHFR A1298C* and the heterozygous form of *PAI-1 (4G/5G)*. Two sessions of Nd:YAG laser embolectomy were performed and the patient received 20 treatments of HBOT. After a 5-week follow-up, the patient achieved 20/20 visual acuity and complete revascularization of the retina.

**Conclusion:** Timely and correct treatment, including the combination of Nd:YAG laser therapy and HBOT can lead to complete retinal revascularization and restoration of vision.

**Keywords:** Fluorescein Angiography; Hyperbaric Oxygenation; Retinal Artery Occlusion

# CR202

## Severe bilateral pneumonia leading to ischemic cardiomyopathy: a case report

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**Introduction:** Severe pneumonia can lead to multi-organ complications, including neuromuscular and cardiovascular impairments. This case report describes an unusual progression from pneumonia to ischemic cardiomyopathy requiring surgical intervention, demonstrating the need for vigilance in post-pneumonia recovery.

**Case report:** A 61-year-old man with no prior medical history presented to an outpatient clinic with flu-like symptoms. He was diagnosed with an uncomplicated viral infection and managed conservatively. Three days later, he was admitted to the Infectiology department with severe bilateral pneumonia requiring mechanical ventilation. He remained in a coma for three months. Upon regaining consciousness, he exhibited paraparesis and was consequently diagnosed with critical illness polyneuropathy (CIP). As the patient exhibited persistent dyspnea, he was referred to a pulmonologist. A pleural effusion was identified and drained. Given ongoing symptoms, cardiology evaluation was performed. Transthoracic echocardiography revealed ischemic cardiomyopathy, severe mitral and aortic valve insufficiency, and a dilated left ventricle with an ejection fraction (EF) of 35%. Coronary angiography demonstrated significant stenosis of the left circumflex artery (LCx) and left main coronary artery (LMCA). Coronary artery bypass grafting (CABG) with two bypasses was performed. Postoperatively, the patient showed significant improvement, with an EF increase to 45%. Paraparesis was resolved by multiple cycles of rehabilitation therapy and the patient exhibited residual peroneal paresis. He was discharged in stable condition with optimized medical therapy.

**Conclusion:** This case highlights the potential for severe infections to uncover underlying cardiac pathology. Unrecognized ischemic cardiomyopathy may contribute to respiratory failure and prolonged hospitalization. Early cardiac evaluation in critically ill patients could improve outcomes.

**Keywords:** Cardiomyopathies; Coronary Artery Bypass; Pleural Effusion; Pneumonia, Viral

# CR203

## Role of extracorporeal membrane oxygenation: recovery after massive pulmonary embolism followed by cardiac arrest

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**Introduction:** Pulmonary embolism is a pathological occlusion of the pulmonary arteries caused by thrombus formation, most often originating from the deep veins of the lower extremities. If untreated, it can lead to cardiac arrest. Extracorporeal membrane oxygenation (ECMO) is a form of extracorporeal life support that provides cardiopulmonary assistance to patients with cardiac or respiratory failure.

**Case report:** We report on a case involving a 40-year-old woman who experienced dyspnea and loss of consciousness, followed by cardiac arrest and subsequent resuscitation in the field with pulseless electrical activity. Computed tomography angiography revealed a massive pulmonary embolism. Due to hemodynamic instability, the patient was started on inotropes and vasopressors. The embolism was removed mechanically. However, hemodynamic instability continued even after administering alteplase, which led to another cardiac arrest. Echocardiography indicated diminished right heart function and a left ventricular ejection fraction of 25%. In cases of cardiac arrest, initiating ECMO is crucial to support the recovery of damaged heart muscle by temporarily assuming its function and ensuring adequate oxygenation and perfusion (extracorporeal cardiopulmonary resuscitation). Three days later, she was hemodynamically stable and ECMO was removed. Follow-up echocardiography showed a left ventricular ejection fraction of 65%. The patient was discharged stable and alert, albeit with mild hypoxic brain damage due to shock. She will need to continue anticoagulant therapy.

**Conclusion:** In conclusion, this case illustrates the remarkable potential of advanced life support methods, particularly ECMO. While it is not a standard intervention for patients with pulmonary embolism, it can be lifesaving for those who develop complications like cardiac arrest. Its role is to maintain adequate circulation and oxygenation until the heart muscle recovers.

**Keywords:** Extracorporeal Membrane Oxygenation; Heart Arrest; Pulmonary Embolism

# CR204

## Severe functional tricuspid regurgitation after left sided valve surgery managed by percutaneous valve intervention

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**Introduction:** Tricuspid regurgitation (TR) is mostly functional and is associated with poor life quality and high morbidity. If left untreated, TR leads to right ventricle dilatation and heart failure. Due to its complex structure, the tricuspid valve creates technical challenges for surgeons, especially in redo surgery, so this condition was traditionally managed with diuretics. However, significant advances in transcatheter therapy have recently shown promising results in reducing TR.

**Case report:** We present a case of a 77-year-old female patient hospitalized because of leg swelling, fatigue, and reduced walking distance due to right-sided heart failure. The patient had 6 years ago aortic valve replacement and mitral valvuloplasty due to severe aortic stenosis and mitral regurgitation. During admission, right-sided heart catheterization was performed showing pulmonary hypertension and left ventricular filling threshold values. Severe secondary tricuspid regurgitation due to prior aortic stenosis and mitral regurgitation was determined by echocardiography. It was decided to proceed with percutaneous edge-to-edge repair using the TriClip XTW device. Using this method our patient received two clips, one between anterior and septal and another between posterior and septal cuspis. The procedure results were optimal, with mild to moderate residual TR, and the patient was discharged in a few days.

**Conclusion:** Percutaneous edge-to-edge repair in tricuspid valve intervention is a minimally invasive treatment option for patients with severe TR who are at intermediate or greater risk for surgery. The tricuspid valve has been neglected for a long time due to high operative risk, so percutaneous interventions represent a significant development in treating this condition.

**Keywords:** Cardiac Catheterization; Heart Failure; Tricuspid Valve

# CR205

## Congenital appendiceal diverticulosis and diverticulitis with clinical presentation of acute appendicitis: a case report

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**Introduction:** Appendiceal diverticulosis represents a rare and poorly comprehended pathology of the appendix. There are two types: the acquired type (more common, with an incidence of 0.014%-1.9%) and the congenital type, described in few cases to date and associated with group D chromosomal trisomy. Due to its rarity, the clinical manifestation and prognostic outcomes of congenital appendiceal diverticulosis remain poorly characterized. Diagnosis is challenging due to its nonspecific presentation, often mimicking other ileocecal pathologies. This case report details an incidental discovery of congenital appendiceal diverticulosis and diverticulitis manifesting clinically as acute appendicitis, unrelated to trisomy.

**Case report:** A 53-year-old male patient presented to the emergency department with right lower abdominal pain. Physical examination revealed tenderness in the right lower quadrant without rebound tenderness or muscle guarding. Laboratory tests showed leukocytosis and elevated C-reactive protein (CRP) levels. Based on these findings, combined with ultrasonographic imaging of the ileocecal region suggestive of acute appendicitis, surgical intervention was performed. Laparoscopic exploration revealed cylindrical, red, and edematous herniations up to 4 mm in size on the surface of the vermiform appendix. An appendectomy was performed. Histopathological examination confirmed congenital appendiceal diverticulitis with surrounding peridiverticulitis. The surgery and early postoperative course were uneventful. On postoperative day two, the patient was discharged home in good general condition. At the follow-up appointment two weeks later, the patient remained in good overall health with no local complications.

**Conclusion:** Congenital appendiceal diverticulosis and diverticulitis should be considered as differential diagnoses in patients presenting with symptoms resembling acute appendicitis. Appendectomy has proven to be a safe and effective treatment approach for congenital appendiceal diverticulitis.

**Keywords:** Appendicitis; Appendix; congenital; Diverticulitis, Diverticulum

# CR206

## Acute Myocardial Infarction as a Cardiac Complication of Systemic Lupus Erythematosus

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**Introduction:** Systemic Lupus Erythematosus (SLE) is a chronic autoimmune systemic disease that, if left undiagnosed, can lead to damage to multiple organs. Ischemic heart disease is a known complication of SLE, occurring in approximately 16% of patients diagnosed with the condition.

**Case report:** In August 2024, a 65-year-old patient with SLE and pancytopenia was admitted to the Department of Rheumatology, Clinical Immunology, and Allergology for further evaluation and treatment. Several years prior, the patient had independently discontinued immunosuppressive therapy (glucocorticoids and hydroxychloroquine). Due to pancytopenia, which can be a sign of active SLE, glucocorticoid therapy was initiated. Two days later, the patient developed cold sweats, chest pain lasting 15 minutes, nausea, and reported vomiting once. An electrocardiogram was performed, revealing previously undiagnosed atrial fibrillation with diffuse ST-segment depression. The patient was transferred to the Cardiology Unit with a diagnosis of acute coronary syndrome. Coronary angiography revealed an 80% calcified stenosis of the distal left main coronary artery extending into the ostium of the circumflex artery (Cx), significant stenoses in the left anterior descending artery, ostial Cx, and ostial right coronary artery. Given the multivessel coronary artery disease, coronary artery bypass grafting (CABG) was performed. Following the procedure and stabilization, the patient was transferred back to the Rheumatology. Considering the normal levels of C3 and C4 complement components, immunosuppressive therapy was not initiated at that time.

**Conclusion:** This case highlights the importance of a multidisciplinary approach to patient care. It is crucial to promptly recognize acute cardiac ischemia in patients with autoimmune diseases, particularly those with SLE, who are at increased cardiovascular risk. Effective control of autoimmune disease is essential for preventing adverse cardiovascular events.

