AMSC 2023

ABSTRACT BOOK

17th edition

11th - 14th September 2023

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Preface

Dear participant,

It is with great pleasure that we welcome you to the 17th edition of the Antwerp Medical Students' Congress!

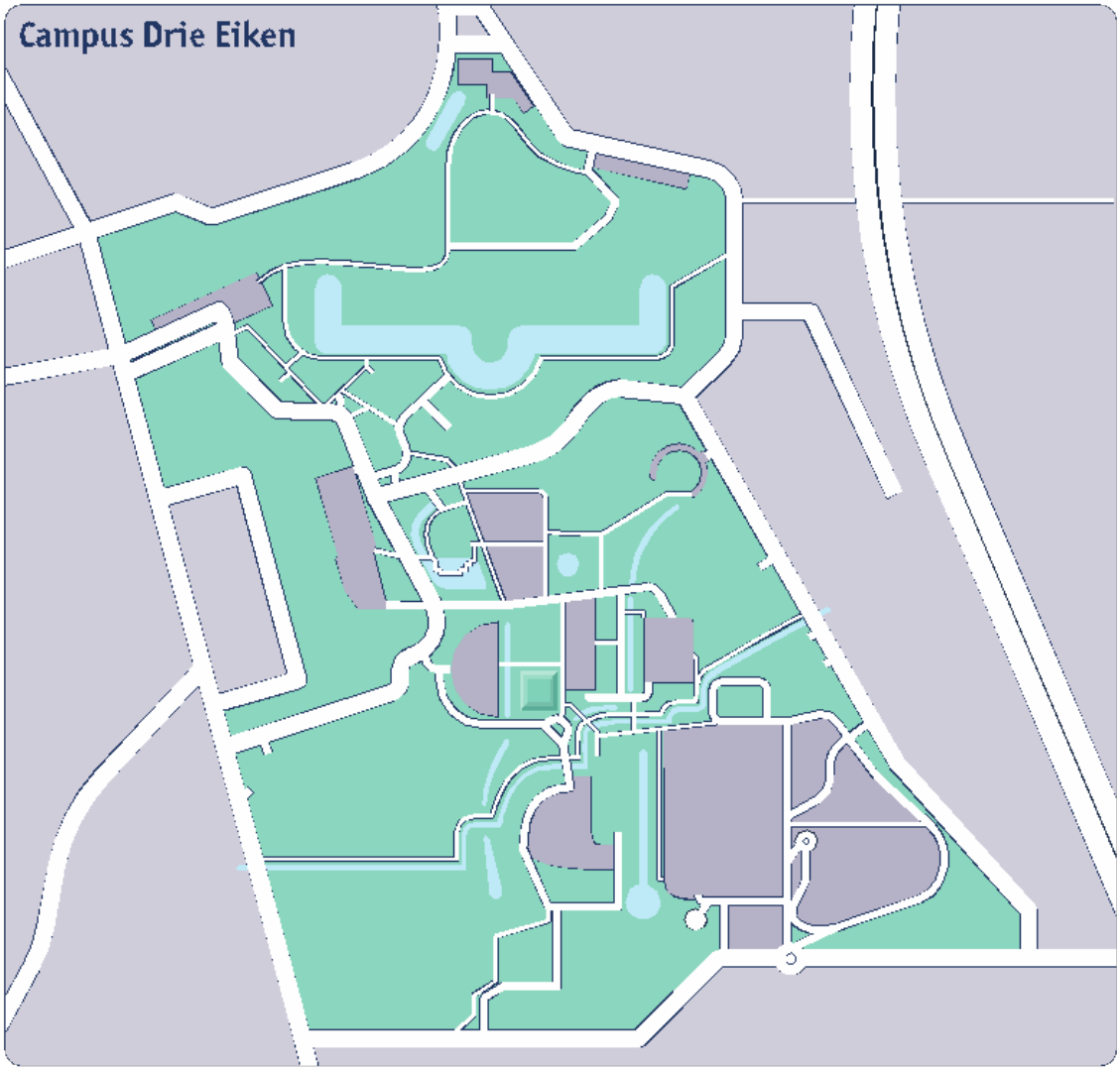
Every single year, when hosting the Antwerp Medical Students' Congress, we intend to attract a wonderful group of (para)medical students. Already in the registration and preparation phases of this event, we were astonished by your interest and commitment. It promises to be an educational and inspirational experience with young, ambitious, and passionate scientists.

Right now, we can proudly present to you our 2023 edition. We hope for it to be a platform to discuss research conducted by fellow students from all over the world, a place where you can get to know the most innovative and interesting topics in Belgian and international medicine and most of all, an opportunity to make valuable connections for your future careers.

We hope to play a part in broadening your scope of medical knowledge and to give you a chance to get some first-hand experience in lesser-known topics.

The organizing team of the AMSC 2023

Map of the campus



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University of Antwerp

Meet the AMSC 2023 Organising Committee

		
Ilayda Kalkan President	**Kristiaan Bogaerts** President	**Amnat Malueva** Secretary
		
Sabrin Abu Allan Secretary	**Gilles Van Troyen** Secretary	**Jakob De Wachter** Treasurer
		
Delphine Truyman Logistics officer	**Nathalie Van Daele** Logistics officer and Public relations officer	**Lotte Duckaert** Logistics officer

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Esther Nijhoff
Workshops officer</td>
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Fabiënne Klaasse
Workshops officer</td>
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Nina Ramezani
Workshops officer</td>
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Fien Vrelust
Public relations officer</td>
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Scientific board

Prof. dr. Benedicte De Winter
Department of Gastroenterology and Hepatology
Vice-Dean of the Faculty of Medicine and Health Sciences at University of Antwerp (UA)
Head of the skills lab and professor at University of Antwerp (UA)
President of Commission for Scientific Research
Director of the Laboratory of Experimental Medicine and Pediatrics (LEMP)

Prof. dr. Philippe Jorens
Head of the intensive care unit at the Antwerp University Hospital (UZA)
Professor at University of Antwerp (UA)
Chairman of Medical Council

Prof. dr. Thérèse Lapperre
Head of Pulmonology Antwerp University Hospital (UZA)
Professor at University of Antwerp (UA)
Translational Research in Immunology and Inflammation (TWI^{2}N)

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Head of Cardiac Surgery department
Professor at University of Antwerp (UA)
Antwerp Surgical Training-, Anatomy and Research Centrum (ASTARC)

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Dr. Annelies Van Eyck
Post-doctoral researcher at University of Antwerp (UA)
Laboratory of Experimental Medicine and Paediatrics (LEMP)

Dr. Stijn Van Hees
Post-doctoral researcher at University of Antwerp (UA)
Laboratory of Experimental Medicine and Paediatrics (LEMP)

Dr. Babette Van Rafelghem
Forensic Medicine at the Antwerp University Hospital

Dr. Kevin Lamote
Assistant professor at University of Antwerp (UA)
Translational Research in Immunology and Inflammation (TWI^2N)

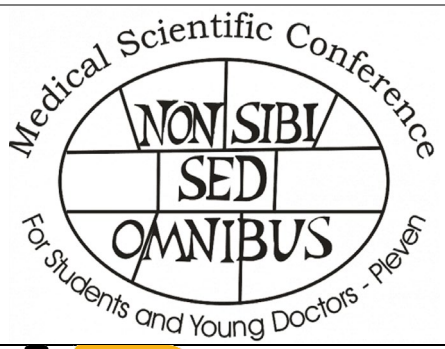
We would like to thank all the members of our scientific board extensively and heartily for their share in the reading and judging of all the submitted abstracts. Due to their aid and effort the best and the most interesting researches will once again be presented during the active days of the AMSC 2020. They have donated their time voluntarily - and freely - to help us create this new edition of our congress. We are extremely grateful to be able to collaborate on such level and hope to extend our cooperation to future editions.

Collaborators

UZA	We would like to thank the University Hospital of Antwerp (UZA) for their support. In addition to financial support, there are so many doctors and professors who are committed to the AMSC by organising a lecture or workshop. We sincerely hope we can continue our cooperation in the future to provide the medical knowledge to international medical students. Without the UZA, we would not be able to organise this yearly event.
University of Antwerp	We are extremely grateful for the support that we have received from the University of Antwerp. Their staff members are always ready to help us with practical issues and we are excited to have some of our best professors speaking at the AMSC 2022.
vaardighedenteam	We would like to especially thank the medical-technical skills team at the Faculty of Medicine and Health Sciences for giving us access to materials for our workshops.
EMSA EUROPEAN MEDICAL STUDENTS' ASSOCIATION ANTWERPEN	EMSA Antwerp is the parent organisation of whom the AMSC is a project. Our team members are active members of EMSA Antwerp and the first prizes in our research competition are sponsored by EMSA Antwerp. We are grateful for their support in the organisation of this event.

Partners

BRAINCOMS BRAZILIAN INTERNATIONAL CONGRESS OF MEDICAL STUDENTS	**Braincoms** 9-11 November 2023 São Paulo, Brazil
C18 CROSS	**CROSS** 25-29 April 2023 Zagreb, Croatia
12th ICHAMS International Conference for Healthcare and Medical Students Inspiring The Future of Healthcare	**ICHAMS** 9-11 November 2023 Dublin, Ireland
ICMS FOR STUDENTS & YOUNG DOCTORS	**ICMS** 11-14 May 2023 Sofia, Bulgaria
	ICOCIMS 9-11 November 2023 Parma, Italy
iMED CONFERENCE® 15.0	**iMED** 18-22 October 2023 Lisbon, Portugal
ISCOMS science beyond borders	**ISCOMS** 5-9 June 2023 Groningen, Netherlands

	**International Medical Scientific Conference for Students and Young Doctors** 16-20 October 2023 Pleven, Bulgaria
	**Plexus** 15-17 October 2023 Split, Croatia
	**ZIMS** December 2023 Zagreb, Croatia

Program

Start	End	Mon 11 Sep	Tue 12 Sep	Wed 13 Sep	Thu 14 Sep	Start	End
08:15	08:30		Free breakfast and registrations (hallway of building S)	Free breakfast and registrations (hallway of building S)	Free breakfast and registrations (hallway of building S)	08:15	08:30
08:30	08:45					08:30	08:45
08:45	09:00					08:45	09:00
09:00	09:15		Opening ceremony (O.3)	Oral Presentations session 4 (auditorium O.3)	Oral Presentations session 5 (O.3) / Poster Presentations session 5 (S.020) / Poster Presentations session 6 (S.038)	09:00	09:15
09:15	09:30		Oral presentations session 1 (auditorium O.3)			09:15	09:30
09:30	09:45					09:30	09:45
09:45	10:00					09:45	10:00
10:00	10:15					10:00	10:15
10:15	10:30			Break	Break	10:15	10:30
10:30	10:45			Poster presentations session 2 (room S.020) / Poster presentations session 3 (room S.038) / Poster presentations session 4 (hallway of S)	Keynote lecture: Embryology: fetal development and anomalies by prof. dr. Steven Van Cruchten (auditorium O.3)	10:30	10:45
10:45	11:00					10:45	11:00
11:00	11:15		Break			11:00	11:15
11:15	11:30		Poster presentations session 1 (hallway of building Q)			11:15	11:30
11:30	11:45			Break	Break	11:30	11:45
11:45	12:00	International student arrivals		Keynote lecture: Endocrinology: Addison's disease by prof. dr. Christophe de Block (O.3)	Workshops session 4: - Mindfulness (R.008) - Trivia (R.014) - Gynaecology (R.009)	11:45	12:00
12:00	12:15					12:00	12:15
12:15	12:30					12:15	12:30
12:30	12:45					12:30	12:45
12:45	13:00		Free lunch and partner promotion (hallway of building S)	Free lunch and partner promotion (hallway of building S)	Free lunch and partner promotion (hallway of building S)	12:45	13:00
13:00	13:15					13:00	13:15
13:15	13:30				Workshops session 5: - Heart valve replacement surgery (building T)	13:15	13:30
13:30	13:45			Transportation		13:30	13:45
13:45	14:00		Oral presentations session 3 (auditorium O.3)	Workshops session 3: - Da Vinci robot (UZA) - Forensic medicine (O.3) - Neurology (R.008)	Poster Presentations session 5 (room S.020)	13:45	14:00
14:00	14:15					14:00	14:15
14:15	14:30					14:15	14:30
14:30	14:45					14:30	14:45
14:45	15:00				Break	14:45	15:00
15:00	15:15		Break	Break/transportation	Workshops session 6: - Heart valve replacement surgery (T) - Emergency medicine (R.007, R.008, R.013, R.015) - Trivia (R.014) - Gynaecology (R.009)	15:00	15:15
15:15	15:30		Workshops session 1: - Basic suturing (R.007, R.008) - Dissections (building T) - Microscopy (building T)	Workshops session 3: - Da Vinci robot (UZA) - Forensic medicine (S) - Laparoscopy (building T) - Neurology (R.008)		15:15	15:30
15:30	15:45					15:30	15:45
15:45	16:00					15:45	16:00
16:00	16:15	Guided city tour (Lange Wapper Statue, Steenplein 1, 2000 Antwerpen)				16:00	16:15
16:15	16:30				Break	16:15	16:30
16:30	16:45		Free time (time for commuting, having dinner, etc.)	Free time (time for commuting, having dinner, etc.)	Awards and closing ceremony (O.3)	16:30	16:45
16:45	17:00					16:45	17:00
17:00	17:15				Free time (time for commuting, etc.)	17:00	17:15
17:15	17:30					17:15	17:30
17:30	17:45					17:30	17:45
17:45	18:00					17:45	18:00
18:00	18:15	Free time				18:00	18:15
18:15	18:30					18:15	18:30
18:30	18:45					18:30	18:45
18:45	19:00					18:45	19:00
19:00	19:15		City game (Brabo Statue, Grote Markt, 2000 Antwerpen)	Private karaoke night (JOYT Antwerp, Noorderlaan 33, 2030 Antwerpen)	Closing dinner and museum rooftop visit (Ellis Gourmet Burger, Sint-Aldegondiskaai 52, 2000 Antwerpen)	19:00	19:15
19:15	19:30					19:15	19:30
19:30	19:45					19:30	19:45
19:45	20:00					19:45	20:00
20:00	20:15					20:00	20:15
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21:30	21:45					21:30	21:45
21:45	22:00					21:45	22:00

All times mentioned in this abstract book are according to the UTC+2/CEST time zone.

Speakers and facilitators

Workshop – Basic Suturing
CHIMES Antwerpen

Chimes is a Belgian student association focused on everything concerning surgery. The student association aims to provide students of academic medical centers in Belgium with a deepened and broadened understanding of surgical disciplines. As a participant of this workshop, you'll have the opportunity to learn or practice basic suturing under the guidance and supervision of Chimes team members!

Workshop – Dissections
Luc Van Nasssauw and Leen Uyttebroek

Sir Van Nasssauw and madam Uyttebroek are both members of the Antwerp Surgical Training, Anatomy and Research Centre (ASTARC).

Throughout this workshop, you will have the chance to explore the complex beauty of the human body, from the marvels of the circulatory system to the intricacies of the nervous system, musculoskeletal system, and beyond.

Workshop – Microscopy
Inge Brouns

Madam Brouns is member of the Department of Veterinary Science at the University of Antwerp.

She will provide us a Microscopy Histology Workshop, an exciting exploration into the fascinating realm of cellular structures and tissues. This workshop is your gateway to a deeper understanding of histology, a discipline that unveils the secrets of biological tissues and their functions.

Lecture – Endocrinology: Addison's disease
Prof. dr. Christophe De Block

Sir De Block is head of department endocrinology, diabetology and metabolic diseases at the University Hospital Antwerp. He is also a professor at the University of Antwerp.

This year he will provide a lecture about endocrinology entitled: Addison's disease, during which he will generously share his profound knowledge and expertise on this subject.

Workshop – Da Vinci Robot
Dr. Suresh Krishan Yogeswaran

Dr. Suresh Krishan Yogeswaran is clinical coordinator Major Trauma Service and staff member of the thoracic and vascular surgery department at the University Hospital Antwerp. His specific areas of interest are lung transplantation, empyema, lung infections, infections of the mediastinum and trauma to the sternum, ribs, lungs, trachea and vessels.

He will provide a demonstration of the Da Vinci Surgical System. This is a robotic surgical system that is designed to facilitate surgery using a minimal invasive approach which reduces complications and improves results. In this workshop you will visit the Antwerp University Hospital (UZA) and you will have the opportunity to see this robot up close. Afterwards, you will even get the chance to control the robot yourself.

Workshop – Forensic Medicine
Dr. Diona D'Hondt

Dr. Diona D'Hondt is member of forensic medicine staff at the University Hospital Antwerp.

During the workshop you will get the chance to learn everything about forensic medicine: the multi-disciplinary branch which deals with examining and diagnosing injured or dead patients who underwent violence, assault, poisoning or suicide.

Workshop – Laparoscopy
Prof. dr. Niels Komen

Sir Komen is Deputy Head of Abdominal, Pediatric and Reconstructive Surgery at the University Hospital Antwerp and professor at the University of Antwerp.

Throughout this workshop, you will have the opportunity to delve into the art and science of laparoscopy, as we unravel the key principles, instruments, and skills required for successful laparoscopic interventions.

Lecture – Embryology: fetal development and anomalies
Prof. dr. Steven Van Cruchten

Professor Sir Van Cruchten holds a distinguished position within the Department of Veterinary Science at the esteemed University of Antwerp.

In the upcoming year, he will grace us with his expertise by delivering a captivating lecture on embryology, aptly titled "Fetal Development and Anomalies." During this enlightening presentation, Professor Van Cruchten will generously impart his profound insights and extensive knowledge on this subject, enriching our understanding of the intricate world of embryonic development.

Workshop – Mindfulness
Dr. Edel Maex

Dr. Edel Maex is a psychiatrist and specialized in mindfulness and meditation. He heads the Stress Clinic of the ZNA Middelheim in Antwerp. He is also one of the founders of Mindfulness Based Stress Reduction (MBSR) in Belgium.

In this workshop he will guide us in a simple mindfulness exercise followed by a discussion on how this practice can help us become a better doctor.

Workshop – Heart valve replacement surgery
dr. Dina De Bock and nurse Tom Van de Laer

Dina De Bock, MD, is senior staff member at the department of cardiac surgery of the Antwerp University Hospital (UZA) since 2009. She got her training in cardiac surgery at the UZA and focused her clinical and scientific expertise on mitral valve surgery. She is involved in the minimal invasive surgical approach of structural heart disease and is working closely together with the department of cardiology for percutaneous treatment of mitral valve disease. She's a pioneer in Belgium in repairing a leaking mitral valve on a beating heart using the Neochord technology and is involved in several scientific projects and studies. In addition to her clinical activity, she teaches medical students. She is Chairman of the national College of Cardiac Surgery and a member of the Belgian Board of Cardio- Thoracic Surgery (BACTS).

In this workshop we will discuss the anatomy of the heart, then you will learn how to replace a pathological valve with a prosthetic valve and finally we are going to teach you how to bypass an occluded artery also called coronary artery bypass graft (CABG).

Workshop – Emergency medicine
Dr. Karen Peeters

Dr. Peeters is an emergency medicine staff member at the University Hospital Antwerp**.**

Dive into a simulated case where you'll learn a diverse set of skills to tackle real-life medical challenges.

Abstracts

Poster presentations

Multi-device complete revascularization of MVD (multi-vessel coronary artery disease) with Impella (left ventricle support device)

Author(s): Szymon Krol, Jan Roczniak
Domain: Internal Medicine
Subdomain: Cardiology
Abstract:

Introduction:
M. N., 66-year-old male with chest pain and pulmonary edema.

Case history:
A 66-year-old patient with a history of coronary artery bypass grafting was admitted with a diagnosis of acute coronary syndrome and pulmonary edema. Investigations Coronarography demonstrated MVD with advanced calcified coronary arteries, including the critically stenosed LMCA (left main coronary artery). An attempt of primary PCI (percutaneous coronary intervention) was unsuccessful. Treatment The patient was qualified for MVD PCI with Impella, due to low LVEF (left ventricle ejection fraction) - 22%. Firstly, PCI of a calcified stenosis in left anterior descending artery was performed with NCB (non-compliant balloon) predilatation and DES (drug-eluting stent) implantation. It was followed by drug-eluting balloon inflation distally to the DES due to small vessel diameter. Secondly, PCI of LMCA and Cx (circumflex branch) was performed. Severely calcified plaque was modified with rotablation, followed by high-pressure balloon predilatation and intravascular lithotripsy. This allowed for optimal DES implantation from LMCA to Cx, confirmed by angiography and IVUS (intravascular ultrasound). Finally, the right coronary artery was treated using rotablation and intravascular lithotripsy, followed by NCB predilatations, which allowed for optimal DES implantation. The result was confirmed in angiography and IVUS. The patient remained hemodynamically stable, the Impella was removed after PCI. The following days of hospitalisation were uneventful and the patient was discharged on 12th day.

Discussions:
There are at least a few methods for calcified coronary plaque modification, which is crucial for optimal stent implantation. In most of cases, one technique is sufficient [1]. In exceptional cases like the presented one, only a combination of several methods is successful. Impella decreases periprocedural risk in patients with decreased LVEF[2, 3] and allows to apply all necessary plaque modification techniques.

Optical coherence tomography during PCI in myocardial infarction patient - one more argument for its wider use.

Author(s): Zuzanna Wyleciał, Aleksandra Karcińska, Alicia del Carmen, Michał Platschek; Supervisor: Konrad Stępień, Karol Nowak, Jarosław Zalewski
Domain: Internal Medicine
Subdomain: Cardiology
Abstract:

Introduction:
Optical coherence tomography (OCT) as a modern intravascular imaging technique enables high-definition visualization of coronary plaque morphology and its length as well as precise assessment of coronary artery diameter during the planning of percutaneous coronary intervention (PCI) and in the evaluation of the PCI result [1,2,3].

Description:
A 53-year-old smoker, with hypercholesterolemia was admitted to the hospital due to non-ST segment elevation myocardial infarction (NSTEMI). The patient complained of chest pain during increased physical activity 3 weeks before admission. On the day of admission to the hospital, he reported severe retrosternal pain in the chest, radiating to the back. Electrocardiography showed negative T waves in aVL and precordial leads. Initial laboratory tests demonstrated a mildly elevated high-sensitive troponin T. Echocardiography showed preserved global systolic function of the left ventricle with hypokinesia of the anterior wall and interventricular septum. The coronary angiography performed immediately after admission showed tight narrowing in the ostium of the left anterior descending artery (LAD) and a discrete and smooth contrast deficit in the distal part of the left main (LM). Baseline OCT images obtained with an imaging catheter revealed atherosclerotic plaque beginning in the middle part of the LM, encompassing 120 degrees in circumference and involving LM bifurcation. The lipid plaque passed from the distal LM to the proximal LAD. Directly implanted stent completely covered the whole plaque. Post-PCI OCT imaging confirmed a good apposition of the stent and widely open circumflex artery. Four days after stent implantation, the patient was discharged from the hospital without chest pain.

Conclusions:
OCT provided crucial information for both the planning and optimization of the procedure. This case report is a strong argument confirming the legitimacy of its wider use [3].

PRIMARY CILIARY DYSKINESIA: TWO NOVEL MUTATIONS IN DNAH11 GENE IDENTIFIED IN ROMANIA

Author(s): Lorin-Manuel PÎRLOG, Adela-Diana PITFORODESCHI, Assistant Professor Andreea CĂTANĂ MD PhD
Domain: Internal Medicine
Subdomain: Pediatrics & Genetics
Abstract:

Introduction, Case History & Investigations:
A history of recurrent upper and lower respiratory tract infections raised clinical suspicion of primary ciliary dyskinesia (PCD) in a 10-year-old female patient. Genetically testing was performed using next-generation sequencing technology with the multiplex ligation-dependent probe amplification technique for primary ciliopathies and syndromes subject to differential diagnosis.

Results:
Genetic testing identified two pathogenic mutations not previously described in the literature, c.7727A>G (p.Asp2576Gly) and c.8578G>A (p.Gly2860Ser), within the DNAH11 gene, which is associated with autosomal recessive PCD. The result also reported mutations in other genes involved in autosomal recessive PCD (DNAH8, DNAH9 and ZMYND10) as variants with uncertain clinical significance.

Discussions and Conclusions:
PCD is a rare, genetically heterogeneous disorder. Mutations in any protein involved in cilia assembly, structure, or function could theoretically cause chronic destructive airway disease, situs inversus, and, frequently, male infertility. In most cases, PCD presents an autosomal recessive inheritance pattern. Transmission electron microscopy of respiratory cilia and nasal nitric oxide (NO) measurement are not feasible to diagnose PCD in patients with DNAH11 mutations because the structure of cilia is unaffected, and the NO levels are not constantly low. High-speed video microscopy analysis can be helpful because DNAH11 mutations cause a distinct phenotype of PCD. However, the mutation analysis of various PCD-causing genes remains the easiest to conduct, providing reliable results. During the past decades, genetic studies of PCD have revealed several notable ciliary genes that give us new insights into the molecular mechanisms involved in the assembly and function of cilia. However, because it is an overly complex and heterogeneous disease, the field of gene diagnosis and therapy in PCD is still in its infancy.

O'DONNELL-LURIA-RODAN SYNDROME: FIRST CASE AND NOVEL GENE VARIANT IDENTIFIED IN ROMANIA

Author(s): Lorin-Manuel PÎRLOG, Adela-Diana PITFORODESCHI, Assistant Professor Andreea CĂTANĂ MD PhD
Domain: Internal Medicine
Subdomain: Pediatrics & Genetics
Abstract:

Introduction, Case History & Investigations:
The present study reports the case of a 5-year-old male patient with delayed gross motor development, incapacity of verbal communication, behavioural anomalies, intellectual disability (an intelligence quotient of 52), severe gastrointestinal symptoms, macrocephaly, and mild facial dysmorphia. Due to the heterogeneous and non-specific clinical manifestations, whole-exome sequencing (WES) was conducted.

Results:
Molecular analysis identified a new mutation in the lysine methyltransferase 2E (inactive) (KMT2E) gene, being first classified as a variant with unknown significance (VUS). Mutations in this gene are specific to O'Donnell-Luria-Rodan (ODLURO) syndrome. Both parents also underwent a WES after this. The result indicated the presence of the same mutation in the father's genetic code who presented in childhood non-specific and undiagnosed psychiatric manifestations. After the second WES, this mutation changed its classification to pathogenic. Moreover, the WES identified the HLA DQ haplotype in the patient's genetic code, creating the predisposition for developing celiac disease.

