ANTWERP MEDICAL STUDENTS' CONGRESS

AMSC 2022

ABSTRACT BOOK

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Preface

Dear participant,

It is with great pleasure that we welcome you to the 16th 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 2022 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.

AMSC 2022 would not exist without the wonderful help of University Hospital of Antwerp (UZA). We are grateful for them and their dedication to teaching, which shows through their support of our congress. We hope to continue our collaboration in spreading science all over the world with future editions of the AMSC.

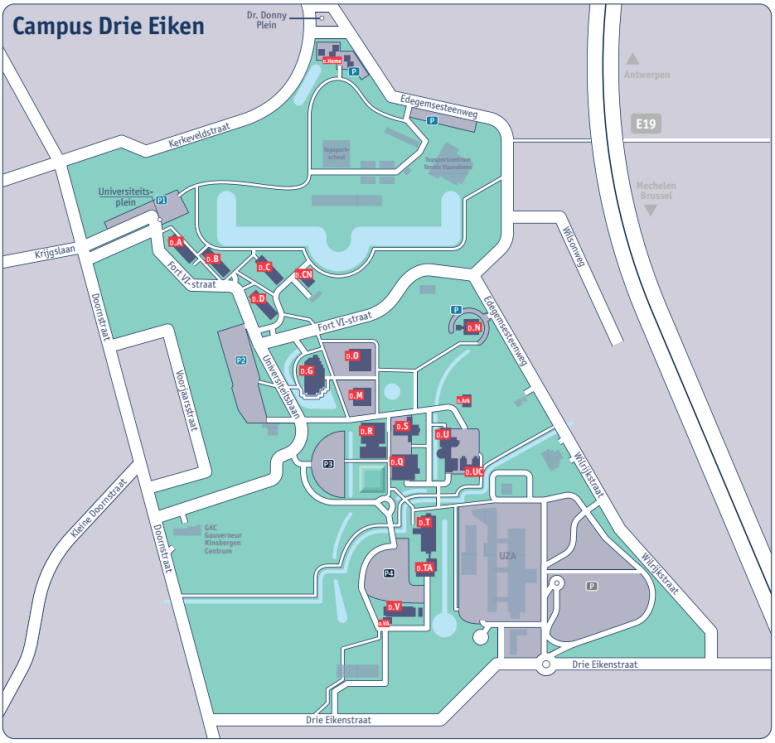
We would also like to thank the University of Antwerp for their contribution to organising this yearly event. With the dean's office, always ready to help and the professors and teachers who make an appearance in our congress.

Let us make this edition an unforgettable experience for every participant, speaker, helper and team member.

Have a wonderful time in Antwerp!

The AMSC 2022 Organising Committee

Map of the campus



Faculty of Pharmaceutical, Biomedical and Veterinary Sciences

- Dean's office ..... D.S
- Tutoring Sciences ..... D.S
- Department of Biomedical Sciences ..... D.S, D.T, D.UC
- Department of Veterinary Sciences ..... D.T, D.U, D.UC, D.Ark
- Department of Pharmaceutical Sciences ..... D.A, D.S, D.T
- Institute Born-Bunge ..... D.T
- VIB - UAntwerp Center for Molecular Neurology ..... D.V

Faculty of Medicine and Health Sciences

- Reception of Medicine and REVAKI ..... D.M
- Dean's office ..... D.S
- Antwerp Surgical Training, Anatomy and Research Centre (ASTARC) ..... D.T
- Center for General Practice ..... GKC
- Centre for the Prevention of Cancer ..... D.R
- Collaborative Antwerp Psychiatric Research Institute (CAPRI) ..... D.S
- Family Medicine and Population Health (FAMPOP) ..... GKC
- Immunology ..... D.T
- Laboratory Experimental Medecine & Pediatrics (LEMP) ..... D.T
- Molecular - Morphology - Microscopy (MVISION) ..... D.UC
- Molecular Imaging, Pathology, Radiotherapy & Oncology (MIPRO) ..... D.T
- Center for Oncological Research (CORE) ..... D.T
- Rehabilitation Sciences and Physiotherapy (REVAKI) ..... D.R
- Translational Neurosciences (TNW) ..... D.T
- VAXINFECTIO ..... D.S
- Nursing and Midwifery Sciences ..... D.R

Faculty of Science

- Department of Chemistry ..... D.B
- Department of Biology ..... D.C-D-O
- Department of Physics ..... D.N
- Tutoring Sciences ..... D.S

Faculty of Applied Engineering

- Applied Electrochemistry & Catalysis (ELCAT) ..... D.B

Reception ..... D.D
Classrooms ..... D.A, B, D, M, N, O, Q, R, S
Laboratories ..... D.A, Ark, B, C, M, O, S, T, TB, U
Aula Fernand Nédée/Promotiezaal ..... D.Q
Campus Library ..... D.R
Komida ..... D.G
Cafetaria ..... D.G
Student home ..... D.Home

Department of Student services and advice ..... D.G

- Social services ..... D.G
- Stip (Student Information Point) ..... D.G

Instituut Born Bunge ..... D.T
Central store ..... D.A
Technical services ..... D.CN
CNO ..... D.D
New Media Office ..... D.D
Course services ..... D.O

University of Antwerp

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Laboratory of Experimental Medicine and Paediatrics (LEMP)

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Translational Research in Immunology and Inflammation (TWI²N)

dr. Stijn Van Hees
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Laboratory of Experimental Medicine and Paediatrics (LEMP)

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

Collaborators

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.

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.

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 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.

We express our sincere gratitude towards Edwards Lifesciences. Our workshop about cardiac surgery would not have been possible without their surgical valve technologies.

Partners

ICHAMS

10-12 February 2022

Dublin, Ireland

MEDESPERA

12-14 May 2022

Chișinău, Moldova

ICMS

12-15 May 2022

Sofia, Bulgaria

MEDICALIS

26-29 May 2022

Cluj-Napoca, Romania

ISCOMS

8-10 June 2022

Groningen, Netherlands

ISC

16-18 June 2022

Graz, Austria

YES MEETING

15-18 September 2022

Porto, Portugal

IMED CONFERENCE

12-16 October 2022

Lisbon, Portugal

IMSCB

23-27 November 2022

Bucharest, Romania

BIMCO

2022 edition postponed

Chernivtsi, Ukraine

LIMSC

15-19 March 2023

Leiden, Netherlands

Speakers and facilitators

Prof. dr. Tomas Menovsky

Lecture: Evolution and innovations in neurosurgery

Date: Tuesday, September 13th

Time: 09:15-10:30

Prof. Dr. Menovsky is head of the department of neurosurgery at the Universitary Hospital of Antwerp and a professor at the University of Antwerp. He is specialized in neurovascular surgery, skull base surgery, intracranial tumors, peripheral nerves and the Moya-Moya disease. This year he will provide a lecture about neurosurgery entitled: evolution and innovations in neurosurgery, in which he will share his knowledge about the recent developments and innovations in the field of neurosurgery.

Prof. dr. Peter Michielsen, Annelies Marien, prof. Kristien Hens and prof. dr. Bettina Blaumeiser

Masterclass: Medical ethics

Date: Wednesday, September 14th

Time: 15:15-16:45

Prof. dr. Peter Michielsen works in the Gastroenterology and Hepatology Department at the University Hospital Antwerp and is specialized in gastroenterological cancers. He also works at the University of Antwerp in the Department of Translational Sciences in the domain of Immunology and Inflammation. Further, he is a member of the Medical Ethics Committee and the Ethical Advisory Committee for Social and Human Sciences.

As a bioethicist, prof. Kristien Hens deals with questions about (epi)genetics and concepts of biology. She is also interested in questions about neurodiversity (autism, ADHD...) and responsibility. Her current project NeuroEpigenEthics is sponsored by an ERC Starting Grant. Furthermore, she is a member of the Belgian Young Academy and Medical Ethics Committee.

Prof. dr. Bettina Blaumeiser is a gynecologist and obstetrician with accreditation in Belgium, Germany and Norway. She obtained her PhD in medical sciences in 2007 with a thesis on the genetic causes of alopecia areata. Prof. dr. Blaumeiser has a specific interest in prenatal diagnosis, complex genetic diseases and hereditary cancers, as well as the treatment of rare diseases and genetic counseling in general. She is currently a clinical geneticist and gynecologist at the University Hospital Antwerp. She is also a professor at the University of Antwerp and a member of the Medical Ethics Committee.

Annelies Marien obtained her master's degree in law at the University of Antwerp. She then worked in the diplomatic department of the Belgian Consulate General in New York. Annelies is now associated with the Dewallens & partners office.

These experts will lead the masterclass ‘Medical Ethics’! In this masterclass you will understand the role of ethics in medicine and the functioning of the ethics committee. In groups the students will receive cases with ethical issues and discuss them. Towards the end all groups will come together and there will be a panel discussion that will be supported by the experts.

Dr. Katrien Maes and dr. Annik Simons

Lecture: Eating disorders

Date: Thursday, September 15th

Time: 09:00-10:30

Dr. Katrien Maes and dr. Annik Simons are psychiatrists active in ZNA Middelheim. They are specialized in general psychiatry and child and adolescent psychiatry. This year they will give a lecture about eating disorders. In this lecture the characteristics of anorexia nervosa will be discussed with special attention to the presentation on childhood. The etiology will be explained by the bio-psycho-social model and transdiagnostic model of Fairburn. An overview of the different therapies will be given, illustrated by some imagery.

Prof. dr. Liesbeth Lewi

Lecture: Fetal surgery

Date: Thursday, September 15th

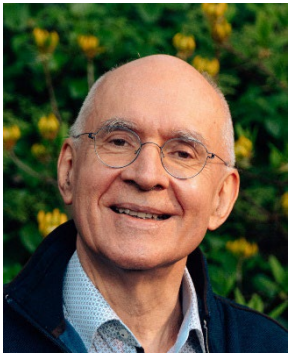
Time: 10:45-12:15

Prof. dr. Liesbeth Lewi is an expert in fetomaternal medicine with nearly twenty years of experience at the university hospital in Leuven. She has been especially active in the subdisciplines of multiple pregnancies and high-risk obstetrics as well, and is internationally renowned in her field, also making regular appearances in the Belgian medical television docuseries “Topdokters”. During her lecture, she will tell us more about the innovative field of fetal surgery.

Dr. Edel Maex

Workshop: mindfulness

Date: Thursday, September 15th



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.

Dr. Suresh Krishan Yogeswaran

Workshop: Da Vinci robot

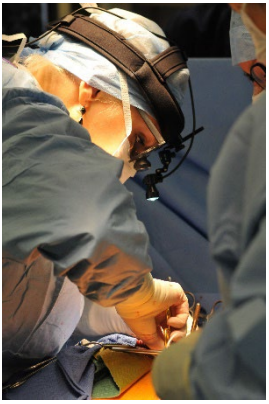
Date: Thursday, September 15th

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.

Dr. Dina De Bock and dr. Jan Coveliers

Workshop: Cardiac Surgery

Date: Thursday, September 15th



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 and is often invited to give lectures. She is Chairman of the national College of Cardiac Surgery and a member of the Belgian Board of Cardio-Thoracic Surgery (BACTS).

Doctor Jan Coveliers is an European Board Certified cardiac surgeon. He is currently working as a staff member at the Antwerp Universital Hospital. His clinical interests include aortic surgery, mechanical circulatory support and heart failure. During his surgical residency he was very commited to surgical training and introduced the silver scalpel award and cadaver workshops while he was president of BAST en BYCTS.

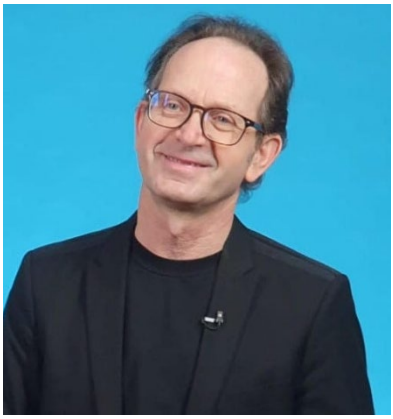
This wetlab for structural heart disease will be given by the two experts within cardiac surgery.