**Keywords:** Coronary Artery Bypass; Lupus Erythematosus,Systemic; Myocardial Infarction

# CR207

## Creutzfeld-Jakob disease: a case report

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**Introduction:** Creutzfeld-Jakob disease (CJD) is rare, rapidly progressive neurodegenerative disorder caused by prions. Clinically, it presents with progressive cognitive decline, dementia and myoclonus. As the disease progresses, it leads to muscle weakness, blindness, mutism, coma, and, ultimately, death. The aim of this case report is to emphasize the importance of making a correct diagnosis, despite all the challenges that come across.

**Case report:** A 74-year-old woman was admitted to the hospital due to 10-day-long cognitive and behavioral changes. Her daughter reported difficulties with dressing and memory lapses such as forgetting how to prepare coffee. Later, the patient became uncommunicative and developed myoclonus. Cerebrospinal fluid analysis ruled out infectious encephalitis. Electroencephalography (EEG) showed diffuse slowing and periodic sharp wave complexes. Brain magnetic resonance imaging (MRI) revealed bilateral hyperintensities in the basal ganglia and thalamus, as well as in frontal, parietal and occipital cortex. All of these findings strongly indicated CJD. Definite diagnosis of CJD requires a post-mortem brain autopsy, which is dangerous due to the risk of an infection. This patient met the criteria for a probable diagnosis of sporadic CJD. Currently, there is no known cure for this disease. The treatment is aimed at symptom relief and supportive care. Therefore, this patient was transferred to a palliative care facility.

**Conclusion:** Although the only way to confirm a definite diagnosis of the CJD is post-mortem, there are well-known diagnostic criteria for making a probable and possible diagnosis. Despite its rarity, CJD should be considered in cases of rapidly progressive dementia, to ensure appropriate care for the patient and conclusion for the patients' family.

**Keywords:** Dementia; Myoclonus; Neurodegenerative Diseases

# CR208

## A complex diagnostic challenge in cirrhosis: going beyond malignancy

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**Introduction:** Focal lesions in a cirrhotic liver should always raise suspicion of malignancy, requiring a thorough diagnostic evaluation. Granulomatous hepatitis is a rare finding, requiring thorough evaluation to determine the underlying cause and define whether its of hepatic or systemic origin.

**Case report:** We present the case of a 47-year-old male with ethylic cirrhosis under regular monitoring in the gastroenterology department. Following an episode of hematemesis and melena, an abdominal computed tomography scan was performed, revealing ascites and multiple hypodense liver lesions. A magnetic resonance imaging was conducted to further assess these findings, suggesting that the lesions resembled dysplastic and regenerative nodules. A biopsy was performed to clarify their nature, ultimately identifying noncaseous granulomas negative for Langerin and *CD1a*, pointing to a diagnosis of granulomatous hepatitis of unknown origin. The detection of hypercalcemia and pancytopenia further complicated the diagnostic process. To exclude myelodysplastic syndrome and multiple myeloma, a bone marrow biopsy was performed, revealing identical granulomas. Increased levels of serum angiotensin-converting enzyme and chitotriosidase have been determined. In collaboration with an immunologist, a final diagnosis of sarcoidosis was reached. The patient was started on corticosteroid therapy, leading to clinical improvement and hypercalcemia has been managed.

**Conclusion:** This case highlights the importance of a comprehensive, multidisciplinary approach in the evaluation of atypical findings in cirrhotic patients, ensuring an accurate diagnosis and appropriate management.

**Keywords:** Granuloma; Hypercalcemia; Liver Cirrhosis; Sarcoidosis

# CR209

## Accidental Discovery of Atrial Septal Defect in a Patient with Paroxysmal Atrial Fibrillation

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**Introduction:** Atrial fibrillation (AF) is the most common arrhythmia in the general population and occurs due to extremely fast and irregular electrical impulses in the atrium. Sometimes, atrial fibrillation may appear in adult patients with so far undiscovered atrial septal defect (ASD).

**Case report:** A 57-year-old female patient was found to have an ostium secundum ASD with left-to-right shunting, during transoesophageal echocardiography (TEE) evaluation and treatment planning for paroxysmal AF in December 2022. The patient had a history of arterial hypertension, hypothyroidism, obesity, and chronic venous insufficiency. Echocardiography revealed right heart dilatation, preserved left ventricular systolic function, mild to moderate tricuspid regurgitation, and an ASD ostium secundum measuring 20 mm. A right heart catheterization revealed normal pulmonary artery pressure and pulmonary vascular resistance with a left-to-right shunt of 1.6:1, thus indicating percutaneous closure of the defect. Firstly, successful pulmonary vein ablation for AF was performed in June 2023. After that, percutaneous closure of the ASD was performed by implanting an Amplatzer septal occluder 24 mm diameter under TEE guidance. Follow-up echocardiography showed proper occluder position, without significant residual flow or pericardial effusion. The patient was discharged in stable general condition with recommendations for a single antiplatelet drug for 3 months and permanent anticoagulation with rivaroxaban.

**Conclusion:** This case highlights the importance of a comprehensive evaluation of patients with AF, during which structural heart disease such as ASD can be detected. Percutaneous ASD closure effectively prevents complications, including pulmonary hypertension and embolic events.

**Keywords:** Atrial Fibrillation; Heart Septal Defects, Atrial; Septal Occluder Device

# CR210

## Hepatitis A virus induced autoimmune hepatitis in a patient with type 2 diabetes mellitus

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**Introduction:** Hepatitis A virus (HAV) is an enveloped RNA virus transmitted through fecal-oral route. HAV typically causes self-limiting acute hepatitis, but in rare cases, it can trigger autoimmune hepatitis (AIH), particularly in predisposed individuals such as type 2 diabetes mellitus (DM2) patients. Most common symptoms are fever, abdominal discomfort, jaundice and dark-colored urine.

**Case report:** A 61-year-old woman with a long-standing DM2, on metformin and semaglutide injections presented to the hospital with fever, nausea, dull epigastric pain and jaundice but hemodynamically stable without edema. The laboratory results showed elevated liver enzymes aspartate aminotransferase (4266 IU/L) and alanine aminotransferase (5282 IU/L) and tested IgM and IgG anti-HAV positive. On the ultrasound the liver was enlarged for 17 cm and showed a big meteorism over the pancreas. Transient elastography showed steatosis of level S2/S3 and fibrosis score F3 which indicated severe liver scarring. Liver biopsy confirmed chronic active hepatitis with a high activity degree but didn't match the elastography results. She was diagnosed with relapsing HAV with high activity grade, prolonged viremia and hypergammaglobulinemia on the rise which would suggest AIH. During HAV infection she was given symptomatic therapy and stopped using metformin because her blood glucose levels were normal. After hospitalization she was prescribed insulin. On the last two check-ups she was HAV RNA negative. She finally went to regression but still had a fatty liver.

**Conclusion:** This case underscores the importance of recognizing HAV as a potential trigger of AIH, particularly in patients with underlying metabolic or immune dysregulation, highlighting complex interplay between viral infection, autoimmunity and metabolic comorbidities. Early diagnosis and prompt initiation of therapy can prevent severe outcomes.

**Keywords:** Diabetes Mellitus, Type 2; Elasticity Imaging Techniques; Fatty Liver; Hepatitis A; Hypergammaglobulinemia

# CR211

## ST-Elevation Myocardial Infarction in Young Patient with Coronary Artery Disease

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**Introduction:** Coronary artery disease (CAD) is the most common type of heart disease in the elderly. However, various risk factors, including an altered lipid profile, hypertension and smoking, contribute to its increasing prevalence among young individuals, often leading to acute coronary syndrome (ACS).

**Case report:** : A 25-year-old Bangladeshi man presented to the emergency department in July 2024 with 3 days of chest pain. His risk factors for CAD included hyperlipoproteinemia and smoking. Physical examination was unremarkable, while laboratory results showed elevated troponin I (1665.4 ng/L) and lipoprotein (a) levels (182 mg/dL). A 12 -lead electrocardiogram (ECG) revealed ST elevation in the inferior leads, leading to the diagnosis of subacute inferior myocardial infarction. Coronary angiography showed a significant stenosis of the right coronary artery (RCA), and the patient underwent emergency percutaneous coronary intervention (PCI) with a drug-eluting stent (DES). In December 2024 he was hospitalized again for unstable angina. Coronary angiography revealed a new severe stenosis of the proximal RCA, with an angiographically borderline lesion, as well as a physiologically significant stenosis of the proximal left anterior descending artery (LAD). PCI of the RCA with a DES was performed, while PCI of the LAD was planned for three months later. In January 2025, he was readmitted due to chest pain, and a successful PCI of the LAD was performed.

**Conclusion:** Early diagnosis and treatment of CAD in young patients are crucial for the prevention of ACS. Additionally, early detection of dyslipidemia through routine screening can help mitigate the risk of life-threatening cardiovascular events, particularly in ethnic groups with an increased risk of CAD, such as South Asians.

**Keywords:** Acute Coronary Syndrome; Coronary Artery Disease; Hyperlipoproteinemias

# CR212

## Persistent Gastrointestinal Bleeding in Crohn's Disease Unveiling Meckel's Diverticulum: A Rare Case Report

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**Introduction:** Crohn's disease is an autoimmune chronic transmural inflammation with skip lesions mostly found in the ileum and colon. The most frequent symptoms include diarrhea, hematochezia and abdominal pain. However, these symptoms can overlap with other conditions. Meckel's diverticulum, a congenital anomaly of the ileum, can lead to complications, which may mimic Crohn's disease, complicating diagnosis.