Discussion and Conclusion:
ODLURO is a neurodevelopmental disorder with autosomal dominant inheritance, first reported in 2019. To date, there are less than 40 cases described worldwide. It appears more frequently in males during the first decade of life and is associated with developmental delay, low intelligence quotient, autism spectrum disorders, epilepsy, speech delay, facial and skeletal deformities, gastrointestinal symptoms and hypotonia. This research highlights a new inherited KMT2E gene mutation leading to unique phenotypic expressions in both father and son. It is the fourth case documented worldwide describing an inherited mutation, with most ones appearing de novo. Moreover, it is the first case to mention an association between ODLURO and the HLA DQ haplotype.

A rare case of myelodysplastic syndrome in the course of sarcoidosis with a confirmed deletion of the long arm of chromosome 5

Authors: Anna Bereta, Olga Tuleja
Domain: Internal Medicine
Subdomain: Rheumatology, immunology, pharmacology – case report
Abstract:

Sarcoidosis is a systemic immune-mediated inflammatory disease with protean manifestations. We present an unusual case of a 70-year-old woman with multiorgan sarcoidosis affecting also bone marrow who developed treatment resistant bicytopenia eventually diagnosed as myelodysplastic syndrome. A 70-year-old woman with a history of erythema nodosum in the past 2 months was admitted to the Department of Rheumatology and Immunology with malaise, dyspnea on exertion, fever, night sweats, significant weight loss, pain in the lower legs, and feet. Chest radiograph revealed bilateral hilar lymphadenopathy and pulmonary venous congestion, which were absent 1.5 months earlier. A chest CT showed bilateral ground-glass opacities, disseminated lung nodules, and enlargement of the lymph nodes of the liver hilum. Laboratory tests were notable for hypercalciuria, hypercalcemia, hypergammaglobulinemia with monoclonal IgGkappa gammopathy, moderate normocytic anemia and leukopenia with neutropenia. Due to constitutional symptoms and bicytopenia, a bone marrow biopsy was performed that led to identification of non-caseating granulomas. Examination of the eyes confirmed uveitis. A diagnosis of sarcoidosis was made and oral prednisone was started, which resulted with general improvement. After 6 weeks, the patient was readmitted due to severe normocytic anemia and agranulocytosis. In thoracic CT regression of interstitial lung lesions was observed, however, bicytopenia did not respond to steroids and G-CSF and the patient became transfusion dependent. Another bone marrow biopsy prompted cytogenetic tests that detected a deletion of the long arm of chromosome 5. The patient was diagnosed with a myelodysplastic syndrome. In subsequent months, the patient contracted Covid-19 and suffered recurrent bacterial infections that led to the patient's death. Patient was diagnosed with multiorgan sarcoidosis involving lungs, lymph nodes, eyes, and, unexpectedly, bone marrow. Steroid treatment allowed partial resolution of lung and eye lesions. Lack of hematologic response warranted a broadening of diagnostic work-up that allowed the final diagnosis of 5q-del myelodysplastic syndrome.

A case report of erysipelas with parotitis.

Author(s): Patrycja Rusin, Natalia Zagozda MD, Asst. Prof. Joanna Jackowska MD PhD
Domain: Internal Medicine
Subdomain: Otolaryngology, dermatology
Abstract:

Erysipelas is a skin disease caused by bacterial infection of damaged skin, usually by Streptococcus. The disease is manifested by high fever, severe pain, and the reddened swelling is well demarcated. This case describes erysipelas in a patient who presented facial oedema on the right side involving the right eyelid, cheek and right parotid gland.

A 62-year-old female patient B.P. presented to the Emergency Room due to swelling and redness of the right orbit from the previous day. The pain was also manifested in area of the right parotid gland and cheek. For several days the patient had an infection with rhinitis, thick purulent discharge from the nose and high fever. After examination, extracranial sinus complications were suggested. The patient was admitted to the otolaryngology department for antibiotic therapy and for a decision on qualifying for surgery.

In computer tomography scan found bilateral concha bullosa, mucosal thickening of both maxillary sinuses and a cyst of 15 mm in the left one. Swelling of the right parotid gland and multiple enlarged lymph nodes up to 14 mm bilaterally were detected.

Due to the patient's condition, the operation was canceled. The ophthalmologist recommended Neomycin ointment and broad-spectrum antibiotic therapy. A swab was taken from the right eye and the aerobic swab detected Staphylococcus epidermidis and Streptococcus pyogenes. The existing antibiotic therapy was modified by including Ospen, Borasol compresses and hydrocortisone ointment. In the following days a significant reduction of erythematous and edematous lesions and ailments in the right orbital region was observed. Fever has subsided.

The most important in the diagnosis of the disease was the aerobic culture of the eye swab, which allowed the diagnosis of erysipelas and to reject extracranial sinus complications. Identifying the bacteria causing the disease and performing an antibiogram to determine the best and most effective treatment.

Unveiling the Deceptive Veil: Renal Actinomycosis - A Rare Diagnosis Concealing as Malignancy

Author(s): Jassal Mathew, Dr. Smrthi Vijay, Dr. Lincy Joseph
Domain: Preclinical
Subdomain: Pathology
Abstract:

Introduction:
Actinomycosis is an unusual infection, which usually appears in the thoracic, cervicofacial, and abdominal areas. However, the emergence of renal actinomycosis in adult patients remains a rare occurrence, with minimal cases reported since 1990. Actinomycosis is often called “the most misdiagnosed disease” as it can be often missed by an experienced clinician.

Case History:
Here we report a case of a 55 year old male with pyrexia of unknown origin and loss of weight with no other comorbidities revealed pallor on general examination. On further investigation his peripheral blood smear showed microcytic hypochromic anemia and neutrophilic leukocytosis with toxic changes. USG abdomen revealed a heterogenous mass with internal vascularity in the left kidney. Further CT abdomen confirmed an ill-defined lesion in the mid and lower pole of the left kidney, with extrarenal extension into the perinephric space and a filling defect in the left renal vein. Then a provisional diagnosis of left renal tumor infiltrating spleen and splenic flexure of colon was given. Following which patient underwent a left radical nephrectomy, splenectomy, and limited colonic resection. Histopathological examination confirmed actinomycosis with abscess formation in kidney and colon. The patient was put on antibiotics for a total of eight weeks until considered disease free.

Conclusion:
Renal actinomycosis challenges diagnosis with its ambiguous clinical and laboratory features. Often masquerading as malignant neoplasms in imaging, it deceives even the sharpest eyes. Early diagnosis is important for accurate medical treatment and to decrease unnecessary surgeries.

Early diagnosis of colon adenocarcinoma, a target for complications prevention

Authors: Andreea Florina Bodea, Maya Stefania Borlan, Delia Lupu
Domain: Internal Medicine
Subdomain: Gastroenterology
Abstract:

Introduction:
Colon adenocarcinoma is the third most common diagnosis and second deadliest malignancy on a worldwide scale. This entity is often presenting in an advanced stage with symptoms of malignant impregnation and a poor prognosis. We are reporting a case of colon adenocarcinoma diagnosed in an early stage with a successful surgical treatment, despite advanced age. Female patient P.A. of 85 years-old presenting no obvious risk factors was admitted on January 2023 at the County Hospital of Cluj-Napoca with reduced appetite, loss of 10 kilograms in the past 6 months, chronic constipation and adynamia. Significant paleness was found on physical examination.
Case history: The actual symptoms occurred in the past 7 months, primarily represented by inappetence and constipation. On December 2022, the patient presented fatigue, shortness of breath and dizziness, interpreted as anemic syndrome.
Investigations: Laboratory tests showed severe normocytic normochromic anemia with hemoglobin values below 7 g/dl, reduced levels of ferritin and negative Hemoccult test. Colonoscopy with biopsy showed a vegetant and ulcerated tumor of the ascending colon. After performing the histopathological examination, the final conclusion was of moderately-differentiated colon adenocarcinoma, stage G2: pT3N0 L0V0Pn1R0. Chest X ray, abdominal echography and CT scan of abdomen did not find any distant metastases.
Treatment: Anemia was corrected with intravenous iron infusion and the tumor formation was removed after performing a right hemicolectomy with latero-lateral end anastomosis. Patient`s prognosis turned out to be favorable due to the successfully carried out surgery and absence of metastases.

Discussions:
Despite presenting malignancy signs, the carcinoma was excised at an incipient stage and left no complications. Screening of colon cancer is very important especially for younger people, because their prognosis can be worse.

EVALUATION OF USEFULNESS OF PELVIC MRI IN SCREENING OF WOMEN WITH BRCA MUTATION AT OPOLE CANCER CENTER BEFORE RISK-REDUCING SALPINGO-OOPHORECTOMY (RRSO).

Author(s): Oliwia Kikosicka, Zofia Klich, Wiktoria Kucharczak, Julia Seidel
Domain: Internal Medicine
Subdomain: Genetic Oncology
Abstract:

Introduction:
Patients with BRCA mutation have an increased risk of developing ovarian cancer (40-45%) and breast cancer (40-85%). MRI is used in breast cancer screening (77% sensitivity for lesions less than 1 cm). Prophylactic salpingo-oophorectomy, as the best method of prevention in patients with a BRCA mutation, reduces the risk of developing ovarian cancer by 71-96%. However, it is associated with the consequences of premature menopause. In the early stage of ovarian cancer, sensitivity of screening done with using the CA125 marker and transvaginal ultrasound is 28-48%. Meaning it is insufficient. Therefore, other methods of early detection of ovarian cancer are sought. One of them could be MRI, which clearly shows the tissues of the pelvis (sensitivity for endometrial cysts is 80%).

Materials and methods: Retrospective data analysis.

Results:
Pelvic MRI was completed for 28 women with BRCA mutation (January 1, 2017 to March 30, 2023), who then underwent RRSO. The average time from MRI to surgery is 68 days. In 8 (28.6%) patients, MRI revealed a simple cyst, which was radiologically unsuspected. During RRSO, cancer was detected in 3 patients (10.7%). One case of ovarian cancer (FIGO III), one fallopian tube cancer (FIGO I) and one borderline ovarian tumor (FIGO I). In 20 no changes were detected. CA125 marker was slightly elevated (69 U/ml) only in a patient with FIGO III ovarian cancer. The transvaginal USG performed before the procedure also showed no malignancy.

Conclusion:
In the performed analysis, MRI did not increase the detection sensitivity of early ovarian and fallopian tube cancers. New methods of early detection of ovarian cancer are needed. Due to insufficient screening, RRSO should be offered to patients, which significantly reduces the high risk of developing ovarian cancer.

A vicious consolidation of an unusual ankle fracture

Author(s): Mihăilă Maria-Elena, Dragoș Apostu MD
Domain: Surgery
Subdomain: Orthopedics
Abstract:

Trimalleolar fractures-dislocations of the ankle are extremely rare conditions representing 7 % of all ankle fractures .These fractures simultaneously interest the medial,lateral and posterior malleoli.The aim of this poster is to present a case in which the patient sought medical care 2 months after the initial injury,resulting in a vicious consolidation,making this case even more particular.

A 42-year-old male patient presents with severe pain in the left ankle,which started 8 weeks before, prior to a fall of unspecified origins.He recalls swelling of the region and instability while walking accompanied by intense pain.On inspection,deformity of the left ankle is observed and incoherent speech,confusion,dilated pupils and behavioral changes are observed at the neurological examination,suggesting a withdrawal syndrome.No significant medical history was found.The X-ray and CT-scan show a 2-months-old trimalleolar comminuted fracture of the left ankle with posterior dislocation of the tarsus with vicious consolidation.

The surgical treatment consisted of:left fibula osteotomy with external fixator for left limb elongation;after 2 weeks,elongation being achieved,the surgeon proceeds with the open reduction of the ankle dislocation and fixation with a transarticular Kirschner wire;open reduction and osteosynthesis with:2 screws-comminuted posterior marginal fracture,1 Kirschner wire-comminuted fracture of fibula's malleolus;2 screws- fracture of the tibial malleolus all done under rachianesthesia.The patient exhibited postoperative hemorrhage and acute pain all adequately managed.Postoperative antibiotic, antithrombotic and analgesic treatment was initialised along with cast immobilisation and sterile dressings of the wound.Patient showed a mild hypercalcemia and stiffness of the left ankle following the surgery.After 6 weeks, the K-wires were removed without complications being detected, with the recommendation to undergo physical therapy to improve recovery.

This case report highlights the importance of timely presentation in case of trauma with lasting pain and how it is crucial to have the necessary knowledge and practical skills to treat uncommon fracture-dislocations.

Keywords:
Trimalleolar fracture-dislocation, Vicious consolidation, Kirschner wire, Osteotomy

EXAMINATION OF OLFACTION RELATED QUALITY OF LIFE AND ANXIETY AND DEPRESSION SYMPTOMS IN PATIENTS WITH TRANSFUSION DEPENDENT BETA THALASSEMIA

Author(s): Doğa Dalay, Yasin Yılmaz, Zeynep Karakaş
Domain: Internal Medicine
Sub domain: Hematology
Abstract:

Background:
Transfusion-dependent beta thalassemia patients may have mood disorders due to their chronic illness, and this may negatively affect their quality of life. In addition, olfactory function problems can effect negatively the quality of life and mood.

Aim:
In our study, the relationship between olfactory function-related quality of life and mood disorder symptoms in transfusion-dependent beta thalassemia patients was investigated.

Materials and Methods:
Forty-six transfusion-dependent beta thalassemia patients followed up at the Istanbul Medical Faculty Thalassemia Center participated in the study. The 12-item questionnaire for the assessment of self-reported olfactory functioning and olfaction related quality of life (ASOF) and the Hospital Anxiety and Depression Scale (HAD) were used to evaluate the smell function capacity, and smell-related quality of life, and psychological symptoms. Statistical analysis was performed by SPSS (v23) program.

Results:
The mean age of the 46 participants was 32.5±7.3 years. The patients' general olfactory capacity score was 8.8±1.3, specific odor capacity score was 4.6 ± 0.5, and the olfactory related quality of life score was 4.7 ± 0.4. According to the scale of HAD, 22% of the patients had anxiety symptoms and 65% had depression symptoms. A significant negative correlation was found between the patients' anxiety scores and depression scores with their general olfactory capacity. Patient with depression symptoms and anxiety symptoms demonstrated lower olfactory capability, respectively. Patients using DFX showed better olfactory capability.

Conclusion:
A significant negative correlation was found between the olfactory capacity with anxiety and depression scores of transfusion-dependent beta thalassemia patients. Chelation type seems to be associated with olfactory capability. Depression symptoms were also seen at a very high rate. It is considered that screening of the psychiatric symptoms of the patients might positively affect their quality of life and their olfactory capacity.

THE ROLE OF AUTOPHAGY IN THE PROINFLAMMATORY CYTOKINE EXPRESSION IN THP-1 CELLS

Author(s): Sara Milošević, Vladimir Trajković
Domain: Preclinical
Subdomain: Immunology
Abstract:

Introduction:
Autophagy is a process that eucaryotic cells use to eliminate old and damaged cytoplasmic components. The interaction between autophagy and cytokines could be one of the mechanisms that coordinate the activity of the innate and adaptive immune systems. Depending on the cell type and activation pathway, pro-inflammatory cytokines and autophagy have different mutual effects. Understanding the balance between these two processes is necessary to realize the therapeutic potential of autophagy regulation in various infectious, inflammatory, and autoimmune diseases.

The aim:
The aim was to investigate the role of pharmacological modulation of autophagy on the expression of mRNA for the pro-inflammatory cytokines TNF, IL-1, and IL-6 in the monocytic cell line THP-1.

Material and methods:
The pharmacological modulation of autophagy by bafilomycin and trehalose was determined by measuring the autophagic flux, the conversion of LC3-II after blocking its degradation, by the immunoblot method. LC3 represents a marker of autophagy and LC3-II levels are thought to correlate with the number of autophagosomes. The RT-qPCR was used to determine how bafilomycin and trehalose, by modulating autophagy, affect the expression of the pro-inflammatory cytokines TNF, IL-1, and IL-6, by measuring the mRNA levels of these cytokines. Statistical analysis was performed using the GraphPad Prism program and the t-test was used.

Results:
Immunoblot analysis confirmed that bafilomycin blocks autophagic flux by increasing intracellular levels of LC3-II. Trehalose increased the level of LC3-II, both in the presence and absence of bafilomycin. RT-qPCR analysis of THP-1 cells treated with trehalose showed a significant increase in expression, and in those treated with bafilomycin, a significant decrease in the expression of mRNA for the cytokines TNF, IL-1, and IL-6.

Conclusion:
Based on the results obtained in this research, it can be concluded that autophagy activates the expression of pro-inflammatory cytokines by increasing the transcription of their genes.

A rare case of acute Sheehan’s syndrome

Author(s): Marcelina Grzelak, Katarzyna Mączka
Domain: Internal Medicine
Subdomain: Gynecology
Abstract:

Introduction:
A 32-year-old woman was admitted to the Gynecological Endocrinology Department at Duchess Anna Mazowiecka Hospital in Warsaw in August 2022 for hormonal diagnostics and observation related to postpartum hypopituitarism, which developed after her third childbirth, third caesarean section performed in the 32nd week of her fourth pregnancy.

Case history:
The patient was admitted to the hospital in Radom, when she was 30 weeks pregnant, due to central placental previa and vaginal bleeding. On the 19th day of hospitalization, she experienced a hemorrhage and was immediately transported to the delivery ward, where a caesarean section was performed. Due to uterine atony, a hysterectomy without adnexa was performed. Following the procedure, the patient's condition was serious, and she was transferred to the ICU ward. On the 7th day after the cesarean section, the patient exhibited symptoms such as disturbances of consciousness, numbness of the body, deterioration of well-being, weakness, apathy, nausea, vomiting, tremors of the whole body, and significant polyuria.

Investigations:
During the physical examination, a fine-fascicular tremor of the limbs was noted. Laboratory tests revealed progressively deep hyponatremia, hypokalemia, hypomagnesemia, and hypocalcemia, as well as low levels of gonadotropins and estrogens. An MRI image showed an enlarged pituitary gland, strongly indicating ischemic stroke in the glandular part of the pituitary.

Treatment/Results
Based on the clinical features and the results of the imaging studies, the patient was diagnosed with Sheehan's syndrome. Her condition improved following treatment with mannitol, fludrocortisone, and infusions of NaCl solution.

Discussions/ Differential diagnosis
Sheehan's syndrome is a severe complication characterized by ischemic necrosis of the anterior pituitary during the peripartum period. Clinicians should be aware of the possibility of such an occurrence after profuse bleeding during delivery. Close patient supervision is crucial for prompt diagnosis and implementation of hormonal replacement therapy.

Excision of a High-Risk Cardiac Myxoma Combined with Coronary Artery Bypass Grafting (CABG): A Case Report

Author(s): Anano Nebieridze, Study Supervisor: Kakhaber Beria M.D.
Domain: Surgery
Subdomain: Cardiac Surgery
Abstract:

Introduction:
A 51-year-old female presents to a cardiology consult complaining of decreased exercise tolerance, fatigue, dyspnea, and palpitations with physical exertion. Physical examination revealed a rumbling mid-diastolic murmur.

Case History:
The patient considered herself in excellent health, until her diagnosis of COVID-19, 4 months prior to her current presentation, which was complicated by pneumonia (Pneumonia Severity Index [PSI] 9). She also had other comorbidities: hyperlipidemia and metabolic syndrome.

Investigations:
Transthoracic Echocardiography was performed and large mass (1.5 - 2 cm), attached to the posterior leaflet P2 segment of the mitral valve, was detected in the left atrium; in addition to mild mitral insufficiency. The systolic phase reveals evidence of mass protrusion into the left ventricle, posing increased risk of mass fragmentation and embolization. Cardiac Myxoma (CM) was suspected. Cardiac surgeon consultation and prompt excision of the mass was recommended.

Treatment:
As a part of the pre-surgical workup, the patient underwent coronary angiography, which revealed moderate (>50%) stenosis of the proximal LAD. Due to the accompanying patient comorbidities, surgery was expanded to include coronary artery bypass grafting (CABG). Median sternotomy approach was used, the patient was placed on cardiopulmonary bypass and the mass was removed; mitral annuloplasty was performed, and left IMA was anastomosed to the proximal LAD. Intracardiac mass was sent for histopathologic analysis and the diagnosis of CM was confirmed. Post-operative course was uneventful.

Discussion:
Cardiac Myxoma (CM) is the most common primary tumor of the heart.1 CM most frequently occurs in the left atrium and its location on heart valves is extremely rare.2,3 Combination of CM with contaminant Coronary Artery Disease (CAD) is a rare oddity, with only a handful of cases described.4–6 CM presents with constitutional symptoms, dyspnea, fatigue, angina, etc. making diagnosis challenging. Surgical removal of CM is curative and has an excellent prognosis. Deciding whether to prioritize CABG or surgical management for CM is still a topic of controversy due to factors including the need for cardioprotection and prevention of systemic embolization of the tumor.7

Anatomical characteristics of the supernumerary coronary arteries in the human heart

Author(s): Mila Škorić, Katarina Škundrić, Valentina Blagojević
Domain: Preclinical
Subdomain: Anatomy
Abstract:

The human heart is usually vascularized by two coronary arteries – left and right, although the number of supernumerary arteries can be three, four and more. The third coronary artery (TCA), if present, partially vascularizes the right ventricle. In case of heart failure, the TCA could significantly contribute to the collateral circulation of the heart.
The aim of this study is to determine the incidence of TCA in our population, morphometric parameters and distribution of this artery.
The research was performed on cadaveric material on a series of 10 hearts. The specimens were extracted from cadavers and their coronary arteries were injected with a mixture of gelatin ink. Then a dissection was performed, which included a detailed preparation of the coronary arteries.
7 out of 10 examined hearts (70%) were vascularized by two coronary arteries; 3 out of 10 hearts (30%) were supplied by three coronary arteries, while hearts with four coronary arteries were absent. The orifice of the TCA was superior and to the left in relation to the origin of the right coronary artery (RCA), while the TCA terminated with a bifurcation on the anterior wall of the right ventricle without exception. Comparison of RCA diameters with and without TCA showed no statistically significant results. Terminal branches of 66.67% of the cases with present TCA formed Vieussens' arterial ring.
The morphometric characteristics and the variable mode of distribution and termination of the TCA are not sufficient grounds to claim that the presence of TCA can indeed cause certain clinical diseases or conditions. However, the role of TCA should always be considered in certain diagnostic and therapeutic interventions because based on its distribution can be concluded that it can represent a significant source of collateral circulation of the heart, especially in the case of coronary artery occlusion.

Thrombotic Microangiopathy – problematic differential diagnosis.

Author(s): Michalina Jelonek, Anna Wrzosek MD PhD
Domain: Internal Medicine
Subdomain: Nephrology, intensive care
Abstract:

A 19-year-old female presented to the nephrology ward and then transferred to the Intensive Care Unit (ICU).
At admission the patient was unconscious, her temperature was slightly elevated at 37,5 C, and also presented with signs of Acute Renal Injury (AKI), thrombotic microangiopathy (TMA) was suspected.

The patient came back to Poland from Turkey, where she had a non-bloody diarrhea, one week before she got her first symptoms, which included an epileptic seizure, renal failure, and loss of consciousness.
After admission patient was on hemodialysis,was given thromboprophylaxis, and started a diagnostic process to implement the proper therapy. After several tests, the diagnosis of aHUS was made.

The patient was tested for Hemolityc Uremic Syndrome (HUS), Atypical HUS (aHUS), as well as Thrombotic Thrombocytopenic Purpura (TTP), as her morphology and clinical state suggested TMA to be a cause of the patient's state (Lowered platelet levels, schistocytes present and, elevated LDH levels).
ADAMATS13 levels were tested, came back normal, TTP was then excluded.
Complement was also tested , lowered C3 and C4 levels.
To exclude HUS the patient's stool was tested for verotoxin producing E.Coli and Shigella, all negative.

Patient spend a month and a half in the ICU, at the end of which she regained consciousness, her kidneys started to function properly and the morphology normalized.
During her stay at the hospital, patient was intubated, parenterally fed, had been given 4 plasmaphereses, was constantly on CVVHD, and after getting diagnosed with aHUS she had been given Eculizumab.

TMA is a group of diseases such as TTP, HUS, or aHUS. We identify them by thrombocythemia and hemolytic microangiopathy, as well as the dysfunction of multiple organs .
It's important to give a proper diagnosis quickly as it's a way to save a life by giving an appropriate treatment, such as Eculizumab, an anti-C5 immunoglobulin in aHUS or plasmapheresis in case of TTP.

Colonic angiodysplasia - a rare cause of iron deficiency anemia

Author(s): Maya Stefania Borlan, Andreea Florina Bodea, Delia Lupu
Domain: Internal Medicine
Subdomain: Gastroenterology
Abstract:

Introduction:
A 54-year-old male was admitted to the County Hospital of Cluj-Napoca due to asthenia, adynamia, paleness and mild dyspnea. During the anamnesis, the patient claimed that for the past year he had a diet which lacked a lot of meat. The clinical examination revealed a red, rough, asymmetric edema on the left leg.

Case history:
The patient was known to have recently suffered deep left popliteal vein thrombosis, which is under treatment with anticoagulants, and stage 2 hypertension. Since teenage years, he had been nicotine dependent, having also a history of gastric ulcer 3 years ago that was manifested through superior digestive hemorrhage presenting melena.

Investigations:
An abdominal ultrasound was performed, but no pathological changes were observed. The laboratory tests showed hypochromic, microcytic anemia of unknown etiology, low ferritin levels and normal vitamin B12 and folic acid levels. Despite the lack of specific symptoms for a digestive tract disorder, an upper and lower digestive endoscopy were performed in order to exclude a possible malignant pathology of the gastro-intestinal tract or other medical conditions explaining the severe anemia. After performing the histopathological examination, the outcome resulted in chronic corporeal gastritis, atrophic of low intensity. A later performed colonoscopy and biopsy had drawn the conclusion of angiodysplasia of the colon- a rare cause of anemia.

Treatment:
The patient was discharged in good shape with few recommendations. His diet should consist of iron-rich products, such as red meat, green vegetables and tuna, and avoidance of prolonged orthostatism. The therapeutic medication scheme consisted of: Iron, Pantoprazolum, Apixabanum and Perindoprilum.

Discussions:
In conclusion, taking into consideration the patient diet, this case highlighted a rare cause of anemia: colonic angiodysplasia.