Dr. Floris Wuyts

Lecture: Space

Date: Friday, September 16th

Time: 10:45-12:15



Prof. dr. Floris Wuyts is part of the EDA Artificial Gravity Expert Group (AGEG), a group of experts appointed by the European Space Agency (ESA) to advise ESA regarding ground based and space studies related to artificial gravity.
Space research shows how humans deal with unusual situations. Because of his experience with more than 50 astronauts and cosmonauts, Floris Wuyts is the ideal person to teach us about the impact of prolonged weightlessness on the human body and in this case on the brain and vestibular system. Topics that will be discussed are neuroplasticity and how we as humid adapt to extreme conditions.

Chimes

Basic and Mid-Level Suturing

Date: Friday, September 16th

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 and mid-level suturing under the guidance and supervision of Chimes team members!

Anouk Van de Vel

Workshop: EEG

Date: Friday, September 16th

Ms. Anouk Van de Vel is an EEG analyst at the pediatric neurology department of the Universitary Hospital of Antwerp and is part of the department of translational neurosciences.This year she will provide an interactive EEG workshop, in which she will explain the basics of EEG and it's interpretation in an interactive way, supported by some cases.

Afromedica

Workshop: Diversity in healthcare

Date: Friday, September 16th

AfroMedica is a group of healthcare professionals working together with students towards the same goal: addressing and improving health care gaps. Many health care professionals already recognize that a commitment to diversity is critical, but there is still a long way to go.

There are many shortcomings such as a lack of representation of pathologies in people of color, micro-aggression during internships towards students with a migration background and lack of research into inequalities both in Belgium and Europe. That is why this workshop, which will be about skin conditions on dark skin and diversity in the workplace, is an important step in the right direction.

Abstracts

Poster presentations

SARS-COV-2 ASSOCIATED MULTISYSTEM INFLAMMATORY SYNDROME IN CHILDREN AND ACUTE APPENDICITIS: CASE REPORT

Author(s): Sofia Phirtskhalava, Israel Magen

Domain: Internal Medicine - Case Report

Discipline: Pediatrics – Infectious diseases

Abstract:

Introduction/Case history/Investigations: Nine-year-old boy had headache, periorbital edema, diffuse abdominal pain, diarrhea, and a fever of 39.5-40 °C for the last five days. On the fifth day, when symptoms became unmanageable, the patient was admitted to the local hospital. Physical examination revealed clinical signs relevant to an acute abdomen, such as abdominal rigidity. Based on clinical presentation and laboratory findings, acute appendicitis was diagnosed and an appendectomy was planned.

Parallelly, anti-SARS-CoV2 antibody serology test was performed with a strongly positive result. Surgical intervention was performed.

After the surgery, the patient's condition worsened dramatically, resulting in shock, which led him to be placed in the critical care department. Diagnostic studies revealed leukocytosis with granulocytosis; normocytic anemia; elevated levels of troponin, D-dimer, ferritin, CRP and ESR. Impaired liver function tests (elevated AST, ALT), hypoalbuminemia was also detected. Abnormal coagulation studies (increased PT, INR, PTT) were also apparent. Cardiac ultrasonography revealed slight dilation of the right coronary artery.

Treatment: Treatment was started according to national protocol with corticosteroid, combined with antibiotics, anticoagulation and antiplatelet therapy.

Results: After 4 days of treatment in the Intensive Care Unit, the patient was transferred to the ward and discharged to the apartment within a few days.

Discussion: We have reviewed the clinical case of appendectomy performed on the background of SARS-CoV-2 associated multisystem inflammatory syndrome in children. Such cases have been described in the literature, but the main question remains unanswered - is appendicitis a complication of multisystem inflammatory syndrome and therefore requires the necessary surgical intervention or does severe abdominal pain and peritonitis-like manifestations in the setting of multisystem inflammatory syndrome do not require surgical approach and can be managed with conservative treatment.

Intracranial rheumatoid nodules: a rare localization of rheumatoid arthritis.

Author(s): Griet Verboven, Yasmine Sluyts, Gert De Mulder, Filip Stessels, Harald De Cauwer

Domain: Internal Medicine

Subdomain: Neurology

Abstract:

Introduction: A 64-year-old female diagnosed with rheumatoid arthritis (RA) presented with ageusia and anosmia for several months. On clinical examination the finger-nose test and heel-knee test showed to be slightly atactic and dysmetric bilaterally.

Case history: Extensive joint disease in her hands, arms and both shoulders led to the diagnosis of rheumatoid arthritis in 2009. She was treated with leflunomide and corticosteroids. In 2019 several rheumatoid nodules were established in the lungs with necrotic cavitation and necrosis.

Investigations: An MRI showed four irregular noduli situated intra-axial in the periphery of the anterior half of the left temporal lobe with significant perilesional edema. A tissue biopsy was obtained. There were necrotic aspects with an atypical infiltration which did not confirm a glioblastoma or other cerebral neoplastic disease. Additional Pathology examination showed granulomatous changes in the brain parenchyma most likely due to rheumatoid arthritis.

Treatment: As the disease was progressively worsening , surgical resection was necessary. Leflunomide was omitted and rituximab was initiated instead.

Discussion: Intracranial rheumatoid nodules have sporadically been reported in literature. Anti-inflammatory drugs such as leflunomide can be associated with an increased risk of rheumatoid nodules. RA knows a more adverse prognosis when rheumatoid nodules are present.

Buried Bumper Syndrome - A rare complication of Percutaneous Endoscopic Gastrostomy

Author(s): Brecht Mullebrouck

Domain: Internal Medicine - Case Report

Discipline: Gastro-enterology

Abstract:

This case concerns a 77-year old man with a history of a malignant mandibular tumour for which he received a resection two years prior. After the resection, he received a percutaneous endoscopic gastrostomy(PEG) due to unsafe swallowing. He presents in the emergency department with 5 days of diarrhea, 3 days of vomiting and nausea. On physical exam we notice leakage around the place of insertion. The PEG-tube itself is hard to mobilize.

A biochemistry panel showed hypernatremia, hyperchloremia and hyperosmolality, indicating dehydration, and an elevated ureum, likely due to high-intestinal bleeding.

C-Reactive Protein(CRP) was elevated to 68,6 mg/L, pointing to an active inflammation. A gastroscopy was performed to evaluate the position of the PEG-tube. This showed complete overgrowth of the internal fixation (internal bumper) of the PEG-tube, which is diagnostic of Buried bumper syndrome (BBS). Subsequently a more detailed evaluation of the anatomy was performed through a Computer Tomography(CT)-scan of the abdomen, which showed the internal bumper located too anteriorly and surrounded by a collection of fluid.

Treatment consisted of gastroscopic release, removal and replacement of the defective PEG-tube. The procedure was executed without complications and the patient was able to leave the hospital after a few days of supportive treatment.

The poor placement of the internal fixation of the PEG and the subsequent overgrowth caused a rare complication of PEG placement: the buried bumper syndrome. BBS is a rare (0.3 - 2.4% of PEG's) and serious complication, often leading to dehydration through diarrhea, vomiting and dysfunction of the PEG-tube. Diagnosis is based on clinical findings and confirmed through gastroscopy. Treatment consists of gastroscopic or surgical revision. Clinicians should be aware of this condition, as it is easily preventable and PEG-tubes are frequently encountered in the clinic. (1-6)

IMPROVING THE DETECTION RATE OF FETAL CONGENITAL HEART DISEASES BY INTRODUCING THE THREE-VESSEL AND TRACHEA VIEW IN ROUTINE ULTRASOUND.

Author(s): Lieselotte De Ceunynck, Eline Hendrickx, Isabel Housen

Domain: Internal Medicine

Subdomain: Gynecology

Abstract:

Introduction: In April 2021, the Flemish OBGYN college updated their guidelines for prenatal cardiac ultrasound in accordance with the ISUOG and AIUM guidelines by adding a mandatory transverse three-vessel and trachea plane (3-VTV). This study is a simulation of both hypothetical and literature-based data to evaluate whether this extra mandatory ultrasound view improves the prenatal detection rate of CHD.

Methods: Over 20 years (1997 to 2016) the population-based EUROCAT-Antwerp registry recorded 2.563 patients with a CHD diagnosis. The standard method to assess the fetal heart by routine mid-trimester, was the use of four transverse planes through the thorax.

First, a hypothetical added value is derived from simulations in the EUROCAT population. This is based on the assumption that when a specific type of CHD gives rise to an abnormal 3-VTV, the theoretical detection rate will increase up to 100%. Second, the EUROCAT registry is compared with literature-based data that includes 3-VTV in the routine ultrasound. Both simulations are statistically calculated by the one proportion Z-test.

Results: In the EUROCAT-database 529 of the 1807 CHDs were prenatally detected (29,3%). Based on the meta-analysis, adding the 3-VTV to the routine ultrasound increases this proportion to 78,55% (75,85%-100%). The hypothetical simulation has an estimated increase up to 50,6%. This gain in detection rate for both the literature-based and hypothetical data is statistically significant ($p \leq 0,05$).

Conclusion: The three-vessel and trachea view significantly contributes to the prenatal detection of congenital heart diseases. The implication of introducing this extra plane to the routine prenatal ultrasound is a well-considered and responsible decision.

PERIPHERAL BLOOD EOSINOPHIL COUNT IN WHEEZING INFANTS – CAN EOSINOPHILS PREDICT ASTHMA?

Author(s): Aleksander Adamiec, Maja Cieślik, Katarzyna Mączka, Joanna Tarnoruda

Domain:Internal Medicine

Discipline: Pediatrics

Abstract:

Introduction: Pre-school children with wheezing disorders represent a diagnostic challenge. Mostly, wheezing episodes are transient, but some infants develop recurrent wheezing. There exists an unmet need for a cheap and reliable method of differentiating between these two groups of children. Peripheral blood eosinophil count (EBC) has already been proposed as one of the possible asthma indicators. There is, however, a striking lack of data on the subject. The purpose of this review was to validate the value of EBC in asthma prediction and identify the cut-off points.

Materials and methods: In November of 2020 PubMed, EMBASE and Cohrane Library databases were searched to identify studies comparing EBCs between wheezing infants who would develop asthma in later life and those who would not. Included articles where all types of observational studies which involved wheezing children aged <6 years, their EBCs and subsequent asthma status. The studies were independently reviewed by four researchers.

Results: Of the initial 2917 findings, 36 studies were subjected to full-text analysis and eventually 14 of them were chosen. The retrieved data indicates that high EBC in wheezing infants predicts asthma development in future years, although some articles suggest that an elevated EBC is only indicative if independent of an infection. Additionally, there is a great variability between the EBC cut-off points, which range from 84/mm3 to as high as 470/mm3.

Conclusion: There is a surprising lack of consistency in defining a cut-off point for an elevated EBC. EBC testing is cheap and broadly accessible. Given the proper systematic data, EBC can aid physicians to introduce early asthma treatment with benefit to the patient. Further analysis of the available data is required to facilitate the routine use of EBC in daily prediction of asthma.

Pheochromocytoma in pregnancy associated with neurofibromatosis type 1

Author(s): Wiktoria Stańska

Domain: Internal Medicine

Discipline: Endocrinology - Oncology

Abstract:

We present a case report of a 30-year-old female patient with neurofibromatosis type 1, who was diagnosed with pheochromocytoma before pregnancy. The tumor was asymptomatic. The patient's blood pressure was 110/70, without orthostatic hypotension and her rate was 92/min., without arrhythmia.

The patient was admitted to the outpatient clinic at Karowa Clinical Hospital in Warsaw in the first trimester of her first pregnancy. The patient had hemartomas in the central nervous system, optic nerve glioma, and multiple neurofibromas on the spinal nerves and the right eyelid.

A year before, she underwent routine examination due to her underlying disease. CT revealed a 36x25mm size mass, 50HU, in the right adrenal gland. MRI showed no signal dropout. 24h urine collection revealed high metoxycatecholamine concentration. Additionally, scintigraphy confirmed the diagnosis of pheochromocytoma.