**Case report:** We present the case of a 70-year-old woman diagnosed with Crohn's disease in January 2023. Treatment was promptly initiated with topical corticosteroid therapy. However, the patient showed no improvement, indicating a colonoscopy. During the procedure severe fibrosis of the Bauchinii valve prevented further intubation. Other diagnostic evaluation, including magnetic resonance enterography, showed no additional pathological findings beyond inflammation of the terminal ileum. Consequently, her treatment escalated to systemic corticosteroids. One month later, she presented with worsening anemia with hemoglobin levels of 73 g/L, hematochezia, and severe diarrhea. The initiation of biological therapy with infliximab was approved, yet it seemed ineffective, forcing a right-sided hemicolectomy to be performed. Despite removing the inflamed part of the colon, the patient's symptoms persisted, with hemoglobin levels dropping to 56 g/L. A subsequent colonoscopy revealed 5–6 ulcers in the newly formed terminal ileum but without bleeding characteristics. Surprisingly, Meckel's diverticulum was identified as the source of the bleeding and was successfully removed surgically, resolving the symptoms. The patient resumed biological therapy and responded positively.

**Conclusion:** This case highlights the complexity of diagnosing and managing bowel diseases. The discovery of Meckel's diverticulum as the underlying cause of severe gastrointestinal bleeding points out the importance of considering rare diagnoses when symptoms persist despite appropriate treatment.

**Keywords:** Diarrhea; Gastrointestinal Hemorrhage; Inflammatory Bowel Diseases; Infliximab

# CR213

## Malignant resistant hypertension: A case report

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**Introduction:** Resistant hypertension is defined as a very high blood pressure associated with target organ damage causing hypertensive disease of the brain, heart, and kidneys despite using three or more antihypertensive medications, including a diuretic. It can be treated with renal denervation that reduces the overall tone of the sympathetic nervous system in the walls of the renal arteries.

**Case report:** A 41-year-old female patient has suffered from arterial hypertension for the past 10 years, but in the last 6 months, she has presented with elevated blood pressure values reaching up to 200/110 mmHg, palpitations, and angina. She was being treated for hypertension and familial hypercholesterolemia. Tests to exclude secondary causes like pheochromocytoma, Cushing's disease, and primary aldosteronism were negative. Coronary disease was ruled out through catheterization, and echocardiography showed mild mitral insufficiency. Ergometry indicated coronary insufficiency under stress. Multislice computed tomography angiography of the renal arteries showed poor blood pressure regulation despite treatment with 7 antihypertensive drugs. Ambulatory blood pressure monitoring confirmed severe hypertension with organ damage. Renal denervation performed in 2022 did not improve blood pressure control and albuminuria worsened. Her therapy has been adjusted several times, and she now takes eplerenone, bisoprolol, urapidil, isosorbide mononitrate, moxonidine, combination of valsartan and hydrochlorothiazide, ezetimibe and atorvastatin, esomeprazole and naproxen.

**Conclusion:** In conclusion, malignant hypertension treatment starts with an accurate diagnosis, ruling out secondary causes, incorrect measurements and patient noncompliance. This patient has resistant malignant hypertension, which does not respond to intensive therapy, requiring intensively blood pressure monitoring and treatment adjustments.

**Keywords:** Blood Pressure; Denervation; Hypertension

# CR214

## Long-term follow-up after sympathetic renal denervation - a case report

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**Introduction:** Hypertension is the leading cause of mortality worldwide, making its treatment a major public health priority. Managing resistant hypertension (RH) poses significant challenges. Although medication is the main treatment, some RH patients fail to control blood pressure (BP) adequately. Recent focus has shifted to non-pharmacological therapies like renal sympathetic denervation (RDN), showing promising results. Nevertheless, the long-term effectiveness of these procedures remains undetermined.

**Case report:** We present a 53-year-old female patient with a history of RH. After failing to achieve adequate control over 5 years, with BP as high as 215/110 mmHg, she was selected for RDN. Before the procedure, secondary causes of hypertension were excluded. Preoperative Multi-slice Computed Tomography Angiography was performed to assess renal vasculature anatomy. After a successful RDN procedure, transient chest oppression occurred that was attributed to relative ischemia in hypertrophic myocardium due to hypotension. The patient was discharged on continued antihypertensive therapy and advised to maintain a home BP diary. At follow-up, she responded well with a progressive reduction in BP, measuring 130/80, 150/90 and 145/95 mmHg at 1, 6 and 12 months, respectively. Post-procedural follow-up included regular Doppler ultrasounds, ruling out potential complications. The latest ambulatory measurements, taken 10 years after the procedure, averaged 138/70 mmHg but required four antihypertensive drugs at maximal doses.

**Conclusion:** This case highlights RDN as a successful last-line intervention for RH when pharmacological management fails. Significant BP reduction and decreased medication post-procedure demonstrate RDN's viability for refractory hypertension. In this case, a 10-year follow-up revealed a progressive need to increase antihypertensive therapy to achieve adequate BP control. Future research should identify optimal candidates for RDN to determine its usefulness in managing RH.

**Keywords:** Antihypertensive Agents; Denervation; Hypertension

# CR215

## From suspected stroke to Giant cell arteritis

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**Introduction:** Giant cell arteritis (GCA) is an inflammatory autoimmune disease of large blood vessels. A transient ischemic attack (TIA) is a short period of symptoms similar to those of a stroke. It is caused by a brief blockage of blood flow to the brain. GCA is the most common primary vasculitis in adults.

**Case report:** We present a case of a 62-year-old female patient with symptoms of TIA who came to the emergency department. She had transient aphasia and left hemiparesis. Under the suspicion of an ischemic stroke, brain CT (computed tomography) was performed, which showed no signs of an acute pathomorphological substrate. CT angiography showed signs of segmental stenosis of intracranial vessels and diffuse thickening of the wall of the ascending aorta, up to 3.5 mm, thickening of the wall at the origin of the truncus brachiocephalicus, and thickening of the origin of the left common carotid artery. Both subclavian arteries have wall thickening along their entire course, extending up to the level of both axillary arteries. Those findings point to vasculitis of medium or large arteries. Laboratory findings showed elevated inflammatory parameters and biochemical markers of autoimmune diseases such as extractable nuclear antigen screen and polymyositis/scleroderma antibodies. The diagnosis of Giant cell arteritis was given due to American College of Rheumatology criteria. She received corticosteroid therapy and the disease continues to be monitored and evaluated.

**Conclusion:** This case serves to emphasize the beneficial role of imaging studies to assess vasculitis, including GCA, and highlights the importance of finding the cause of TIA. All of this should be done prior to the progressive development of more serious debilitating and potentially fatal pathology.

**Keywords:** Angiography; Brain ischemia; Giant Cell Arteritis

# CR216

## Takotsubo syndrome and SCAD - what is the connection?

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**Introduction:** Spontaneous coronary artery dissection (SCAD) is a rare yet significant cause of myocardial infarction, predominantly affecting women, and is characterized by either a disruption of the intimal layer or an intramural hematoma within the coronary artery. Takotsubo syndrome (TTS), often referred to as stress-induced cardiomyopathy, involves transient left ventricular dysfunction and typically arises following emotional or physical stress.The objective of this article is to highlight the interplay between these two conditions through the presentation of a rare case.

**Case report:** A 54-year-old female presented with central substernal chest pain lasting 30 minutes prior to her admission. Upon examination, she reported no chest pain or dyspnea, denied any stressors or chronic medical conditions but a 10-pack-year smoking history. The initial workup revealed sinus rhythm on electrocardiogram with a normal heart rate and no ischemic changes. High-sensitivity cardiac troponin T was elevated. Urgent coronary angiography identified a type 2B SCAD affecting the distal left anterior descending artery (LAD) according to the Saw angiographic classification. Left ventriculography demonstrated apical ballooning with hypokinesia and mid-to-basal hyperkinesia of the left ventricle (LV). Echocardiography confirmed mildly reduced ejection fraction (45%) and distal left ventricular dysfunction, consistent with a diagnosis of TTS. The patient received optimal medical therapy and demonstrated recovery of systolic function at the follow-up visit.

**Conclusion:** Due to apical ballooning and wall motion abnormalities in the mid-to-basal LV segment, consistent with a diagnosis of TTS, torsion forces and mechanical stress are generated on the LAD wall, leading to intimal dissection and SCAD. This case highlights the importance of recognizing the relationship between TTS and SCAD in clinical practice as it’s crucial for accurate diagnosis and optimal patient management.

**Keywords:** Coronary Angiography; Coronary Artery Dissection, Spontaneous; Takotsubo Cardiomyopathy

# CR217

## Challenges in treating a rare and aggressive tumor: Angiosarcoma

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**Introduction:** Angiosarcoma is a rare, highly aggressive soft tissue malignancy of uncertain etiology. It primarily arises in the skin, soft tissues, and internal organs, with clinical presentation and management varying based on tumor localization. The disease often leads to significant functional impairment of the affected organ, necessitating a specialized therapeutic approach.

**Case report:** A 60-year-old patient was admitted to the Department of Cardiology in Osijek due to cardiac decompensation. Imaging identified an irregular mass occupying the entire left atrium and prolapsing through the mitral valve into the left ventricle, necessitating surgical intervention. The patient developed pulmonary edema, prompting emergency tumor excision. Pathohistological analysis confirmed angiosarcoma of the left atrium and ventricle, measuring I – 1.2×0.6×0.3 cm, II – 9×7.8×2.5 cm, III – 4×2.8×1 cm. Following resection, intracardiac blood flow was restored, and the patient was discharged with a recommendation for adjuvant oncological therapy. Shortly after, the patient was readmitted due to tumor recurrence and pneumonia. A multidisciplinary team initiated chemotherapy with weekly paclitaxel; however, after one cycle, the patient and family declined further treatment. Subsequent computed tomography of the chest and abdomen revealed metastases in the bones and lungs. The patient passed away the day after hospital discharge.