AN UNUSUAL CLINICAL PRESENTATION OF A PATIENT WITH INHERITED THROMBOPHILIA

Author(s): Hanea Teodora-Elena, Pelea Michael, Albu Adriana
Domain: Internal Medicine
Subdomain: Hematology
Abstract:

Introduction:
A 49-year-old female patient, S. E., presented to the County Emergency Hospital Cluj-Napoca for acute, intense left hypochondrium pain irradiating to the left shoulder, accompanied by nausea and vomiting.

Case history:
The patient was a non-smoker, with no history of miscarriages or other thrombotic events and was previously diagnosed with hypertension and type 2 diabetes mellitus.

Investigations:
Laboratory results showed hypochromic and microcytic anemia, leukocytosis with neutrophilia, and increased C-reactive protein. Abdominal ultrasound revealed an inhomogeneous spleen which raised suspicion of splenic infarction which was confirmed by contrast-enhanced ultrasound. Abdominal CT angiography scan also revealed bilateral renal infarction and occlusion of the gastroduodenal and right hepatic arteries for which anticoagulant therapy was initiated. Extensive thrombophilia screening identified mutations in Factor II gene (prothrombin G20210A), MTHFR C677T gene and the presence of 4G/4G genotype of PAI-1 gene, all associated with a higher risk of thrombosis.

Treatment:
Anticoagulant therapy with low-molecular-weight heparin was administered and careful timing of splenectomy was considered, yet postponed, due to partial recanalization of the splenic artery.

Discussions/Differential Diagnosis
The activity of Protein S, Protein C, and Antithrombin was normal and the localization of the thrombi in the arteries is also unusual for thrombophilia, the most common manifestation being venous thrombosis. Other possible etiologies considered were: myeloproliferative disorders such as Essential thrombocythemia, Polycythemia vera (negative bone marrow biopsy, absent JAK2 mutation, and normal hemoglobin levels), antiphospholipid syndrome (IgG and IgM antiphospholipid antibodies were negative), COVID-19 infection (tested negative), multiple arterial emboli (the echocardiogram did not reveal left atrial thrombus, valvular damage or infective endocarditis). Differential diagnosis in such cases is key for patient management, evaluating long-term prognosis, and choosing the best therapeutic options.

An exceptional fatality caused by a bear attack

Author(s): Zuzanna Buś, Katarzyna Klimaszewska, Tomasz Konopka MD PhD
Domain: Forensic medicine
Subdomain: Forensic medicine
Abstract:

The body of a 61-years-old man (S.P.) was transported to the forensic medicine facility in Krakow in October 2014. The autopsy was challenging due to advanced decomposition. The man exhibited numerous head, neck, and torso injuries.

The deceased had multiple cut wounds resembling strikes by a sharp-edged object, mainly on the thighs, torso, and left forearm. Two circular openings were observed on the cranial bones, indicating they were caused by the same item. Due to the dissimilarity of the injuries to those inflicted by animals such as wolves, suspicion of homicide arose. It was doubted that the wounds could have been inflicted by a bear due to the rarity of such attacks and the inconsistent pattern of the injuries.

Significant information was provided by photographs of a quad bike, grabbed by the bear with its teeth. Four openings similar to the wounds on deceased's left thigh and forearm were visible on the plastic parts. Similarly, the perforations on the quad's fender corresponded to the openings in the cranial bones. Multiple fractures of the metacarpal bones, difficult to explain by incised wounds, support the hypothesis of a bear attack.

The presented evidence in the form of photographs depicting the quad bike damage, corresponding to the injuries found on the deceased's body, confirm that S.P. died as a result of a bear attack. Suggillations on the torso and limbs suggest that some wounds were inflicted while the victim was still alive.

Bear attacks on humans are extremely rare but occasionally result in catastrophic consequences. From 2000 to 2016, 54 attacks were reported in Slovakia, none of which were fatal. However, growing belief in the increased frequency of bear attacks, leads to an escalation of fear and pressure to initiate bear hunting.

An extremely late postoperative recurrence of Hydatid disease – a rare case report.

Author(s): Fayez Fahal, Raheem Javadian, Ivan Novakov
Domain: Surgery
Subdomain: General surgery
Abstract:

Introduction:
AT, a 45-year-old male complained of a painless mass in the right thoracic wall for 2 months.

Case history.
The patient was operated on due to a right sided lung Hydatid disease 29 years ago. The patient underwent postoperative chemotherapy with albendazole, however was not followed-up.

Investigations.
Whole body Computed Tomography established cystic mass in the thoracic wall, with a large dimension of 10.6 cm and no other pathology. ELIZA test was negative.

Treatment.
The chest wall tumour mass was excised. The base of the gross appearance and histological result determined the nature of the tumour was «non fertile hydatid cyst».

Discussion.
Recurrence remains the major problem in management of Hydatid disease. The main reason for recurrence appears to be microscopic spillage of live parasites. Our aim is to present an extremely late post operative recurrence of lung Hydatid disease as well as explore prophylactic measures against it.

With this case we demonstrate how long an asymptomatic period of recurrent hydatid disease may be. We accept spillage of live parasites throughout the previous operation as the cause of the recurrent hydatid cyst. This case is also interesting due to an unusual localization of the recurrent hydatid cyst. Additionally, this case provides an example of the lack efficacy of chemotherapy against recurrence of hydatid disease.

An interesting case of a patient with the coexistence of two rheumatic diseases

Author(s): Anna Tomoń, Jarosław Nowakowski MD
Domain: Internal Medicine
Subdomain: Rheumatology and immunology
Abstract:

A 52-year-old male patient R.T. with long-standing ankylosing spondylitis (AS) was admitted to the Rheumatology and Immunology Department in February 2020 due to exacerbation of joint symptoms, despite the treatment (etanercept; from January 2020 secukinumab).
The patient reported spine pain and stiffness, inflammatory pain and swelling of the peripheral joints (shoulders, elbows, hands, feet and knees) and a significant deterioration in mobility.

R.M. underwent left (2013) and right (2014) hip arthroplasty due to severe secondary coxarthrosis in the course of AS.

In laboratory tests, inflammatory indicators were increased (CRP 35mg/l, ESR 73 mm/h).
Ultrasound of the joints of the hands showed slight exudation with synovial hyperemia in both wrist joints, effusion in the proximal interphalangeal joint III of the left hand and in the fourth extensor compartment of the right hand.

Systemic steroid therapy was used in the treatment, the non-steroidal anti-inflammatory drug was maintained, resulting in a transient clinical improvement.

During the control at the rheumatology clinic, polyarthritis with symmetrical involvement of the wrists was still present. Autoantibodies were assessed: ACCP: 500 IU/ml; RF: 379 IU/ml - both at high titers. Based on this, rheumatoid arthritis (RA) was diagnosed. Treatment with tofacitinib was initiated in July 2021. Despite the treatment, his symptoms worsened, symmetric arthritis affecting hands persisted. Janus kinase inhibitor (tofacitinib) was switched to tociziliumab which finally brought improvement.

It is important not to rule out the coexistence of rheumatoid arthritis and ankylosing spondylitis in one patient. It is the first case in literature of seropositive RA which occurred in patient with established AS on anti-IL-17 treatment that required a change for more RA specific treatment. In addition, this is also the first case of a patient with these two diseases treated with tocilizumab - this treatment has had the desired effect.

Management of a ruptured cerebral arteriovenous malformation in a pregnant woman – case report

Author(s): Bianca-Maria Petrea, Maria-Bianca Andrei, Nicolaie Dobrin MD PhD
Domain: Surgery
Subdomain: Neurosurgery
Abstract:

Introduction:
Cerebral arteriovenous malformations are generally congenital pathological aspects consisting of afferent arteries connected with veins through networks of shunts. Their association with pregnancy is unusual and imposes serious management, especially in the case of a complication as serious as intra-cerebral hemorrhage.
We are reporting the case of C.D., a 21 years old female admitted to the neurosurgery ER with violent headaches and vomiting. Clinical examination revealed confusional syndrome, no motor deficit in the limbs, and, most importantly, a 22-week-old pregnancy.

Case history:
Anamnesis showed no relevant pathological or family history. Earlier that day, she presented to the general hospital with extrasystolic ventricular arrhythmias and, upon the installation of neurological symptoms, she was sent to our clinic.

Investigations:
The EKG had the same result as the initial one, showing extrasystolic ventricular arrhythmias. An MRI revealed a ruptured left temporo-occipital arteriovenous malformation, along with the contralateral displacement of the midline structures and a compressed mesencephalon.
In the case of a cAVM, a direct angiographic intervention (Seldinger) is normally performed, exposing the malformation's characteristics and establishing the therapeutic behavior: conservative, surgical, endovascular, radiosurgical, or combined. However, due to the ongoing pregnancy, special precautions had to be taken into account regarding exposure to ionizing radiation.

Treatment and results:
An endovascular procedure was performed with no complications, completed with gamma knife therapy a few months later, after the pregnancy was safely delivered. Follow-up MRI and angiography showed a favorable long-term evolution, with the patient fully recovering.

Discussion:
The particularity of this case resides in how rare cAVMs are, their global incidence being 0.05%-0.1%. When manifested during pregnancy, diagnosis and treatment are limited and the situation becomes even more difficult in the case of a broken malformation. However, with proper management, recovery is possible, as shown by our patient.

Anatomo-clinical and embryological considerations on the C1 vertebra

Author(s): Maria-Bianca Andrei, Bianca-Maria Petrea, Lecturer Alin Horatiu Nedelcu MD PhD
Domain: Internal Medicine
Subdomain: Radiology
Abstract:

Introduction:
Developmental anomalies of the atlas are very rare findings involving multiple morphologic aspects, such as occipitalization of the atlas, os avis, or occipital condyle hypoplasia. We present the case of M. F., an 80-year-old man that was admitted for a pelvic fracture in the Orthopedics and Traumatology section.

Case history:
The patient's history showed no relevant pathologic aspects or family antecedents. The patient presented earlier that day with aphasic phenomena and motor deficits in the left limbs.

Investigations:
A CT scan revealed the presence of a rare malformation of the C1 vertebra along with an acute right hemisphere stroke. The radiological examination showed an incomplete fusion of the anterior arch and the anterior tubercle associated with the absence of the posterior arch.
Treatment/Results: This case is secondary to a Pax gene mutation which performs hypoplasia of the hypochordal bow. This leads to an incomplete ossification process of the anterior arch of the atlas causing its replacement with loose connective tissue, highlighting an exceedingly rare anomaly. Varying degrees of aplasia of the lateral sclerotome of C1 result in partial or complete agenesis of the posterior atlantal arch. In the posterior arch defects, the centrum sclerotome of C1 is not affected and the dental pivot is normal, in this case being required a conservative treatment. The C1–C2 complex in patients with posterior arch defects is usually stable despite the intimidating appearance of the radiographs.

Discussions:
Anomalies involving the posterior arch are rare findings being documented in a total of six subtypes, the rarest referring to total agenesis. This report is illustrating a unique pattern of anomalous re-segmentation of proatlas somatom while also highlighting the embryological aspects of this malformation. Clinical and imagistic implications are reviewed, raising awareness of these abnormalities, especially for neurologists, neurosurgeons and radiologists.

Clinical and Pathological Correlations on an Abnormal Origin of the Right Subclavian Artery

Author(s): Maria-Bianca Andrei, Bianca-Maria Petrea, Lecturer Alin Horatiu Nedelcu MD PhD
Domain: Internal Medicine
Subdomain: Radiology
Abstract:

Lusoria artery is a malformation in which the right subclavian artery does not emerge, as normal, from the brachiocephalic trunk, but directly from the aortic arch. We are reporting the case of G. D., a 45-year-old female, who presented for a routine CT which led to us discovering this anomaly.

Up to this point, the patient had no relevant pathological history, the malformation being discovered during a routine CT. The anamnesis also revealed no significant family history.

A CT scan showed the abnormal origin of the right subclavian artery (RSA) directly from the aortic arch, distal to the origin of the left subclavian artery. Initially, the RSA is posterior to the esophagus, having an ascending path before passing the subclavicular space. In our case, there was no arterial dilatation of the RSA remarked. The radiological examination also presented several pulmonary rheumatoid nodules and a different origin for the right vertebral artery, emerging from the right common carotid artery and not from the RSA.

Lusoria artery is described as a congenital malformation, being associated with other anomalies such as chromosomal defects or dysphagia lusoria. Treatment is recommended for symptomatic relief of dysphagia lusoria and to prevent complications caused by aneurysmal dilatation, our patient presents none of them.

The abnormal origin of the RSA is a congenital vascular anomaly of the aortic trunk, having an incidence between 0.5% and 1.8%. Usually, it is discovered by incident on imaging studies and it is asymptomatic, more than half of the patients being symptom-free lifelong. This report is highlighting the abnormal pathway of the RSA while also correlating the genetical and embryological aspects with this malformation. Because the presence of this anomaly possess a life-threatening risk for the patients undergoing esophagectomy, the aim is to raise awareness about this malformation among surgeons.

When all hope is lost in critical limb ischemia: rebuilding the arterial system

Author(s): Bianca-Maria Petrea, Maria-Bianca Andrei, Professor Grigore Tinică MD PhD, Teaching Assistant Andrei Țăruș MD PhD, Teaching Assistant Alberto Bacușcă MD PhD

Domain: Surgery

Subdomain: Vascular surgery

Abstract:

In some cases of peripheral artery disease, venous arterialization seems like a viable option when arterial reconstruction is not possible. This intervention directs oxygenated blood flow through the venous system, allowing retrograde peripheral tissue perfusion.
We are reporting the case of C.B., a 76-year-old male admitted to the cardiovascular surgery clinic complaining of right leg rest pain for the past 3 weeks. Clinical examination showed cyanotic changes in the dorsal forefoot and varicose veins.

Anamnesis revealed several cardiovascular risk factors and comorbidities, like smoking, hypertension, and chronic atrial fibrillation.

The ankle-brachial index (ABI) results for both the right and left lower extremities were suggestive of critical limb ischemia (CLI). Angiography revealed several occluded arteries, with no continuous blood vessels below the knee. The patient was deemed ineligible for standard treatment and was offered distal venous arterialization as a last resort before amputation.

We combined deep and superficial venous arterialization, with the common femoral artery as the inflow and the posterior tibial vein (PTV) and distal great saphenous vein (GSV) as outflow, along with an expanded polytetrafluoroethylene graft (ePTFE) and the entire length of GSV as the bypass conduit. The vessels were exposed through two incisions, and the following anastomoses were made: a proximal one, a modified diamond intermediate one following endarterectomy of the infrageniculate popliteal artery, and a distal one including the graft, the PTV and transposed GSV, anastomosed in an end-to-side fashion. The recovery was favorable, as a CT angiography performed 4 weeks post-op showed normal circulation in the calf and foot, and the postoperative right ABI normalized.

Amputation is a major concern in CLI, but it can be prevented with the appropriate techniques. In spite of our patient's concomitant pathologies, which made the case particularly difficult, he successfully recovered after combined deep and superficial venous arterialization.

A rare case report of a phrenic artery responsible of the vascularization of the lung

Author(s): Maria-Bianca Andrei, Bianca-Maria Petrea, Lecturer Alin Horatiu Nedelcu MD PhD
Domain: Internal Medicine
Subdomain: Radiology
Abstract:

An ectopic phrenic artery responsible for the vascularization of the lung is a rare finding in the radiological field, highlighting an abnormal pathway. We present the case of M. E., a 74-year-old female, where we discovered this anomaly during a routine CT examination.

An ultrasound evaluation revealed the presence of adrenal lesions, as well as a lung nodule. The patient presented no symptoms and her anamnesis did not show other relevant pathologic aspects, so the doctor recommended further investigations.

Pre-contrast, arterial and portal venous phases were performed using a multi-detector 16-channel CT scanner (Aquilion 16, Toshiba Medical Systems) with a slice thickness of 1.0 mm. Using an automatic power injector, 110 mL of contrast agent (iohexol OMNIPAQUE 350 mgI/ml) was administered at a rate of 2,5 mL/s. The CT scan revealed in the lung window the appearance of ground glass attenuation which did not extend to the adjacent areas. The radiological examination highlighted the abnormal path of the phrenic artery, starting from the celiac trunk and crossing the diaphragm muscle. The artery is distributed to the paravertebral lung parenchyma from the posterior basal segment of the inferior right lobe, having no anastomoses with pulmonary vessels.

Since in this case the phrenic artery has an abnormal path, irrigating a different organ than usual, no intervention can be performed. For our patient that lived her entire life with this anomaly, it was recommended a treatment in case of relevant symptoms, but no curative treatment can be performed.

Normally, the phrenic artery supplies the diaphragm, having its origin from a common trunk with its pair. However, this artery may have a wide range of variations regarding its origin, this report having the purpose of awareness about the existence of the abnormal arterial supply in the base of the lung.

Acute ischemic stroke in a woman with twin pregnancy: a case report

Author(s): Maria Sobolewska, Paweł Wrona
Domain: Internal Medicine
Subdomain: Neurology
Abstract:

Introduction:
Although intravenous thrombolysis (IVT) with alteplase in pregnant patients is approved in special cases, the decision to treat is difficult and requires prudence and courage from the stroke physician.

Case history:
We present a case report of a 33-year-old pregnant female (second pregnancy, Hbd 33, twins) in her second trimester admitted to the Stroke Unit with mild mixed aphasia and right hemianopia. The National Institutes of Health Stroke Scale (NIHSS) score was 7 pts. Previous patient used 50µg levothyroxine, 0.4 mg folic acid and 100 mg progesterone daily.

Investigations:
Routine laboratory tests, including coagulation parameters and test for COVID-19, were normal. In the diffusion-weighted magnetic resonance imaging (DWI-MRI) sequence lesions in the left medial temporal and occipital lobes, mainly involving the posterior cerebral artery territory were found. In angio-MRI an asymmetrical decrease in flow signal in the left posterior cerebral artery on brain was observed. Genetic tests for V Leiden, prothrombin gene 20210 and methylenetetrahydrofolate reductase (MTHFR) mutations, and antiphospholipid syndrome antibodies were negative.

Treatment:
A team of neurologists, gynaecologists and radiologists qualified the patient for IVT. The treatment was without complications. At discharge, the patient showed improvement with mild residual mixed aphasia biased towards expressive speech and partial right hemianopia (NIHSS – 2 pts.). Secondary prevention with 75 mg of acetylsalicylic acid was recommended. The pregnancy was terminated by caesarean section in 38+0 week. The children were born healthy.

Discussion:
Pregnancy-related strokes are relatively rare. Management of stroke in young pregnant patients poses challenges, necessitating careful evaluation of risks and benefits of therapeutic interventions for both the mother and foetus. Although the latest recommendations prefer the treatment of pregnant women with ischemic stroke with endovascular thrombectomy (EVT), if such treatment is not possible, IVT should be considered.

Acute Post-Infarction Ventricular Septal Defect in the Course of ST-Elevation Myocardial Infarction in a 66-Year-Old Woman: A Case Report

Author(s): Michał Kostro, Dominik Tenczyński, Marek Cisowski MD PhD, Witold Gwóźdź MD, Rafael Tichý
Domain: Surgery
Subdomain: Cardiac surgery
Abstract:

In Poland, there are 100,000 cases of ST-segment elevation myocardial infarctions (STEMI) annually with a prehospital mortality rate of around 30%. Percutaneous coronary intervention (PCI) is the preferred treatment option, with a mortality rate of 2.03%. The mechanical complications, such as ventricular septal defect (VSD), occur in 0.27% to 0.91% of STEMI cases. 71% of the patients with post-infarction VSD develop cardiogenic shock, and the 30-day mortality rate reaches 62%.

A 66-year-old female patient “MS” was admitted to the hospital with symptoms of acute coronary syndrome (ACS) and pulmonary oedema. The patient was diagnosed with anterior and apical STEMI, along with cardiogenic shock. Echocardiography (ECG) confirmed the presence of VSD in the anterior-apical region of the septum. The patient was stabilized both pharmacologically and with intra-aortic balloon pump counterpulsation (IABP). Due to a prolonged clinical course, PCI was abandoned, and the patient was qualified for surgical closure of the VSD.

Transthoracic echocardiography (TTE) revealed significant left ventricular systolic dysfunction. It also showed a post-infarction dyskinetic aneurysm of the apex with VSD in the distal interventricular septum (IVS), which progressed in subsequent examinations. Coronary angiography confirmed occlusion of the left anterior descending artery (LAD).

The patient underwent VSD-closing surgery on the 14th day after the onset of myocardial infarction symptoms. However, 48 hours later, there was a recurrence of leakage, leading to a reoperation. On the 14th day after the second surgery, symptoms of acute pericardial tamponade appeared. Another operation revealed a rupture in the left ventricular free wall in the infarcted area. Unfortunately, the postoperative course had negative outcomes, and the patient passed away due to cardiopulmonary failure during a generalized infection.

Acute post-infarction VSD is a rare and life-threatening complication of STEMI, with a mortality rate of 94% if it is conservatively treated. Surgical treatment is a better therapeutic option, but it also carries a high risk of death, reaching 47%. This patient's case highlights the complex nature and associated risks of managing such cases.

What does a macrophage storm hide? A Hodgkin lymphoma story

Author(s): Adela Diana Pitforodeschi, Teaching Assistant Oana Șerban MD, Lorin Manuel Pîrlog
Domain: Internal Medicine
Subdomain: Haematology
Abstract:

A 48-year-old male patient presents in the emergency room with fever and altered general condition. Physical examination gives out hepatosplenomegaly and an inguinal lymphadenopathy of 2x3cm mobile, solid, and painful.

Biologically, are notable elevated C-reactive protein (CRP=206.02mg/l), extremely high levels of Ferritin (42 581 ng/ml), elevated aspartate aminotransferase (AST=202U/l) and hypertriglyceridemia (TGL=322mg/dl). Haematological tests show anemia, thrombocytopenia, and leukopenia with lymphopenia. Infection markers are negative for viral infections. Bone marrow biopsy shows images of hemophagocytosis. A CT scan reveals multiple adenopathy lesions present in the abdomen and thorax. At ultrasound the inguinal lymphadenopathy is suggestive for malignancy, probably haematologic. In this case, a biopsy is recommended for histologic examination. The results come out with diagnosis of classic Hodgkin lymphoma (HL).

The clinical presentation associated with inflammatory syndrome, extreme hyperferritinemia, thrombocytopenia and hemophagocytosis on bone marrow biopsy are suggestive for Macrophage activation syndrome (MAS). While inguinal lesion biopsy reveals a histologic structure fitting for HL. Based on the multiple lymphadenopathies present on both sides of the diaphragm, stage III lymphocyte depletion HL is retained. Due to the advanced state the patient was in at the time of admission and the reserved prognosis, the patient declines chemotherapy treatment.

MAS is a rare immunologic syndrome described by an exaggerated immune response. At the centre of this is a cytokine storm leading to excessive activation and expansion of T lymphocytes and macrophages that exhibit hemophagocytic activity. This is clinically expressed by cytopenia, liver disfunction, coagulopathy resembling disseminated intravascular coagulation and hyperferritinemia. MAS is mostly associated with rheumatic or autoimmune disorders. On the other hand, HL is a malignant disease derived from B cells. Therefore, it is exceptional to see HL revealed by MAS. This association is rare enough to be observed in only a few cases and it appears to be a particular entity.

Pathological attachment of the Placenta – Placenta percreta, a rare case report

Author(s): Raheem Javadian, Fayez Fahal, Petur Uchikov, Nikoleta Parahuleva
Domain: Surgery
Subdomain: Obstetrics and gynaecology
Abstract:

Introduction:
The patient DP 32-year-old pregnant female at 31 weeks gestation presented to the emergency department with sharp pain in the lower abdomen and back. As well as limited genital bleeding.

Case history:
The patient Gravida 3 parity 2. The two births were with Cesarean section in 2015 and 2017.

Investigations:
A speculum examination showed dark blood in the vagina.
Ultrasound revealed one live foetus and placenta praevia totalis covering the cervical canal. Additionally, MRI revealed severe placenta percreta with blood vessels present in the bladder wall and surrounding soft tissues. Urethrocystography demonstrated changes in the bladder mucosa because of the fused placenta.

Treatment:
A lower median laparotomy was performed to extract the foetus. After the foetus was removed the presence of placenta praevia percreta isthmico-cervicalis was confirmed with infiltration of the vesicouterine pouch, posterior bladder wall and parietal peritoneum on the left. Given the diagnosis a hysterectomy was performed. A total of 2500ml of blood loss was reported.
Due to the complex nature of operation a multidisciplinary team was involved with the participation of Urologists who sutured the bladder wall.

Discussion:
The increasing incidence of Cesarean sections worldwide is associated with several long-term complications that threaten the life of the woman. Among them are Placenta praevia and Placenta percreta as was the case with our patient. Indeed, the pathological attachment of the placenta was found in the area of the uterine cicatrices from the previous cesarean section.

Our Aim:
Is to present a rare case of severe placenta percreta with placenta praevia totalis as well as to explore the association between cesarean sections and placenta pathologies.

Post Partum septic arthritis, a rare case report

Author(s): Fayez Fahal, Raheem Javadian, Petur Uchikov, Nikoleta Parahuleva
Domain: Gynaecology
Subdomain: Obstetrics and Gynaecology
Abstract:

Introduction:
The patient AT a 17-year-old female was admitted to the Obstetrics and Gynaecology clinic with complaints of severe pain in the left gluteal region, which radiates along the course of the left leg when moving. Physical exam demonstrated palpable and spontaneous pain in the left sacroiliac joint as well as palpable tenderness at the level of L5 and the Point of Vale on the left.

Case History:
The patient had a normal vaginal delivery of a live full-term foetus which weighed 3100g and had a height of 49cm as well as an APGAR 9-10. 10 days after the delivery the patient was admitted with complaints of severe leg pain.

Investigations:
Paraclinical parameters revealed elevated C-reactive protein: 163mg/l, elevated ESR: 81mm and elevated WBC 17.1g/L.
Lochial secretion culture revealed Streptococcus pyogenes. Blood culture also revealed Streptococcus pyogenes. Magnetic Resonance Imaging demonstrated subchondral oedema of the bone marrow in the left sacroiliac joint. Intra-articular effusion and para-articular effusion from the ventral surface of the pelvic ring.

Treatment:
Intravenous antibiotics were given until the patient's condition stabilized thereafter the patient was given oral antibiotics.