Doxazosin was administered, and later metoprolol was added. Elective adrenalectomy was planned before the pregnancy, but the outburst of the COVID-19 pandemic led to its cancellation. In the meantime, the patient became pregnant. Pharmacological treatment was continued during the pregnancy as a pretreatment before removing the adrenal gland, which outweighs the risk of perinatal pheochromocytoma attack. No peaks in blood pressure were observed. In the 27th week of gestation, she underwent uneventful surgery. Cardiotocography and ultrasound scans were normal. At 39 weeks of pregnancy, she gave birth by an elective cesarean section to a healthy, 3170g girl. The perioperative and early postnatal period was uneventful.

Our study clearly shows that the course of pregnancy can be uneventful despite having pheochromocytoma. It's a rare cause of hypertension during pregnancy and can be easily misdiagnosed with more common gestational hypertension, pre-existing chronic hypertension, and even preeclampsia. That is why differential diagnosis is crucial, particularly in treatment-resistant hypertension. Screening high-risk patients, early diagnosis, and proper management can result in good maternal and fetal outcomes.

Elevated CA-15.3 in a patient with megaloblastic anemia – a red herring in breast cancer follow-up

Author(s): Martin Wyckmans

Domain: Internal medicine

Subdomain: Oncology

Abstract:

Introduction:

The cancer antigen 15.3 (CA-15.3), based on the MUC 1-gene, is a tumor marker that is frequently used in follow-up of patients with breast cancer, although it determination is not recommended in asymptomatic patients according to the ESMO guidelines.(1,2)

This antigen, based on the MUC 1-gene, is expressed on the apical surface of epithelial cells.(1)

Although useful, CA-15.3 is not suitable for diagnosis of breast cancer, as several other conditions can increase the amount of serum CA-15.3.(3) In this case report, we present a patient with a history of breast cancer and elevated CA-15.3 tumor marker.

Case History: A 65-year old woman experienced fatigue and difficulties in self-care. She had a history of ductal adenocarcinoma in the right breast (pT2pN0cM0; grade III, estrogen receptor positive, progesterone receptor positive, HER-2 status negative).

Investigations: Physical examination revealed two nodules in the right breast. Additional blood samples showed a macrocytic anemia, thrombocytopenia, leukocytopenia and elevated erythroblasts. Folic acid and vitamin D levels were decreased. CA-15.3 was elevated to twice the normal threshold.

Biopsy and PET-scan did not reveal arguments for a recurrence of breast cancer, but a homogenously increased signal of the bone marrow and bilateral pleural fluid was observed.

Results: The patient was diagnosed with a megaloblastic anemia due to folic acid deficiency. Supplementation of folic acid resulted in a correction of the pancytopenia and normalization of the CA-15.3 levels.

Discussion: CA-15.3 is a tumor marker that can be elevated in benign disease. This marker is present in differentiating erythroid cells such as erythroblasts. Presence and apoptosis of erythroblasts in peripheral blood will logically increase CA-15.3 levels. An elevation of CA-15.3 requires a broad differential diagnosis, including hypothyroidism, liver cirrhosis, hepatitis, sarcoidosis, lupus and rheumatoid arthritis. This way, patients can be reassured if another underlying condition besides malignancy is the cause of CA-15.3 elevation. Our patient made an uneventful recovery.

Treatment-resistant paraganglioma of the retroperitoneal space

Author(s): Weronika Kowalczyk, Agnieszka Żyłka MD, PhD
Domain: Internal Medicine
Discipline: Endocrinology
Abstract:
Paraganglioma is a rare neuroendocrine tumor with ability to secrete catecholamines. The most common clinical symptom is overactivity of sympathetic nervous system.
A 73-year-old male patient was admitted due to detection of a tumor on ultrasound (US) examination on 04.2019. He complained of long-term constipation and back pain without weight loss. His past medical history is significant for hypertension, atrial fibrillation and hyperlipidemia. Physical examination revealed a soft abdomen without palpable masses. Computed tomography (CT) of the abdomen revealed an 8x6x8cm solid heterogeneous tumor in the retroperitoneal space invading the aortocaval space. High scores of methoxy derivatives of catecholamines were found in plasma (normetanephrine - 7099pg/ml; the norm is to 200pg/ml) and urine. Histopathological examination confirmed paraganglioma. Radiological studies have shown that the tumor is inoperable. Genetic testing revealed no relevant mutation. Whole-body scintigraphy and SPECT at 24, 48 and 72 hours reveal areas of high I-131MIBG-uptake in the tumor. On 11.2019 the patient was started on I-131MIBG treatment. He received 4 doses every 5 months. The follow-up US and scintigraphy after each treatment revealed that the tumor size remained unchanged, no metastases were found. In 05.2021 intensity-modulated radiation therapy (IMRT) was introduced for 6 weeks with a total dose of 4860cGy/T. A PET scan performed after this treatment showed no change in tumor mass. The patient is currently under observation and waiting for a follow-up CT scan. Oncologists plan to introduce chemotherapy in case of unsuccessful treatment.
Paraganglioma can correlate with mutations: RET, VHL, NF1, SDH. Surgical removal is the first option of treatment. I-MIBG therapy, radiotherapy or chemotherapy are used when radical surgery is impossible. Although this patient was symptomatic with I-MIBG-uptake, the tumor was resistant to treatment. This prompts the search for new therapeutic pathways and multidisciplinary approaches between experienced medical specialists.

Recurrent infective endocarditis in a 44-year-old patient – a case report

Author(s): Joanna Ozga
Domain: Internal Medicine
Discipline: Cardiology
Abstract:
Introduction:
Patients surviving a first episode of infective endocarditis (IE) have a significantly worse survival than the general population, mainly due to late complications such as heart failure, and a risk of recurrence. Recurrent IE usually occurs within 2 months of finishing clinically effective therapy.
Case history:
A 44-year-old male patient with hypertension and atopic dermatitis (AD) was transferred from a regional hospital due to suspected recurrent IE with the presence of fever and the elevation of the inflammatory markers. In the past the patient overwent IE of the mitral valve in 2014 of Staphylococcus aureus etiology. In 2015, the patient suffered from Staphylococcus sepsis after the dental procedure, treated with vancomycin and gentamicin. In 2018 the patient had septic shock of Staphylococcus etiology and was treated in the intensive care department.
Investiagtions:
On admission the patient was hemodynamically stable, and he presented a diastolic murmur 4/6 (Levine Scale) over the apex of the heart. In laboratory tests: the C-reactive protein was elevated 8,1H mg/L [<5,0], NTproBNP 70pg/mL [<125], procalcitonin <0,05ng/mL, Methicillin-sensitive Staphylococcus aureus was detected in blood culture. In the transthoracic echocardiogram, the rupture of mitral valve chordae tendineae was detected. The single-photon emission tomography and computed tomography with technetium99m-hexamethylpropyleneamineoxime—labeled leukocytes (99mTc- HMPAO-SPECT/CT) were performed during the antibiotic treatment. No pathological uptake of radiolabeled leukocytes in the cardiac region was observed, showing a good response to ongoing treatment.
Treatment:
On admission, he was treated with targeted antibiotic therapy (vancomycin 2 gram per day) During hospitalization, the vancomycin was changed to 3 grams per day due to the low blood level The patient was consulted by Heart Team and qualified to further pharmaceutical IE treatment.
Discussion:
Recurrent IE is a severe, potentially fatal infection that can cause complications such as heart valve damage or heart failure. Early diagnosis and treatment of IE are vital.

Treatment of significant bone fragment loss: a case report

Author(s): Szymon Sztuczka

Domain:Surgery

Discipline: Orthopedics

Abstract:

Introduction:

A 39-year–old male patient was admitted to the Department of Orthopedic Surgery and Traumatology due to destabilization of the femoral implant. Prior year he suffered from polytrauma after a road accident.

Case history:

Polytrauma consisted of open-book pelvic fracture, comminuted open fracture of the right femur with 13cm of bone loss and fractures of both shanks. The right femur and tibia were stabilized with external fixators. The femur bone loss was initially planned to be filled with a vascularized fibula graft. In order to perform this surgery, a bridging plate was first placed on the femur. During the five-month wait for the graft, the plate bent and destabilized. Decision on changing plate into nail and use of autologous bone grafts mixed with frozen bone grafts was made.

Investigations:

Physical examination revealed destabilization of the femoral implant and lack of tibia fusion on radiography.

Treatment:

The patient demanded non-standard treatment. He underwent a two-stage surgery. Intramedullary nail locks were removed from the right tibial fracture and a fibula osteotomy was performed. Next, the plate bridging the right femur fracture was removed and intramedullary nail (T2 Femur A/R Stryker) was used to fix and stabilize the femur. In the end, autogenous bone grafts harvested from the iliac crest mixed with frozen bone grafts were introduced into the bone defect site. The patient was discharged from the hospital after five days. Five months after surgery, the bone united, with somewhat limited range of motion in the knee joint and slight limping.

Discussion:

The non-standard procedure applied in the treatment showed a successful effect. The decision to insert the intramedullary nail and bone grafts resulted in the possibility of bone fusion and consequently a significant improvement in the mobility of the lower limb.

Pain management in pediatric patients undergoing the Nuss procedure

Author(s): Miodrag Belopavlović
Domain: Surgery
Discipline: Anesthesiology
Abstract:
Introduction. Pectus excavatum (PE) is the most common congenital chest deformity. The Nuss procedure is considered the gold standard of surgical treatment of PE in the adolescent population. Although this procedure is considered minimally invasive, patients experience significant postoperative pain.
Aim. The aim of this study was to determine the characteristics and significance of perioperative analgesia in patients undergoing Nuss procedure.
Material and methods. The study was conducted as a clinical retrospective study. The analysis included patients undergoing Nuss procedure at Clinic for Pediatric Surgery in Novi Sad, in the period from 2006 to 2019. Collected data include general patients information, diagnosis, preoperative preparation and premedication, type of anesthesia and postoperative analgesia, total consumption of anesthetics and analgesics. For all patients, data were obtained from the hospital information system.
Results. The study included 36 patients aged 9 to 19 years. There were statistically significantly more males. Opioid analgesics used during anesthesia were fentanyl and remifentanil. 22.2% of patients recieved a bolus dose of fentanyl during anesthesia, while 77.8% of patients received a continuous infusion of remifentanil. Epidural anesthesia was used in 16.6% of patients. Remifentanil was given to 26 patients postoperatively. The difference between the number of patients who recieved remifentanil and those who did not was statistically significant. Postoperatively, 88.8% of patients required the use of systemic analgesics. 50% of patients recieved dual analgesic therapy.
Conclusion. Regional anesthesia was used in 6 patients with good but insufficient effect. Remifentanil proved to be the best opioid analgesic. The combination of remifentanil with systemic analgesics has been shown to be effective.
Keywords. Pectus excavatum; Nuss procedure; Analgesia

Calcifying arms- a rare case of synovial chondromatosis involving multiple joints.

Author(s): Weronika Skoczek, Julia Janecka, Ph.D. Bogna Grygiel-Górniak
Domain:Surgery
Discipline: Orthopedics
Abstract:
Introduction: A 45-year-old patient was admitted to the Orthopedic Department presenting with persistent joint pain and an enlarged outline of the left humeral joint and both elbows.
Case history: The patient has an extensive medical history consisting of glomerulonephritis, due to which he has been dialyzed for 12 years now. Three years ago, he started to struggle with joint aches and stiffness.
He underwent an arthrotomy of the right elbow joint with the removal of calcifications and inflammatory fluid. From the left humeral joint, a big classified mass has been surgically removed. After the operation, there was a complete remission of the symptoms.
Investigations: The histopathological examination of the specimen removed during the surgery of the shoulder revealed metaplastic synovium organized into nodules with extensive calcifications.
After the surgeries, the symptoms recurred.
The recent X-ray scans of the left shoulder girdle showed a huge 130x172mm calcified mass located in the proximal end of the humeral bone, as well as the osteoporotic changes close to the acetabulum. Scans of both elbows also presented significant pathological calcified regions accounting for circa 64 x 67 x 34mm in the left joint.
Treatment/results: The patient was qualified for the reoperation on his left humeral joint in which the metaplastic nodules were removed. After the successful intervention, the patient was discharged home.
Discussion/ differential diagnosis: A rheumatological consultation revealed no signs of systemic diseases nor crystal formation within the joints. Based on the histopathological result and radiological findings, a diagnosis of synovial chondromatosis was made. It is a rare benign condition affecting the synovial membrane with the formation of loose chondroid bodies within the joint space, which causes pain and joint dysfunction.