**Conclusion:** Despite initial surgical intervention achieving temporary stabilization, subsequent recurrence, metastatic progression, and associated complications highlighted the highly aggressive nature of cardiac angiosarcoma. Due to the high recurrence and metastasis rates of angiosarcoma, novel therapeutic approaches are being explored, including targeted therapy, immunotherapy, and gene therapy.

**Keywords:** Cardiac Surgical Procedures; Heart Neoplasms; Paclitaxel; Patient Care Team

# CR218

## Complications of Acute Cholecystitis in a Patient with Pseudoaneurysm of the Right Hepatic Artery: A Case Report

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**Introduction:** Acute cholecystitis is an acute gallbladder inflammation, in 90% of cases associated with gallstones (calculous) and rarely without them (acalculous). Pseudoaneurysms of the right hepatic artery are rare but can cause dangerous complications such as hemorrhage. They represent an increased risk for complications of cholecystitis.

**Case report:** We present the case of a 59-year-old man with end-stage renal disease, type 2 diabetes and arterial hypertension. He was hospitalized for epigastric pain and jaundice. Ultrasound showed thickened gallbladder and gallstones. A computed tomography (CT) scan was performed, revealing signs of acute cholecystitis and pseudoaneurysm of the right hepatic artery. Furthermore, a gastroscopy showed a prominent papilla of Vater. After consultation with the surgeon, the patient was discharged with antibiotics apart from his usual therapy. The patient came back a week later because of melena and fatigue. His hemoglobin level was 45 g/L. Gastroscopy again presented a prominent papilla of Vater but now with a coagulum emerging from it. CT angiography of the abdominal aorta and visceral organs was requested due to suspicion of hemorrhage from the previously described pseudoaneurysm. As a result, imaging suggested arterial filling and possible partial thrombosis of pseudoaneurysm. Firstly, a stent graft was placed across the occluded neck of the aneurysm. Secondly, dual antiplatelet therapy was recommended for 90 days and acetylsalicylic acid lifelong. Control CT angiography described proper stent position without visible filling of the aneurysm sac. The blood count was stable with hemoglobin at 90 g/L.

**Conclusion:** To conclude, acute cholecystitis within patients with pseudoaneurysm of the right hepatic artery can lead to life-threatening complications. Early detection and appropriate management are the key to treatment.

**Keywords:** Cholecystitis; Endovascular Aneurysm Repair; Renal Artery Obstruction

# CR219

## Panic disorder under the mask of cardiovascular emergency: a case report

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**Introduction:** Panic disorder (PD) is the type of anxiety disorder characterized by unexpected panic attacks (PA) that last several minutes, sometimes hours. During PA patients are experiencing variety of somatic symptoms including dyspnea, chest discomfort or pain, palpitations, tachycardia, sweating, nausea that can mimic some internal diseases. Accompanied psychiatric symptoms include depersonalization, derealization, fear of dying or not being in control of oneself.

**Case report:** We present a case of a 24-year-old female patient. She was admitted to the emergency room due to severe chest pain, tachycardia, vertigo, and fear of dying that lasted for 20 minutes. Patient's medical history revealed no significant conditions but her family history revealed father's peacemaker and grandmother's death caused by cerebrovascular insult. Her electrocardiogram showed sinus tachycardia, extrasystoles, and ST-elevation. However, laboratory results showed no elevated troponin, D-dimers nor thyroid hormones, and also chest X-ray and echocardiography were normal. After thorough workup, acute coronary syndrome, pulmonary embolism, and hyperthyroidism were excluded and psychiatrist was consulted. She was diagnosed with PD according to the criteria of The Diagnostic and Statistic Manual of Mental Disorders, 5th Edition, which include recurrent PA followed by persistent worry about new PA and/or maladaptive behavioral response to the PA for a month. Sertraline was prescribed and cognitive-behavioral therapy was also recommended. The patient reported significant improvement with lower frequency of PA and no somatic symptoms.

**Conclusion:** This case emphasizes the importance of recognizing PD and also other psychosomatic conditions that mimic somatic diseases in clinical practice, especially in young patients. Education of health professionals is needed and essential in order to optimize healthcare resources and also to significantly improve patient's quality of life.

**Keywords:** Cognitive Behavioral Therapy; Electrocardiography; Interdisciplinary Communication; Panic Disorder; Sertraline

# CR220

## Peripheral arterial disease presented as venous thrombosis in family medicine practice

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**Introduction:** Peripheral arterial disease refers to the progressive narrowing of the arterial lumen, leading to reduced blood flow and the subsequent development of distal ischemia. It is a pathological condition resulting from atherosclerosis, primary involving the major arteries of the lower extremities, including the femoral, popliteal, iliac, peroneal and tibial arteries.

**Case report:** A 67-year-old male, previously diagnosed with type II diabetes, presented to a family medicine doctor with edema and redness of the right lower leg. The patient reported experiencing paresthesia in the right leg. The Homan's sign was positive during the examination, raising suspicion of a diagnosis of venous thrombosis. The patient was referred for an urgent evaluation by a vascular surgeon. Laboratory findings showed no abnormalities, including D-dimer levels. X-ray findings did not show any pathological changes. Color doppler imaging of the right leg veins was performed and showed no abnormalities. However, color doppler imaging of the right leg arteries showed occlusion of the lumen of the superficial femoral artery. Surgical treatment with percutaneous transluminal angioplasty was indicated. The patient was started on long-term anticoagulant therapy with acetylsalicylic acid and rivaroxaban. Rivaroxaban, an oral factor Xa inhibitor anticoagulant, coadministered with acetylsalicylic acid is indicated for the prevention of atherothrombotic events in patients with peripheral artery disease. The postoperative recovery proceeded without complications, after which the patient was discharged home.

**Conclusion:** To conclude, peripheral arterial disease can present with nonspecific symptoms and surgical treatment is necessary to prevent ischemia. Annual color doppler is necessary in the follow-up of these patients. Focus should be placed on prevention and regular screenings of patients with diabetes and hyperlipidemia due to their increased risk of this condition.

**Keywords:** Angioplasty; Peripheral Arterial Disease; Venous Thrombosis

# CR221

## Retained intravascular metal wire fragments - a rare complication of the subclavian vein catheterization

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**Introduction:** The placement of a central venous catheter (CVC) is common in intensive care medicine. CVC is used for drug administration, monitoring of central venous pressure, and the administration of vasoactive drugs. The material from which the catheter was made plays a crucial role in device's characteristics. Any deficiency in the quality of the catheter material can lead to serious health consequences, including drug extravasation, infection, damage to blood vessels, and retained intravascular foreign bodies in the bloodstream.

**Case report:** 47-year-old oncological surgical patient with a transverse colon cancer was admitted to the Intensive Care Unit after the surgery with sepsis. The next day, he was placed on High-Flow Nasal Oxygen, and due to the progression of respiratory failure he was intubated, mechanically ventilated and continuously sedated. On the sixth day of treatment, the patient's general condition becomes extremely severe. Due to a septic episode, a CVC manufactured from flexible polyurethane was placed to enable vasoactive support with noradrenaline. However, due to the insufficient quality of the material and tortuous vascular lumen, a guide-wire was entangled, and retained in the right subclavian vein. Subsequently, the patient underwent a surgical procedure of foreign body removal with right-sided thoracic drainage due to the pneumothorax.

**Conclusion**: The quality of the materials used to make intravascular devices must meet medical standards. The combination of CVC material imperfection and anatomic vascular anomalies, as observed in our patient, can lead to the retention of foreign body fragments in the vascular pool and serious complications. A careful introduction without resistance and procedural monitoring can reduce the incidence of this complication.

**Keywords:** Central Venous Catheters; Equipment Failure Analysis; Sepsis

# CR222

## From Daily Collapses to a Life Reclaimed: The Minimally Invasive Miracle of TAVI

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**Introduction:** Aortic stenosis (AS) is a progressive disease that greatly lowers the quality of life and increases mortality if it is not treated. For years, surgical aortic valve replacement (SAVR) was the gold standard for treatment, but transcatheter aortic valve implantation (TAVI) offers an alternative for high-risk patients.

**Case report:** A 75-year-old woman with a history of hypertension, hypothyroidism, and hyperlipidemia had a recurring syncope multiple times a day – even with minimal physical activity. She experienced dyspnea, chest pain, and progressive fatigue. Over the years she underwent extensive diagnostic examination, including several emergency room visits, when she was diagnosed with severe AS in 2016 ( aortic valve area (AVA) 0.8–1.0 cm², maximal pressure gradient (PGmax) 56 mmHg).Regardless of the clear indication for SAVR, she refused high-risk open-heart surgery because her brother, who also suffered from AS, died during the procedure. With time, her condition worsened with persistent dizziness, disorientation, and confusion. In 2023, echocardiography showed further progression of AS (AVA 0.6 cm², moderate aortic regurgitation), requiring urgent treatment. In September of 2024, transfemoral TAVI was performed with optimal placement and without paravalvular leakage. Postprocedural echocardiography confirmed a well-placed prosthetic valve with better hemodynamic function (AVA 1.3 cm², PGmax 36 mmHg). After the procedure, the patient stopped experiencing syncope and her physical endurance significantly improved. On her checkup in January of 2025, she was stable, normotensive, and without complications.