Discussion:
Inflammation of the sacroiliac joint is a rare disease and occurs in only 5-10% of cases of septic arthritis (1). The frequency of septic postpartum sacroiliitis is low, the number of cases described in the literature is less than 20 (2). Bacteremia with Staphylococcus aureus (70%) and Streptococcus pyogenes (30%) occupies a major place in the pathogenesis. (1)
Given that the number of cases presented in the literature is small, post-septic sacroiliitis is defined as a diagnostic and therapeutic challenge (3). Hence, the aim of our case report is to bring greater awareness of this pathology, as well as explore the risk factors and preventative measures that should be taken.

INCONSISTENT ST ELEVATION WITH A HIDDEN DIAGNOSIS. MYOCARDIAL INFARCTION WITH NON-OBSTRUCTIVE CORONARY ARTERIES

Author(s): Ana Lupșor, Assistant Professor Mihai Lupu M.D.
Domain: Internal Medicine
Subdomain: Cardiology
Abstract:

A 59-year-old male, a former smoker, presented to the emergency department accusing of retrosternal constrictive pain that appeared 30 minutes before, while walking, accompanied by anxiety and diaphoresis. Past medical history claimed chronic hypertension treated with Perindopril and class 1 obesity, confirmed by the otherwise non-modified clinical exam.
The doctor suspected myocardial infarction, confirmed by ECG (peaked T wave and slightly elevated ST segment in V2-V4) and echocardiography (anterolateral hypokinesia of myocardium). Laboratory tests revealed hyperlipidemia (elevated LDL and decreased HDL Cholesterol) and delayed transitory troponin augmentation up to 3.74 ng/ml. Urgence arteriography showed 30% stenosis caused by an atherosclerotic plaque in the middle segment of the interventricular artery, while the ECG had normalized.
The lack of paraclinical findings suggested the presence of Myocardial Infarction with Non-Obstructive Coronary Arteries (MINOCA), most probably caused by a transitory coronary spasm. Considered differential diagnoses were Myocarditis, Takutsubo syndrome, Pulmonary Embolism, or Type 2 Myocardial Infarction (oxygen supply/demand imbalance), infirmed by the paraclinical investigations. Treatment included anticoagulants and antithrombotics, hypotensives, and statins.
Three days following the acute syndrome, the cardiologist performed a stress test that triggered the reappearance of ST elevation at a heart rate of 89 bpm, accompanied by chest pain, dyspnea, and dizziness. ESC guidelines recommend an immediate coronarography with stent implantation for patients with recurrent dynamic ST, T, or especially ST changes on ECG, conducted with ideal results.
The aim of this report is to draw attention to an often-neglected disease, due to the few symptoms and paraclinical changes, so treatment is frequently postponed until the condition aggravates, combined with comorbidities.
MINOCA is a non-conventional presentation of coronary symptoms with minimal signs and symptoms, while the lack of treatment may lead to heart failure. Doctors need to be vigilant and provide all the diagnostic and therapeutic tools for an efficient approach.

A collection of dataset containing chest X-rays with pulmonary nodules, specifically designed for evaluating AI algorithms

Author(s): Busygina Yulia, Kirill Arzamasov, Maria Zelenova, Lev Pestrenin, Tatiana Bobrovskaya, David Shihmuradov, Andrey Pankratov
Domain: Internal Medicine
Subdomain: Radiology
Abstract:

Artificial Intelligence(AI) is gaining traction in the field of healthcare, particularly in radiology. Chest X-rays(CXR) are a routine imaging modality in radiology, commonly utilized to identify pulmonary nodules. Accurate differential diagnosis for lung malignancies, including lung cancer, is essential. Hence, our objective was to create a reference dataset for CXR, both with and without confirmed pulmonary nodules.

Methods:
A dataset of radiological examinations conducted in Moscow between 2020 and 2022, filtering for pairs of CXR and chest CT performed within a 14-day timeframe and for specific keywords in the "Impression" section such as "Consultation of an oncologist". A thorough examination of 103 pairs of studies was carried out, following the criteria defined in the Glossary of the Fleischner Society for "pulmonary nodule." To ensure dataset balance, we included 50 CXR studies without any detectable pathologies. A total of 203 study pairs were selected and reviewed by three radiologists. Following the review, 100 CXR studies were chosen, consisting of 50 with pathological changes (pulmonary nodules measuring more than 6 mm but less than 30 mm, located within the lung parenchyma) and 50 without any pathological changes. This dataset was sent to 7 AI-algorithms.

Results:
We assessed the ability of AI-algorithms to distinguish between pathological and nonpathological changes by comparing the results (converted into binary scale) with the ground truth (GT):0.88;0.9;0.92;0.95;0,93;0.92. The second phase focused on evaluating the models' capability to accurately localize lung nodules within the images. After that, the accuracy decreased slightly: 0.598;0.600;0.82;0.884;0.842;0.705;0.787 respectively.

Discussion:
AI-driven solutions exhibited high diagnostic accuracy metrics, AUC reaching up to 0.956, in categorizing chest X-rays into normal and pathological instances. This dataset will be instrumental in evaluating the diagnostic accuracy of radiologists (with a focus on "pulmonary nodules") as well as the performance of AI algorithms.

PROTEUS SYNDROME IN TWO YEAR OLD FEMALE PATIENT: CASE REPORT

Author(s): Maria Klimeczek Chrapusta, Marek Kachnic
Domain: Surgery
Subdomain: Plastic pediatric surgery
Abstract:

Introduction:
Z.R, a twenty-two months old female patient presented oneself at the plastic surgery clinic with a rare case of a Proteus syndrome (somatic embryonal mutation of ATK1 gene[1]) with following clinical features: unilateral overgrowth of connective tissue in the right buttock and right foot, where overgrowth of bone tissue was also found.

Case history:
Patient was genetically tested with a positive result, at the age of 20 months for somatic embryonal mutation of ATK1 gene. Due to high risk of deep vein thrombosis and embolism, two additional investigations were made: molecular analysis of genes F2 (for 20210G>A mutation presence) and F5 (for Arg534Gln mutation presence) and mutation testing in MTHFR gene. No mutations in F2 and F5 genes were found. Regarding MTHFR gene testing, mutation Ala222Val (C677T) was discovered, that results in decreased activity and stability of metylenothetrahydropholiate reductase enzyme, which can increase homocysteine levels in blood and rise a risk for hypercoagulability and cardiovascular system diseases. At 9 months old the patient underwent an amputation surgery of distal phalange of IVth and Vth toe owing to an overgrowth.

Investigations:
Physical examination and radiological screening didn't reveal any additional abnormalities. At 22-months-old the patient's parents complained of difficulty in finding fitting shoes for the patient's right foot and systematic growth of a right buttock.

Treatment:
Right foot's soft tissue reduction surgery in the plantar surface, lateral and heel region was performed when the patient was 4,5 years old. The symmetry of both feet has been achieved as a result. One year later, the child underwent a surgery for right buttock reduction. Attained aesthetic outcome allowed for postponement of the next reduction operation.

Discussion:
Proteus syndrome is an extremely rare complex disorder with estimated prevalence of <1/1000000 live births[1] Treatment includes both clinical and psychological support and it aims to limit disability[2]. Many patients develop vascular malformations and are at risk of pulmonary embolism, which causes short life expectancy ranging from 9 months to 29 years.[3]

Fracture of the femur complicated with femoral artery injury

Author(s): Karol Szudy, Michał Platschek
Domain: Surgery
Subdomain: Orthopedics
Abstract:

Distal femur fractures often require surgical intervention due to associated injuries of the femoral blood vessels. The success and final outcome of treatment are primarily influenced by the duration of limb ischemia. This case study presents the admission of a 43-year-old male to the emergency department, five hours after an injury caused by the explosion of a combine-harvester's tire. The patient exhibited open, comminuted fractures of the distal part of the femur and mid-shafts of both the tibia and fibula, classified as Gustilo type 3c. Additionally, an injury to the femoral artery led to an undetectable pulse in the left lower limb. Acute kidney injury associated with crush syndrome was also observed, with a creatinine level six times higher than the upper limit.

The treatmeant involved debridement and stabilization of fractures using external fixators, implantation of a stent, fasciotomy, dialysis for acute kidney injury, therapy in a hyperbaric chamber, and ultimately, amputation of the lower left limb at the mid-shaft of the femur.

The discussion highlights the challenges associated with arterial injuries, which account for 17% of acute limb ischemia cases and require multidisciplinary treatment due to associated injuries. Crucial prognostic factors in these cases include collateral circulation efficiency, duration and extent of ischemia, and the importance of early fasciotomy to mitigate risks related to Compartment Syndrome. Prolonged limb ischemia exceeding six hours necessitates fasciotomy to reduce the risk of limb loss (35-39%) and patient mortality (approximately 10%).

In conclusion, prompt multidisciplinary surgical intervention, involving revascularization, is a crucial prognostic factor in fractures complicated by vessel injuries. The duration of ischemia depends on various medical factors, including the availability of angiological diagnostic procedures, as well as non-medical factors like transportation time to a multidisciplinary hospital. Addressing these factors can significantly impact treatment outcomes and contribute to improved patient recovery.

Patient with Common Variable Immunodeficiency (CVID) presenting with severe lumbar pain.

Author(s): Olga Tuleja, Jarosław Nowakowski PhD MD
Domain: Internal Medicine
Subdomain: Rheumatology
Abstract:

Intro:
In this case presentation I would like to bring closer a rare case of patient who was admitted to our ward with severe back pain. The interplay between CVID and the development of spondylodiscitis in this patient provides an intriguing scenario worthy of investigation and clinical discussion. Spondylodiscitis frequently develops in immunocompromised individuals, such as my patient.

Case history:
Due to severe back pain differential diagnosis was pursued, and a comprehensive workup was initiated, including transoesophageal echocardiography (TEE), electrocardiogram (ECG), magnetic resonance imaging (MRI), as well as blood, urine, and sputum analysis. Pending test results, the patient was empirically treated with two antibiotics (linezolid and levofloxacin). Initial investigations yielded normal findings, except for the MRI, which revealed spondylodiscitis at the L3-L4 level.
After 12 days of antibiotic therapy, the patient developed pancytopenia, resulting in the postponement of the planned neuro-orthopaedics decompression surgery for spinal canal decompression. Haematology consultation indicated that linezolid, one of the prescribed antibiotics, was the likely cause of pancytopenia. Consequently, the haematologist recommended close monitoring blood count tests due to the potential risk of lymphoproliferative neoplasms. Fortunately, the patient's blood parameters remained stable, and he was successfully transferred to the orthopaedic ward.

Treatment:
The neuro-orthopaedic team proceeded with decompression of the lumbar spinal canal. Notably, on the first day following the procedure, the patient exhibited improved neurological findings, including enhanced sensation and muscle strength. With ongoing antibiotic treatment, the patient was eventually discharged, while continued follow-up was recommended.

Discussions:
In summary, this case report provides an opportunity to explore the underlying mechanisms linking CVID and spondylodiscitis. The immunodeficient state may predispose patients to atypical or opportunistic infections, which could impact the clinical presentation and response to treatment. Understanding these factors can assist clinicians in improving diagnostic accuracy, optimizing therapeutic interventions, and enhancing patient outcomes.

Turn of events in a post-traumatic esophageal perforation – case report

Author(s): Bianca-Maria Petrea, Maria-Bianca Andrei, Lecturer Lucian Bulat MD PhD, Teaching Assistant Ana-Maria Rotariu MD PhD, Geanina-Iuliana Androni

Domain: Surgery

Subdomain: General surgery

Abstract:

Introduction:

Esophageal perforation is an uncommon, potentially fatal condition caused by any foreign body reaching the area. The diagnosis is usually delayed due to its various etiologies and clinical presentations, complicating timely and appropriate management.

We are reporting the case of R.F., a 43 years old male who presented to his local ER with left latero-cervical trauma following a fall through a pipe. The only pathological changes revealed during the clinical exam were the obvious wound and the patient's pain.

Case history:

Anamnesis showed no relevant familial or pathological history. After the diagnosis was concluded at that hospital, he was sent to our general surgery clinic.

Investigations:

A CT showed the presence of gaseous left retro-laryngeal and latero-cervical content, dissecting through the anatomical structures and extending all the way to the carina. Following the injury's circumstances and the imagistic investigations, the diagnosis was post-traumatic esophageal perforation.

Treatment:

The standard treatment includes surgery consisting of endoscopic clipping of the fistula and a jejunostomy. Two days after the surgery, a collection was revealed at the incision site. Cervical echography showed an infiltrative liquid collection extending through the adjacent tissue. Blood tests revealed an inflammatory profile, along with an extremely increased CRP. Due to this complication, the patient underwent a second intervention, and, intraoperative, an antibiogram confirmed the presence of gram-negative germs, which preceded the abscess drainage and initiation of antibiotic therapy. This led to a significant clinical improvement, and the patient's digestive function progressively ameliorated.

Discussion:

The particularity of this case resides in the fact that esophageal perforations are rare entities and, when present, the diagnosis and proper management are extremely challenging. However, in our patient's case, despite the severe trauma and postoperative complication, the treatment was successful and he ended up fully recovering.

Challenges of heart failure diagnostics in pregnancy – preeclampsia, peripartum cardiomyopathy or left ventricular non-compaction – case report.

Author(s): Olaf Hajnus, Aleksandra Iwanicka, Dominika Szumilas, Prof. Agnieszka Olszanecka M.D PhD

Domain: Internal Medicine
Subdomain: Cardiology
Abstract:

Introduction:
Heart failure (HF) remains the most common major cardiovascular complication arising in pregnancy and the postpartum period requiring multidisciplinary care. Pregnancy is associated with a gradual increase in preload on the heart, which can reveal previously undiagnosed cardiac conditions or develop pregnancy-specific health issues such as peripartum cardiomyopathy (PPCM).

Case report:
A 33-year-old woman in her 33rd week of a twin pregnancy was admitted to the obstetrics department due to hypertension and the risk of preterm birth. Initial assessment revealed markedly elevated blood pressure, peripheral oedema, proteinuria, and an episode of supraventricular tachycardia. The patient was diagnosed with preeclampsia and caesarean section was performed. During the peripartum period, the patient experienced dyspnoea with clinical and radiological signs of pulmonary congestion, elevated NT-pro-BNP and severe impairment of left ventricular systolic function. Pulmonary embolism, acute coronary syndrome were excluded, PPCM was suspected. In further evaluation cardiac MRI was performed and features of left ventricular non-compaction (LVNC) were detected. Typical treatment of heart failure was implemented in addition with bromocriptine. Repeated echocardiography and MRI were scheduled to clarify the diagnosis.

Conclusions:
Diagnostics of heart failure in pregnancy is challenging and should always include differentiation between PPCM, preexisting structural heart disease, myocarditis, pulmonary embolism and acute coronary syndrome. Women with hypertensive disorder of pregnancy are at higher risk of PPCM. Diagnosing PPCM must be done by exclusion. Moreover, aggravation of pre-existing heart disease by pregnancy-mediated haemodynamic changes should be differentiated from PPCM. LVNC is characterised by abnormal trabeculations in the left ventricle. As the pregnancy can induce de novo left ventricular trabeculations to the extent they may satisfy the criteria for the diagnosis of LVNC, and most of which resolve during postpartum is the indication to perform close follow up with repeated cardiac imaging to provide crucial information for a definitive diagnosis.

Anti-GBM antibodies causing RPGN, a case report.

Author(s): Rahem Javadian, Fayez Fahal, Nikolai Dimov, Dimitar Nikolov
Domain: Internal Medicine
Subdomain: Nephrology
Abstract:

Introduction:
The patient, GC, is a 67 year old female presented with lassitude, fatigue, red urine, as well as general vomiting at night.

Case history:
The patient has a history of left ventricular hypertrophy, diastolic dysfunction, dilated left atria with increased pressure, pulmonary hypertension, sclerotic aortic valve with mild regurgitation. Additionally the patient has COPD, seronegative rheumatoid arthritis, bilateral gonarthrosis, IBS.

Investigations:
Blood work revealed a Creatinine of 1042mkmmol, a Urea of 50mmol/L, Hyperkalaemia 6.5mmol/L, positive anti-GBM autoantibodies, as well as establishing a metabolic acidosis.

Treatment:
Given the acute condition of the patient Haemodialysis was started immediately.

Discussion:
The presence of Anti-GBM antibodies lead to the suspicion of a Rapidly Progressive Glomerular Nephritis, a diagnosis confirmed by histology. RPGN represents a rare and acute form of Acute Kidney Injury with potentially fatal consequences.

RPGN caused by Anti-GBM antibodies is a rare pathology with a limited number of articles in the clinical literature this case report seeks to shed more light on this pathology as well answer the question why did the patient develop anti-GBM antibodies at such a late stage of life thereby also explaining the pathogenesis.

The puzzling origin of Cushing's syndrome

Author(s): Anna Tomoń, Grzegorz Sokołowski MD
Domain: Internal Medicine
Subdomain: Endocrinology
Abstract:

A 38-year-old male patient Z.M. with arterial hypertension was admitted to the endocrinology department in 2016 for further diagnosis of hypercorticism. The patient reported the face rounding, with the reposition of fat tissue on the nape and cheeks, accompanied by reddening of the skin of the face and neck. The patient also reported episodes of excessive somnolence accompanied by polyuria.

Based on the performed tests, the diagnosis of ACTH-dependent (adrenocorticotropic hormone) Cushing's syndrome and secondary gonadal and thyroid axis insufficiency was diagnosed. MRI of the pituitary gland was performed and no focal lesions in the anterior pituitary gland were found.

Classic inhibition test with dexamethasone was performed:
In the test with 2 mg of dexamethasone, no inhibition, in the test with 8 mg of dexamethasone, the inhibition of cortisol exceeded 50%. A stimulation test with CRH (corticotropin-releasing hormone) was also performed - ACTH rose over 30 percent, suggesting Cushing's disease - pituitary form of ACTH-dependent Cushing's syndrome).
The turning point was the PET/CT (positron emission tomography) examination with Ga68-labeled somatostatin analogue and it showed a right lung nodule in segment 3, with a diameter of 13 mm, located peripherally. The tumor showed a mediocre expression of somatostatin receptors.

A steroidogenesis inhibitor (Ketoconazole) and a long-acting somatostatin analogue were included in the treatment. In October 2016, the right lung tumor was removed.
During the follow-up visit, the patient did not show clinical signs of endogenous hypercorticism. After the operation, generalized swelling, plethora, and weakness resolved. In home measurements, blood pressure was within the normal range without antihypertensive drugs.

In this case functional tests indicated Cushing's disease - both the inhibition test with dexamethasone and the CRH test. The performance of SRI (somatostatin receptor imaging) redirected the therapy to the removal of the lesion in the lung.

Multisystem Langerhans cell histiocytosis

Author(s): Ozana Jakšić, Viktor Zatezalo, Inga Mandac Smoljanović
Domain: Internal Medicine
Subdomain: Hematology
Abstract:

INTRODUCTION/OBJECTIVES:
Langerhans cell histiocytosis (LCH) is a very rare idiopathic disorder in which clonal expanding proliferation of mutated dendritic cells forms granulomatous lesions causing tissue damage. The incidence is 1-2 per million. Most cases present with involvement of the head or neck region.

CASE PRESENTATION:
A 36-year-old male presents with stabbing pain under the right rib cage with an intermittent fever of up to 38oC. He had no previous diseases; the physical exam was unremarkable, except for itchy lichenoid erythematous lesions on his neck. The C-reactive protein was 53 mg/L with no other laboratory abnormalities. Empirical therapy with amoxicillin/clavulanate and metronidazole was administered. MSCT showed enlarged fatty liver with multiple hypodense lesions up to 2 cm which was confirmed on MRI. There was no response to first-line antibiotics, so meropenem was administered. CT-guided liver biopsy showed multifocal epithelioid non-necrotizing granulomatous inflammation rich in eosinophils. Albendazole was administered with a minor response. MSCT was repeated showing liver lesions enlargement, steatosis progression, and periportal lymph nodes enlargement. There have been up to 0,6 cm ring lesions in upper pulmonary lobes, and cystic expansions of peripheral bronchial branches. Repeated liver biopsy showed histiocyte infiltration with the positivity of CD1a and langerin (CD207). Diagnosis of LCH multisystemic type was made with predominant liver and pulmonary infiltrates. PET-CT showed increased accumulation in liver nodules and neck skin infiltrates. Chemotherapy with cytarabine is ongoing without complications.

CONCLUSION:
LCH is a clonal and life-threatening disease affecting multiple systems, mimicking multiple conditions, and therefore difficult to diagnose. Treatment and prognosis depend on the systems that are involved.

The impact of ADHD on the treatment of Bipolar Disorder.

Author(s): Katarzyna Klimaszewska; Aneta Kotlarek; Aleksandra Gorostowicz MD
Domain: Psychiatry
Subdomain: Psychiatry
Abstract:

A 41-year-old male, diagnosed with bipolar disorder in 2020, was admitted to the psychiatric ward for further diagnostic evaluation and optimization of treatment.

The patient had had a few hypomanic and depressive episodes (with predominant manic polarity). He was hospitalized a few times due to suicidal behaviors and ineffective mood stabilization. The patient had difficulties with treatment adherence and did not take the medications regularly. His medical history reveals a tendency for risky use of psychoactive substances and alcohol since high school.

Upon admission the patient reported past periods of depression and hypomania, current impulsivity, difficulty concentrating, irritability in interpersonal relationships, mood instability, and risky alcohol consumption. He denied suicidal thoughts and tendencies. During hospitalization, ADHD was diagnosed.

The patient's treatment with lithium, valproic acid, quetiapine, and sertraline was maintained. Methylphenidate was introduced after ruling out substance dependence. Improvement was observed in terms of attention, distractibility, work organization, task performance, restlessness.

ADHD (attention-deficit/hyperactivity disorder) is a common comorbidity in patients with bipolar disorder. Approximately 17% of adults with bipolar disorder are estimated to have co-occurring ADHD. Individuals with these comorbid conditions also have a higher risk of substance abuse disorders. The overlapping symptoms and clinical features of ADHD and bipolar disorder, particularly during manic/hypomanic episodes, result in diagnostic difficulties. Undiagnosed ADHD may contribute to poor treatment adherence and only partial effectiveness of medications. In cases like the one presented, it is crucial to consider the presence of a coexisting disorder and modify the administered treatment if necessary.

Posterior reversible encephalopathy syndrome in a 7-year-old girl with acute poststreptococcal glomerulonephritis.

Author(s): Tomasz Pulanecki, Natalia Ostruszka, Marta Olszewska MD, Izabela Szymońska MD, prof. Przemko Kwinta MD PhD
Domain: Pediatrics
Sub domain: Pediatric neurology, pediatric nephrology, pediatric infectious diseases
Abstract:

Posterior reversible encephalopathy syndrome (PRES) is a rare condition presenting with headache, seizures, altered consciousness and visual disturbances. It is related to white matter vasogenic edema involving occipito-parietal region.

A 7-year-old with previously diagnosed scarlet fever was admitted to the University Children's Hospital of Cracow because of fever, nausea, vomiting and cough.

On admission, the patient presented with strawberry tongue, maculopapular rash with epidermal desquamation and diminished breath sounds on the right side. Laboratory tests revealed high C-reactive protein and procalcitonin levels with massive leukocyte count (up to 49 thousands/µl). Chest X-ray and ultrasound confirmed right sided pneumonia complicated by lung abscess and pleural empyema.

She underwent right thoracoscopy with lung decortication and broad-spectrum antibiotic therapy. In the second week of treatment she developed hypertension and edema.
Urinalysis revealed microscopic hematuria. Estimated creatinine clearance decreased by 40%.
Serum complement level was normal. Antistreptolysin O titer was 1600 IU/ml.
Treatment with furosemide was started.

On the 20th day she presented with severe headache, vomiting, focal seizures and impaired consciousness, with postseizural unilateral muscle weakness.
In diffusion magnetic resonance imaging (MRI) parieto-occipital injury was suspected.
Computed tomography angiography of the head was normal.

After conservative treatment, she presented with complete regression of neurological symptoms and pathological changes in the control MRI. Diagnosis of PRES due to acute poststreptococcal glomerulonephritis (PSGN) and serious bacterial infection was stated.

After observational period and specialistic consultations, the patient was discharged in good general condition and remains under ambulatory care.

Our report presents a rare case of PRES due to complications of scarlet fever. We suspect hypertension in the course of PSGN and serious infection to be key predisposing factors in this patient. Rapidly developing neurological symptoms with complete regression and typical MRI findings are consistent with the literature for PRES.

Multivariate analysis of factors determining number of top performances in short, middle- and long-distance running by sport gender categories

Authors: Jelena Jaksic, Lukas Libric, Ozana Jaksic; Supervisor: Dora Dragcevic MD
Domain: Sport medicine
Subdomain: Sport medicine
Abstract:

Background:
Sports performance and results progression are closely related to advances in the knowledge of human physiology and sports science leading to better training and results. However, number of factors may also influence results such as doping abuse and efficacy of antidoping, major competitions (Olympics) as well as regulations regarding eligibility for competition in women category (testosterone levels).

Methods:
We have analyzed the number of top performances per year in the world (www.alltime-athletics.com) in men and women from 2006 to 2022 in disciplines with different physiologic requirements: 100m, 800m and 5000m running. Top performances were determined based on cut-off times covering around 200 top all-time performances. We have performed multivariate analysis evaluating impact of years with Olympic games, implementation of athlete's biological passport modules (ABP), testosterone regulations and COVID-19 pandemic on the number of top performances.

Results:
In multivariate analysis for men model was significant for 100m (R2 0.65, $p<0.05$, positive influence Olympic year and COVID-19 era), for 800m (R2 0.66, $p<0.05$, positive influence Olympic year and ABP implementation). In women model was significant for 100m (R2 0.90, $p<0.05$, positive influence of Olympic year and COVID-19 era, while negative influence of onset of COVID-19 pandemic) for 800m (R2 0.76, $p<0.05$, positive influence Olympic year, time progression while negative influence testosterone limitation). For 5000m model was not significant in both genders.

In conclusion, our results show that Olympic year and COVID-19 era significantly influence number of top results in short and middle-distance categories. However, these factors are compound and may incorporate many other factors influencing performance directly or indirectly. Testosterone regulations in women category significantly influence number of top performances only in middle distance discipline. Further studies are warranted in this interesting field at the crossroads of human physiology/endocrinology, sport science, antidoping and sports regulations.