Diagnostic challenge- when everything seems to be okay. A case report of an adolescent patient with suspicion of Munchausen syndrome.

Author(s): Julia Janecka

Domain:Pediatrics

Discipline: Psychiatry

Abstract:

Introduction: We present a case of a 13-year-old female complaining of hemoptysis for the last two days and chronic chest pain due to which she was admitted to the ER.

Case history: She has an extensive history of past hospitalizations and was examined by different specialists several times. A year prior, she was admitted to the Pediatrics Department with persistent headache, where the diagnosis of migraine was made. It was followed by the hospitalization in the Cardiology Ward, where no abnormalities were found. However, during the multiple subsequent visits to GP, propranolol was administered for elevated blood pressure.

Investigations: During her current hospitalization, the patient was examined thoroughly, and the laboratory tests showed no deviation from the norm. She had a gastrointestinal, pulmonological, and ENT examination where no abnormalities were found except for the small rupture of the mucous membrane of the tongue, which did not correspond with the presented symptoms.

Treatment/results: Due to the diagnostic limitations of the current facility, she was transferred to a reference center for an extended examination. In detailed diagnostic evaluation consisting of CT scans, bronchoscopy, gastroscopy, and bronchoalveolar lavage showed no abnormalities. Due to the patient's incompliance, the psychiatric consultation was discontinued. She was discharged home with suspicion of Munchausen syndrome.

Discussion/ differential diagnosis: The patients with the Munchausen syndrome are intentionally producing physical or psychological symptoms to gain attention, sympathy, and treatment. In order to obtain that, they can exaggerate symptoms, overdramatize, or even self-harm, yet are not driven by the financial benefits or ailments. The diagnosis process is challenging because it is often made by excluding other disorders and that is how it happened in our case.

EXTREMELY RARE PULMONARY METASTASIZING BASAL CELL CARCINOMA – CASE REPORT

Author(s): Kajetan Kiełbowski, Seweryn Skrzyniarz, Piotr Lisowski, Małgorzata Wojtyś, Janusz Wójcik, Michał Kunc, Konrad Ptaszyński

Domain:Surgery

Discipline: Thoracic Surgery

Abstract:

Introduction: 72-year-old non-smoking male patient was admitted to the hospital due to discovery of neoplasm in the right lung in May 2018. He was asymptomatic and physical examination was within normal ranges.

Case history: In 2010 the patient underwent prostatectomy due to prostate cancer and skin basal cell carcinoma (BCC) resection with radiotherapy in 2014.

Investigations: Chest-CT examination confirmed 11 mm nodule in the 2nd segment of the right lung, most probably of a post-metastatic character. PET-CT was performed which showed standardized uptake value 2.45 for the lesion. This result spoke in favor of neoplastic background.

Treatment/ results: It was decided that patient needs to be treated surgically. Thoracotomy in 5th intercostal space was performed which revealed a 1,5 cm mass in the 2nd segment of the right lung. It was approached by wedge resection. Intraoperative histopathological examination confirmed pulmonary metastasizing BCC. By immunohistochemistry, neoplastic cells expressed CK5/6, p63, and EMA (focally), BCL-2, and CD10 whereas they were negative for CK7, CK20, S100, estrogen and progesterone receptors, and TTF- Histologically, two lesions (skin cancer resected in 2014 and pulmonary mass) were similar, which allowed for final diagnosis. The patient is still alive and in good physical condition.

Discussions/ Differential diagnosis: BCC is the most common human skin cancer typically developing on sun-exposed skin. Life-time risk of occurrence is estimated for 30% in Caucasians [1]. On the contrary, metastasizing BCC (MBCC) is extremely rare, ranging from 0,0028 to 0,55% of BCC patients [2]. To the best of our knowledge, only around 350 cases of MBCC in various anatomical locations were published.

CLINICOPATHOLOGICAL FEATURES OF INTRATHORACIC LIPOSARCOMA - SYSTEMATIC REVIEW WITH AN ILLUSTRATIVE CASE

Author(s): Kajetan Kiełbowski, Estera Bakinowska, Nikola Ruszel, Seweryn Skrzyniarz, Małgorzata Wojtyś, Darko Gajić, Konrad Ptaszyński

Domain:Surgery

Discipline: Thoracic Surgery

Abstract:

Introduction: Liposarcomas (LPS) are one of the most frequent soft-tissue malignancies, accounting for 20% of cases. Typical location of LPS include extremities and retroperitoneum. Intrathoracic LPS is a rare entity published mainly in case reports. The aim of this study is to provide insight into clinicopathological features of intrathoracic LPS with an illustrative case and systematic review.

Materials and methods: Thorough search through PubMed and Embase databases was performed. Inclusion criteria consisted of case reports or case series of intrathoracic LPS in English. Pediatric, chest wall, esophageal or pericardiac LPS were not included.

Results: The total of 123 articles with 198 patients were included in this systematic review (together with reported illustrative case). Mean age of included patients was 55 years. Liposarcoma originated from mediastinal tissues, pleura or lung in 75%, 17% and 7% respectively. Symptoms included dyspnea (50%), chest pain (29%), cough (26%) and dysphagia (13%). 96% of included patients underwent surgical resection. Additional chemo- or radiotherapy was introduced in 35 and 20 patients respectively. The most common histological subtype was well-differentiated LPS (WDLPS, 44%), followed by dedifferentiated (21%), myxoid (19%) and pleomorphic (9%). The biggest tumors were observed in case of WDLPS (mean 20 cm). LPS heavier than 3000g were the most common (37% of included patients). Recurrent disease was reported in 53 patients (37%) and developed from 6 to 96 months postoperatively. 5-year survival rate of included patients was 62%. The best prognosis was observed in WDLPS (80%) while the worst in myxoid LPS (31%).

Conclusions: Surgical resection offers the best possible outcomes in intrathoracic LPS. Prognosis differs based on histological subtype and WDLPS has the highest survival rate. Additionally, LPS patients require a long-term follow-up period as recurrence may develop years postoperatively.

Is it FAHR'S SYNDROME OR SEVERE HYPOCALCIEMIA, CAUSED BY CLOSTRIDIUM DIFFICILE INFECTION?

Author(s): Fayez Fahal, Elisha Taylor, Presiyana Nyagolova

Domain:Internal Medicine

Discipline: Endocrinology

Abstract:

INTRODUCTION: A 48-year-old male ITT was admitted to the hospital due to transient loss of consciousness, difficulty swallowing, diarrhoea for a month, and loss of 35 kg for that period.

HISTORY: At the end of November 2021, he contracted COVID-19 and was admitted to the ICU. One week after discharge he complained of fever, dry cough, headache, fatigue, muscle ache, anorexia, nausea, vomiting, dysphagia, abdominal tenderness, and severe diarrhoea persisting for a month, with progressive worsening of general health. Denies any concomitant diseases. Positive family history of diabetes mellitus and arterial hypertension.

INVESTIGATIONS: The patient was somnolent, confused, subfebrile. Appearing pale, dehydrated with dry mucous membranes, and poor skin turgor. With hypotension (85/60 mmHg) and tachycardia (110 bpm). There was generalized abdominal tenderness.

Computer tomography (CT) of the brain revealed "sun ray" calcifications in parietal lobes and focal calcifications in the basal ganglia bilaterally. Laboratory studies displayed hypocalcaemia, hypomagnesemia, hyperphosphatemia, low-normal parathyroid hormone, vitamin D3 deficiency, anaemia, hypoalbuminemia, systemic inflammatory response syndrome, and pre-renal kidney failure. Positive stool test for C. difficile toxin genes.

TREATMENT: The patient improved after intravenous rehydration and calcium substitution, followed by oral supplemental calcitriol. Diarrhoea resolved after commencement of oral metronidazole.

DISCUSSIONS AND DIFFERENTIALS: Basal ganglia calcification is most thought to be due to endocrine disorders, specifically hypoparathyroidism (HP) that can evoke increased calcinosis. Basal ganglia calcifications prevalence demonstrated in the HP cohorts, varied significantly from 12 up to 74%. Small intestinal diarrhoea typically results in larger faecal volumes with fluid, electrolyte, and protein loss, with acid-base abnormalities. Yet the acute diarrhoea itself cannot explain low parathyroid hormone levels and basal ganglia calcification.

Internuclear ophthalmoplegia in primary Burkitt lymphoma of the appendix - case report

Author(s): Maria Zimowska, Magdalena Wojtaszek-Główka

Domain:Internal medicine

Discipline: Neurology

Abstract:

Introduction

We present a case of a 32-year old male (A.F) admitted to the Neurology Department due to diplopia, headache and jaw aches. He also reported fatigue, weight loss and night sweats. Neurological examination revealed left ptosis with left internuclear ophthalmoplegia, diplopia and decreased sensation on the left chin and lower lip.

Case history

The patient was hospitalized twice. Firstly, most probable diagnosis of cerebral infarction, lesions and common infections were excluded. The low field magnetic resonance imaging (0,4Tesla), which was performed due to metal jaw implants of unknown material, showed noabnormalities, nor did examination of cerebrospinal fluid. Suspecting an

inflammatory or demyelinating etiology, we admitted steroids with improvement in oculomotor function. Patient was discharged with a planned admission for

further diagnosis. 6 days later the patient reported to the emergency room again because of persistent doubled vision, headache and more intense general weakness and night sweating that indicated a possible neoplasm

Investigations

The diagnosis was extended, finding elevated lactate dehydrogenase and uric acid, Ca-125 and neuron-specific enolase. Computed tomography of the abdomen showed neoplastic spread originating in the sigmoid or appendix. Metastatic tissue turned out to be Burkitt Lymphoma with the primary location in the appendix.

Treatment/Results

The patient was redirected for further surgical and, subsequently, oncological treatment.

Discussions/Differential Diagnosis

Sudden diplopia at young age usually turns out to be a manifestation of demyelination, inflammation or at times infarction, yet we should be aware that in some cases it might be caused by a paraneoplastic syndrome. Due to diagnostic limitations we could not conclude whether the mechanism was paraneoplastic, or caused by infiltration of cancerous cells to meninges and cranial nerves. Nonetheless, primary Burkitt Lymphoma of the appendix is especially rare [1] , with only a few similar cases reported [2, 3], making the case compelling.

RADIATION-INDUCED BREAST ANGIOSARCOMA

Author(s): Katarzyna Mączka, Katarzyna Pisarz

Domain:Internal Medicine

Discipline: Oncology - Dermatology

Abstract:

Introduction: 80-year old woman presented to the Department of Dermatology at Medical University of Warsaw in June 2021 with greyish-brown nodular infiltrating skin lesions covering 90% of the right breast surface. The lesions first occurred in April 2020 gradually increasing their size.

Case history: The patient had a history of right breast tumor diagnosed in 2015 which was surgically removed (tumorectomy with axillary lymph nodes dissection). Subsequently, adjuvant radiotherapy and hormonal therapy were administered.

Investigations: The histopathological examination of the skin sample from the right breast (April 2020) presented the image of atypical vascular lesion. Ultrasonography, mammography and computed tomography showed no signs of cancer recurrence. Skin biopsy was performed again in June 2021 revealing atypical blood vessels with hyperchromatic and atypical endothelial cells.

Treatment/Results: Basing on the cancer history as well as clinical and histopathological features, angiosarcoma of right breast was diagnosed. The patient was referred to the oncology department to receive further treatment.

Discussions/Differential Diagnosis: Angiosarcoma is a rare malignant neoplasm originating from vascular endothelial cells. It accounts for 1-2% of sarcomas found in adults and is characterized by varied clinical features as well as the unexpected course of the disease. Due to the unspecific clinical and radiological presentation of angiosarcoma associated with poor prognosis, caution should be advised. It is important to differentiate atypical vascular lesions from angiosarcoma in the areas of body which were previously exposed to radiation.