**Conclusion:** This case shows the potential of TAVI to save lives by proving to be an effective and safe way to treat severe AS. With the rapid development of invasive cardiology, minimally invasive techniques now allow the treatment of patients who previously refused or feared undergoing high-risk procedures.

**Keywords:** Aortic Valve Stenosis, Syncope, Transcatheter aortic valve replacement

# CR223

## Cardiopulmonary exercise testing (CPET) in determining the cause of unexplained dyspnea - case report

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**Introduction:** Cardiopulmonary exercise testing (CPET) determines a patient's reaction to exertion, measuring multiple cardiovascular, pulmonary and metabolic parameters. It provides a clear diagnostic assessment of findings in the commonly overlapping fields of cardiology and pulmonology. In this case report, we focus on the importance of CPET in determining the cause of unexplained dyspnea after many inconclusive diagnostic attempts.

**Case report**: A 62-year-old female smoker of 40 pack/years with obesity presented with dyspnea on exertion. She had been previously diagnosed with arterial hypertension and hypothyroidism, both of which were adequately regulated. Ergometry and echocardiography showed no pathological results. Ischemic heart disease was suspected, however, coronary angiography showed no significant stenosis. Chest x-ray and spirometry were normal and bronchodilator test was negative, however, diffusing capacity of the lungs for CO was reduced. Despite extensive diagnostic attempts, the cause of dyspnea on exertion remained unexplained, prompting a CPET on a treadmill, which showed ventilatory inefficiency, inadequate end-tidal CO2 rise, as well as a significant drop in arterial oxygen saturation. These results pointed towards an issue at the level of alveolocapillary membrane which was subsequently confirmed with a computerized tomography of the thorax that showed advanced bilateral centrilobular emphysema. For symptom relief, dual bronchodilator therapy was recommended, as well as adequate vaccination and regular follow-ups.

**Conclusion:** CPET is an underutilized diagnostic tool of great importance which can be useful in determining the cause of unexplained dyspnea, as well as in differentiating between cardiac and pulmonary conditions. The method reduces the need for an overly broad evaluation, which focuses and simplifies the diagnostic process, leading to a better patient outcome.

**Keywords:** Dyspnea; Exercise Test; Pulmonary Emphysema



# CLINICAL MEDICINE

OSCON

# CM01

## Comparison of programmed death-ligand 1 (PD-L1) expression in squamous-cell and adenocarcinomas of the lung diagnosed at University Hospital Center Osijek

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**Introduction:** Programmed death-ligand 1 (PD-L1) expression on tumor cells enables immune response evasion. Immunotherapy administration depends on PD-L1 expression. We aimed to compare PD-L1 expression in squamous-cell carcinoma and adenocarcinoma of the lung, assuming greater expression in squamous subtype.

**Materials and methods:** From the Department of Pathology and Forensic Medicine, archival data was collected from patients who were diagnosed with non-small-cell lung cancer (NSCLC) between 1.1.2022. and 31.12.2023. Based on archived histology reports, NSCLCs were divided into squamous-cell carcinomas, adenocarcinomas and a third category for not otherwise specified (NOS) and large cell NSCLCs. PD-L1 expression was categorized using the tumor proportion score (TPS) into: TPS < 1 %, TPS = 1-49 % and TPS ≥ 50 %. Statistical tests: Chi-square and Analysis of Variance.

**Results:** Of the 304 patients, 214 (70.4 %) were male. Average age at diagnosis was 67 years. Histologically, 153 (50.3 %) tumors were adenocarcinomas, 93 (30.6 %) were squamous-cell carcinomas and 58 (19.1 %) were in the third category. 154 (50.7 %) tumors had TPS < 1 %, 94 (30.9 %) had TPS = 1-49 % and 56 (18.4 %) had TPS ≥ 50 %. Female patients were more frequently diagnosed with adenocarcinoma (62.2 % vs 45.3 %, p = 0.015). Adenocarcinomas, compared to squamous-cell carcinomas, were more represented in the TPS ≥ 50% category (18.3 % vs 15.1 %, p = 0.124), which was not statistically significant. No differences in TPS values were found relating to age or gender.

**Conclusion:** NSCLC was more common in male, but adenocarcinomas were more predominant in female patients. Adenocarcinomas were the most frequently diagnosed NSCLC. Majority of tumors had TPS < 1 % and less than one out of five had TPS ≥ 50 %. No statistical differences in TPS categories were found relating to age and gender of the patients or histological subtype of the tumor, thus the hypothesis was not confirmed.

**Keywords:** Adenocarcinoma; Immune Checkpoint Inhibitors; Carcinoma, Non-Small-Cell Lung; Carcinoma, Squamous Cell

# CM02

## Medication therapy in patients with acute heart failure presenting to emergency department

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**Introduction:** Medical treatment of heart failure traditionally included renin-angiotensin-aldosterone system (RAAS) inhibitor and a beta-blocker with mineralocorticoid receptor antagonists (MRA) added in a second line; diuretics have been prescribed as symptomatic treatment. Recently there has been an advance in heart failure medication due to adding neprilysin inhibitors and sodium-glucose cotransporter-2 inhibitors (SGLT-2i) to treatment. Current guidelines now recommend angiotensin-converting enzyme inhibitors (ACEI), or angiotensin receptor blockers (ARBs), SGLT-2i, beta-blockers, and angiotensin receptor/neprilysin inhibitor (ARNI) as the first-line treatment. In this study we investigated medication recommendations in patients with acute heart failure presenting to emergency department.

**Materials and methods:** The study included patients admitted to the emergency department in 3 months (May-August 2024). Data collection included demographic and physiological data, medical history, and medication. Any change in medication for heart failure was recorded.
**Results:** In the investigated period we identified 250 patients, aged 74±12 years, 81 (32%) with diabetes, and 119 (48%) were not followed by a cardiologist ever or in the previous 5 years. More than half of the patients 128 (51%) were not taking an ACEI or ARB, most patients 182 (73%) were taking beta-blockers. Only 38 (15%) took ARNI and 96 (38%) MRA. Treatment with SGLT-2i was identified in 72 (29%) patients: 32 out of 81 (39.5%) patients with diabetes and 40 of 167 (24%) non-diabetics. Recommendation for treatment change most commonly included diuretic dose increase in 55 (22%) patients and very rarely introducing heart failure drugs: 12,5 ( 5%) beta-blockers, 5 (2%) for either MRA, ARNI, or SGLT-2i.

**Conclusion:** Most patients with heart failure presenting to the emergency department do not have optimal medical treatment which presents an opportunity for treatment interventions and possible better outcomes.

**Keywords:** Drug Therapy; Emergencies; Heart Failure

# CM03

## Cardiac Biopsies: A Retrospective Analysis of Tumor Incidence and Transplant Monitoring

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**Introduction:** Primary cardiac tumors are rare, with approximately 90% being benign. Among them, myxomas are the most common, occurring in the left atrium in 75–85% of cases. These tumors can lead to left atrioventricular valve obstruction and embolization, potentially causing significant clinical complications. The presentation of cardiac myxomas varies depending on tumor size. Patients may be asymptomatic or experience mild, nonspecific symptoms, larger tumors cause severe obstructive and systemic effects.

**Materials and methods:** The University Hospital Center Sisters of Charity processes over 35,000 biopsies annually. We conducted a comprehensive analysis of cardiac biopsy records from 2018 to 2025, filtering cases specifically related to cardiac tumors.

**Results:** A total of 90 myocardial tissue biopsies were analyzed, representing 53 patients, 70% due to assessment of histological criteria of posttransplant rejection reaction. Two cases of amyloidosis were confirmed, while three were inconclusive. Inflammatory etiologies included one case of chronic pericarditis and one myocarditis. Additionally, we identified one case of hypertrophic cardiomyopathy. Seven biopsies showed proliferative myxoid stroma, and one case involved a complete excision of a myxoma. Additionally, one papillary fibroelastoma was identified. Among malignant tumors, we found one case of angiosarcoma and one case of metastatic clear cell renal cell carcinoma.

**Conclusion:** Heart biopsies are primarily used to monitor post-transplant patients for signs of rejection, underscoring their crucial role in transplant management. Cardiac tumors are extremely rare, and when present, they are most often benign. However, due to their potential to cause hemodynamic instability, surgical excision remains the recommended therapy.

**Keywords:** Heart Neoplasms; Heart Transplantation; Myxoma; Pathology

# CM04

## Etiology of Bloodstream Infections in Cardiovascular Patients

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**Introduction:** Bloodstream Infections (BSIs) are infections that occur when harmful microorganisms enter a patient's bloodstream. They may lead to sepsis which can result in organ failure and death. Therefore, we conducted a retrospective study to examine differences in the incidence and etiology of BSIs in cardiovascular patients hospitalized in University Hospital Center Osijek.

**Materials and methods:** The study was conducted from May 18, 2020, to December 31, 2024, on cardiovascular patients from the Department of Surgery (DoS) and the Department of Internal Medicine (DoIM). In total, 2,646 samples were taken from 745 patients. The isolates were cultured in blood culture bottles using fully automated, continuous-monitoring broth-based blood culture systems (BD Bactec FX) and then identified by MALDI-TOF mass spectrometry (Bruker).