ENDOPROSTHETICS OF THE SHOULDER JOINT USING ADDITIVE TECHNOLOGIES

Author(s): Anzor M. Bairamkulov, Yekaterina P. Tychina
Domain: Surgery
Subdomain: Traumatology
Abstract:

The aim of this study is to introduce the case of a 54-year-old male patient with deforming osteoarthritis who was hospitalized at Sechenov University Hospital. From the age of 51 he complained of a constant pain and was diagnosed with 3rd stage deformation osteoarthritis. A physical examination showed combined contracture of the shoulder joint and hypotrophy of the deltoid muscle in the right shoulder. The patient suffered from severe pain and a decrease in range of motion, leading to a reduction in quality of life. VAS (visual analogue scale): 90; SF-36 (short form 36): 20%; UCLA (University of California, Los Angeles): 22. Computer tomography detected a significant reduction in the surface area of the glenoid fossa of the scapula. A concept and 3-dimensional templates were developed to create a support platform for the glenoid. An exact copy of the scapula helped evaluate the patient's pathological anatomy. It was decided that additive technologies should be used due to the absence of a support platform for the glenoid. An individual-design titanium implant was used for the endoprosthesis. As a result, the retroversion of the shoulder head and the introversion of the glenoid were restored, and the functions of the right shoulder joint were resumed with the desired amplitude and volume of movements. Results of the patient's scales after 12 months: VAS: 0; SF-36: 85%; UCLA: 100. The use of additive technologies allowed for the restoration of the supporting surface for the placement of a shoulder prosthesis. This procedure restored the function of the shoulder joint, significantly improved the patient's quality of life, reduced the pain syndrome, and restored the volume in all parts of the deltoid muscle. We demonstrated the potential of this method and the effectiveness of a modern personalized approach. [1,2,3]

Uncommon neonatal hiatal hernia with an unexpected post-operative complication: Case report

Author(s): Amrita Devi M, K.T. Sreekanth, Koruth.V. Samuel
Domain: Internal Medicine
Subdomain: Pediatrics
Abstract:

Introduction:
B/o JM, a newborn female baby, presented with respiratory distress and tachypnoea. On examination, nasal flaring with an oxygen saturation of 88% on room air was found which was indicative of respiratory distress. There was also presence of a scaphoid abdomen. On auscultation, there was decreased air entry on the left side of the lung with the presence of bowel sounds.

Case history:
Evaluation of a newborn presenting with respiratory distress and tachypnoea revealed a type 4 hiatal hernia, with the entire stomach herniating into the thorax. Emergency laparotomy was performed in which the hernia was reduced, the sac excised, and Toupet fundoplication performed. Postoperatively, the newborn was weaned off oxygen by day 2, and enteral feeding resumed. She was discharged on day 20 with a monthly follow-up. At the 3-month follow-up, the patient presented with recurrent vomiting and lethargy. On evaluation, she was found to have diaphragmatic eventration with adhesive intestinal obstruction. Following adhesiolysis and plication of the left hemidiaphragm, the baby was discharged symptom-free and without reflux disease.

Investigations:
Chest radiograph revealed herniation of the entire stomach into the thorax with a mediastinal shift to the right. Upper gastrointestinal contrast study revealed the presence of a paraesophageal hiatal hernia with the stomach protruding into the left hemithorax.

Treatment:
Surgical management was done for hiatal hernia in which emergency laparotomy was performed in which the hernia was reduced, the sac excised, and Toupet fundoplication performed. Complete excision of the hernial sac is crucial for obtaining an adequate length of the intrabdominal esophagus and mobilization of the stomach.
Plication of the left hemidiaphragm with adhesiolysis for adhesive intestinal obstruction was performed for eventration of the diaphragm.

Discussion:

Hiatus hernia is a rare condition in children, which can be either congenital or acquired. The underlying pathology is believed to involve laxity of the ligamentous attachments of the stomach and a deficient hiatus. Postnatally, type 4 hiatus hernia often manifests with prominent respiratory symptoms such as recurrent pneumonia and dyspnoea. In the presented case, tachypnoea and respiratory distress were observed from birth.

It is important to note that acquired eventration of the diaphragm following hiatus repair is not reported. In this specific case, it was speculated that weakness in the diaphragm may have developed postoperatively due to tight closure of the crura.

Type 4 hiatus hernia requires emergency surgery. Close follow-up is crucial to detect and manage potential complications. Regular assessments and imaging aid in early detection and intervention, optimizing patient outcomes.

‘Acute tubulointerstitial nephritis – a rare complication of urothelial cancer immunotherapy – a case report’

Author(s): Piotr Tyburski, Jędrzej Sikora, Miłosz Miedziaszczyk, Ilona Idasiak-Piechocka MD PhD (tutor)
Domain: Internal medicine
Subdomain: Nephrology
Abstract:

Introduction:
64-year-old male presented to the Nephrology Department in January 2023 with acute kidney injury indicators and pyrexia. The symptoms had persisted for several days before. Physical examination revealed xerosis and softened alveolar murmur.

Case history:
The patient suffers from high-grade papillary urothelial carcinoma. Transurethral resection of bladder tumour (TURBT) was performed twice (September and November 2022) and followed by intravesical Bacillus Calmette-Guerin (IVBCG) immunotherapy in January 2023 – two days before the symptoms occurred. The latest follow-up cystoscopy excluded the recurrence of the cancer.

Investigations:
Laboratory tests displayed hyperkalaemia, hypercreatininemia (12,14mg/dl), decreased Glomerular Filtration Rate (GFR = 4ml/min/1,73m2), hyperuremia, elevated C-reactive protein, and acute metabolic acidosis. Urinalysis showed proteinuria (900mg/24h), leukocyturia, and massive erythrocyturia (20402,7 per microlitre). Renal ultrasound demonstrated slight bilateral renal enlargement.

Treatment/results:
The patient was identified with acute tubulointerstitial nephritis (ATIN). The treatment involved intravenous methylprednisolone (250mg every 2 days three times and 125mg every 2 days next four times), followed by oral methylprednisolone (24mg and 12mg daily alternately for a week). Piperacillin and tazobactam, probiotics, and proton pump inhibitors were also administered. Hemodialysis was conducted three times. Significant improvement was observed two weeks after the admission: creatinine dropped to 2,04mg/dl, and GFR increased to 33ml/min/1,73m2. The patient was discharged with a recommendation to reduce the dose of glucocorticosteroids and continued in the outpatient clinic.

Discussion:
IVBCG is considered the most optimal follow-up therapy for high-risk urothelial cancers. The mechanism of IVBCG is based on the infection of urothelial cells by BCG followed by the induction of an immune response (1). IVBCG can cause ATIN by infiltrating renal tubules and interstitium by inflammatory cells (2) (3) (4). Due to the risk of developing ATIN during IVBCG therapy, monitoring of serum creatinine is recommended (5).

PELIOSIS HEPATIS MIMICKING NEOPLASM

Author(s): Zuzanna Wojtczak, Francesco Rizzetto MD
Domain: Radiology
Subdomain: Radiology
Abstract:

Peliosis hepatis(PH) is a rare condition characterized by the gross appearance of multiple cyst-like, blood-filled cavities within the liver parenchyma. It has been related to a variety of settings and the clinical presentation is non-specific. The imaging appearance is difficult to differentiate and may be mistaken for neoplasms, hypervascular metastases, abscesses.

A 68-year-old woman diagnosed with undifferentiated connective tissue disease and fibromyalgia was referred to the Niguarda Hospital(Milan, Italy) for evaluation. Her abdominal ultrasound showed enlarged liver with markedly inhomogeneous echostructure and presence of multiple hypoechoic nodular lesions; the largest in segment IVb(27x12mm) and in segments V-VIII(26x20mm). CT confirmed the presence of nodular hypervascular structures visible only in the arterial phase, isodense with respect to the parenchyma in the portal venous and delayed phases. Laboratory examinations excluded abnormal liver function and viral hepatitis B or C. The results of blood coagulation and tumor markers(AFP, CA19.9, CEA, CA125, CA15.3, NSE) were within normal ranges, except for chromogranin A(7x elevated). A neuroendocrine tumor was suspected, so a liver biopsy was performed. The histological examination showed variable-sized, blood-filled cystic spaces with focal necrosis and the diagnosis of PH was made. The condition was attributed to chronic oral contraceptive use and intake of azathioprine; the medication was withdrawn. The chromogranin value could be explained by the chronic intake of a proton pump inhibitor. The follow-up was scheduled.

Since PH may culminate in spontaneous hemorrhage and thus be a life-threatening condition, it should always be kept in mind as a differential diagnosis of atypical hypervascular hepatic lesions. Due to the presence of various diseases with similar characteristics and non-specific radiological findings, it is almost impossible to carry out a differential diagnosis. To avoid inappropriate treatment, percutaneous liver biopsy can be performed with caution for the conspicuous vascularization.

A RARE CASE OF RETROPERITONEAL PARAGANGLIOMA DIAGNOSED IN PREGNANCY

Author(s): Zuzanna Wojtczak, Michał Lipa MD PhD
Domain: Surgery
Subdomain: Obstetrics and gynaecology
Abstract:

Pheochromocytomas and paragangliomas(PPGLs) are vascularized tumors derived from adrenomedullary chromaffin cells or extra-adrenal neural crest cells. PPGLs are rarely diagnosed throughout the pregnancy and occur in 1 out of 54 000 pregnancies. As their clinical manifestations depend on the location, size and hormonal secretion, they remain a challenge to diagnose and treat. Approximately 40 cases of paragangliomas in pregnancy were reported and best to our knowledge this is the first one regarding a non-functional retroperitoneal paraganglioma diagnosed in pregnancy.

A 27-year-old primigravida was referred to the 1st Department of Obstetrics and Gynecology MUW at 15-16 weeks of gestation(WG) due to suspicion of the uterine mass, most likely a fibroid. The referral ultrasound revealed a single fetus in a cephalic position with normal anatomy, normal uterine myometrium and ovaries. A vascularized mass with dimensions corresponding to 10.24 x 6.47 x 9.80 cm, located in the paraaortic retroperitoneal space was identified. Subsequent MRI confirmed the diagnosis. Due to the unknown type of the tumour and significant growth patient underwent a laparotomy at 22WG with a complete excision of the tumour. Pathological examination revealed a paraganglioma. Further course of the pregnancy was unremarkable- at 38WG patient delivered vaginally a healthy neonate 2740g/51cm, Apgar score 10/10.

Since paragangliomas during pregnancy are such a rare finding, current management strategies are based on case reports and expert opinions. Early diagnosis, treatment in a referral center and individual approach remain essential to improve perinatal outcomes. Before 24WG a laparoscopic approach may be a first choice, however patients affected with prominent tumors shall undergo laparotomy due to technical limitations. Tumor excision shall not affect the method of the delivery- caesarean section and vaginal delivery are possible. In patients diagnosed with PGLs in the third trimester the treatment shall be administered after the delivery.

Gastric perforation secondary to intentional ingestion of foreign bodies, a rare cause of Acute Abdomen.

Author(s): Wai Ho Chui, Fayez Fahal, Ivan Petkov Novakov
Domain: Surgery
Subdomain: General Surgery
Abstract:

Introduction:
A case report on a 25-year-old male patient by the initials L.V.D was presented to the emergency department with intense abdominal pain and involuntary guarding due to intentional ingestion of foreign bodies.

Case history:
We report a 25 years old male prisoner who was presented to our emergency department with abdominal pain complaints. Generalised abdominal tenderness and guarding were established on physical examination. The patient had intentionally ingested foreign bodies in the aim of a respite from prison not due to suicidal ideation.

Investigations. Treatment:
After initial resuscitation, abdominal x-ray imaging identified multiple metal objects of varying size and shape as well as subdiaphragmatic free air. An emergency exploratory laparotomy was performed and perforation of the stomach by sharp metal objects was established. Upon opening the stomach, six rusted objects were extracted, these being: three hooks, two small jig-saw and a bradawl with a wooden handle.

Discussion:
This case is curious due to the circumstance of how these different sharp and large foreign bodies passed into the stomach without any complications on the upper gastrointestinal tract and how the foreign bodies resided in the stomach for such a long period of time without earlier complications. Since intentional ingestion of sharp foreign bodies are rare, we aim to explore the complications of gastric perforation. In addition, we seek to confirm if acute abdomen, secondary to foreign body ingestion, has a demographic association, owing to its rarity as a condition as this may provide a useful differential diagnosis in acute peritonitis.

Keywords:
Foreign bodies, stomach, gastric perforation

Cornea verticillata as a rare complication of chloroquine toxicity - case report

Author(s): Emilia Babula, Natalia Winiarska, Katarzyna Samelska MD PhD, Justyna Izdebska MD PhD
Domain: Internal medicine
Subdomain: Ophthalmology, Rheumatology
Abstract:

Emilia Babula, Natalia Winiarska
Katarzyna Samelska MD, PhD, Justyna Izdebska MD, PhD
Department of Ophthalmology, Faculty of Medicine, Medical University of Warsaw

Chloroquine is commonly used in protozoal diseases and their prevention. Additionally, it has an application in dermatology and rheumatology as an anti-inflammatory agent in collagenosis, rheumatoid arthritis or lupus erythematosus [1].
The 62-year-old female patient was referred to the Ophthalmology Clinic for diagnosis of corneal lesions detected incidentally during a follow-up examination 6 months after starting treatment with chloroquine for rheumatoid arthritis.
The slit-lamp exam revealed bilateral deep epithelial opacities, not occupying the stroma. Confocal microscopy (Confoscan 4, Nidek) showed bilateral hyperreflective circular opacities in the deep layers of the corneal epithelium.
Due to other side effects, the rheumatologist decided to discontinue treatment with chloroquine. After 6 months, the patient appeared for a follow-up visit. The corneal lesions had partially withdrawn, cornea verticillata had not completely resolved, and visual acuity remained normal for distance and near.
Cornea verticillata is typically characterized by bilateral grayish or golden lines opacities in typical vortex shape, mainly in the lower segments of the corneal epithelium, without covering the corneal stroma [2]. It is most often associated with taking amiodarone. Discontinuation of medication results in partial or, in some cases, complete withdrawal of changes. Differential diagnosis should consider corneal toxicity, epithelial basement membrane dystrophy (EBMD) or Meesmann corneal dystrophy. Moreover, chloroquine can lead to permanent loss of visual acuity due to maculopathy, which is irreversible [3]. Therefore, we should consider eye side effects when treating systemic diseases and recommend screening tests. Baseline ophthalmic examination should be performed on all patients before initiating the use of chloroquine.

Transcatheter aortic valve implantation (TAVI) via common carotid artery with a regional anaesthesia

Author(s): Ewa Kwiatkowska, Michał Okarski
Domain: Internal medicine
Subdomain: Invasive cardiology
Abstract:

Transcatheter aortic valve implantation (TAVI) is a worldwide procedure which has changed the fate of patients who have been disqualified from surgical aortic valve replacement (SAVR). The most common TAVI is via femoral access, which is not possible to perform in every case. Therefore, we need safer alternative accesses for TAVI. In this case, we used carotid access with a superficial intermediate cervical plexus nerve block instead of general anaesthesia.
A 74-year-old woman who is a high-risk patient with severe valve stenosis – AVA (aortic valve area) 0.7cm2, chronic heart failure with preserved ejection fraction and multimorbidity was admitted to the hospital for a TAVI procedure. The patient was under immunosuppression after kidney transplantation and suffered from a neurological deficiency in the upper limbs caused by spinal cord compression fractures C2-C4.
Due to iliac atherosclerosis found in a preprocedural CT-angio scan, the patient underwent TAVI through the right internal carotid artery access. An intermediate cervical plexus nerve block was performed under ultrasound guidance. The block involved injecting 1% lignocaine and 0.25% bupivacaine between the superficial fascia of the neck and the prevertebral fascia on the right side at the C4 level. Preemptive analgesia was achieved with intravenous paracetamol.
The TAVI procedure was successful, with no complications reported during the perioperative period.
Carotid access is an excellent alternative for femoral one. According to the studies comparing both of them, there were no significant important differences (measured by p-value)between the outcome and side effects between both accesses. Also, the use of an intermediate cervical plexus nerve block in TAVI allowed for effective analgesia and minimized the risks associated with general anaesthesia in high-risk elderly patients with severe aortic valve stenosis and cervical spine injuries. The successful procedure highlights the importance of personalized access and anaesthetic management in complex cases

NEUROMYELITIS OPTICA: A CASE REPORT

Author(s): Amrita Devi M, Elsha Shaji, Krishnan Balagopal S
Domain: Internal medicine
Subdomain: Neurology
Abstract:

INTRODUCTION:
Neuromyelitis Optica (NMO) or Devics Disease is an inflammatory demyelinating disorder of the central nervous system involving the neurons of the optic nerve and the spinal cord [1]. It is seen more commonly in females and follows a relapsing clinical course in more than 80 percent of cases [2]. A 30-year-old female ND, presented with features of cervical myelopathy and was later found to have Neuromyelitis Optica.

CASE HISTORY:
A 30-year-old female with no prior comorbidities presented with slowly progressive intermittent numbness of all four limbs since one month. It initiated in the lower limbs and progressed till below the neck involving upper limbs.
Further clinical examination revealed evidence of spasticity in both lower limbs along with bilateral extensor plantar responses, exaggerated deep tendon reflexes, in all four limbs, ankle clonus and normal cranial nerve and sensations. Motor examination showed distal weakness of right upper limb with difficulty in gripping objects. Lhermitte's sign was positive. Clinical localisation was to the cervical spinal cord. There was no weakness of lower limbs. There was no history suggestive of cranial nerve, bladder, and bowel involvement. There was also no headache, vomiting or significant episodes in the past.

INVESTIGATIONS:
MRI of the cervical spine showed a long segment hyperintensity involving the cervical cord extending from the cervico- medullary junction to the lower border of C5. This was in keeping with Longitudinally Extensive Transverse Myelitis (LETM) which was characteristic of demyelination secondary to NMO. There was peripheral enhancement on contrast. MRI of the brain was normal. Serum NMO /Aquaporin antibody was strongly positive, suggestive of NMO. CSF analysis showed raised proteins which is suggestive of an inflammatory process with normal cells. ANA (antinuclear antibody) testing was strongly positive.

TREATMENT:
A final diagnosis of NMO was made and she was given intravenous pulse dose of steroids followed by a long taper of oral steroids. In view of antibody positivity, she was started on long term immune modulation with Mycophenolate . She had complete clinical improvement with the same. Repeat imaging after three months showed resolution of the lesions.

DISCUSSION:

The differential diagnoses for this case of cervical myelopathy were demyelination and intramedullary spinal cord neoplasm. Investigations were consistent with demyelination secondary to NMO. NMO is an important cause of cervical cord demyelination in young females[3]. Long segment involvement of the cord is a characteristic feature. Early diagnosis and treatment lead to good outcomes. Long term treatment may be needed due to relapsing course.

ECG PATTERNS IN CHRONIC OVERLOAD OF RIGHT VENTRICLE WITH DIFFERENT UNDERLYING MECHANISMS

Author(s): Maria Smorąg; Co-authors: Natalia Bukała, Natalia Kachnic, Marianna Zygmunt; tutors: Marcin Waligóra MD PhD, Jakub Stępniewski MD PhD, Grzegorz Kopeć MD PhD

Domain: Internal Medicine
Subdomain: Cardiology

Abstract:

Chronic right ventricle (RV) overload results in its different adaptation whether it is volumetric (right ventricle dilatation – RVD) or pressure (right ventricle hypertrophy – RVH). However, little is known which ECG patterns are associated with different underlying mechanisms. Therefore, we assessed if chronic setting of a RV pressure and volume overload result in different ECG patterns.

We analyzed 176 patients with pulmonary arterial hypertension (PAH) and 25 with isolated tricuspid regurgitation (iTR) diagnosed between 2008 and 2021, who underwent right heart catheterization.

The following ECG criteria of RVH were more frequent in PAH than in iTR: RV1>6mm (23,4% vs 4%, p=0.03); R:SV1>1 (42.2% vs 20%, p=0.02), (RI+SIII)–(SI+RIII)<15mm (97.7% vs 92%, p=0.03), maxRV1,2+maxSI,aVL–SV1>6mm (69.1% vs 36%), PII>0,25mV (86.3% vs 24%, p<0.001), S>R in I (60.6% vs 24%, p=0.007), presence of SI and QIII (48% vs 24%, p=0.02). They remained significant when PAH patients were matched to iTR in terms of presence of severe TR, RVD and age. ROC analysis identified useful predictors of PAH in the setting of severe TR and RVD: RV1>4,5mm (AUC 0.79, sensitivity 52%, specificity 92%, p<0.001), R:SV1>1 (AUC 0.8, sensitivity 76.5%, specificity 75%, p<0.001), SV5>5mm (AUC 0.67, sensitivity 83.3%, specificity 48%, p=0.03), RV5,6 ≤6 (AUC 0.67, sensitivity 83.3%, specificity 48%, p=0.03), R:SV5 to R:SV1≤0.96 (AUC 0.81, sensitivity 82.4%, specificity 68.7%, p<0.001), (RI+SIII)–(SI+RIII)<-4.5mm (AUC 0.86, sensitivity 76%, specificity 87.5%, p<0.001), maxRV1,2+maxSI,aVL–SV1>3mm (AUC 0.76, sensitivity 96%, specificity 60%, p<0.001), RV1+SV5,6>12 mm (AUC 0.72, sensitivity 60%, specificity 80%, p=0.003).

RVH criteria are rarely met in iTR as compared to PAH. We identified that maxRV1,2 +maxSI,aVL–SV1>3mm is sensitive for PAH, while RV5,6 ≤6 mm is specific for PAH absence in the setting of RVD and severe TR. Criteria based either on S wave or R to S ratio are more prevalent in PAH patients with RVD.

The Complex Medical Journey of a Kidney Transplant Patient: A Patient's "Odyssey"

Author(s): Michail Koutentakis, Maciej Kosieradzki
Domain: Surgery
Subdomain: General Surgery
Abstract:

Introduction
This case report presents a 63-year-old male patient who received two kidney transplants to address end-stage kidney disease resulting from IgA and BKV (BK virus) nephropathy [1,2] in the course of Autosomal Dominant Polycystic Kidney Disease (ADPKD) [3]. It outlines the patient's journey through different diagnoses, treatments, and recovery phases, accompanied by fluctuations in parameters, such as creatinine levels.

Case History
In 2015, the patient underwent delayed kidney transplantation to alleviate end-stage renal failure caused by IgA nephropathy [1] associated with ADPKD [3]. Subsequently, he faced a diagnostic challenge when presenting with diverticulitis, characterized by diarrhea, abdominal pain, and low-grade fever [4]. Hospital admission prompted antibiotic administration, oral rehydration therapy, and the incidental development of drug-induced leukocytosis. The patient further encountered comorbidities such as atherosclerosis, infections, stroke, prostatic hyperplasia, as well as vascular abnormalities including narrowing of the lower artery of the transplanted kidney and an aneurysm of the right iliac artery. In 2021, the patient had preemptive kidney re-transplantation in the setting of BKV nephropathy [2].

Investigations
Pathological assessments revealed acute cellular rejection following the patient's second preemptive kidney transplantation, necessitated by the BK virus [2]. Simultaneous investigations detected leukocyturia, erythrocyturia, and a concomitant COVID-19 infection.

Treatment/Results
In response to elevated inflammatory markers, the patient's immunosuppressive therapy was tailored accordingly, complemented by antibiotic therapy and monitoring. Strategic modifications to the patient's immunosuppressive regimen and continued administration of antibiotics led to improvement in his clinical condition. The patient was then discharged home, representing a vital step in his ongoing medical management.

Discussions/Differential Diagnosis
This case highlights the complex medical challenges encountered by a patient with two kidney transplants, encompassing transplant-related complications and a spectrum of medical complexities. It emphasizes the significance of modifying immunosuppressive therapy and the need for close monitoring, and ongoing medical management to optimize outcomes for individuals with end-stage renal disease.

Correlation of Instagram addiction with symptoms of depression

Author(s): Ema Sabotic, Rafet Sabotic, Ajsa Sabotic MD, Vanja Sojanovic MD
Domain: Internal Medicine
Subdomain: Psychiatry
Abstract:

Introduction:
Instagram is a social network with great popularity and even greater addictive potential, especially among young people. Previous studies suggested that associations between most behavioral addictions and depression are strong and relatively non-specific. Nevertheless, the number of studies that researched the correlation between Instagram addiction (IA) and psychiatric disorders is very low.

Aim:
The aim of our research was to analyze correlation of Instagram addiction and symptoms of depression.

Material and Methods:
256 students of Medical high school in Berane participated in the research (81.9% female; mean age 15.99 ± 1.35). The following questionnaires were used: general questionnaire for socio-demographic data; Instagram Addiction Scale (IAS); Depression Anxiety Stress Scales – 21 (DASS-21). We used Depression subscale. Mann-Whitney test and Spearman's rank correlation coefficient were used for numerical and correlation description.

Results:
The average score on IAS was 33.21 ± 8.61. 21,6% met the criteria of Instagram addiction. There was not a statistically significant difference according to gender. The most frequent activity of respondents was looking the photos of others. On average, our respondents spend 2.31 ± 1.85 hours on Instagram. All activities on Instagram were in a statistically significant positive correlation with the IAS score. The strongest correlation is with "How many hours daily you spend using Instagram?", ($r_s = 0,385$, $p < 0,05$). However, the activity that caused the most increased levels of depression (DASS – 21) was "I am watching live streams of others" ($r_s = 0,251$, $p < 0,05$). Correlation between these two scales was $r_s = 0,441$, $p < 0,05$.

Conclusion:
Our results were expected because all Instagram activities are possible factors for addiction development and there is a positive correlation between Instagram addiction and increased levels of depression.

Keywords:
Instagram, depression, behavioral addiction, IAS scale, DASS – 21 scale

Self-inflicted craniocerebral gunshot wound: a case report and clinical management

Author(s): Victor Synowiec, Olaf Majewski, Jakub Woźniak
Domain: Surgery
Subdomain: Neurosurgery
Abstract:

Introduction:
Brain injuries caused by gunshots present a significant challenge in both civilian and military settings. Due to their complex nature and potential for devastating neurological consequences (such as increased intracranial pressure, neuroinfection and possibility of herniation) operations on these patients have high mortality rate and require exceptional planning.