Multiple digital amputations in a patient with systemic sclerosis/polymyositis overlap syndrome and Raynaud's phenomenon: a case report

Author(s): Paulina Sytek, Bogna Grygiel-Górniak MD, PhD, DSc

Domain:Internal Medicine

Discipline: Rheumatology

Abstract:

Introduction: A 58-year-old non-smoker male was admitted in 2022 to the rheumatology department to evaluate and continue his treatment of systemic sclerosis/polymyositis overlap syndrome (SSc/PM), complicated with multiple digital amputations.

Case history: The patient was diagnosed with systemic sclerosis (SSc) in 2000. The first symptoms included scleroderma and Raynaud's phenomenon. In 2007 the patient was diagnosed with SSc/PM overlap syndrome. In the course of the disease, he underwent the necrosis and amputations of his first and second left toe (2011), right fourth finger (2020), and distal phalanx of the right middle finger (2021). The disease was also complicated with heart failure, heart arrhythmia, renal failure, recurring urinary tract infections, gastroesophageal reflux disease (GERD), and pulmonary hypertension. In 2020 the patient was proposed with sympathectomy, but surgery was postponed for cardiac reasons. Due to pericarditis, a total of 1800ml of fluid was evacuated during pericardial drainage.

Investigations: During current hospitalization, physical examination revealed only small ulceration on the right thumb. X-rays of both foot and right hand showed condition after fingers amputations and osteolysis in the course of SSc. The patient was antinuclear antibody positive (titer=1:2560).

Treatment/Results: Organ-specific therapy was used since GERD, heart, and renal failure were present. Besides, the patient was treated with 25mg of sildenafil twice daily and referred to the Outpatient Wound Center.

Discussions/Differential Diagnosis: Multiple digital amputations are SSc's rare complication. In this case, necrosis was secondary to advanced Raynaud's phenomenon. In SSc, this phenomenon is connected with the irreversible dysregulation of endothelial-derived vasodilators and vasoconstrictors, defects in revascularization, and increased coagulation, leading to thrombosis. Moreover, multiorgan involvement (including pulmonary hypertension, cardiomyopathy, renal failure, and GERD) reflected the severity of SSc.

A 28-year-old woman with venous thrombosis complicating severe diabetic ketoacidosis: a case report

Author(s): Paulina Sytek, Paulina Wietrzak, Aleksandra Uruska MD, PhD, DSc

Domain:Internal Medicine

Discipline: Endocrinology

Abstract:

Introduction: A 28-year-old female patient was admitted to the Clinic of Internal Medicine and Diabetology because of metabolically uncontrolled type 1 diabetes (T1D) with hypoglycemic episodes.

Case history: The patient suffered from T1D for 22 years and was treated with intensive functional insulin therapy at the moment of admission. Medical history also included overweight, hypothyroidism, mixed hyperlipidemia, eating disorder, and borderline personality disorder. One month before, the patient had been hospitalized due to severe diabetic ketoacidosis (DKA) complicated with severe respiratory insufficiency, acute renal insufficiency, and pneumonia. Since the hospitalization, the patient has developed pain in the right lower leg and right foot.

Investigations: Physical examination revealed soreness, slight edema, and reduced temperature at the right lower leg and right foot. Doppler ultrasound revealed right medial gastrocnemius vein thrombosis.

Treatment/results: The treatment included anticoagulants (enoxaparin and rivaroxaban) and compression therapy. The patient was discharged home in good health and followed up at the outpatient clinic.

Discussion/differential diagnosis: The case highlights the role of venous thrombosis prophylaxis, which should be considered in every patient with severe DKA. Arterial thrombosis is a common complication of DKA, but few reports present adult patients with venous thrombosis complicating DKA. The prevalence of venous thrombosis in adults who developed DKA is also poorly known, especially as a distant complication. Except for DKA, the most important risk factors of venous thrombosis in the reported patient included T1D, respiratory insufficiency, and immobility during the previous hospitalization.

Determination of physiological diameters of a spleen by the computer tomography

Author(s): Milan Curcic

Domain: Internal Medicine

Discipline: Radiology

Abstract:

Introduction: As the biggest organ of our lymphatic system spleen is a carrier of numerous

physiological functions such as blood homeostasis and immunological defense of our organism. Splenomegaly is a ailment of a spleen manifested by the enlargement of mass and spleen dimensions. Due to high risk of this ailment there is a need to distinctly define of physiological spleen diameters.

Aim: Determination of average size of spleen in our population by the means of computer

tomography, or determining the values of transverse and longitudinal diameters of the spleen in relation to the sex and age of our patients.

Materials and methods: There were 201 patient, of different sex and age involved in this study. They all had a computer tomography examination of abdomen due to various reasons not related to spleen. Size of the spleen was measured in transverse and longitudinal diameter.

Results: Physiological values of spleen diameters are statistically higher in male population

compared to female population. The range of values of longitudinal diameter of spleen in male population was 93.31±22.3 mm, and for transverse is 41.94±7.98 mm. In male populations diameter differences among age groups were minimal. The range of values of longitudinal diameter of spleen in female population was 86.81±16.36 mm, and for transverse is 38.74±7.73 mm. There were no statistically significant differences of spleen diameters in various female age groups.

Conclusion: Understanding of the physiological diameters of a spleen is crucial in diagnostics of a pathological enlargement of a spleen, better known as splenomegaly.

A case of giant coronary artery aneurysm with a significant progression over time

Author(s): Anna Matrejek

Domain:Internal Medicine

Discipline: Cardiology

Abstract:

Title: A case of giant coronary artery aneurysm with a significant progression over time

Introduction: A 70-year-old male presented to a clinic for a cardiovascular assessment before thoracic surgery due to a mass in the right lung apex. His symptoms comprised physical activity limitation with exertional fatigue and paroxysmal palpitations. Physical examination was unremarkable.

Case history: Seven years before admission, transthoracic echocardiography revealed a mixed-echogenicity mass measuring 12x15 mm. After cardiac magnetic resonance imaging (CMR) and coronary angiography, the patient was diagnosed with a coronary artery aneurysm (CAA) and coronary ectasia, which were monitored with coronary computed tomography angiography (CCTA) in the following years. The patient's medical history was also remarkable for common iliac artery aneurysm, abdominal artery aneurysm and right adrenalectomy. He had many other comorbidities. His family history was significant of an aortic aneurysm in his father.

Investigations: Echocardiography revealed severe deformation of the right atrium with undisturbed flow through the tricuspid valve. CCTA confirmed the expansion of the aneurysm (maximum transverse diameter of 86x80 mm) and progression of thrombus recanalization inside the aneurysm.

Results: The patient was disqualified from surgical management of the aneurysm because of the high perioperative risk. He was allowed for thoracic surgery due to life-saving indications. He is currently awaiting genetic testing as the genetic background of the lesions is suspected.

Discussion: Giant coronary artery aneurysm is a rare phenomenon defined as a dilation of a coronary artery exceeding 4 centimetres and observed in 0,02% of patients undergoing coronary angiography. The most common aetiology is atherosclerosis. There are reports of potential loci associated with CAA. There are no guidelines on CAA management. The diagnostic imaging with CCTA and CMR can help establish the diagnosis and determine optimal treatment. To the best of our knowledge, it is the second biggest aneurysm reported in Poland.

A mysterious case of ulcerative pancolitis post-SARS-CoV-2 and the stubbornness of Clostridium Difficile

Author(s): Velescu Maria Amalia

Domain: Internal Medicine

Discipline: Gastroenterology

Abstract:

Introduction: A 53 years-old female patient was brought to the ER via ambulance in December 2020. Her symptoms were mainly digestive (diarrhea, nausea, diffuse abdominal pain and weight loss).

Case history: The patient is known with Arterial Hypertension stage II, Seronegative Rheumatoid Arthritis, type 2 Diabetes, and a severe form of SARS-CoV-2 infection in November 2020. On physical examination, the patient obnubilated, had muscular hypotonia, tachycardia and diffuse abdominal pain during palpation.

Investigations: The laboratory tests results came back positive for D-dimers, procalcitonin and the Clostridium Difficile markers (GDH-, Toxin A and Toxin B). The abdominal ultrasound showed the colon walls with a diameter of 2 cm. There were no signs of ascites and occlusion. The initial diagnosis was acute enterocolitis with Clostridium Difficile, toxic megacolon and septic shock.

She was readmitted in January 2021 with diarrhea, diffuse abdominal pain and vomiting. Her laboratory tests indicated an inflammatory syndrome and infection with Clostridium Difficile. The CT scan showed hepatosplenomegaly, ascites, and colonic and rectal inflammation. A proctosigmoidoscopy was run and the appearance was specific for an ulcerative colitis in the active phase, confirmed by the Anatomopathological Department.

Treatment: On admission, in December 2020, the patient was treated with antibiotics (Meropenem, Vancomycin), probiotics and analgesics.

In January 2021, she was treated with oral Vancomycin, Pentasa, Furosemid, Ursofalk Folic Acid, and Lantus. The evolution was good, with the remission of both symptoms and histopathological aspects.

Discussions: The particularity of the case consists in the development of toxic megacolon and ulcerative pancolitis in a patient with a history of SARS-CoV-2 infection, without a pre-existing inflammatory bowel disease. It is demonstrated that COVID-19 is frequently linked to gastrointestinal symptoms such as vomiting and diarrhea and that it can present as a pancolitis in pre-existing inflammatory disease.

78-year-old patient with lungadenocarcinoma metastasizing to the thyroid gland- a case report

Author(s): Paulina Kalman

Domain: Internal Medicine

Discipline: Oncology

Abstract:

Introduction: 78-year-old woman was admitted to the hospital because of a pneumonia in 2010.

Case history: The computed tomography (CT) study showed a mass in the 1⁄2 upper segment of the right lung and two nodules in the left adrenal gland, confirmed in dynamic CT test as metastases. On the basis of a histopathological examination an adenocarcinoma of the lung was diagnosed The patient received three cycles of chemotherapy which was discontinued due to pancytopenia and lack of regression. An upper right-sided bilobectomy was conducted and three months later a left-sided adrenalectomy.

Investigations: The patient was under observation and in 2013, a focal lesion in the head of the pancreas was detected. Positron emission tomography (PET-CT) showed increased fluorodeoxyglucose metabolism (FDG) in the area of the pancreas head. The patient was approved for Whipple surgery. During a follow-up in 2021 the patient reported a change in the anterior neck area. An ultrasound of the thyroid gland revealed an enlargement of both thyroid lobes and hypoechogenic solid lesions.

Results: A fine-needle aspiration biopsy (FNAB) showed metastasis of lung cancer in the left thyroid lobe. The patient was classified for left-sided thyroidectomy with a postoperative diagnosis of the metastases of lung adenocarcinoma Napsin A[+], TTF-1[+], CK19[+], TGB[-]. The resection margin showed the tumour tissue and the patient was qualified for further diagnosis and a total thyroidectomy.

Discussion: Metastatic changes in the thyroid gland are very uncommon and renal cells carcinoma is the most frequent location of primary malignancies. In a patient with a known history of malignancies the finding of a new thyroid mass should be promptly evaluated with a FNAB to search for metastatic disease, because in the case of lung adenocarcinoma metastases to thyroid gland is an ominous sign and even after total thyroidectomy patients survive only a few months.

COMPLICATIONS OF CYST PUNCTURE DURING PREGNANCY

Author(s): Dawid Pajor

Domain: Surgery

Discipline: Obstetrics and Gynecology

Abstract:

Introduction

The 26-year-old woman gravida 1, para 1 was admitted to the Perinatology Clinic of Jagiellonian University in Krakow at 26th week of pregnancy in order to perform elective puncture of left ovarian cyst. On physical examination only lower abdominal pain was found without any other pathologies.

Case history

In the past, the patient already had ovarian cysts removed twice. The cyst was punctured during the hospitalisation and there were no complications after the procedure. Six weeks later the patient was readmitted due to acute abdominal pain. An ovarian cyst was found to have torn.