**Results:** Out of 2,646 samples, 503 were positive, with significantly more from the DoS (334) than DoIM (169) ( 2=14.23, p<0.01). Regarding isolates, including coagulase-negative staphylococci (CoNS), the DoS had 71 Gram-negative bacteria, 96 Gram-positive bacteria and 7 fungi, while the DoIM had 25 Gram-negative bacteria, 96 Gram-positive bacteria and 2 fungi, also a significant difference ( 2 =16.55, p<0.01). However, no significant difference in etiology was observed if CoNS are excluded.

**Conclusion:** This study revealed a higher incidence of bloodstream infections in the DoS than in the DoIM, emphasizing differences in microbial profiles. However, considering that CoNS are mostly skin contaminants and are not likely to be primary pathogens, there is no statistically significant etiological difference between the two departments.

**Keywords:** Bacteremia; Fungemia; Sepsis

# CM05

## The effects of cannabidiol on vascular stiffness in patients with untreated primary hypertension: insights from a randomized controlled trial

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**Introduction:** Emerging evidence suggests that cannabidiol (CBD) exerts significant cardiovascular effects. The HYPER-H21-4 trial aimed to investigate the impact of chronic CBD supplementation on 24-hour ambulatory blood pressure (BP) in patients with primary hypertension. Furthermore, our preliminary findings with acute CBD administration suggest that CBD influences arterial stiffness. Therefore, this sub-analysis assessed whether a 5-week CBD course influences arterial stiffness.

**Materials and methods:** The trial was designed as a triple-blind, randomized, crossover study with 38 untreated primary hypertension patients. Exclusion criteria included significant comorbidities, smoking, pregnancy and a body mass index ≥35 kg/m². Patients were randomly assigned to receive either oral CBD or placebo for 5 weeks, with a 2-week washout period before switching treatments. Measurements were taken at four time points using ambulatory monitors, which indirectly assess arterial stiffness indices. The primary parameters of interest were pulse wave velocity (PWV) and central augmentation index standardized to a heart rate of 75 bpm (cAIx@75bpm).

**Results:** After 5 weeks of CBD supplementation, no significant CBD-mediated change was observed in PWV (CBD: 7.9 ± 1.2 m/s to 8.1 ± 1.1 m/s Placebo: 8.0 ± 1.2 m/s to 8.2 ± 1.2 m/s P = 0.412). Similarly, no significant changes in cAIx were detected during either the CBD or placebo dosing period (CBD: 27.9 ± 8.2% to 28.1 ± 8.1% Placebo: 29.4 ± 9.2% to 28.8 ± 9.0% P = 0.412).

**Conclusion:** The findings of this sub-analysis of the HYPER-H21-4 trial suggest that chronic CBD supplementation does not influence vascular stiffness. In contrast, other sub-studies from the trial have demonstrated that CBD lowers blood pressure by modulating the sympathetic nervous system, endothelial function, and inflammatory mediators.

**Keywords:** Cannabidiol; Essential Hypertension; Vascular Stiffness

# CM06

## Difference in Progression-Free Survival and Overall Survival in RAS-WT metastatic Colorectal Cancer in relation to treatment with anti-VEGF and anti-EGFR

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**Introduction:** Colorectal cancer ranks third among all malignant diseases in the world and second in terms of mortality. Metastatic disease is treated with chemotherapy in combination with biological therapy such as anti-vascular endothelial growth factor (anti-VEGF) and anti-epidermal growth factor receptor (anti-EGFR).

**Materials and methods:** This cross-sectional study with historical data included 82 patients diagnosed with metastatic colorectal RAS-wild-type (RAS-WT) cancer, thus treated in a five-year period from January 1, 2017 to December 31, 2021 at the Oncology Clinic. It was designed to examine the time to disease progression in patients with RAS-WT metastatic colorectal cancer treated with anti-VEGF or anti-EGFR in the first line of chemotherapy, and whether there is a difference in the time to disease progression and overall survival in patients regarding biological drug therapy.

**Results:** In the observed period, five-year progression-free survival (PFS) in patients treated with anti-VEGF therapy is 43 %, with median time 22 months (95 % confidence interval 17 – 36), while the PFS in patients treated with anti-EGFR is 38 %, with median time to disease progression of 51 months (95 % confidence interval 15 – 51). Also, the overall five-year survival in patients with left-sided metastatic colorectal cancer treated with anti-EGFR is 46 %, but although it is slightly higher than in patients with anti-VEGF therapy (34 %), it is not significantly different (log-rank test, P = 0.05).

**Conclusion:** Five-year progression-free survival does not differ significantly regarding biological drug therapy, while overall five-year survival is significantly longer in patients treated with anti-EGFR compared to patients treated with anti-VEGF in the first line of treatment.

**Keywords:** Biological Therapy**;** Colorectal Neoplasms; Progression-Free Survival

# CM07

## Comparison of recurrence frequency and length of hospitalization between VATS and drainage in the treatment of pneumothorax

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**Introduction:** Pneumothorax is a condition characterized by the appearance of air in the pleural space due to the interruption of the continuity of the parietal or visceral pleura which is treated by placing a thoracic drain or video-assisted thoracoscopic surgery (VATS). This study aims to examine the incidence of a local recurrence of pneumothorax and length of hospitalization after drainage and video-assisted thoracoscopic surgery and to compare the obtained values. Hypothesis was that the length of hospitalization is shorter after thoracic drainage whereas the local recurrence rate of pneumothorax is lower after VATS.

**Materials and methods:** This research was designed as a cross-sectional survey with historical data. The study included patients with a diagnosis of primary spontaneous pneumothorax who were hospitalized at the Department of Thoracic Surgery of Clinical Hospital Center Osijek in the period from January 1, 2018. until 31.12.2022. The study included 85 patients who were treated with local drainage or VATS. Data of opted treatment were collected by reviewing medical records from the hospital information system for each individual patient.

**Results:** Out of 85 patients, recurrence of primary spontaneous pneumothorax occurred in 20 patients, which is 23.5%. The recurrence rate regarding drainage was 29.5%, while the recurrence rate after VATS significantly lower and resulted in 8.3%. The median length of hospitalization for drainage was 7 days and is shorter compared to the median length of hospitalization after VATS, which was 9 days.

**Conclusion:** The median length of hospitalization with local drainage is shorter compared to VATS, while the incidence of recurrence is less frequent after treatment with VATS compared to local drainage indicating that both results align with our hypothesis.

**Keywords:** Drainage; Pneumothorax; Thoracic Surgery, Video-Assisted

# CM08

## Overview of patients with transplanted kidney in Clinical medical center Osijek during the period of 3 years.

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**Introduction:** Kidney transplantation is the treatment of choice for end-stage renal disease (ESRD), significantly improving quality of life and survival. This study aimed to evaluate the demographic and clinical characteristics of kidney transplant recipients and their outcomes, focusing on graft function.

**Materials and methods:** The observed group consisted of transplanted patients in University Hospital Osijek during the period of 01.01.2021. - 31.12.2023. Data were collected retrospectively. A total of 24 kidney transplant recipients were observed.

**Results:** Among 24 kidney transplant recipients, 70.8% were male, and 29.2% female. Donor kidneys were obtained from 54.2% male and 45.8% female donors. The most common causes of kidney failure were polycystic kidney disease (20.8%), focal segmental glomerulosclerosis (FSGS, 16.7%), and glomerulonephritis (16.7%), while 12.5% of cases had an unknown etiology. Immediate graft function (IGF) was observed in 33.3% (n=8) of patients, non-dialyzed delayed graft function in 50% (n=12), and dialyzed delayed graft function in 16.7% (n=4). No significant association was found between graft function categories and the sex of recipients (p=0.36) or donors (p=0.43).

**Conclusion:** The data suggest that the distribution of kidney transplant recipients and donors by sex is relatively balanced, with males being slightly more prevalent among both groups. Polycystic kidney disease and FSGS were the most common causes of kidney failure in this cohort. While IGF was observed in one-third of patients, most exhibited some degree of delayed graft function. No significant differences were found between graft function and sex of the recipients or donors. Further research is needed to explore other factors influencing graft function.

**Keywords:** Kidney Failure, Chronic; Graft Survival; Kidney Transplantation

# CM09

## Might we find the solution for sepsis therapy by comparing sepsis from different sources?

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**Introduction:** Sepsis is a life-threatening organ dysfunction triggered by a dysregulated host response. The Sepsis-III definition covers heterogeneous population; however, common pathophysiological mechanisms include microthrombi formation driven by immune and endothelial dysfunction. Normally, thrombi formation and lysis are balanced, but in sepsis, fibrinolysis-shutdown occurs. The viscoelastic point-of-care device ClotPro provides detailed coagulation profiles, including microthrombi lysis measured by TPA-test Lysis Time (TPA-LT). This study explores differences in coagulation profiles and clinical outcomes between intensive care unit (ICU) patients with urosepsis (’U’) and pneumonia (’P’) to identify distinct pathophysiological background for better healing urosepsis.

**Materials and methods:** Patients with urosepsis or pneumonia admitted to the ICU in 10 months were included within 24 hours of admission, alongside a healthy control group (’H’). Conventional coagulation parameters and ClotPro TPA-LT were measured on ICU days 1, 3, and 5. Statistical analysis was performed using SPSSv.20. Ethical approval and informed consent were obtained. The National Ethical Committee approved our study (reg. number: BM/3049/2023).

**Results:** Thirty-one sepsis patients (14 ’U’, 17 ’P’) and 17 controls were recruited. Disease severity scores were similar at admission (’U’ SOFA: 8±3 ’P’ SOFA: 9±3). Urosepsis patients had shorter ICU stays and lower mortality. TPA-LT was higher in sepsis patients at admission than in controls (’H’: 211±36 ’U’: 607±218 ’P’: 445±321, p=0,045), indicating fibrinolysis shutdown. By day 5, TPA-LT decreased significantly in ’U’ compared to ’P’ patients (’U’: 301±69 ’P’: 513±12, p=0,018).