Case report:
A 22-year old male was admitted to ER with a gunshot entry wound on the left side and no exit wound. Despite that he was in good general condition and had no signs of head injury. He was diagnosed with Craniocerebral Gunshot Injury with a mild course and at the time no neurological deficits. Patient during his hospitalization was apathetic and depressed, but these symptoms had occurred before the gunshot and correlated with his general psychiatric state. During his 1-month stay in the neurosurgical ward he was monitored for possible neuroinfections or developing epilepsy, but after this time he was released.

Investigations:
Computed tomography revealed the bullet's path and fragment resting in the right middle cranial fossa and showed no sign of bleeding or increased intracranial pressure.

Treatment:
Patient underwent two-stage surgery that included debridement of entry wound and local brain tissue on the left side and bullet removal on the right side.

Discussion:
Lack of clear guidelines in this type of injuries forces medical professionals to act by means of retrospective studies and case reports. This requires an individual approach to each case from the managing physician, because even patients with extensive damage in CT can have no neurological symptoms.

BETWEEN LIFE AND DEATH: THE DISSECTING ANEURYSM OF THORACIC AORTA (TAAD) WITH ENDOLEAK (EL) TYPE 1A AS A POSSIBLE COMPLICATION OF ENDOVASCULAR ANEURYSM REPAIR (EVAR)

Author(s): Zofia Głowniak, Aleksandra Kaczmarek, Damian Prus, MD PhD Jerzy Leszczyński; MD PhD Rafał Maciąg; Professor MD PhD Zbigniew Gałązka
Domain: Surgery
Subdomain: Vascular surgery
Abstract:

Introduction:
WS - a 46-year-old man. History of gout, COPD, obesity and emphysema. He presented anatomical variability: right aortic arch with an aberrant left subclavian artery.
Case history: WS was admitted to the hospital for an advised repair of TAAD, as a result of stent implantation into thoracic aorta in 2013.

Investigations:
Dissecting aneurysm of thoracic aorta with endoleak type Ia.

Treatment:
The solution involved two stages. 1st operation consisted of debranching the aortic arch and creating a bypass between left and right common carotid artery (LCCA and RCCA). The 2nd stage was performed 2 weeks later. The right brachial artery, left superficial temporal artery and were punctured. The stent (type arch branch COOK with 2 branches to RCCA and left subclavian artery (LSA) was implanted to the aortic arch. Laser fenestration of the stent was performed to right subclavian artery, followed by balloon-covered and self-expanding stent. The thoracic stent was implanted to distal part of the descending aorta (DA). The BeGraft stent was implanted via femoral access to RCCA. The self-expanding stent was implanted to RCCA. The two aortic BeGrafts and two self-expanding Zilver stents were implanted via femoral access to LSA. Arteriography confirmed procedure effectiveness. Major postoperative complications including pericardial tamponade and respiratory insufficiency occurred. CT revealed an aneurysm of the DA, dissection of the abdominal aorta and occlusion of the right bronchus. A lifesaving operation took place. A thoracotomy performed through the 5th intercostal space allowed to remove the 17 mm thoracic aortic aneurysm. Aneurysmorrhaphy was performed. After a month he was discharged in stable condition, qualified for in-home respiratory therapy.

Discussion:
Multiple guidelines recommend follow-up imaging after EVAR to treat e.g. aortic complications. Early detection and treatment are crucial to prevent setbacks and improve results. It is worth mentioning that personal approach to each case is recommended.

Unraveling Rare Radiological Findings in a Stroke Mimic Case: Cytotoxic Lesion of the Corpus Callosum

Author(s): Kaja Zdrojewska, Dominik Wróbel, Paweł Wrona
Domain: Internal Medicine
Subdomain: Neurology
Abstract:

Introduction:
28-year-old male was admitted to the Neurology Department with sudden-onset speech disturbance, characterized by a complete absence of speech with intact comprehension. The symptoms had been present since the morning of admission. Four days prior, the patient had developed upper respiratory tract infection symptoms (URTI), including a fever of 39 degrees Celsius, followed by a low intensity diffuse tension headache.

Case History:
Upon admission to the Emergency Department, the Acute Ischemic Stroke (AIS) was suspected. Neurological evaluation using the National Institutes of Health Stroke Scale (NIHSS) yielded a score of 5 points due to the observed mutism. The patient's medical history was unremarkable. The Computed Tomography (CT) did not demonstrate any abnormalities. The patient was diagnosed with AIS, received intravenous thrombolysis and was transferred to the Stroke Unit for further evaluation. Notably, the patient’s neurological symptoms resolved completely one day after admission.

Investigations:
Magnetic resonance imaging (MRI) showed a non-ischemic, high T2 signal lesion within the splenium of the corpus callosum, exhibiting restricted diffusion and no contrast enhancement - radiological features consistent with cytotoxic edema, characteristic of cytotoxic lesions of the corpus callosum (CLOCC).

The only abnormality revealed in the Cerebrospinal fluid (CSF) analysis was a mild leukocytic pleocytosis (12 cells/µl).

Results
Diagnosis of the CLOCC associated with a preceding URTI is most likely.

Discussions
CLOCC is an inflammatory disorder caused by various etiologies that can mimic many common neurological conditions. This case highlights the importance of considering stroke mimics (SM) such as CLOCC in the differential diagnosis of patients presenting with stroke-like symptoms, as SM can be a cause of observed findings in around 20% of patients with the initial AIS diagnosis. The correct diagnosis is crucial to ensure appropriate management and prevent unnecessary interventions associated with stroke treatment.

A Medical Milestone: The First Laparoscopic Sleeve Gastrectomy on a Patient with Obesity and ADCY5-Related Dyskinesia

Author(s): Michail Koutentakis, Radosław Cylke
Domain: Surgery
Subdomain: General Surgery
Abstract:

Introduction:
Despite the widespread availability of various conservative obesity treatment programs, long-term success remains elusive for many individuals. Bariatric and metabolic surgery (BMS) has emerged as a viable option for those with morbid obesity, with an increasing number of patients deciding on this kind of treatment.

Case History:
A 49-year-old female with a history of hypertension, diabetes mellitus type 2, drug-induced obesity with a BMI of 43, hypercholesterolemia, familial chorea, and depression.

Investigations:
The patient was referred to the Department of General and Transplant Surgery in 2022 and was assessed with a weight of 120 kg, a height of 1.67 cm, and therefore a BMI of 43. No other pathological evaluations were made.

Treatment/Results:
Following the necessary clearances from the neurologist, cardiologist, anesthesiologist, and psychologist, the patient was qualified for the BMS. After laparoscopic sleeve gastrectomy, the patient experienced no complications and reduced her weight by 14 kg in a month. Despite the initial success of the operation, the patient regained most of the weight due to modifications of the neurological treatment.

Discussion/Differential Diagnosis:
To our knowledge, this is the first described case of a patient with ADCY5-related dyskinesia who underwent BMS. Most importantly this case report highlights the importance of considering a patient's medical history when selecting an appropriate bariatric surgical procedure. Understanding the factors that contribute to the success of BMS is essential for healthcare professionals to optimize patient outcomes and improve the quality of life for individuals with morbid obesity.

Unusual Machete injury – case report

Author(s): Olaf Hajnus; Tutors: Jarosław Brudnicki MD PhD.
Domain: Surgery
Subdomain: Orthopedy
Abstract:

Introduction:
In the early 2000s, Cracow witnessed an increase of gangs being formed by local football psychofans, leading to a rise in gang-related violence. Often dangerous weapons were used, with machetes being particularly prominent. This wave of violence not only affected the gang members themselves but also innocent citizens who occasionally became targets, resulting in severe injuries.

Case report:
65-year-old homeless patient was admitted to the Orthopaedics and Traumatology Department. The patient presented relatively minor machete wounds on the left buttock and a significant laceration on the left lower limb resulting in damage to multiple ligaments and bone structures in the knee joint. RTG imaging revealed foreign body located in the knee, which was later identified as a fragment of cloathing. Additionaly, the patient had a history of alcohol abuse. Surgical intervention involved wound debridement, tendoms and ligaments reconstruction, fixation of bone fragments using screws, successfully restoring limb continuity. On the next day, the patient experienced an episode of alcoholic delirium (AD), during which he re-injured the knee joint by knife. The surgery had to be performed again. The patient was referred to the psychiatric ward for the treatment of Alcohol Withdrawal Syndrome (AWS). Two months after the surgery, the patient regained independent mobility.

Discussion:
Alcohol addiction impacts patient management across various departments. It can lead to the occurrence of AWS, and one of its most dangerous complications AD, which requires early detection and treatment in psychiatric ward. Injuries caused by machete attacks cause reconstructable damage, however, the surgeries are challenging and time-consuming. The development of AD in this case required modifications in the treatment plan and a subsequent surgery, further burdening the patient's health, increasing hospitalization costs, and prolonging the recovery period. Therefore, every homeless patient with multiple body injuries should be taken into consideration regarding the potential development of AWS.

Oral presentations

PRIMARY SPONTANEOUS PNEUMOTHORAX IN CHILDREN - POSSIBLE CORRELATION WITH AIR POLLUTION: 6-YEAR STUDY IN THE CITY OF KRAKÓW.

Author(s): Maciej Preinl, Maria Klimeczek Chrapusta, Zofia Łubniewska, Filip Prochaska
Domain: Public health, pediatrics, pediatric surgery
Subdomain: Pediatric Surgery, Public Health
Abstract:

Introduction:
The aim of the study was to investigate the possible relation between parameters of air polluting particles concentration and occurrence of spontaneous pneumothorax, before and after Anti-smog Resolution in the Kraków city of Poland.

Materials and methods:
This retrospective study included 23 patients admitted to the Department of Pediatric Surgery in Children's University Hospital for spontaneous pneumothorax [SP] from January 2019 to December 2022. The data regarding dates of admission, duration of hospitalization, gender, comorbidities and residential address was collected. We obtained information on air pollution concentration from 8 different measuring stations in Kraków from the Chief Inspectorate Of Environmental Protection website. Months with the significantly higher pollution were chosen. Data was processed in Excel and analyzed using multiple linear regression, an ANOVA analysis was further used due to the limited nature of the dataset.

Results:
Fifteen months had significantly higher air pollution. 12 patients(52%) were hospitalized with SP during those months, remaining 11 (48%) had SP when quality of air was good. Out of 12 patients, 9(75%) were hospitalized before implementing Anti-Smog Resolution at the end of 2019. Since 2020, air quality has improved. Out of 23 hospitalized patients 15(65%) had no respiratory diseases, 4(17%) had allergies, 3(13%) had asthma and 1(4,3%) had a respiratory infection prior to SP. The average R^2 of the multiple linear regression was 0.01. This suggests that 1% of the variance in SP cases was explained by the variance in air pollutants. In any of the cases the R^2 did not exceed 0.2. The F-Statistic of the ANOVA was 0.13 with a significance level of 0.73.

Conclusion:
Our analysis does not show correlation between occurrence of SP in children and increased air pollution.

THE IMAGING DIAGNOSTIC OF DEEP INFILTRATING ENDOMETRIOSIS: OVERCOMING THE ICEBERG EFFECT

Author(s): Lorin-Manuel PÎRLOG, Adela-Diana PITFORODESCHI, Associate Professor Diana FEIER MD PhD
Domain: Surgery
Subdomain: Obstetrics and Gynaecology
Abstract:

Introduction:
Deep infiltrating endometriosis (DIE) is a prevalent health disorder in women. Diagnosis is often delayed due to its concealed nature, leading to the iceberg effect. This study examines the impact of the iceberg effect on DIE diagnosis and explores imaging techniques like transvaginal ultrasound (TVUS) and magnetic resonance imaging (MRI) to improve understanding of diagnostic challenges in DIE.

Materials and Methods:
From PubMed, articles were chosen based on keywords [deep infiltrating endometriosis] and [imaging diagnostic], filtered by [Free Full Text], [Review], and [Last Ten Years: January 2013 - January 2023]. Out of 392 articles, 24 met the criteria, providing information on the diagnostic accuracy evaluation of TVUS and MRI for preoperative detection of pelvic DIE.

Results:
Taking into consideration all the data provided by those studies, TVUS has a sensitivity (Sen) of 0.79 (95% confidence interval (CI) 0.69, 0.89) and a specificity (Spe) of 0.94 (95% CI 0.88, 1.00). MRI has a Sen of 0.94 (95% CI 0.90, 0.97) and a Spe of 0.77 (95% CI 0.44, 1.00). This research also indicates that laparoscopy has similar accuracy to MRI (Sen of 0.94 & Spe of 0.79).

Conclusions:
To sum up, this study revealed a significant factor that worsens and prolongs the diagnosis of DIE. The use of a more specific test, like TVUS as a screening test, along with the reliance on the more sensitive MRI for confirmation, contributes significantly to this issue. Furthermore, the prevalence of this condition ranges from 5% to 25% within some countries, and approximately 50% of diagnosed patients show no symptoms. Combined with the fact that it takes 7 to 10 years to diagnose DIE, a considerable number of patients remain unnoticed by specialists, thus amplifying the iceberg effect.

HYPERTENSION AFTER PEDIATRIC LIVER TRANSPLANTATION

Author(s): Eline Braekman, Agnieszka Prytula, Ruth De Bruyne
Domain: Internal Medicine
Subdomain: Pediatrics
Abstract:

INTRODUCTION

Hypertension and flattening of the nocturnal blood pressure dip are frequently occurring adverse effects of immunosuppressive therapy – mainly tacrolimus – after pediatric liver transplantation. Evidence-based guidelines for diagnosis and management of post-transplant hypertension are scarce. UZGent set up a standard of care protocol in 2017 in order to detect hypertension early and to treat it appropriately. The aim of this study was to evaluate the effect of the new protocol on the blood pressure profile, which was hypothesized to be positive. The current data were also compared to the data of a previous retrospective study.

MATERIALS AND METHODS

The study population consisted of 32 patients who underwent pediatric liver transplantation between July 2003 and August 2018 and who had regular follow-ups at UZGent. Patients who received at least one 24-hour blood pressure measurement between January 2017 and April 2022 were included. Thirty patients (94%) used tacrolimus as an immunosuppressant. The results of 113 ambulatory blood pressure measurements were examined.

RESULTS

At baseline and follow-up after 1, 2, 3 and 4 years, the median z-scores for systolic blood pressure were -0.2285; -0.0349; -0.2595; -0.8396 and -1.0780 during daytime and -0.0286; 0.1202; 0.2128; 0.0000 and -0.5424 during nighttime. The median z-scores for diastolic blood pressure were -0.2435; 0.4810; -0.0783; 0.7741 and 1.6284 during daytime and 0.1649; 0.3889; 0.4592; 1.3154 and 2.5533 during nighttime. Systolic z-scores were higher during nighttime than during daytime and diastolic z-scores too, except for one moment. Diastolic z-scores were higher than systolic equivalents.

CONCLUSION

UZGent achieves a good blood pressure control after pediatric liver transplantation. However, the beneficial effect of the new protocol is less pronounced for diastolic and nocturnal blood pressure. All blood pressure parameters are better than before the introduction of the protocol. The study underpins the importance of regular 24-hour blood pressure measurements and the therapeutic value of amlodipine and lisinopril.

Anatomy of Meyer's loop: scoping review

Authors: Viktoriia Popadynets, Agata Mazurek, Urszuła Durlak
Domain: Preclinical
Subdomain: Neuroanatomy
Abstract:

Anatomy of Meyer's loop: scoping review Authors: Viktoriia Popadynets, Agata Mazurek, Urszuła Durlak Tutors: Prof. Jerzy Walocha Affiliation: Student's Scientific Association of Neuroanatomy, Jagiellonian University Medical College, Krakow, Poland Introduction: Meyer's loop(ML) is the anterior bundle of the optic radiation, which makes up part of the visual pathway. There are different ways to see the ML anatomy, such as anatomic dissection studies, surgical studies, and the MRI imaging technique known as DTI. Current data on ML localization are sparse in the literature. This makes it difficult to understand the exact measures of ML. In this study, we aimed to provide the accurate description of the anatomy and variations of the ML according to data available in the literature. Adequate knowledge of the normal anatomical features and variations of the ML can prevent or at least reduce the severity of postoperative visual field deficits during epilepsy surgery. Materials and methods: We followed PRISMA extension for scooping reviews. In this scooping review, we focused on the three main parameters of the Meyer's loop anatomy and the asymmetry of the left and right hemispheres. A search of MEDLINE, Embase, Scopus, Scielo was made, resulting in 816 studies. Screening was performed using Rayyan. Results: After strict selection, 50 studies were included in qualitative analysis and 25 in quantitative syntheses. We collected information about distance between Meyer loop and temporal pole, tip of the inferior horn and occipital pole. Conclusion: There is individual variability in the exact location, anatomy, size, course of ML. It is important to understand that different methods of visualization of ML have their own limitation. Studies shows differences in results depending on method which was used.

Hiperbaric oxygen therapy (HBOT) as a complementary strategy in glioma treatment – in vitro study.

Author(s): Natalia Hajduga, Katarzyna Jaśkiewicz
Domain: Oncology
Subdomain: Oncology
Abstract:

Hypoxia is a hallmark of glioblastoma, the most aggressive cancer of the CNS. Intratumor hypoxia favours its malignant phenotype manifested by radio/chemio resistance, inhibition of immunological response, stimulation of cells migration, support of glioma stem cells and pathological angiogenesis. Thus, hypoxia seems to be an attractive target for non invasive support for GBM therapy. Up to now, an influence
of HBOT on GBM is still unproven.

This in vitro study aimed to assess the potential effect of HBOT on hypoxia-induced malignant features of three human GBM cell lines.

Experiments were conducted on three human GBM cell lines (1) commercial T98G, (2) de novo patient derived HROG02 and (3) HROG17 recurrent glioma cell line. Cells were cultured in hypoxic conditions (HypoxyLab) that reflected intratumor hypoxia (2.5%) and then were placed in hyperbaric oxygen chamber and/or radiated (10Gy). Following cellular parameters were analyzed: mitochondrial activity/cell vitality (MTT), cell migration (wound healing assay), HIF-1-alfa expression and MMP-2,14 expression (PCR).

The MTT assay showed decrease in all studied groups (HBOT: TG98 - 35,62%, HROG02 - 28,57%, HROG17 - 37,27%; HBOT+Radiation: TG98 - 40,63%, HROG02 - 18,19%; HROG17 - 33,64%) when compared to the control groups. Level of HIF-1-alpha decreased by 41%, 33% and 26% in T98G, HROG02, HROG17 respectively. MMP-2 and MMP-14 expression decreased by over 95% in all studied cell lines. In the wound healing test, the time to close the wound has increased from 35h to 120h, 25h to 100h, 15h to 100h for T98G, HROG02, HROG17 respectively.

HBOT needs further research because as non invasive therapy it might become an important part of GBM treatment reducing its invasive potential and thereby, improving effects of standard therapy applied nowadays.

EFFECT OF PHYSICAL TRAINING ON ARTERIAL STIFFNESS INDEX AMONG UNDERGRADUATE MBBS STUDENTS

Author(s): Shines Mariya Shaji P; Supervisor: Dr. Minu Liz Abraham
Domain: Preclinical
Subdomain: Physiology
Abstract:

INTRODUCTION:
Arterial stiffness is defined as a vascular phenotype caused by the changes in the walls of large arteries resulting from the loss of elasticity over time. It is recognized as an independent and significant predictor of cardiovascular morbidity and mortality & positively influenced by physical activity possibly via improvement of endothelial function.

OBJECTIVES:

1. To determine effect of exercise training on arterial stiffness among Undergraduate MBBS students
2. To determine effect of gender on arterial stiffness among Undergraduate MBBS student

METHODOLOGY:
This is a Cross-sectional Study on 249 MBBS students satisfying inclusion &exclusion criteria. Physical Activity was assessed by International Physical Activity Questionnaire. The pulse volume was recorded by Pulse transducer &Student physiograph. Height was measured. Stiffness Index= height /difference in peaks of pulse wave.
GROUP 1: INSUFFICIENTLY ACTIVE
GROUP 2: ACCEPTABLE
GROUP 3: ACTIVE & HEALTHY
One way ANOVA and Independent sample t-test were performed. The entire analysis was performed using SPSS and EZR software.

RESULT:
There was a statistically significant difference between groups as determined by one-way ANOVA. A Tukey post hoc test revealed that the arterial stiffness scores was statistically significantly higher in group 1 compared to group 3($p=0.014$). There was no statistically significant difference between group 1& group 2($p=0.67$). Study also found there was no statistically significant difference in mean scores of arterial stiffness between male & female ($p=0.411$).

CONCLUSION:
As from the study, majority of the students comes under in the group of insufficiently active with high stiffness index which can lead to complications in mere future. Physically Inactive students are more prone for increased arterial stiffness. This study helped in establishing relationship between the Arterial Stiffness & physical activity and can be established as routine investigation for various heart diseases.

IMPLICATIONS:

The significance of this study is to intervene & mitigate the adverse consequences especially in those who are at low and intermediate risk for cardiovascular disorders by assessing Arterial Stiffness Index. Arterial stiffness should be seen as a complimentary to risk factors including BP measurement and should be considered when making treatment decisions. This study helped in establishing relationship between the Arterial Stiffness and physical activity. It can be established as routine investigation for various heart diseases especially in young adults.

Impact of the visceral fat and abdominal wall thickness in estimating intraoperative technical difficulties in bariatrics - correlational research

Author(s): Izabela Powalacz, Magdalena Pyzik, Bartosz Iwanowski, Jakub Pośpiech, Piotr Panek, Prof. Piotr Major, PhD Piotr Małczak, PhD Justyna Rymarowicz
Domain: Surgery
Subdomain: Surgery
Abstract:

Purpose:
Laparoscopic surgery in obese patients poses additional challenges. It is well known that a high body mass index (BMI) is one of the predicting factors of intraoperative surgical difficulty in abdominal surgery. However, there is a scarcity of research that investigates the influence of adipose tissue distribution on the level of intraoperative difficulties.

Aim:
To recognize the patient's anthropometric factors including adipose tissue distribution, which may correlate with the intraoperative difficulty in bariatric surgery.

Methods:
We performed prospective correlational research among bariatric patients. The following predictor variables were gathered in the database: Age, gender, BMI, and waist-hip ratio (WHR). Ultrasonography measurements of abdominal wall thickness were performed. The percentage of adipose tissue and Visceral Fat Rating (VFR) were gathered from Tanita's measurements. The outcome variable -the difficulty of surgery was assessed using operative time in relation to the median operating time for the surgeon. The data

Results:
56 consecutive bariatric patients were included. 21 (37.5%) patients were classified as a group of patients with intraoperative difficulties and 35 (62.5%) were stratified as a group of patients without intraoperative difficulties. There were no statistically significant differences between the two groups in age, BMI, gender, type of obesity, percentage of adipose tissue, and WHR. The abdominal wall fat thickness measurement was significantly lower (22.27 [IQR 11.73, 35.27] vs. 41.57 [IQR 19.77, 55.29], p = 0.028). and VFR was significantly higher (20.75 (SD 7.93) vs.15.76 (SD 6.81), p = 0.019) in patients with intraoperative difficulties compared to patients without intraoperative difficulties.

Conclusions:
According to our study, body fat distribution and high visceral obesity rate can be considered more adequate predicting factors for intraoperative difficulties than BMI in the bariatric population.

BREAKING BARRIERS AND NURTURING ACCEPTANCE : UNDERSTANDING SCHOOL TEACHERS' KNOWLEDGE AND AWARENESS ABOUT LGBTQ+ COMMUNITIES IN INDIAN CONTEXT

Author(s): Jassal Mathew, Stephina Lizette Sebastian, Dr. Biju Bahuleyan,
Domain: Preclinical
Subdomain: Physiology
Abstract:

Introduction:
India, a country with diverse cultures, has varying attitudes towards LGBTQ+ acceptance. Despite changes worldwide, the social stigma and human rights disparities still persist in India. Among youth, the formative years of upper primary and high school are pivotal for self-discovery. School teachers have a key role in creating a safe and supportive environment for LGBTQ+ students. This study aims to explore the level of knowledge and awareness among school teachers regarding LGBTQ+ communities and their rights, with the ultimate goal of developing strategies to improve teacher education and support for LGBTQ+ students.

Methodology:
This is a cross-sectional study conducted in Kerala, India, which surveyed 255 school teachers aged 23 to 60 years from 17 schools in Thrissur district based on convenient sampling techniques. A semi validated questionnaire was distributed among teachers of high school and upper primary classes. Based on the scores obtained they were categorized as good, average and poor. Chi square test was used for the analysis.

Results:
Among the total respondents 56.5% had average knowledge and 53.7% had poor awareness. Even though most of them have better knowledge, their awareness level was very poor which was statistically significant. Age was found to inversely correlate with knowledge and awareness. On analyzing each knowledge question, it was revealed that while most teachers had knowledge of LGBTQ terminologies, only 36.9% knew the meaning of 'sex'. Among awareness questions, 62.4% of teachers were aware that being LGBTQ+ is not a disease.

Conclusion:
This study highlights the lack of LGBTQ knowledge and awareness among teachers. Introducing Comprehensive Sexuality Education in schools is crucial for a safe environment enhancing LGBTQ youth's well-being and academic outcomes. It is our collective responsibility to ensure all students feel seen, heard, and valued, irrespective of sexual orientation or gender identity.

Cytological characteristics of cerebrospinal fluid in patients with multiple sclerosis

Author(s): Srdjan Stankovic, Nikola Stipic, Masa Todorovic
Domain: Preclinical
Subdomain: Pathological Physiology and Laboratory Medicine
Abstract:

Introduction:
Multiple sclerosis is a chronic inflammatory disease that causes the loss of white matter of the central nervous system. Autoreactive T and B lymphocytes sensitized to the antigens of the myelin sheath which they came into contact due to the increased permeability of the blood-brain barrier play a key role in its development. The diagnosis of the disease is established via clinical and radiological examination as well as laboratory procedures.

The Aim:
Our objective was to examine the cytological characteristics of the cerebrospinal fluid of the patients with multiple sclerosis and assess how they differ from the control group.

Material and Methods:
The cross-sectional study included 93 patients, hospitalized at the Clinic for Neurology, University Clinical Center of Vojvodina. The patients were divided into two groups: the first group consisted of patients diagnosed with multiple sclerosis (n=63), whereas the second was a control group - patients suffering from non-inflammatory diseases of the CNS (n=30). Cerebrospinal fluid samples were collected by lumbar puncture, after which protein concentration and differentiated cellular elements were determined.