Investigations

Leukocytes, C-reactive protein, and procalcitonin levels were all elevated in blood testing. The patient had a high fever and an ultrasound examination revealed fluid in the Douglas pouch.

Treatment&Results

A biopsy was conducted and antibiotics were given due to a probable cyst abscess. Despite the applied treatment, the patient's condition did not improve during his stay at the hospital. A Caesarean section was carried out. A purulent cyst with left appendages was excised during the procedure and peritoneal lavage was performed. The presence of an obstruction in the intestine was ruled out and treatment was started. Pleuropneumonia developed on the eighth day following surgery, which was another problem. The patient was discharged in good health after a week.

Discussion

Cyst abscess and sepsis are serious, but uncommon after effects of ovarian cyst biopsy. They should be taken into account, if you have symptoms like a rapid fever or an increase in inflammatory indicators, as well as stomach discomfort and peritoneal symptoms. Because of the increased risk and unusual symptoms that might arise in pregnant women, special attention should be made during diagnostics. In such circumstances, Caesarean section, surgery with peritoneal lavage and other treatments should be performed.

Loa loa filariasis - a tropical differential for edema in returning travelers

Author(s): Eduard Van Beeck Morales
Domain: Internal Medicine
Subdomain: Infectious Diseases
Abstract:
A 78 year old Cameroonian woman, A. M., came to the outpatient services of the Institute of Tropical Medicine in Antwerp, Belgium. She had been living for a year and a half in a rural area in the Central African Republic. By the time she had returned to Belgium, she had developed generalized itching and swelling around her eyes, hands and feet. She had a history of filariasis and toxocariasis. As filariasis was suspected, she was prescribed doxycycline which eliminates endosymbiotic Wolbachia bacteria in certain species. Serological testing demonstrated hyper-eosinophilia and was positive for Loa loa antibodies. Strongyloides antibodies also tested positive, which was most likely a cross reaction. No microfilariae were detected. Her current complaints were therefore confirmed to be due to a case of Loa loa filariasis. Doxycycline was stopped since L. loa does not rely on Wolbachia for survival and she was then treated with diethylcarbamazine and a single 3 mg dose of ivermectin. Loiasis is an infection by the nematode L. loa which is endemic to the rainforests of Western and Central Africa where it affects more than 10 million people. It is spread by flies belonging to the genus Chrysops. Also known as African eye worm, its clinical presentation is typically characterized by the adult worm migrating through subconjunctival tissues in the eye or the intermittent appearance of subcutaneous, non-pitting, non-tender edema. This is most frequently localized to the extremities and is known as “Calabar swellings”. In non-endemic settings filarial infections, such as loiasis, are diagnosed in a minority of migrants and travelers. This disease remains an important consideration in travel medicine and should be recognized by physicians who come in contact with this patient population, including general practitioners. This is important as patients should be swiftly referred to a specialized center for appropriate treatment.

Post-covid venous thromboembolism with unusual beginning

Author(s): Natalia Kulicka

Domain: Internal Medicine

Subdomain: Pulmonology

Abstract:

Introduction: A 24-year-old woman admitted to hospital due to severe pain, massive swelling and lividity of the entire left lower limb and increasing breathlessness. The medical history revealed pain in the right thoracolumbar area that had been increasing for a week. Physical examination revealed enlargement and lividity of the left lower limb, foot cooling and positive Homans symptom.

Case history: A patient with the COVID-19 convalescent status, with asthma and polycystic ovary syndrome treated with oral hormonal contraception (drospirenone with estetrol). A few days before hospitalization, an outpatient visit to the orthopedic clinic was performed due to back pain. At that time, analgesic treatment (etoricoxib, tolperisom) was prescribed.

Investigations: Laboratory tests revealed a significantly increased level of D-dimers, leukocytosis with neutrophilia and remarkably elevated levels of C-reactive protein. The ultrasound examination of the deep veins showed thrombosis of the left femoral and popliteal veins. Embolism was diagnosed in thoracic CT angiography, while high reconstruction resolution revealed peripherally located area of atelectasis in the right lung.

Treatment: Treatment of venous thromboembolism (VTE) consisted of anticoagulants (bolus of unfractionated heparin at a dose of 5000 IU and subsequently low molecular weight heparin in a therapeutic dose). Moreover, after 24 hours of anticoagulant treatment patient was intensively rehabilitated. Additionally, empirical antibiotic therapy was used (ceftriaxone). Due to DVT, compression therapy of the left lower limb was implemented.

Discussion: Case concerns a patient with an episode of VTE and significant thromboembolic risk factors, i.e. the use of oral hormonal contraceptives and history of COVID-19.

Immediate diagnosis and prompt treatment of VTE are essential for prognosis of this type of patients. This case underlines the importance of careful history taking and the necessity to exercise particular caution in patients with a recent COVID-19 history.

Modifications in diet and eating behaviour patterns in adults during SARS-COVID pandemic

Author(s): Arnav goel

Domain: Preclinical Sciences

Subdomain: Epidemiology

Abstract:

On December 12th, 2019, a fresh coronavirus (SARS-Cov2) arose in Wuhan, China, igniting a human pandemic of the acute respiratory syndrome.The COVID-19 pandemic has had a huge effect on public health, causing abrupt lifestyle modifications, significant discrepancies, and home isolation, with social and economic consequences. Optimizing public health during this pandemic necessarily involves knowledge not only of biological sciences, but also of all human sciences related to lifestyle, social, and behavioral research, including nutritional overall lifestyle.The favourable connection between home-cooked meals and diet quality has been demonstrated to be stronger in rising income adults than in reduced income adults. The COVID-19–related early shutdown has had a direct and immediate impact on food resources and requirements, while also implicitly lowering the financial capacity to purchase foods due to loss of work, especially among more vulnerable populations. population body mass, illustrating overweight and low increased physical activity as increased risk factors for COVID-19 affection and physiopathology. Furthermore, malnutrition and deficiencies in vitamin C, D, B12, selenium, iron, omega-3, and medium-short fatty acids were observed in COVID-19 hospitalised patients, highlighting the potential health benefit of vitamin C and D interventions. More research is needed to determine the full role and repercussions of nourishment in the prevention and treatment of COVID-19 patients.This exhibits that, in spite of the fact that calorie limitation might help to alleviate the pernicious outcomes of a time of actual idleness, gula in the setting of house constrainment is incredibly liable to intensify them. Hypertension, diabetes, and confusion are completely settled danger factors for COVID-19 patients who are terminally debilitated. As an outcome, compelling administration of metabolic issues might be needed to bring down the danger of extreme COVID-19 contamination.

Refixed comminuted ankle joint fracture without bone fusion after a motorcycle accident

Author(s): Tomasz Kozioł, Dominika Kondyjowska, Henryk Liszka

Domain: Surgery

Subdomain: Orthopedics

Abstract:

Introduction:

We present a 31-year-old male professional speedway rider who suffered an ankle injury after an accident and was operated on several times because of complications.

Case history:

The patient was admitted to the hospital after a motorbike accident. Radiograph showed a comminuted fracture of the ankle joint. The primary fracture was stabilized by an external fixator in March 2019. After the procedure postoperative wound became infected, which caused necrosis of skin in the ankle area. Due to no significant improvement in the same month fracture was reoperated. During the second surgery, the fracture was fixed with 2 plates. In June 2019 patient was subjected to a skin graft because of progressing skin necrosis.

Investigations:

During a physical examination, disturbances of skin sensation on the right foot and progression of clubfoot deformation were observed. Radiograph showed no bone union in the operated area.

Treatment/Results:

In March 2020 patient was subjected to reoperation. First, the plates from the last surgery were removed. Then osteotomy was performed, the fracture was fixed with 2 nails: fibular and tibiotalocalcaneal, contractures were removed and antibiotic was administered. After surgery and rehabilitation, the patient returned to professional sport in August 2020.

Biological therapy in COVID-19

Author(s): Manuca Sorana Maria, Ioana Onofrei MD PhD

Domain: Internal Medicine

Subdomain: Infectious Disease

Abstract:

Introduction

Anti-cytokine monoclonal antibodies could in some cases even be a rescue therapy in severe infections that do not respond to antibiotic therapy. Interferon treatment in infectious pathology may be considered the best example of cytokine therapy, but it has not been used for its immunomodulatory effects, but for its direct antiviral action.

Methods

The use of monoclonal antibodies in infectious pathology within the Iasi Infectious Diseases Hospital is limited to the period 2020 - 2021, during the COVID-19 pandemic. Tocilizumab (IL-6 receptor antagonist) was administered at an average dose of 530 mg / patient, in a number of 1067 patients (631 men and 436 women) and Anakinra (IL-1 receptor antagonist) at an average dose of 615 mg / patient in 318 patients (168 men and 150 women).

Results

Off label administration of monoclonal antibodies is limited to severe cases of COVID -19 pneumonia (based on imagistic results) associating clinical manifestations of respiratory failure with need of oxygen supplementation, invasive/non – invasive mechanical ventilation, persistent fever, and cytokines storm (revealed by increase of inflammatory markers, LDH, ferritin, D-dimers, etc). Therapeutic response was very variable, depending of various demographic factors (age, gender) and comorbidities (metabolic, cardiovascular, neoplasms, autoimmune disorders).

Discussion

Although the role of cytokines in infectious diseases is already established, therapeutic immumodulation in infectious pathology has only been used during the COVID-19 pandemic. Significantly elevated levels of certain cytokines have been detected in patients with severe SARS-CoV-2 infection. There is no doubt that IL-6 plays a key role in development and amplification of cytokine storms that underlie lung and systemic lesions caused by SARS-CoV-2. In this context, administration of IL-6 receptor antagonists (tocilizumab) has been an effective approach for treatment of severe SARS-CoV-2 infections.

Infected nonunion of pilon fracture in professional speedway rider

Author(s): Tomasz Kozioł, Dominika Kondyjowska, Henryk Liszka
Domain: Surgery
Subdomain: Orthopedics
Abstract:
Introduction:
We present a 31-year old male professional speedway rider who suffered an ankle injury after accident and was operated several times because of complications.
Case history:
Patient was admitted to hospital after motocross accident. Radiograph showed multifragmentary pilon fracture of distal tibia. Primary fracture was stabilized by external fixator in March 2019 and after 2 weeks open reduction and internal fixation with plates and screws were performed. After procedure postoperative wound became infected, which caused necrosis of the skin in the medial malleolus area. Debridement of the necrotic tissue was performed and revealed damage of the tibial nerve and posterior tibial artery. The patient was referred to plastic surgery department and subjected to a skin flap reconstructive surgery. In June 2019 the patient was discharged with fistula at the border of the flap in the medial malleolus area.
Investigations:
During physical examination were observed disturbances of skin sensation and progression of clubfoot deformation. Radiogram showed nonunion in the operated area with ostitis confirmed with leukocytes positive scintigraphy.
Treatment/Results:
In December 2019 plates were removed and the skin fistula has closed. In March 2020 patient was subjected to reconstructive surgery. Tibiocalcaneal fusion was performed with a hindfoot nail fixation, all contractures were released and antibiotic spacer was administered. 2 months after surgery both ankle joint was fused and bone union was achieved. After rehabilitation patient returned to professional sport in September 2020.

Oral presentations

CREATING A PREDICTIVE MODEL FOR RISK ASSESSMENT OF BREAST CANCER DEVELOPMENT BASED ON ANTHROPOMETRIC AND REPRODUCTIVE CHARACTERISTICS

Author(s): Ivana Starčević

Domain: Internal Medicine

Discipline: Oncology

Abstract:

Introduction: Breast cancer is the most commonly diagnosed malignant tumor worldwide. Diagnosis made at a time when the disease is at an early stage is associated with greater therapeutic success and longer survival. The lack of appropriate screening in the population group of younger women leads to later diagnosis and consequently worse prognosis. Identifying women with higher risk of breast cancer development based on anthropometric and reproductive characteristics could be useful in conducting screening programs.

Aim: Purpose of the study is to create a predictive model for risk assessment of breast cancer development based on anthropometric and reproductive characteristics of women with breast cancer and a control group of healthy women using Random Forest (RF) algorithm.