**Conclusion:** In summary, urosepsis fibrinolysis shutdown resolves quickly after therapy begins, and patients have better survival rates. We must conduct further research to define what causes the difference between the two sepsis patient groups and why microthrombi dissolve better in urosepsis patients.

**Keywords:** Fibrinolysis; Point-of-Care Testing; Sepsis

# CM10

## Correlation Between Growth Differentiation Factor 15 and Interleukin-6 in Hospitalised COVID-19 Patients

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**Introduction:** Growth differentiation factor 15 (GDF-15), a member of the transforming growth factor-β (TGF-β ) superfamily, is studied as a biomarker for various pathological conditions, including inflammation and sepsis. Interleukin-6 (IL-6) is a cytokine linked to worse clinical outcomes in COVID-19 patients. This prospective observational study explores the connection between GDF-15 and IL-6 in hospitalized COVID-19 patients and examines their relationship with disease severity.

**Materials and methods:** Upon admission of 95 adult hospitalized COVID-19 patients, blood samples were collected by venepuncture using 4 mL BD Vacutainer® CAT (Clot Activator Tube). The samples were centrifuged for 10 minutes at 2000 × g. IL-6 and GDF-15 concentrations in the serum samples were measured using the electrochemiluminescence immunoassay (ECLIA) method with the COBAS e601 Immunoassay Analyzer (Roche Diagnostics GmbH, Mannheim, Germany). The patients' other medical data were also collected. Patients were categorized by disease outcome into survivors and non-survivors. Statistical analysis was conducted to assess correlations between variables using Spearman's rank correlation coefficient (ρ=0.02).

**Results:** The observed cohort consisted of 43% men and 57% women. The mean age was 76 years, with a minimum of 22 years and a maximum of 93 years. A statistically significant correlation between GDF-15 and IL-6 was found in the group of all patients ($\rho = 0.461$, $P < 0.001$), as well as in subgroups of survivors ( $\rho = 0.401$, $P < 0.001$) and non-survivors ($\rho = 0.424$, $P = 0.02$).

**Conclusion:** A positive correlation between GDF-15 and IL-6 was observed across all patient group, including survival and non-survival subgroups. This suggests that their (patho)physiological pathways may be linked, with one potentially driving the secretion of the other. Further research is needed to explore this relationship.

**Keywords:** Cytokines; COVID-19; Growth Differentiation Factor 15

# CM11

## Clinical and cytogenetic features of lymphoproliferative diseases in children treated in the Pediatric Department of KBC Osijek

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**Introduction:** This study aims to test the clinical characteristics, frequency, and outcome of lymphoproliferative diseases (LPD) and their difference in age, gender, comorbidities, perinatal risk factors, and family history. Also, to determine the types of chromosomal abnormalities and immunophenotype of LPD.

**Materials and methods:** The research was conducted as a cross-sectional study with historical data at the Pediatric Clinic of Clinical Hospital Center Osijek from 2017 to 2023 among patients diagnosed with leukemia and lymphoma.

**Results:** In the observed period, 30 children with LPD were diagnosed, with an average of 5 cases per year, and a higher incidence of leukemia (63%) versus lymphoma. The median age for leukemia diagnosis is 5 years and 13 years for lymphoma. The occurrence of LPD is higher among boys (63%). There are no established differences in the occurrence of LPD considering family history, comorbidities, and perinatal factors. Supraclavicular and cervical lymphadenopathy (63%), fever (57%), and pallor (53%) are the most common clinical features in children with LPD. Immunophenotyping revealed the presence of lymphoid lineage blasts in 86% of cases, while cytogenetic results confirmed the presence of structural and numerical chromosomal aberrations in 60% of cases. After establishing the diagnosis of LPD, protocol treatments were indicated with which all children achieved complete remission.

**Conclusion:** There is no statistically proven difference in the occurrence of LPD regarding gender, comorbidities, perinatal risk factors, and family history, however, there is a difference in occurrence among age groups. Determining the presence of chromosomal aberrations leads to adequate treatment with a favorable outcome among patients.

**Keywords:** Cytogenetics; Immunophenotyping; Lymphoproliferative Disorders

# CM12

## Examination of pituitary adenylate cyclase-activating polypeptide (PACAP) in patients with atrial fibrillation undergoing pulmonary vein isolation

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**Introduction:** Pituitary adenylate cyclase-activating polypeptide (PACAP) is a cardioprotective neuropeptide involved in cardiovascular conditions. Plasma PACAP levels increase in myocardial infarction and decompensated heart failure but decrease in chronic heart failure. Its role in atrial fibrillation (AF) remains unclear. This study investigated the relationship between PACAP and AF in the context of pulmonary vein isolation (PVI).

**Materials and methods:** Our research team investigated blood samples from 46 patients undergoing PVI for AF. Blood samples (5 ml) were collected from the femoral vein at the beginning of the procedure, the right atrium before septal puncture, the left atrium before and after ablation, the femoral vein after the procedure, and the cubital vein the next day. Electroanatomical mapping classified patients into intact (n=29) and scarred (n=17) left atrial groups. PACAP levels were compared between groups and correlated with left atrial size and comorbidities.

**Results:** PACAP levels were significantly higher in atrial blood and post-procedural femoral vein samples than in peripheral blood collected at the beginning and one day after the procedure. We detected lower PACAP levels in the left atria with a scarred atrium than in those with an intact atrium. PACAP levels significantly increased in the femoral vein after the ablation in patients with intact atria.

**Conclusion:** This study is the first to show differences in PACAP levels between atrial and peripheral blood samples. The elevated PACAP levels measured in atrial samples may be due to myocytes and neurons, whose PACAP production decreases depending on the degree of scarring following ablation-induced injury in the left atrium. Transient systemic PACAP elevation suggests its potential as a biomarker in AF and post-PVI recovery, offering insights into atrial remodeling and procedural outcomes.

**Keywords:** Atrial Fibrillation; Biomarkers; Pituitary Adenylate Cyclase-Activating Polypeptide

# CM13

## Ventral and umbilical hernias: outcomes of laparoscopic and open surgery – a retrospective study

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**Introduction:** Ventral and umbilical hernia repairs are common elective procedures in general surgery. However, it remains unclear whether laparoscopic or open surgery is the optimal approach when considering outcomes. This study, for the first time in Croatia, aimed to examine the incidence and types of ventral and umbilical hernias and to compare the outcomes of laparoscopic and open surgery.

**Materials and methods:** This single-center retrospective observational study included patients who underwent surgery for ventral or umbilical hernia between January 2023. and December 2024. at the National Memorial Hospital Vukovar, Vukovar, Croatia.

**Results:** A total of 113 patients (55 males and 58 females) were treated for ventral (n=54, 47.4%) or umbilical hernias (n=60, 52.6%). Among these, 9 hernias (7.9%) were incarcerated, 65 (57%) were postoperative hernias, and 8 (7%) were recurrences. Laparoscopic surgeries were performed in 22 cases (19,47%), while 91 cases (80,53%) underwent open hernioplasty. The mean operation duration was 75.15 ± 25.14 minutes. There were no intraoperative complications, while early postoperative complications included one dehiscence. The median hospitalization length was 2 days (IQR=1). Postoperative hernia recurrences occurred in 3 cases (2.6%). Laparoscopic surgeries lasted longer than open surgeries ($t(114)=2.73$, $p=0.01$), but no significant differences were observed in the incidence of intraoperative complications ($\chi2=0.56$, $p=0.455$), length of hospitalization ($t(114)=1.11$, $p=0.271$), postoperative complications ($\chi2=2.12$, $p=0.548$), or hernia recurrence ($\chi2=0.15$, $p=0.697$).
**Conclusion:** Both laparoscopic and open surgery for ventral and umbilical hernias showed low rates of intra-/postoperative complications, differing only in operation duration. Further multicenter retrospective studies with larger cohorts and extended follow-up periods are required to better define outcomes of these surgical approaches.

**Keywords:** Hernia, Umbilical; Hernia, Ventral; Laparoscopy



# REVIEW

OSCON

# R01

## Exploring the Impact of Air Pollution on Atherosclerosis: A Review of Recent Findings

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**Introduction:** Air pollution is a modifiable risk factor for cardiovascular (CV) diseases. This abstract reviews recent research on the impact of air pollution, specifically particulate matter with aerodynamic diameter 2.5 m (PM . ), nitrogen oxides (NO ) and ozone ($O_3$), on the progression of atherosclerosis.

**Review:** The PubMed database was searched using the keywords 'Air Pollution ', 'Atherosclerosis ' and 'Environmental Exposure '. Articles published between 2020 and 2024 were included. The significant impact of air pollution on CV health has been noted, with particular emphasis on the roles of PM . , NO and O3. PM . promotes thrombosis through increased platelet activity and the release of pro-coagulant factors. It also alters lipid metabolism leading to an increase in low-density lipoprotein (LDL), oxidized LDL, and triglycerides, as well as a reduction in high-density lipoprotein and apolipoprotein A1. Long-term exposure to PM . and NO , in combination with roadway vicinity, is associated with larger total plaque volumes and the primary non-calcified plaque subtype. Moreover, a connection was observed between long-term PM . and NO exposure and subclinical atherosclerosis in a young population. Short-term exposure to PM . has been linked to an increased risk of acute coronary syndrome. Long-term exposure to O3 is associated with lower fractional flow reserve on computed tomography values in atherosclerotic patients. High O3 doses are linked to the increase of calcified plaques and the extent of coronary stenosis.