Results:
A significant difference was found in the number of lymphocytes (7.17±0.74 x106/l vs. 1.36±0.99x106/l; $p<0.05$) and the number of total cells (9.98±1.04x109/l vs. 1.72±0.32x109/l; $p<0.05$) of the cerebrospinal fluid samples between the two groups, while the difference in the number of granulocytes and protein concentration was without statistical significance.

Conclusion:
Cytological analysis of the cerebrospinal fluid of patients with multiple sclerosis is a simple procedure that can provide important information about the current state and prognosis of the disease as well as about therapeutic possibilities, and should be considered in the diagnostic procedure.

Brucellosis: A Deceptive Infectious Disease.

Author(s): Jassal Mathew, Ardra M, Chithra Valsan, KA Sathiavathy
Domain: Preclinical
Subdomain: Microbiology
Abstract:

Introduction:
Various emerging and re-emerging infectious diseases have made the existence of mankind in this world a great challenge. Brucellosis, a zoonotic disease prevalent in developing countries, poses a significant threat to human and animal health. Despite its diverse manifestations, diagnosing and managing the disease remains a challenge for clinicians. To address this neglected but debilitating disease, clinicians must increase their awareness and vigilance.

Objective:
To highlight the spectrum of clinical manifestations, laboratory findings, treatment and outcome of brucellosis in a Tertiary Care Hospital.

Method:
A retrospective study was conducted on all culture proven cases of human brucellosis admitted in a Tertiary Care Hospital in Central Kerala, India from June 2011 to June 2022. The case records were reviewed for analyzing the demographic data, clinical presentations, laboratory parameters, treatment and outcomes.

Results:
Out of 14 culture proven Brucella cases, 13 presented as Pyrexia of Unknown Origin (PUO) and one was a soft tissue infection. Thirteen patients had a history of either unpasteurized milk consumption or contact with animals. 75% of cases were imported from middle-east countries. One of the cases, possibly by sexual transmission. All patients complained of fever and malaise (100%), while low backache and arthralgia noted in 78.6%. Common clinical and laboratory findings included hepatosplenomegaly (42.9%), anemia (64.3%) and raised ESR (64.3%) respectively. Treatment with oral doxycycline for six weeks combined with either aminoglycoside or rifampicin was effective, with no deaths or relapses noted.

Conclusion:
This study emphasizes close collaboration of an alert clinician and an experienced microbiologist for effective diagnosis and treatment of brucellosis with its diverse presentations in endemic areas.

Usage of anticoagulants in patients with atrial fibrillation

Authors: Milica Jurišić, Ana Tomas Petrović, Filip Ađić
Domain: Pharmacology
Subdomain: Cardiology
Abstract:

Introduction:
Atrial fibrillation is one of the most common heart rhythm disorders which occurs due to an ectopic electrical stimulation that is generated outside of the cardiac conduction system. Treatment of atrial fibrillation has three main goals; correction of the heart rate, rhythm cardioversion and anticoagulation. Anticoagulants play the key role in the ischemic stroke prevention. The aim was to determine the percentage of patients that are left uncovered with oral anticoagulants although their CHA2DS2-VASc score is two or higher. Focus of this study also was to define the percentage of patients that are using Novel Anticoagulants (NOACs) rather than vitamin K antagonists.

Material and methods:
1437 patient's charts were collected in retrospective study that included all hospitalized cases of atrial fibrillation between January 1st 2022 and September 9th 2022 at The Institute of cardiovascular diseases, Vojvodina, Serbia. We excluded death cases, patients with multiple hospitalizations during this period and anticoagulants administered par enter. Finally 930 patients were observed in this study. Data were analyzed using Microsoft Excel Pivot tables and Statistical Package for the Social Sciences (SPSS).

Results:
9.89% of our patients are uncovered with any kind of therapy. Vitamin K antagonists are more often prescribed than NOACs. Most prescribed medication is acenocumarol. Among NOACs rivaroxaban was the most administered drug.

Conclusion:
Despite of NOACs having better safety profile these drugs are underused in general population. Vitamin K antagonists are still drugs of choice and NOACs have not found their place in therapy of atrial fibrillation yet. Most importantly, in elderly population prescription of NOACs is still at very low rate. In the future rivaroxaban may become the most prescribed anticoagulant, because of its adherence and administration, as increased prescription rate is noticed in the study.

Heart rate variability in a rat model of prenatal alcohol exposure

Author(s): Aleksandra Midro, Magdalena Król, Michał Jurczyk MD, Prof. Krzysztof Gil MD PhD
Domain: Preclinical
Subdomain: Physiology
Abstract:

Introduction
Fetal alcohol spectrum disorders were first described in 1973 and nowadays belong to crucial challenges in medicine. The statistics is not accurately known and the knowledge in this field is still insufficient. Prenatal alcohol exposure leads not only to growth retardation or facial dysmorphology but also to severe brain damage. For that reason, long-term effects result in various behavioral and cognitive abnormalities. Ethanol has also a negative impact on cardiovascular system and therefore our aim was to check the abnormalities among the offspring after prenatal alcohol exposure.

Materials and methods
To our experiment we needed 4 pregnant Wistar rats dived into 2 groups depending on the administered substance during pregnancy: 0.9% NaCl (control) or 28.5% ethanol. 26 Wistar rats were born – 10 deriving from the control group and 16 from the ethanol group. The electrocardiograms of born rats were analyzed with regard to parameters of heart rate variability (HRV), including heart rate (HR), standard deviation (SD), standard deviation of NN intervals (SDNN), root mean square of successive differences between normal heartbeats (RMSSD) and detrended fluctuation analysis (DFA).

Results
We observed a significant increase of RMSSD in the ethanol group comparing to the control group (2.05 vs 5.21, $p<0.01$), while HR was higher in the control group (388.57 vs 343.55, $p=0.08$). Moreover, we noticed significantly higher SD in ethanol group (1.45 vs 3.69, $p=0.03$), while DFA was lower (0.36 vs 0.24, $p=0.04$). There was also an increase of SDNN in the ethanol group (1.84 vs 3.69, $p=0.12$).

Conclusion
Our study shows that prenatal alcohol exposure may result in various abnormalities concerning cardiovascular system. Presumably, ethanol has an impact on autonomic nervous system, which involves sinoatrial node, leading to HRV abnormalities and other negative consequences. We still cannot predict long-term effects on different systems, so further research is needed.

HYDROSTATIC SALINE ENEMA FOR PEDIATRIC ILEOCOLIC INTUSSUSCEPTION: ANALYZING SUCCESS RATES, FAILED REDUCTION, AND PREDICTIVE FACTORS FOR SURGICAL MANAGEMENT

Author(s): Maria Klimeczek Chrapusta, Maciej Preinl, Zofia Łubniewska, Filip Prochaska
Domain: Surgery
Subdomain: Pediatric surgery
Abstract:

INTRODUCTION:
This study aims to evaluate the results of intussusception management in children using hydrostatic saline enema and explore correlations between clinical findings and a need for surgery.

MATERIALS AND METHODS:
A retrospective study was done of the records of 141 patients (85 males, 60,2%) hospitalized with intussusception between January 2018 and December 2022 in the Department of Pediatric Surgery, in Children's University Hospital, Kraków. Mean age was 36,6 months. The data regarding medical history, clinical symptoms revealed in the physical examination, ultrasound findings and treatment method was collected. Each finding was classified as one point, points were summed up to examine correlation to the enema failure. Data analyzed using logistic regression, Pearson correlation analysis and support vector machine.

RESULTS:
149 USG guided saline hydrostatic enemas were performed in 119 patients with a success rate of 86,5%. There were 23 (16,3%) recurrences following an enema and 23 (19,3%) patients required more than one enema with 4 attempts being the maximum. 16 (11,3%) children underwent surgery after a failed enema. Most prevalent symptom presented in the emergency room was vomiting (65 patients, 46,1%). It was determined using support vector machines that the data (points vs. enema and surgery) are linearly separable. This allowed us to use the Pearson correlation analysis instead of the Spearman's rank distribution. A Pearson correlation coefficient of 0.2936645 suggests a moderately weak positive relationship between these variables. A Pearson correlation coefficient of 0.3614101 indicates a moderately weak positive correlation between the presence of Meckel's diverticulum and a enema failure.

CONCLUSION:
USG guided hydrostatic enema is a very effective technique for intussusception reduction though the relation between severity of the medical state of the pediatric patient and enema failure is not particularly strong.

THE PARADOX OF WEIGHT AND POWER - THE MOST SUITABLE ANIMALS FOR ATRIAL FIBRILLATION MODELS

Author(s): Ana Lupșor, Lecturer Gabriel Cismaru M.D., Alexandru Necula
Domain: Internal Medicine
Subdomain: Cardiology
Abstract:

Atrial fibrillation (AF) is one of the most frequent arrhythmias in humans, with an increased incidence of 33% in the last 20 years. The available treatment consists of antiarrhythmic medication and catheter ablation, but the pathological background is not well known. Studies based on animal models can enhance understanding of the mechanisms leading to AF and the development of more efficient treatments.
This presentation aims to examine the main ways of inducing AF in animal models and discuss each species' advantages and disadvantages for different types of procedures.
To understand the reproducibility in humans of AF experiments, we studied the medical literature and analyzed the most suitable animal model and their particularity for each proposed AF design.
The major arrhythmogenic mechanisms involved in AF pathogenesis are the ectopic electrical activity of the pulmonary vein and reentry due to atrial fibrosis and dilation. The most common AF designs imply drug induction (acetylcholine, streptozocin, beta-adrenergic agents, alcohol, pro-arrhythmic medication), inflammatory pericarditis induction, invasive intracardiac or non-invasive transesophageal stimulation, and atrial/ventricular ischemia.
Depending on the animal's weight, AF's duration increased, starting from seconds to minutes in small animals, such as mice, rats, guinea pigs, or rabbits, up to 2 weeks in medium animals like dogs, sheep, horses, and even several months in pigs. Although small animals cannot sustain AF and need permanent pacing triggering, they are more versatile for testing different substances' effects. However, the long-term outcomes can be better analyzed on bigger models such as horses, that maintain arrhythmia longer and mimic human physiopathology better.
Experimental AF can be performed on different animal models by various mechanisms, each being more or less suitable for a different objective. It is important that researchers had a well-defined purpose of the study for a statistically significant experiment.

Consumption of hypolipidemic drugs in Serbia in 2011-2020.

Author(s): Jovana Lajčak, Saša Vukmirović, Boris Milijašević
Domain: Pharmacology
Subdomain: Pharmacoeconomics
Abstract:

Introduction:
Hypolipidemic drugs are used for regulating various classes of lipids in blood and their purpose is to provide primary and secondary prevention of cardiovascular events. These are highly efficient drugs that have wide usage in population, and their use is often long- term.

The aim:
The aim of this study was to analyze the amount and structure of hypolipidemics consumed in the Republic of Serbia during 10 years and to determine whether there is a correlation between the price and consumption of these drugs.

Material and methods:
In our investigation we used drug utilization 90% and ATC/DDD methodology. Prices of drugs per DDD are presented in euros (€).The relation between drug consumption and price was examined by linear regression at the level of statistical significance of 0.05.

Results:
Hypolipidemics consumption in the Serbia is increasing, but it is stil significantly lower than in Norway and Finland. In Serbia, there is a negative correlation between consumption and price of the drugs.

Conclusion:
Consumption of hypolipidemics should be increased for purposes of primary prevention of cardiovascular events. Current consumption of the drugs is limited for treatment of incurable cases of the desease and secondary prevention, and therefore the restrictions of the RFZO should be changed.

Keywords:
Hypolipidemics, cardiovascular system, hyperlipidemia

IMPACT OF SOCIAL MEDIA AND PREVALENCE OF CYBERBULLYING AMONG WOMEN IN A RURAL COMMUNITY, SOUTH KERALA, INDIA-A COMMUNITY BASED CROSS SECTIONAL STUDY

Author(s): Milana Saju, Dr.Y Suba Joice, Dr.Simi Mohan,Dr.Sreekumari.K, Dr.Yuva Ravindran, Ms.Athira A.S

Domain: Preclinical
Subdomain: Public health

Abstract:

INTRODUCTION:
Social media has grown to be the most influential virtual space that has revolutionized digital world especially since the COVID19 pandemic. Though social media offer women the potential to bypass traditional, cultural and mobility barriers, there are also potential risks such as cyber bullying and addiction. Our study has explored the impact of social media amongst rural women.

METHODOLOGY:
A cross sectional study was conducted among 289 women in a rural community in Thiruvananthapuram district, Kerala using a pre designed, pretested interviewer administered questionnaire. Data analysis was done using SPSS. Variables were expressed in mean and percentage. Association between socio demographic variables with social media was analyzed and p value <0.05 was considered statistically significant.

RESULTS:
Median age was 31 years, Demographic analysis showed that 62.3% were graduates, 85.8% were married and 70.2% belonging to low socioeconomic strata. 83.8% of women had a special preference to facebook among the various social media sites. 55.7% of women believed that social media has boosted their self-concept but nearly 75% of them felt they have been deceived by some means. 87% felt that children and spouses have been sidelined due to excessive usage and there was a consequent decrease in productivity. 10% of women faced cyber bullying and the commonest form was hacking. Majority of them suggested the need for censorship (55.4%) and responded by deleting their accounts. Although the above findings were similar in both precovid and post covid era it was noticed that there was an increase in cyber infidelity in the later period (5.6%). There was a strong association between low socioeconomic and poor educational statuses with the chance of having a negative impact.

CONCLUSION:
Digital revolution has undoubtedly remained as a boon in terms of information provision and building oneself, but the negative effects such as its impact on family and cyberbullying should also be explored and surveilled for a better future.

Adenosine vs Regadenoson - differences in coronary microcirculation measurements during passive hyperaemia.

Author(s): Natalia Bukała, Andrzej Surdacki MD PhD, Stanisław Bartuś MD PhD, Rafał Januszek MD PhD.
Domain: Internal Medicine
Subdomain: Cardiology
Abstract:

Haemodynamical significance of coronary artery stenosis can be assessed by fractional flow reserve (FFR) measurement. The index of microcirculatory resistance (IMR) and coronary flow reserve (CFR) are parameters of microvascular circulation and could be assessed during FFR.
The aim of the study was to determine if there are any differences in assessment of coronary microcirculation using adenosine and regadenoson and factors influencing potential differences.
We included 44 patients assessed at the reference centre, diagnosed between 2021 and 2023. Microcirculation measurements were performed in 8 patients - circumflex branch(Cx) and 36 patients - left anterior descending branch(LAD). Pressure/temperature sensor guide-wire based on the thermodilution was used. FFR, CFR and IMR were measured twice: with adenosine (140 µg/kg/min) and 10 minutes later with regadenoson (400 µg i.v.). We estimated the differences between the mean FFR, IMR and CFR values depending on the used drug. Factors significantly associated with higher differences between both assessed groups were identified using linear regression model.
We quantified the average results with adenosine and regadenoson for FFR(0.81 [0.75÷0.89] vs. 0.80[0.73÷0.88]), CFR(3.84[1.67÷4.08] vs. 3.97[1.78÷4.32]) and IMR(20.01[11÷24.5] vs. 20.25[10.75÷23]), respectively. None of the differences were statistically significant. The difference between measurements with adenosine and regadoneson proceeded on the same artery were:ΔFFR=0.02(0.01÷0.04), ΔCFR=0.6(0.29÷1.55) and ΔIMR=3.5(1.38÷7.1). Predictors of smaller absolute ΔFFR were: coronary artery disease (CAD)(p=0.006), treatment with acetyl salicylic acid(ASA)(p=0.047). Prior percutaneous peripheral interventions(PCI) were related to greater absolute ΔFFR(p=0.011). In the case of ΔCFR, CAD(p<0.001), ASA(p=0.009) and left ventricle ejection fraction(p=0.049) were related to smaller absolute ΔCFR, whereas prior PCI(p<0.001), stroke/transient ischaemic attacks(TIA)(p=0.03) and therapy with oral anticoagulants(p=0.043) related to greater differences. ASA usage was related to greater absolute ΔIMR(p=0.03), while stroke/TIA(p=0.026).
There were no significant changes between mean FFR, CFR and IMR measured either with regadenoson or adenosine. Selected factors were found to be predictors of differences in IMR, CFR and FFR.

Superior mesenteric artery clinical classification and morphometrical analysis

Author(s): Radosław Chmiel, Jakub Batko, Aleksiej Juszczak, Jerzy A. Walocha, Artur Moskała, Andrzej Dubrowski, Krzysztof Woźniak, Artur Pasternak
Domain: Surgery
Subdomain: clinical anatomy
Abstract:

Introduction:
The superior mesenteric artery is one of the most important arteries in the abdominal cavity, which is of great clinical importance, especially in surgical procedures and fatal ischemic complications. The aim of this study was to develop a clinical classification of the superior mesenteric artery.

Methods:
Postmortem contrast-enhanced computed tomography of 104 (29.8% female, age 50.7±18.7) human bodies were analyzed. Based on anatomic predisposition to ischemic and iatrogenic complications, a three-tiered clinical classification of the superior mesenteric artery was developed. Type 0 was defined as standard risk for ischemic and iatrogenic complications. Type 1 was defined as increased thromboembolic risk with decreased risk of iatrogenic bleeding, and type 2 was defined as decreased ischemic risk with increased risk of iatrogenic bleeding. The supply area of the superior mesenteric artery was divided into 4 regions: pancreas, caecum, ascending colon, and transverse colon.

Results:
Type 0 (standard risk) was found in 62.5% of cases. Type 1 was most frequently observed in the ascending colon region (15.4%). Type 2 was most frequently observed in the pancreatic region (17.3%). Regarding type, most abnormalities were found in the region of the ascending colon (18.3%), pancreas region (17.3%), and transverse colon (16.3%).

Conclusion:
The proposed clinical classification of SMA links anatomic variations in morphology with their clinical significance. A simple, three-level classification can be easily applied in daily practice and serve as a great support for preoperative evaluation and recognition of patients at risk of iatrogenic or thromboembolic complications.

Gender differences in the autonomic nervous system's response to prenatal alcohol exposure.

Author(s): Magdalena Król1, Aleksandra Midro1, Prof. Krzysztof Gil, MD, PhD1, Michał Jurczyk, MD1. 1. Department of Pathophysiology, Jagiellonian University Medical College, Kraków, Poland

Domain: Preclinical

Subdomain: Pathophysiology

Abstract:

Introduction:

Fetal Alcohol Spectrum Disorders (FASD) includes physical and neurobehavioral disorders resulting from prenatal alcohol exposure (PAE). The early diagnosis of this syndrome is essential to provide interventions and optimize the outcome in adulthood. Our study aimed to evaluate the changes in autonomic nervous system in relation to the sex of offspring.

Material and methods:

The study included 4 pregnant Wistar rats divided into 2 groups depending on the administered substance during pregnancy: the first one with 0.9% NaCl and the second one with 28.5% ethanol. 26 Wistar rats were born – 10 deriving from group 1 (female: 5, male: 5) and 16 from group 2 (female: 8, male: 8). The electrocardiogram analysis of rats' offsprings' were conducted 30 and 60 days after administration of substances and included following parameters of heart rate variability (HRV): heart rate (HR), the standard deviation of normal-to-normal intervals (SDNN) and root mean square of successive differences between normal heartbeats (RMSSD).

Results:

The analysis of conducted measurements showed a significant decrease in mean HR after 30 days in the female offspring of the ethanol group compared to the male offspring of this group (301.2 vs. 385.9, $p < 0,01$). Moreover, this decrease corresponded with higher SDNN (4.88 vs. 2.48, $p > 0,01$) and similarly higher RMSDD among female offspring (6.77 vs. 3.64, $p > 0,01$). Additionally, all these changes were more evident after 30 days of exposure than after 60 days.

Conclusions:

The study showed that PAE results in abnormalities of heart rate variability. These changes were more significant among female than male offspring, which suggests
a possible link between the sex and consequences of PAE. Moreover, even short-term exposure to alcohol has a pronounced effect on the autonomic nervous system.

The correlation of β- carotene uptake and expression of nuclear androgen receptor in prostate cancer cell lines

Author(s): Kacper Dykas1, Stanisław Boznański1, Kamil Sobieszek1, Joanna Dulińska- Litewka1
1. Chair of Medical Biochemistry, Jagiellonian University - Medical College, Kraków, Kopernika 7 street, Poland

Domain: Preclinical
Subdomain: Medical biochemistry

Abstract:

Introduction:
Dietary and „nutraceutical" approach to prevention and treatment of different diseases is dynamically developing branch of medical sciences. In the case of prostate cancer (PCa), which is the most diagnosed neoplasm in men in Europe1 and the second wordwide2, studies suggest that the consumption of carotenoids (e.g., β-carotene) is a protective factor3,4. The exact molecular mechanism of this phenomenon is not fully understood but the alternations in expression of nuclear receptors, such as androgen receptor (AR) are suggested. Because AR expression changes during the natural history of PCa, it is important to establish in which stage of the disease β-carotene (β-C) might be used as a potential supplementary therapeutic option. The cellular models of PCa provide such an opportunity, as various cell lines exhibit different properties that mimic the development of malignant process.

Materials and methods:
The human cell lines (ATCC): PC-3, LNCaP, 22Rv2, DU145, and RWPE-1 were treated with different concentrations of β-C (30; 15; 7,5; 3;1,5 µM). Cells were cultured according to the previously described protocol. β-C uptake by incubated cells was analyzed using the Shimadzu SCL-10AVP instrument (Japan), λ=450nm5. The expression of AR was established at the level of protein (through Western Blot method) and mRNA (RQ-PCR, RT-PCR).

Results:
There was significant difference in uptake of β-C between cell lines. Androgen- dependent lines were characterized by higher uptake compared to androgen- independent ones. β-C reduces expression of AR both on the level of mRNA and protein in androgen- sensitive lines. The re-expression of AR was not induced by β-C in case of androgen- independent lines.

Conclusion:
Our results indicate that β-C uptake differs depending on the stage of PCa. It could be an effective supplement to early-stage PCa therapy, as it decreases the activity of the main signalling pathway involved in the proliferation of this neoplasm.

ASSESSMENT OF GASTROPROTECTIVE POTENTIAL OF BEE POLLEN SUPPLEMENTATION IN WISTAR RAT MODEL

Author(s): Paweł Oszczędłowski, Kamil Górecki, Milena Krawczyk, Aleksandra Greluk, Katarzyna Pacyna
Domain: Preclinical
Subdomain: Histology, potentially gastroenterology or nutrition in medicine
Abstract:

Among people interested in organic food and healthy lifestyle, bee pollen is a popular diet supplement, especially in countries with developed apiculture. Bee pollen anti-oxidant and gastroprotective effects have been suggested, but the topic is not yet well-researched [1]. It was suggested that polyphenols contained in bee pollen can modulate expression of enzymes such as iNOS, COX-1 and COX-2, that are important for the pathogenesis of diseases of gastric mucosa [2,3,4]. The aim of our study is to evaluate gastroprotective effects of bee pollen supplementation and its effect on iNOS, COX-1 and COX-2 expression in gastric mucosa in vivo.

Material and methods:
30 Wistar rats were divided into 6 groups – 3 running and 3 non-running – among those there was one control, one supplemented with bee pollen and one receiving whey proteins in both levels of physical activity. After 8 weeks of laboratory phase all animals were decapitated and their stomachs were collected, formalin-fixed and paraffin-embedded. 5 µm thick slides were stained with hematoxylin and eosin. Immunohistochemical reactions were performed on other slides, assessing the expression of COX-1, COX-2 and iNOS enzymes. Microscopic images were evaluated for possible changes

Results:
Gastric mucosa structure was properly built in control groups and whey protein-supplemented groups. Gastric mucosa was altered in bee pollen supplemented groups, with increased amount of chief cells and lower amount of parietal cells. Expression of iNOS was highest in groups supplemented with bee pollen, while expression of COX-1 in those was lower than in control and whey protein groups. COX-2 expression was similar in all groups.

Conclusions:
Bee pollen consumption did not result in any visible signs of gastroprotection. Moreover, elevated iNOS levels may suggest a potentially harmful effect that requires further detailed research, as unexpected pro-oxidative effects of bee pollen extracts have previously been described in the literature [2].

Does sex matter? Is the use of biological treatment the answer to the treatment of rheumatological diseases? A cross-sectional study of patients treated at University Hospital in Cracow under the PolNorRheuma program.

Author(s): Anna Bereta, Olga Tuleja, Karol Szudy
Domain: Internal Medicine
Subdomain: Rheumatology, immunology, pharmacology
Abstract:

Rheumatic diseases are a group of inflammatory diseases, the classification is based on clinical symptoms: pain, stiffness, joint mobility limitation, as well as the results of auxiliary laboratory tests. Inflammatory spondyloarthritis includes: Ankylosing Spondylitis, Non-radiographic axial Spondyloarthritis, Psoriatic Arthritis and Psoriatic arthritis with axial disease. During the treatment of these diseases, special attention should be paid to the sex and age of patients in order to select the most optimal treatment.
The aim of our study was to look at the treatment of women and men suffering from spondyloarthropathies and to simultaneously assess disease activity using various indicators such as MHAQ, BASDAI, ASDAS.
After analysing the selected sample, randomly chosen 24 patients with axPsA, 147 patients with PsA, 181 patients with AS, and 30 patients with nr-axSpA from the outpatient department of University Hospital in Cracow were included in the study.
Among patients with nr-axSpA and PSA, women predominated, while in patients with AS and axPsA, men predominated. Currently, the dominant form of treatment is biological treatment.
To assess the treatment and activity of spondyloarthritis, we used the MHAQ, ASDAS and BASDAI, which are dedicated to inflammatory diseases. The results of our study displayed that with biological therapy, women score higher on the assessment of pain, back pain and joint pain. Statistically significant differences between the response of men and women to treatment are most pronounced in AS and nr-axSpA.
It is extremely important to personalize treatment methods depending on sex. Inappropriately treated rheumatic diseases are associated with the risk of disability, pain and a significant decrease in the quality of life. Inflammatory changes are often irreversible. From the preliminary results of our work, it can be concluded that women, despite equally aggressive treatment, respond less well. Such conclusions oblige us to personalize treatment.

Influence of bariatric surgery on erectile dysfunction – systematic review and meta-analysis.

Author(s): Piotr Małczak, Michał Wysocki, Magdalena Pisarska-Adamczyk, Jakub Strojek, Hanna Rodak, Ilie Lastovetskyi, Michał Pędziwiatr, Piotr Major
Domain: Surgery
Subdomain: Bariatric surgery
Abstract:

Introduction:
Obesity is a well-known condition which drastically impairs patients` quality of life. Morbidly obese males have higher prevalence of erectile dysfunction which affects patients' well-being. The aim of our study is systematically reviewing available literature whether weight-loss surgery has a beneficial impact on erectile function.