Matherial and Methods: Predictive models were created using the RF algorithm based on reproductive and anthropometric characteristics of women with breast cancer and healthy controls. For purpose of development the predictive model for the group of premenopausal women, the study group included 97 women with breast cancer and the control group included 123 healthy women, while for creating the predictive model for postmenopausal women the study group consisted of 37 women and the control group included 178 women.

Results: Out of 435 subjects, created models successfully classified 374 of them, while an error was made in 61 case. The model created for the group of premenopausal women had the following success measures: accuracy 87.4%, precision 64.7%, specificity 93.3% and sensitivity 59.5%. The model created for the group of postmenopausal women showed the following success measures: accuracy 84.5%, precision 88%, specificity 91.9% and sensitivity 75.3%.

Conclusion: The predictive model created for the group of postmenopausal women has greater precision and sensitivity, and poorer accuracy and specificity compared to the model created for the group of premenopausal women.

Keywords: Breast cancer; Anthropometry; Machine learning; Random Forest

INTRADERMAL SUTURE SCAR QUALITY ASSESSMENT AFTER USING DIFFERENT TYPES OF SUTURE MATERIALS

Author(s): Vanja Tatalović

Domain: Surgery - Clinical Fundamental Study

Discipline: Plastic surgery

Abstract:

Introduction. There is no ideal suture material or ideal sewing technique. The type of suture material affects the quality of the scars. Patient's and surgeon's satisfaction with the quality and comfort of the scar is one of the main goals of modern surgery.

The aim. The aim of this study is to compare the quality of scars and patient satisfaction after using two different types of sutures.

Material and methods. This research was conducted as prospective study which included 64 patients whose surgical wounds were closed with intradermal suture using different suturing material according to which the patient were divided into 2 groups: 1. absorbable - Monocryle (32) and 2. non-absorbable - DemeLENE suture (32). POSAS scale and an ultrasound machine were used to assess the scars. The doctor and the patient evaluated seven parameters on two occasions, after 2 and 6 weeks after the surgery. Data were statistically processed in the SPSS program.

Results. Statistically significant advantage was found after 2 weeks in scars sewn with non- resorptive suture in terms of elasticity, doctor's general impression, pain, itching, color, stiffness, thickness, irregularity and patient's general impression. After 6 weeks, statistically significantly better results were shown on scars sewn with non-resorptive thread for the parameters doctor's general impression, itching, irregularity and patient's general impression.

Conclusion. Non-resorptive sutures show statistically significantly better results, especially after 2 weeks from the patient's point of view so we consider them more comfortable and convenient to use.

PREDICTION MODEL OF SUICIDE BEHAVIOR AMONG INPATIENTS AT THE CLINIC OF PSYCHIATRY IN NOVI SAD

Author(s): Vanja Tatalović

Domain: Internal Medicine

Discipline: Psychiatry

Abstract:

Introduction. One of the key aspects in suicide prevention is timely response and identification of risk factors for suicidal behavior in order to provide adequate assistance. By applying machine learning in the analysis of clinical data, models can be obtained that classify patients into high- and low-risk groups, which can help prevent loss of life.

The aim. The aim of this study is to develop a machine learning model for grouping patients into a high or low risk group for suicide attempt.

Material and methods. We analyzed data from 301 respondents that were hospitalized at the

Clinic of psychiatry due to suicidal behavior or non-suicidal reasons. They were divided into two groups of respondents according to presence of suicidal behavior. Using machine learning methods, we analyzed how 18 observed features influence the development of suicidal behavior. A model has been developed to predict 2 categories of risk levels (high and low risk) of suicidal behavior for the observed population. The k-Nearest Neighbors (kNN) method was used to train the model.

Results. Using the kNN algorithm, the classification accuracy is 87%, sensitivity 87%, accuracy 90% and F-score 85% for the tested sample.

Conclusion. Early identification of risk factors for suicidal behavior is the best form of suicide prevention. Classification models could be a useful clinical tool in predicting the degree of risk for suicidal behavior and thus potentially reduce high suicide rates in Vojvodina. Increasing the database could improve the functions of the obtained classifier and enable its introduction into medical practice.

Keywords: suicide attempt; machine learning; algorithm; classifier; degree of risk

Health seeking behaviour and lifestyle of people with comorbidities during COVID 19 pandemic

Author(s): Megha Joy, Dr. Anil Bindu.S

Domain: Public Health - Epidemiological study

Discipline: Public Health

Abstract:

COVID 19 pandemic had demanded the governmen/ts and authorities to impose lockdown measures and restrictions to ensure control of its random spread, had significant impact on healthcare services for Non-communicable disorders along with the lack of staff since more of them were reassigned to support COVID-19 services. Adding to the crisis was the high fatality of COVID 19 infection in people with other comorbidities.

We aimed to assess the disruption of health seeking behavior among people with comorbidities during the pandemic that may prove to be a guide to take the issue seriously in the future.

A quantitative cross sectional study from November to December 2020, based on non-random convenience sampling through telephonic interviews among comorbid adults according to data from Medical Records department of Hospital, TVM, followed by filling of semi-structured questionnaire in google forms.

Independent variables: age, comorbidity, gender, educational level

Dependent variables: Health seeking behavior, lifestyle practice

Statistics: Categorical data: frequency, percentage, dependency: Chi-square test

In the 124 study participants (of mean age 65.145), 58.5% were diabetic and 52% were hypertensive. Among those participants below 50 years in our study, only 5.8% missed hospital visits whereas, among those above 50 years, 87.9% missed at least one hospital visit(chi square value: 5.81, p0.025) making them susceptible to complications. There was no significant difference in missing of hospital visits according to gender. Among those who did not miss any hospital visits, only 12.7% had experienced any complication or emergencies during the COVID period while 31.4% among those who missed hospital follow up had experienced any complication or emergencies during the COVID period (p=0.012). Alternatives like telemedicine facilities (27.4%) and health services from primary health workers (1.6%) were utilised. The study gives an insight into the lack of preparedness of medical system to consider the vulnerable hand-in-hand.

Acute Mesenteric Infarction due to the Infection with SARS CoV-2: A Case Report

Author(s): Bogdan Moldovan, Liliana Vecerzan

Domain: Surgery - Case Report

Discipline: General Surgery

Abstract:

Introduction: In the end of December 2019 a threat of a zoonosis caused by the Severe Acute Respiratory Syndrome- Coronavirus 2, also known as SARS CoV-2, started a worldwide pandemic with clinical manifestations similar to those of the influenzae. The virus of SARS CoV-2 causes various pathological complications which are still not entirely known.

Objective: We present as follows the treatment of a severe complication after the infection with the new SARS CoV-2 virus, the infarction of the mesenterum.

Material+Methods: A 45 year old male with a recent history of infection with the Coronavirus is reffered to the surgical ward of the St. Constantin Hospital Brasov by the Transplant Center of Geneve with signs of highly painful and distended abdomen along with an open enteric fistula and generalised peritonitis, subsequent after two unsuccessful surgeries performed for an acute mesenteric infarction during his initial hospitalisation whilst being tested positive for the infection with the Coronavirus.

Results: Despite the poor survival prognosis, with a mortality at about 98% of all cases associated with an almost complete mesenteric infarction, we highlight the surviving of the patient along with the fact that he is currently in no need of parenteral nutrition an fully independent.

Conclusions: A rare abdominal emergency is the acute mesenteric ischemia which is frequently associated with high rates of morbidity and mortality. It still remains not enterly known which exact pathological mechanism is leading to the complication of AMI in COVID-19 patients. The possibilities can include an invasion of bowel tissue the virus or the hypercoaguability given by the presence of high numbers of prothrombotic factors.

Frequency of Epstein-Barr and BK virus reactivation in patients with hematopoietic stem cell transplant

Author(s): Andjela Obradovic

Domain: Preclinical - Clinical Fundamental Study

Discipline: Microbiology

Abstract:

Introduction: Hematopoietic stem cell transplantation (HSCT) represents the collecting and infusion of hematopoietic stem cells with the aim to revive production of blood cells in patients with malfunctioning or abnormal bone marrow and/or immune system. Infections acquired due to viral reactivations represent a significant complication of HSCT, associated with higher morbidity and mortality, because of which these patients require regular monitoring.

Aim: To study the frequency of Epstein-Barr (EBV) and BK virus (BKV) reactivation following HSCT during a one-year period in patients treated at the Clinic of Hematology at the University Clinical Centre of Serbia in Belgrade.

Material and Methods: A retrospective study was conducted at the Institute of Microbiology and Immunology (Faculty of Medicine, University of Belgrade). Data on 11 patients was analyzed using available documentation from the virology laboratory. PCR was used for the detection of viral DNA. Data was processed in Excel and analyzed using descriptive and analytical statistics.

Results: During a one-year period 156 blood samples were acquired. Incidence of reactivation was 25% for EBV and 74.36% for BKV. Taking into account the post-transplant period, incidence of EBV was 7.69% during the early period, 27.45% in the intermediate and 37.93% during the late period. Incidence of BKV was 94.87% during early period, 72.45% in the intermediate and 72.93% during the late post-transplant period. Reactivations were most commonly detected in patients with acute myeloid leukemia and T-cell lymphoma and the least in patients with Hodgkin's disease. There was no statistical correlation between viral reactivation and patient age and sex.

Conclusion: EBV and BKV represent significant pathogens associated with viral reactivations post-HSCT. Their regular monitoring helps formulate better strategies to prevent disease and help recuperate from underlying condition.

Keywords: HSCT; viral reactivation; EBV; BKV.

ROLE OF NEUTROPHIL-TO-LYMPHOCYTE RATIO, PLATELET-TO-LYMPHOCYTE RATIO AS INDEPENDENT RISK FACTORS TO ASSESS SEVERITY OF COVID-19 IN HOSPITALIZED PATIENTS.

Author(s): Basil Mary Eldo, Dr. Anne Varghese

Domain: Internal Medicine

Discipline: Physiology – Hematology – General medicine

Abstract:

INTRODUCTION

The Neutrophil-To-Lymphocyte Ratio (NLR) and Platelet-To- Lymphocyte Ratio (PLR) are established markers that reflect systemic inflammatory response and various studies have shown that NLR is a sound prognostic factor in COVID-19. Both are widely available, fast, comparatively cheap assessments in the screening of COVID-19 patients. If proved significant, it is of great prognostic relevance.

METHODOLOGY AND MATERIALS

This is a retrospective, descriptive study on 40 patients over 2 months' duration conducted in a cohort (satisfying exclusion and inclusion criteria) with COVID-19. The data of patients were collected from the medical records. Data entry done using Excel Spreadsheet and Analysis using SPSS-21. The quantitative variables were summarized as Median & IQR [Q1, Q3] as data violates the normality assumption. Kruskal Wallis ANOVA was performed. The entire analysis was performed using EZR Software.

RESULTS

NLR as a prognostic factor for COVID – 19 Severities

NLR 1 (NLR on Day 1) was found to be significant ($p = 0.024$, $p < 0.05$) while that of NLR 2, NLR 3, PLR 1, PLR 2, PLR 3 were insignificant. The applicable thresholds for NLR 1 were 3.19, 6.78, 11.25 for Mild, Moderate and Severe categories of COVID – 19 which were found to be consistent with the State Treatment Guidelines (15-08-2020) for COVID-19.

Type-2 Diabetes Mellitus (52.5 %), Hypertension (30 %), Dyslipidemia (15 %), Acute Kidney Disease (12.5 %) were major comorbidities.

Elevated NLR was found to be an independent prognostic biomarker

Correlation of histological subtypes and clinical pathological characteristics of advanced lung adenocarcinoma with mutation type of the receptor of the epidermal growth factor

Author(s): Tamara Zelenović

Domain: Internal Medicine

Discipline: Pathology

Abstract:

Introduction: The presence of EGFR mutation is the best predictive marker of response to tyrosine kinase inhibitor therapy. Therefore, accurate assessment of the prevalence of certain types of EGFR mutations and correlations with clinical characteristics is crucial in the effective treatment of advanced lung adenocarcinoma.