**Conclusion:** Exposure to air pollution significantly contributes to the onset and progression of atherosclerosis, highlighting the need for further research and stricter air quality regulations.

**Keywords:** Air Pollution; Atherosclerosis; Cardiovascular Diseases

# R02

## The Role of Endocrine-Disrupting Chemicals in Cardiovascular Disease: A Literature Review

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**Introduction:** Endocrine-disrupting chemicals (EDCs) are naturally occurring or man-made substances that interfere with hormone synthesis and destabilise the endocrine system. Initially linked to reproductive health and cancer, emerging evidence suggests environmental exposure to EDCs as a contributor to the onset and progression of cardiovascular disease, which this abstract aims to review.

**Case report:** A literature search was conducted using the PubMed database with a combination of the following keywords: "endocrine disruptors", "atherosclerosis", "dyslipidemias" and "heart disease risk factors". We included studies published since January 2019 that investigated the effects of EDCs, such as bisphenol A (BPA), on metabolic functions. BPA exposure concentration was correlated to lower HDL cholesterol, while no association with LDL cholesterol was found. One study reported that individuals (20-45-year-olds) with high plasma BPA presented with higher blood pressure and CRP levels, suggesting its possible role in inflammation. Furthermore, urinary BPA was positively associated with an increased risk of atherosclerosis, myocardial infarction and congestive heart failure, which was more evident in men. Triclosan, an antimicrobial EDC, was found to exacerbate atherosclerosis pathogenesis. Phthalates were associated with metabolic disturbances, such as dyslipidemia and insulin resistance, especially in adolescents and girls with polycystic ovary syndrome. Various animal experiments have reported that BPA exposure during pregnancy or lactation is much more likely to induce the development of cardiovascular and cardiometabolic diseases in comparison with BPA exposure during adulthood.

**Conclusion:** Exposure to endocrine-disrupting chemicals is positively associated with increased cardiovascular disease. Further research is needed to clarify mechanisms and inform public health interventions in order to reduce environmental exposure to EDC.

**Keywords:** Atherosclerosis; Dyslipidemias; Endocrine Disruptors

# R03

## Application of Artificial Intelligence in Risk Assessment for Cardiovascular Disease

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**Introduction:** Cardiovascular disease (CVD) is a major healthcare problem, with mortality rates reaching up to 400 per 100 000 a year in developed countries. With the growing use of artificial intelligence (AI) in medicine, researchers are developing predictive models for certain diseases. This review evaluates recent advancements in AI-driven predictive models for CVD risk assessment, emphasizing their clinical utility and implementation challenges.

**Case report/review:** A systematic search of the PubMed database using the keywords “cardiovascular disease risk” and “artificial intelligence” identified 40 articles between 2021 and 2024. Inclusion criteria focused on studies applying machine learning (ML) or deep learning (DL) models for CVD prediction with reported key performance metrics. Traditional ML models used simpler features, such as patient history and quantitative clinical examination results, and yielded models of moderate accuracy (70-80%). However, by being inherently highly interpretable, they allowed for the identification of key predictive features, such as age, systolic blood pressure, and cholesterol levels. In contrast, DL models achieved higher accuracy (85-99%) by utilizing more complex datasets, including genomic features, radiomic features, and visual data. In particular, analysis of retinal microvascular changes in eye fundus examination images demonstrated strong predictive power.

**Conclusion:** AI has demonstrated notable potential in CVD prediction through traditional ML and multi-omic DL models. Further scientific and administrative efforts could enable AI to revolutionize CVD diagnostics and pave the way for personalized treatment approaches.

**Keywords:** Artificial Intelligence; Heart Disease Risk Factors; Precision Medicine

# R04

## New imaging and treatment methods of autonomic nervous system dysfunction in cardiovascular diseases

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**Introduction:** It is well known that autonomic nervous system (ANS) dysfunction is involved in the pathogenesis of many cardiovascular diseases (CVDs) such as hypertension, arrhythmias, vasovagal syncope, neurogenic orthostatic hypotension, non-obstructive coronary artery disease, Takotsubo cardiomyopathy and heart failure. However, our ability to diagnose ANS dysfunction in these conditions is poor and largely relies on excluding other causes. And our standard treatment methods, which still rely heavily on beta-blockers and renin-angiotensin-aldosterone system inhibitors, are not always successful enough. The aim of this review was to explore new imaging and therapeutic methods in this area.

**Review:** We searched the PubMed database for articles related to ANS dysfunction, CVDs, imaging methods and treatment published in the last 10 years. From a total of 219 results, we selected 23 papers that fit our research objective. Of the imaging methods for determining ANS dysfunction in heart failure, planar and single-photon emission computed tomography using norepinephrine analogue [123I]meta-iodobenzylguanidine and positron emission tomography using [11C]meta-hydroxyephedrine show the best results. Cardioneuroablation (either surgical or percutaneous stellate ganglion block), vagus nerve stimulation, renal sympathetic denervation, baroreceptor activation therapy and carotid body removal are the best-tested therapeutic methods to date in the treatment of arrhythmias, heart failure and hypertension.

**Conclusion:** Although the aforementioned new imaging and therapeutic methods have promising results, due to their invasiveness and the required experience, they are not widely available. However, they should be considered as an option in cardiology patients in whom the pathophysiology is dominated by dysfunction of the autonomic cardiac system.

**Keywords:** Autonomic Nervous System; Cardiac Imaging Techniques; Cardiovascular Diseases; Therapeutics

# R05

## Perforated gastric and duodenal ulcers in pediatric population: a systematic review

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**Introduction:** Perforated peptic ulcers in the pediatric population represent a rare (5.4/100,000) but clinically significant entity. Notably, there are no systematic reviews or recent treatment guidelines for this pathology. Therefore, this systematic review aims, for the first time, to summarize findings from studies focusing on the risk factors, etiology, treatment modalities, and outcomes of perforated peptic ulcers in children.

**Case report:** A systematic review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. A literature search was performed on November 24, 2024, using four electronic databases: Web of Science, Scopus, PubMed, and ScienceDirect. Out of 1963 records, 12 studies met the inclusion criteria. A total of 239 pediatric patients with median age of 11 years (IQR=3.2–16.5) and perforated ulcers were analyzed. Ulcer perforation was more prevalent in males, with duodenal perforations being more common than gastric perforations. The most common symptoms included abdominal pain, vomiting, peritoneal signs, and fever. Subdiaphragmatic free air was the most commonly observed radiographic finding. In terms of medication use, patients most frequently used nonsteroidal anti-inflammatory drugs and corticosteroids. Surgical treatment was the most common treatment modality, with open surgery performed more frequently than laparoscopic repair. Among these, simple sutures with or without an omental patch was the most commonly employed technique. Postoperative complications were reported in 14.5% (n=30) of patients. Reoperation was required in 1.9% of cases, and the mortality rate was 3.8% (n=9).

**Conclusion:** Perforated ulcers were more prevalent in males and predominantly located in the duodenum. Surgical intervention was the most commonly utilized treatment modality, demonstrating a relatively low complication rate. Despite its rarity, this condition carries significant health risks, underscoring the need for early diagnosis and standardized management protocols.

**Keywords:** Child; Duodenal Ulcer; Peptic Ulcer Perforation



# OTHER

OSCON

O01

# (Don’t) Take It Lightly: Humour’s Impact on Anxiety and Coping

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**Introduction:** Humour is a universal human experience that has important cognitive, emotional, and social functions. Humour has long been considered an effective way of coping with distress and anxiety, but research shows that compared to dark (negative) humour, light (positive) humour proved to be more effective for downregulating negative emotions. The purpose of this study was to explore the connection between different types of humour, cartoon humour preference and experienced anxiety.

**Materials and methods:** The data for the research was accumulated via a self-report online questionnaire filled out by 200 participants from a multicultural background. Apart from measuring their humour styles (Humour Styles Questionnaire) and trait anxiety (Shortened version of the State-Trait Anxiety Inventory), participants were also asked to watch short light- and dark-humoured cartoon scenes and report their experienced level of state anxiety (Shortened version of the State-Trait Anxiety Inventory) before watching the videos and after each section.

**Results:** The research revealed that those participants who showed a preference for self-defeating humour had higher reported trait anxiety, while those who engaged in affiliative humour reported lower trait anxiety. There was no significant relationship between trait anxiety and either self-enhancing or aggressive humour styles. It was also found that the reported state anxiety of subjects was significantly lower after watching the light humour cartoons than before the videos and after watching the dark humour cartoon block.

**Conclusion:** Altogether, it can be stated that our experiment results on the different types of humour and anxiety mostly aligned with the findings of previous scientific research in the topic. In the future, further studies could concentrate on how the sense of humour is connected to personality.

**Keywords:** Anxiety; Cardiovascular Diseases; Emotions; Laughter; Laughter Therapy

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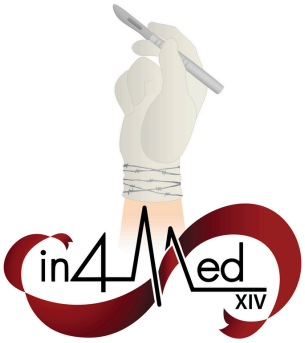
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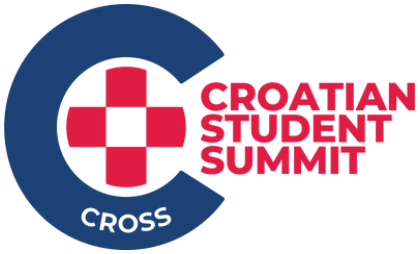


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