Material and Methods:
We searched the Medline, Embase, Cinahl and Scopus databases with the language restricted to English. Furthermore, bibliographies from other systematic reviews and meta-analyses on the subject were searched. Inclusion criteria involved: 1) the study concerned adult patient who underwent bariatric surgery; 2) the study assessed erectile dysfunction by validated scale (most frequently IIEF-5); 3) the study compared pre- and post-operative outcomes in longitudinal design. All criteria were required to enroll a study for further analysis. Quality of included studies was assessed using New-Castle Ottawa Scale. The statistical analysis was performed by RevMan 5.4, as well as statistical heterogeneity and inconsistency were measured by Cochran`s Q tests and I2, respectively. Our study follows the PRISMA guidelines and MOOSE consensus statement.

Results:
From 596 records, only 14 met the inclusion criteria, which involved 508 patients and 6 different surgeries, such as Roux en-Y gastric bypass, sleeve gastrectomy, gastric banding, banded gastric bypass etc. The analysis unveiled significant differences between findings at periods before and after a surgery (SMD=1.19; 95% CI=0.72-1.66; p<0.0001). On the other hand, heterogeneity was meaningful (I2=91%), but sensitivity analysis showed that 6 studies were the cause of all heterogeneity. A subgroup analysis of studies with follow-up of 12 months was performed, including 5 studies involving 229 patients. The outcomes were statistically significant, and the mean difference was 12.13 in favor of post-surgery period (MD=12.13; 95%CI=7.88-16.38; p<0.0001; I2=89

Conclusion:
Our study showed that bariatric surgery improves the erectile function, which is compatible with previous meta-analysis performed by other authors.

CLINICAL PROFILE AND PROGNOSIS IN SADDLE AND NON-SADDLE ACUTE PULMONARY EMBOLISM PATIENTS

Author(s): Patrycja Kurczyna, Michał Karnaś, Weronika Chaba, Jakub Stępniewski MD PhD, prof. Grzegorz Kopeć MD PhD
Domain: Internal medicine
Subdomain: Cardiology
Abstract:

INTRODUCTION:
Saddle thrombus has not been included in contemporary risk stratification models in the setting of acute pulmonary embolism (PE), however it is often assumed to be associated with increased clinical severity. Our study aimed to investigate clinical profile and prognosis of saddle PE (SPE) in comparison to non-SPE (NSPE).

MATERIALS AND METHODS:
We evaluated consecutive PE patients consulted by the Pulmonary Embolism Response Team (PERT) for thrombus type, European Society of Cardiology (ESC) 2019 Guidelines risk group, symptoms, angiotomography right-to-left ventricle ratio (RV/LV), vital signs, serum troponin levels, treatment method and 30-day mortality. For statistics we used Chi2 and U Mann-Whitney tests.

RESULTS:
Our study included 98 individuals [63+/-17 years old, 52 (53.06%) male] with SPE and 235 [63+/-18 years old; 101 (43,98%) male] with NSPE consulted between January-2018 and May-2023.
Patients with SPE presented with syncope more commonly [32 (33.33%) than NSPE [41 (17.75%), p=0.002]. Had the heart rate (HR) >110/min, elevated troponin levels and RV/LV ratio >1 more often than NSPE [38 (39.58%) vs 62 (26.72%), p=0.02; 76 (93.83%) vs 157 (78.11%), p=0.003; 62 (83.78%) vs 116 (63.04%), p=0.001, respectively]. No differences were found in the prevalence of particular ESC risk groups between SPE and NSPE patients. As compared to NSPE, SPE patients were more likely to be treated with reperfusion method - systemic thrombolysis (10.47% vs 5.80%, p=0.16), catheter-based therapy (16.28% vs 10,14%, p=0.14). Thirty-day mortality obtained for 38 SPE and 74 NSPE patients was higher in NSPE [9 (12.16%) vs 1 (2.63%), p=0.09].

CONCLUSION:
We found in our study that SPE was associated with more severe PE presentation and higher need for reperfusion treatment as compared to NSPE, resulting in more favourable outcome.

A NEW SUBPOPULATION OF PATIENTS WITH PULMONARY HYPERTENSION – RETROSPECTIVE ANALYSIS OF INDIVIDUALS WITH MPAP OF 21-24 MMHG.

Author(s): Michał Karnaś, Weronika Chaba, Jakub Stępniewski MD PhD; prof. Grzegorz Kopeć MD PhD
Domain: Internal medicine
Subdomain: Cardiology
Abstract:

Introduction:
According to European Society of Cardiology (ESC) guidelines from 2022, the hemodynamic definition of pulmonary hypertension (PH) was modified. The new diagnostic threshold of mean pulmonary arterial pressure (mPAP) for PH is >20 mmHg, which is lower than the previous one (≥ 25 mmHg), consequently, this may result in an increase of PH diagnoses. There is a necessity to better describe this new PH subpopulation. Our study aimed to determine the clinical classification of patients with mPAP of 21-24mmHg.

Materials and methods:
We evaluated medical records of patients who underwent right heart catheterization (RHC) in the Pulmonary Circulation Centre. For further analysis, we included patients with mPAP 21-24 mmHg and analysed their pulmonary artery wedge pressure (PAWP) and pulmonary vascular resistance (PVR). The patients were divided into subgroups according to 2022 ESC guidelines, considering the haemodynamic and clinical classification of PH.

Results:
We evaluated 1660 RHCs performed between January-2011 and December-2022 and included 793 RHCs. Subsequently, we identified 69 patients [64±13 years old; 20 (29%) male], who met the criteria. Among this subpopulation, the mean mPAP was 22.3±1.2 mmHg, PAWP 10.3±4.7 mmHg and PVR 2.2±1.5 Wood units. Pre-capillary PH was found in 34 (49.3%) patients, post-capillary in 10 (14.5%), combined pre-and-post-capillary in 1 (1.4%) and unclassified in 24 (34.7%). There were 21 (30.4%) patients with idiopathic pulmonary arterial hypertension (iPAH), 26 (37.7%) with congenital heart defect (CHD), 8 (11.6%) with left heart disease (LHD), 7 (10.1%) with connective tissue disease (CTD), 4 (5.8%) with chronic lung disease (CLD), 3 (4.3%) with chronic thromboembolic pulmonary disease (CTEPD). Among 52 patients with available clinical follow-up (1030±980 days), 4 (7.7%) experienced worsening of pulmonary hemodynamics, which required introduction of PH-specific therapy.

Conclusion:
Patients with mPAP 21-24mmHg represent a diverse clinical group. Close surveillance may be needed for early detection of deterioration.

CLINICAL PROFILE OF PATIENTS WITH ACUTE PULMONARY EMBOLISM CONSULTED BY PULMONARY EMBOLISM RESPONSE TEAM (PERT).

Author(s): Weronika Chaba, Michał Karnaś, Patrycja Kurczyna, Jakub Stępniewski MD PhD; prof. Grzegorz Kopeć MD PhD
Domain: Internal medicine
Subdomain: Cardiology
Abstract:

Introduction:
According to the European Society of Cardiology guidelines, the formation of a Pulmonary Embolism Response Team (PERT) is encouraged in order to provide the best treatment for patients with severe pulmonary embolism (PE). The aim of this study was to assess the clinical profile of patients with acute PE who were consulted by the PERT operating in Krakow, Poland.

Materials and methods:
We reviewed the medical records of patients consulted by the PERT. Physicians from different hospitals in our region who were taking care of a patient with acute PE notified a PERT consultant, who then collected in the mobile application form, patient's clinical data including: time of consultation, referring centre, gender, age, clinical symptoms, vital signs, results of diagnostic imaging, and severity of PE. Each consultation resulted in individually determined treatment recommendations.

Results:
There were 335 patients [63±17.7 years old; 153 (45.7%) male] consulted by the PERT between January-2018 and May-2023. Forty (11.9%) had high, 171 (51.0%) intermediate-high, 105 (31.3%) intermediate-low and 19 (5.7%) low risk of death. Reperfusion treatment was recommended for 87 (26.0%) patients, including catheter intervention, systemic thrombolysis and surgical embolectomy [61 (18.2%), 22 (6.6%), 4 (1.2%), respectively]. The majority of patients were treated in the referring centre under the remote supervision of PERT consultants: 241 (71.9%). Overall 30-day mortality, assessed from available data [155 patients (46.3%)], was 6.5% (10 patients): 2 (1.3%) with intermediate-low, 4 (2.6%) with intermediate-high and 4 (2.6%) with high risk of death.

Conclusion:
The PERT was activated most commonly to help establish the treatment strategy, especially among patients with an intermediate risk of death. Prognosis in acute PE remains a challenge.

STATE-OF-THE-ART IN SITU LASER FENESTRATION IN THE ENDOVASCULAR TREATMENT OF AORTIC ARCH PATHOLOGIES USING TWO TYPES OF AORTIC ARCH STENT GRAFT SYSTEMS

Author(s): Zuzanna Wojtczak, Rafał Maciąg MD PhD, Professor Zbigniew Gałązka MD PhD, Vadym Matsibora MD, Michał Sajdek MD, Dominik Wretowski MD, Jerzy Leszczyński MD PhD, Kamil Stępkowski MD, Associate Professor Magdalena Januszewicz MD PhD, Professor Olgierd Rowiński MD PhD

Domain: Radiology
Subdomain: Interventional radiology

Abstract:

Introduction:
Laser in situ fenestration(LISF) is an innovative alternative for arch vessel revascularization in endovascular aortic arch repair. With low complication and mortality rate, it allows the management of various complex aortic pathologies including acute aortic syndromes. This study aimed to present early patient outcomes of endovascular arch repair combined with an emergent method of LISF performed in the foremost centre in Poland.

Methods:
From 2020 to 2023, 8 patients underwent aortic arch repair with LISF combined with aortic arch stentgraft systems (6 Nexus Endospan off-the shelf system, 2 COOK custom-made arch branch stentgrafts) in the 2nd Department of Clinical Radiology MUW. Vascular accesses (femoral artery, common carotid artery, superficial temporal artery, radial artery, subclavian artery, axillary artery) were appropriately selected for patients' anatomical conditions. The treatment was applied with two different stent graft systems and the Turbo-Elite laser atherectomy catheter 0,9-2,3 mm. Balloon expandable covered stents in combination with self-expandable nitinol stents were deployed. All patients were followed up regularly and imaging examinations were performed.

Results:
LISF was successful in all of the patients. Indications included chronic dissection(5), atherosclerotic aneurysm(3). There was 1 case with aortic kinking causing an issue with main module positioning(NEXUS system), which was resolved intraoperative. No patient developed major complications, such as strokes, transient ischemic attacks, spinal cord ischemia. During the 1-12 months follow-up 1 case of endoleak was detected(type I or III). Control angiography demonstrated false lumen thromboses, consecutive positive remodeling of the aorta, and patent in situ laser-fenestrated arteries.

Conclusions:
While LISF in aortic arch stentgrafts remains an off-label technique, it was shown to be an effective and promising state-of-the-art treatment option for urgent patients, patients unfit for open surgical repair, or with anatomical anomalies. However, long-term data remain scarce. Preoperative evaluation of the anatomy of intracranial arteries is essential.

Small-Molecule PKR-like Endoplasmic Reticulum Kinase Inhibitors As A Novel Targeted Therapy For Parkinson's Disease

Author(s): Weronika Lusa, Wioletta Rozpędek-Kamińska, Natalia Siwecka, Grzegorz Galita, Ireneusz Majsterek

Domain: Preclinical

Subdomain: Neurology, Molecular Medicine, Biochemistry

Abstract:

Introduction:

Parkinson's disease (PD) constitutes a therapeutic challenge due to the low efficacy of current treatments. Numerous studies have demonstrated the pivotal role of endoplasmic reticulum (ER) stress in PD pathogenesis. ER stress, followed by activation of the protein kinase RNA-like endoplasmic reticulum kinase (PERK) dependent branch of the unfolded protein response signaling pathway, ultimately leads to neural cell death and dopaminergic neurodegeneration in PD. Therefore, the present study evaluated the effectiveness of the small molecule PERK inhibitor LDN 87357 in an in vitro PD model using the human neuroblastoma SH SY5Y cell line.

Materials and methods:

The experiments on SH-SY5Y cells have been conducted after treatment with ER stress conditions activator – thapsigargin (Th) or with both Th and small-molecule PERK inhibitor LDN-87357.To determine the level of the pro-apoptotic ER stress markers gene expression, the TaqMan Gene Expression Assay was performed. The cytotoxicity of the investigated compound was measured by 2,3 bis (2 methoxy 4 nitro 5 sulfophenyl) 2H tetrazolium 5 carboxanilide Assay whereas the ability to apoptosis induction was assessed by colorimetric Caspase-3 Assay. Furthermore, cell cycle progression was evaluated by flow cytometry using PI staining. Statistical analysis and comparison among multiple groups were performed using ANOVA with Dunnett's post hoc test.

Results:

The present study demonstrated that LDN-87357 provoked a significant decrease in ER stress marker genes expression within SH-SY5Y cells with induced ER stress conditions. Furthermore, LDN-87357 remarkably increased cell viability and did not cause cytotoxic effects at any used concentrations and incubation time. Moreover, after treatment with LDN-87357 and Th, a significant decline in the apoptotic cells percentage was observed. Also, investigated compound restored normal cell cycle distribution of SH-SY5Y cells with induced ER stress conditions.

Conclusion:

Small-molecule selective PERK-mediated pathway inhibitors, constitute attractive molecular targets in PD management, due to neuroprotective effects such as chronic terminal ER stress prevention and apoptotic cell death reduction.

INVESTIGATION OF ANTIPROTOZOAL ACTIVITY OF TELOMERASE INHIBITORS (ON THE EXAMPLE OF MALARIA)

Author(s): Marat Gripp, Ilona Sarukhanyan, Yuri Isaakyan, Evgeny Morozov
Domain: Preclinical
Subdomain: Infectious diseases
Abstract:

Introduction:
Artemisinin-based combination therapy for malaria remains highly effective, but drug resistance in parasites in Southeast Asia threatens its use. The developed methods of gene therapy, including the use of telomerase inhibitors, can help maintain the effectiveness of this therapy and develop new drugs. Telomerase inhibitors can be used as antimalarial agents, malaria pathogens have a linear genome similar to malignant neoplasms.

Materials and methods:
The work was carried out in vivo on a model of rodent malaria P. berghei, strain N K 65 was used. 1020 mice were used in the experiments. The comparison drugs were artesunate. The negative control was untreated mice infected with P.berghei. At the first stage of the study, screening of drugs with antimalarial activity was carried out. In vitro experiments used the blood of mice infected with the NK65 P strain.berghei. The aim of this work was to investigate telomerase inhibitors to identify compounds with antimalarial activity.

Results:
33 compounds were selected from the literature to test for antimalarial activity in vivo and in vitro on cultures of the malaria causative agent of rodents P. berghei. The minimum effective dose of imatinib is 0.5 mg/kg, and phosphazide is 1.5 mg/kg. The reference drug artesunate demonstrates a minimum effective dose of 100 mg/kg. Candidate compounds of imatinib and phosphazide have been studied. Imatinib has a greater therapeutic breadth compared to artesunate, which makes it a promising candidate.

Conclusion:
The compounds selected from the group of telomerase inhibitors – imatinib mesylate and phosphazide – underwent in vitro and in vivo experiments and showed that imatinib mesylate significantly exceeds artesunate by 4 times and phosphazide by 12.5 times in therapeutic breadth, which makes it a promising candidate for further research in the development of an antimalarial drug at a dose of 0.5 mg/kg.

Biomarkers associated with mortality and decompensated heart failure related hospitalization in elderly patients with heart failure

Author(s): Patrycja Piłat, Michał Stojko, hał Stojko, Wiktoria Smyła, Oliwia Warmusz, Sebastian Krych, Piotr Lewandowski, Emilia Kupczyk, Bożena Szyguła-Jurkiewicz, MD PHD (Profesor of university)

Domain: Internal medicine
Subdomain: Cardiology

Abstract:

Background:
Copeptin (C-terminal fragment of provasopressin) is a marker of vasopressin release. Vasopressin is released from the neurohypophysis in response to changes in plasma osmolality and is involved in osmoregulation and cardiovascular homeostasis. The plasma concentration of vasopressin increases in patients with heart failure (HF), however it rapidly degrades in the circulation. Instead, copeptin is secreted in equimolar amounts to vasopressin and has been recently suggested as one of the promising biomarkers in various populations of patients with cardiovascular disease.

Aim:
This study aimed to identify the factors associated with the composite end-point (all-cause mortality or decompensated HF related hospitalization) within three months, with a particular focus on copeptin serum concentration.

Material and Methods:
The study was a prospective analysis of consecutive elderly patients admitted to the Department of Cardiology between 2021 and 2022 for decompensated HF. The inclusion criteria were age > 65 years, a diagnosis of HF at least 2 years prior to admission, and left ventricular ejection fraction < 40% on admission echocardiography. Copeptin values were measured in blood samples using the ELISA (Enzyme-Linked Immunosorbent Assay) technique and the Human Copeptin ELISA kit from Sunred Biological Technology Co, Shanghai, China.

Results:
The median age of patients was 76 years (68-79) and 148 (77%) were male. A composite end-point was reached by 53 (27.7%) patients during the three-month follow-up period. The area under the curve (AUC) for copeptin, fibrinogen, and uric acid serum concentrations were 0.9796 [95%CI: 0.9646-0.9945], 0.7284 [95%CI: 0.6424-0.8144], and 0.7611 [95%CI: 0.7291-0.8367], respectively.

Conclusions:
Copeptin, fibrinogen, and uric acid serum concentrations are associated with mortality and decompensated heart failure related hospitalization in the analyzed population.

Antiretroviral Drug Use and the Risk of Falls in People Living with HIV: A Systematic Review and Meta-Analysis

Author(s): Pratik Lamichhane, Michail Koutentakis, Sushma Rathi, Ayomide Daniel Ode, Hirak Trivedi, Summiya Zafar, Pratima Lamichhane, Prahlad Gupta, Rakesh Ghimire

Domain: Internal medicine
Subdomain: Infectious Diseases

Abstract:

Introduction:
Despite antiretroviral treatment (ART) revolutionizing the management of Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS), the global health challenges posed by HIV/AIDS persist, encompassing the risk of falls among people living with HIV (PLHIV) who are receiving ART. This study aims to examine the link between select ART drugs and fall risk in PLHIV, hypothesizing that specific ART medications may lead to a heightened risk of falls in those living with HIV.

Materials & Methods:
Databases, including PubMed, Google Scholar, Embase, and Cochrane Central Register of Controlled Trials, were searched from database inception to January 2023. The inclusion criteria entailed observational studies and controlled trials that examined the relationship between specific antiretroviral drugs and falls in PLHIV. Data on single falls, multiple falls, and non-fall events were extracted from the included studies. The collected data were analyzed using fixed-/random-effects models, yielding odds ratios (OR) and 95% confidence intervals (CI).

Results:
Out of 414 observed articles, five observational studies, involving a total of 51,675 participants, were considered suitable for inclusion. Stavudine usage was associated with an increased risk of single falls among PLHIVs (OR: 1.69, 95% CI: 1.08–2.66, $p = 0.02$). Conversely, efavirenz (OR: 0.82, 95% CI = 0.76- 0.89, $p < 0.001$) and zidovudine (OR: 0.82, 95% CI = 0.77-0.92, $p < 0.001$) showed a protective effect against single falls. Didanosine did not exhibit a significant association with fall risk (OR: 1.23, 95% CI: 0.78–1.93, $p = 0.37$). Other ART classes did not demonstrate important correlation.

Conclusions:
This study enhances fall risk comprehension in PLHIV on ART. It is the first systematic review and meta-analysis, revealing stavudine as a risk factor, while efavirenz and zidovudine may reduce falls. Targeted interventions are imperative for mitigating these risks, with future research projected to advance our understanding further.

Mixed reality supports superior precision and accuracy in humerus osteotomy: validation study

Author(s): Przemysław Lubiatowski, Szymon Stupnicki, Jan Niziński, Piotr Tuczyński, Agata Kaczmarek, Jakub Stefaniak, Alex Green, Kamil Roszak, Bartłomiej Lubiatowski
Domain: Surgery
Subdomain: Orthopaedic surgery
Abstract:

Introduction:
Mixed reality (MR) is a combination of virtual elements and a real environment. By using specialized headset, this technology enables to create 3-dimensional image of different objects, which can be integrated in space. We tried to explore its potential in orthopedic surgery, in the context of osteotomy. In this procedure high precision is crucial in order to adequately correct the mechanical axis of bones. Therefore virtually created tools may be beneficial to navigate surgeons intraoperatively and improve outcomes of such surgery.

Aim of the study:
The purpose of the study was to asses if Mixed reality supports precision and accuracy in humerus osteotomy

Matherials and methods:
In this preclinical study we used swine femoral bones. Osteotomy was performed by experienced orthopedic surgeon. Operator performed 30 degree osteotomy of 54 bones in three different ways (each way 18 bones). First method was Eye Bowing (EB) - osteotomy done only by surgeon's expertise, no additional guidance. Second was support by Wedge (W) - cut done using a triangle shaped physical wedge, which had exactly desired angle of osteotomy. Third, and last, guided by Holo Wedge (HW) - cut using virtually created wedge (using Microsoft HoloLens2 and RSQHOLO software). After osteotomy, excised fragment of bone was measured by an electronic protractor. Additionally AP and lateral photo views were taken to assess the axis of corrected bone.

Results:
Three different ways of performing osteotomy
showed similar, good results. But RSQHolo wedge showed smallest 95% confidence interval, which was the best in context of repeatability. Moreover lateral views of corrected bones revealed the least disruption of lateral bone axis using this tool.

Conclusions:
We concluded that RSQHolo Mixed reality wedge is helpful to gain desired precision and accuracy of humerus osteotomy.

Tumor Necrosis Factor - alpha serum levels correlate with temperament and character dimensions in adolescents with mood disorders

Author(s): Maria Terczynska, Aleksandra Rajewska-Rager, Joanna Pawlak, Maria Skibinska
Domain: Psychiatry
Subdomain: Psychiatry
Abstract:

Introduction:
Tumor necrosis factor alpha is a cytokine that plays a significant role in the pathophysiology of mood disorders. The aim of this pilot study was to investigate correlations between the TNF-alpha serum levels with Temperament and Character Inventory (TCI) dimensions in adolescents with mood disorders in a longitudinal observation, with particular emphasis on potential predictors of diagnosis conversion.

Methods:
The study involved 64 participants aged 14-24 with major depressive disorder (MDD, n=42) or bipolar disorder (BD, n=22). Patients were diagnosed according to ICD-10 and DSM-5 criteria. Subjects were recruited during the exacerbation of depressive or hypomanic/manic symptoms (baseline). During two-year observation, patients underwent five control visits. Diagnosis conversion from MDD to BD was monitored. Participants completed TCI. Serum levels of TNF-alpha were measured using ELISA. The Spearman's rank correlation was applied to analyze relationships between baseline circulating TNF-alpha levels and TCI measures.

Results:
The diagnosis change from MDD to BD was confirmed in 12 participants. Positive correlations of TNF-alpha levels with total self-directedness (R=0.66 p=0.02), RD2 - attachment (R=0.65, p=0.02), and C3 - helpfulness subdimensions of TCI were detected in the group with diagnosis conversion. Positive correlations with total reward dependance (R=0.48, p=0.01), RD2 - attachment (R=0.48, p=0.01) and SD3 - resourcefulness (R=0.41, p=0.03) were found in the group without diagnosis conversion.

Conclusion:
The correlations of TNF-alpha levels with total SD and C3 of TCI may be considered as possible markers of diagnosis conversion from MDD to BD during the early stages of mood disorders. The obtained results require replication on a larger group of adolescents.

Sleep Disorders and Motor Neuron Diseases: Correlations with disease progression, cognitive insights and quality of life.

Author(s): Dario Bottignole, Lucia Zinno, Carlotta Mutti, Andi Nuredini, Francesca Tanzi
Domain: Neurology and Sleep Medicine
Subdomain: Neurology
Abstract:

Introduction:
Sleep disorders are among the most prevalent non-motor manifestations in patients affected by amyotrophic lateral sclerosis (ALS), particularly sleep-breathing related disorders (SBD) impact on patients' quality of life and survival. So far, little attention has been dedicated to explore the association between SBD, quality of life and cognitive performances. We analysed the frequency of sleep disorders in a cohort of adult ALS patients, and whether these disorders may be associated with quality of life, severity of disease and cognition.

Materials and Methods:
This study has been carried out at the University Hospital of Parma (Parma, Italy), enrolling patients followed by the ALS Centre. A night-time Cardio-Respiratory Monitoring (CRM) was recorded for each patient, primarily collecting the Apnoea/Hypopnea index (AHI) and the Oxygen Desaturation Index (ODI). The ALS-FSR-R scale was used to assess ALS severity; the Slow Vital Capacity was used to assess the respiratory function. Several questionnaires were used to establish the presence of sleep impairments (i.e. PSQI, ESS, DBAS-16, RBDSQ), quality of life (i.e. SF-36 survey) and cognitive performances (i.e. ECAS battery).

Discussion:
Eleven patients were enrolled: six patients (54.55%) presented sleep disturbances, mainly SBDs (with a mean AHI value of 14.88 +/- 15.71 events/h and a mean of ODI of 13.07 +/- 16.54 events/h), resulting in a significantly higher prevalence than the general, age-matched, population (18.65%, p = 0.0022). Mean ESS was 5,6 +/- 3,07, while mean PSQI was 5.36 +/- 2,62. AHI and ODI positively correlated with SVC, abnormal ECAS scores presented higher AHI and ODI measures, and higher AHI and ODI measures negatively correlated with emotional subitems of the SF36 score. A positive correlation was identified between ESS and ALS-FRS-R decay rate, while a parallel negative relation between the ESS total score and the role physical and social functioning subitems in the SF36 questionnaire was found.

Conclusions:
Sleep disorders are prevalent in ALS patients, and SBDs may increase the risk for cognitive impairment and negatively affect patients' emotional stability. Daytime sleepiness worsens with disease physical progression and negatively impacts social abilities of patients. Thus, sleep evaluation could easily enrich the work-up in patients affected by ALS.


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