The aim: The aim of this study was to determine the frequency of the presence of EGFR mutation in patients with adenocarcinoma and to determine the individual dependence of the presence of EGFR mutation in tumor cells with certain clinical and pathological characteristics.

Material and methods: The prospective-retrospective non-randomized study included 309 patients diagnosed with adenocarcinoma of the lung at the Institute for Lung Diseases of Vojvodina in Sremska Kamenica, Serbia in the period from January 1st, 2020 to December 31st, 2021. EGFR mutation was detected by the PCR method. Clinical and pathological characteristics were analyzed: sex, age, smoking habits, disease stage, ECOG performance status, as well as a histological subtype of tumor. The correlation of EGFR mutation with clinical-pathological characteristics was analyzed using Pearson's $\chi 2$ test and Fisher's test.

Results: Of the 309 patients with lung adenocarcinoma examined, EGFR mutations were confirmed in 42 patients (13.59%). Sixteen patients (38.10%) were men and 26 (60.90%) women aged 32 to 72 years (62.2 years) in stage IV disease. Sixteen patients were smokers (38.11%) and six ex-smokers (14.28%) and twenty non-smokers (47.61%). The most common EGFR mutated confirmed types of adenocarcinomas were acinar (42.86%) and solid subtype (28.57%).

Conclusion: The results of our study indicate that EGFR mutations are more common in older women, non-smokers with the acinar adenocarcinoma subtype.

Keywords: adenocarcinoma; EGFR mutation, PCR; clinical-pathological characteristics

STAGE II COLORECTAL CANCER: DOES SIDE MATTER?

Author(s): Jules Colebunders, Brecht Mullebrouck, Vincent Liégeois

Domain:Internal Medicine

Discipline: Oncology

Abstract:

Introduction:

Colorectal cancer (CRC) is the second most common tumor in women and the third in men. Treatment of stage II CRC begins with resection of the primary tumor, possibly followed by chemotherapy. The prognosis varies among patients. Some have a higher risk of recurrence than others, and therefore have more relative benefit of adjuvant chemotherapy. However, there is still significant difference in prognosis among these groups. This has indicated a need for further stratification of stage II CRC in different risk groups to determine the need of adjuvant chemotherapy. Hence the need for new biomarkers to further elucidate the prognosis and treatment possibilities in patients with stage II CRC. One such proposed biomarker is the sidedness (right-sided vs left-sided) of the primary tumor.

Materials and methods:

The study design was an observational study based on a retrospective cohort from data of the Belgian Cancer Registry. The aim is to collect data on primary tumor location, demographics, stage, molecular biomarkers (BRAF or KRAS mutation, …) and survival. We will investigate the difference in overall survival in right- vs left-sided stage II CRC patients. Next, we will look into underlying molecular biomarkers and demographics to see if there could be a confounding effect of these mutations on the prognostic effect of the primary tumor location.

Results:

Pathology reports of 3,000 patients diagnosed with stage II CRC in 2015-2016 were reviewed. 1173 patients had a right-sided tumor, 1231 left-sided, 596 rectal. 314/1663 (18.9%) of patients had a tumor with microsatellite instability, . 143/312 (45,8%) had a tumor with a KRAS mutation and 63/230 (27%) had a tumor with a BRAF mutation. The association of primary tumor location, molecular biomarkers and survival is ongoing. Data-analysis will be completed on 10/07/2022.

Conclusion:

Is tumor sidedness an independent prognostic factor in stage II CRC patients?

Characteristics of patients with cerebral aneurysms and arteriovenous malformations

Author(s): Joanna Ożga, Zuzanna Oleniacz, Michał Wyka, Szymon Sztuczka, Agata Raczko

Domain: Radiology

Discipline: Neuroradiology

Abstract:

Introduction:

The purpose of this study is to characterize patients with intracranial aneurysms and arteriovenous malformations(AVMs). These abnormalities in blood vessels can lead to severe complications such as intracranial haemorrhage.

Material and methods:

The study included 200 retrospectively evaluated subjects, based on Digital Subtraction Angiography. Patients who were involved in the characteristics had only aneurysms(91 cases), AVMs(76 cases) or a compilation of both(33 cases). The research concerned the mean age of the patients, the dimensions of the abnormalities and their vascularization pattern. Statistical analysis was performed using StatSoft STATISTICA 13.

Results:

The age of the patients ranged from 7 to 90 years, while the mean age was 49.9, 95% CI[33.2, 66.6] and 112(56%) of them were women.

The average dimensions of the aneurysms were 6.20mm, 95% CI[4.89, 7.51] x 5.88mm, 95% CI[4.58, 7.17] and the AVM nidus were 25.8mm, 95% CI[23.2, 28.40] x 19.82mm, 95% CI[17.63, 22.00]. The abnormalities were found in the extent of circulation of ACA(anterior cerebral artery) 63(22.26%), MCA(middle cerebral artery) 58(20.49%), PCA(posterior cerebral artery) 35(12.37%), ICA(internal carotid artery) 52(18.37%) and other intercranial arteries 37(13.07%). Additionally, 38(13.43%) AVMs were supplied by multiple arteries.

In the group of patients with the compilation of both abnormalities the median dimensions of intranidal aneurysm (located within the AVM's nidus) were 5.00mm, 95% CI[2.91, 7.09] x 5.45mm, 95% CI[2.29, 8.61] and extranidal aneurysm were 6.14mm, 95% CI[4.06, 8.22] x 5.8mm, 95% CI[3.87, 7.74]. The AVMs with coexisting aneurysms were larger 27.09mm, 95% CI[21.12, 33.06] x 21mm, 95% CI[16.65, 35.00] than those found alone 25.24, 95% CI[22.45, 28.02] x 19.3mm, 95% CI[16.74, 21.86]).

Conclusions:

Aneurysms and AVMs are prone to occur in patients regardless of age or gender and are commonly found in the extent of circulation of ACA. Intranidal aneurysms are smaller than extranidal and tend to be isolated.

Development of artificial intelligence in MRI examination of sacroiliac joints

Author(s): Michał Wyka, Joanna Ożga, Agata Raczko, Michał Korman, Zuzanna Oleniacz, Szymon Sztuczka

Domain:Internal Medicine

Discipline: Radiology

Abstract:

Introduction: The aim of this study is to create a fully-automated algorithm that finds sacral and iliac bones in magnetic resonance imaging(MRI) examinations of sacroiliac joints.

Material and methods: A total of 249 patients diagnosed with axial spondyloarthritis (axSpA) who underwent MRI examination of the sacroiliac joints were included in the study. 206 (83%) images were performed using 3.0T MRI scanner and 43 (17%) using 0.3T. Detection of sacral and iliac bones was evaluated according to the field strength of the MRI scanner and validated technical correctness of the procedure. All images were analyzed using fully automated artificial intelligence algorithm (AI) that performed bone segmentation. The segmentation results were rated on a scale of 0 to 2 points by two independent reviewers. 0 points were given if the segmentation was entirely valid, 1 point if there were errors in areas outside the joint, and 2 if errors appeared in the joint area. StatSoft STATISTICA 13 was used for statistical analysis.

Results:

The 249 patients were included for analysis. Of all studies, 84 (34%) were scored with 0 points, 67 (27%) with 1 point, and 98 (39%) with 2 points. The median of measured deviation angle was 6.2 (IQR, 8.2) degrees. Based on the deviation angle, the patients were assigned to four groups of similar size according to the quartile values. Statistical analysis did not show significant differences in points in each group ($p=0.724$). Comparison of studies obtained with different MRIs reveled better performance in 3T studies ($p<0.0001$).

Conclusions: The fully automated algorithm can be used to detect bones in the MRI regardless of its technical correctness. Although AI should overcome more training to improve results, this program can be upgraded to detect inflammatory lesions in the sacroiliac joint and facilitate the diagnosis of spondyloarthritis.

The incidence of aneurysms of the celiac trunk and its branches in symptomatic and asymptomatic patients with the celiac trunk compression

Author(s): Weronika Kowalczyk, Bohdan Solonynko MD.PhD

Domain:Surgery

Discipline: Vascular Surgery

Abstract:

Median Arcuate Ligament Syndrome (MALS) occurs in compression of the celiac trunk (CT) by the median arcuate ligament of the diaphragm. Not all patients with CT and its branches compression diagnosed in computed tomography and angiography (CTA) scans may develop clinical symptoms.

The aim of the study was to check the incidence of CT compression and aneurysms in CT branches in symptomatic and asymptomatic patients with MALS.

The anatomy of the CT, superior mesenteric artery (SMA) and their branches were analyzed in CTA scans in 300 consecutive patients, diagnosed with other reasons than MALS. The occurrence of aneurysms of the CT and its branches, as well as demographic data were compared. In addition, patients were divided into symptomatic (gr.A) and asymptomatic (gr.B). Information was collected on age at the first onset, gender and reported symptoms. Patients were diagnosed for arrhythmias, abdominal pain, and loss of consciousness.

Signs of CT compression were found in CTA scan in 43 of 300 patients (14%). 6 of 43(14%) patients were symptomatic (gr.A). The rest 37 of 43(86%) were asymptomatic (gr.B). The aneurysms of the CT and its branches were found in 12 patients (gr.A- 1, gr.B- 11): CT aneurysms in 5 patients (gr.A- 1, gr.B- 4) and aneurysms of the CT branches in 7 patients (gr.A- 0, gr.B- 7). The multifactorial analysis of medical date performed in both groups showed be higher incidence of MALS in younger patients with early onset of clinical symptoms.

The CT compression is usually asymptomatic in most patients. The diagnosis of MALS should depend on specific symptoms and CTA. The higher incidence of MALS is associated with younger age and earlier onset of specific symptoms. Compression of CT can lead to the formation and rupture of aneurysms in the SMA branches. Asymptomatic visceral aneurysms in patients can be life-threatening.

COVID-19 VACCINE: DIFFERENCES IN VACCINATION FREQUENCY AND CONCERNS ABOUT VACCINES BETWEEN PATIENTS WITH CHRONIC DISEASES AND THE HEALTHY POPULATION IN POLAND.

Author(s): Wiktoria Stańska

Domain: Internal Medicine

Discipline: Infectious Disease - Public Health

Abstract:

Vaccines are proved to be the most effective way of preventing COVID-19. However, even though they are widely available, vaccine hesitancy is a significant threat to the success of COVID-19 vaccination programs. The study aims to assess the differences in vaccination rate, protective measures, and concerns about vaccinations between healthy people and those with chronic disease in the Polish population.

An online survey was designed and shared via social media channels between 13th January and 14th February 2022. The form contained questions about the status of vaccination, comorbid diseases, perceived risk of getting the illness, and several statements about the vaccination itself.

7018 individuals completed the survey. 76,89% were women, 22,44% were men, and 0,67% did not want to specify their gender. 5742 of all responders were vaccinated (81,82%), 1276 were not (18,18%). The average age was 32 years old (from 18 to 68), SD=8,87. Among all respondents, 3729 (53,13%) had at least one chronic disease. 85% of them were vaccinated in comparison to 78,2% of 3289 healthy individuals.

The highest vaccination rate was in patients with hypertension, psychiatric conditions and obesity, achieving 88,7%, 88,2% and 87,77% respectively. These patients believe more strongly that vaccinating the population speeds a return to normalcy as soon as possible. The most common personal protective measure among all responders was wearing a face mask, washing and disinfecting hands. Repliers without any disease tend to use personal protective measures less frequently. Healthy responders are more likely to think that not enough time has passed for a good investigation of Covid vaccines. The research results show a significant difference in vaccine hesitancy between responders with chronic illnesses and healthy individuals. Therefore, more efforts should be made to educate people about immunization against Covid-19, particularly patients with chronic illnesses, addressing their concerns and beliefs.

Temporary and permanent electrical impulse conducting abnormalities in acute myocardial infarction

Author(s): Jelena Curcic

Domain: Internal Medicine

Discipline: Cardiology

Abstract:

Introduction: Acute myocardial infarction (AMI) is one of the leading causes of morbidity and mortality. The presence of conducting abnormalities in AMI is relatively frequent and has a significant impact and correlation with its outcome.

Aim: Analysis of the incidence of different types of conducting abnormalities in AMI, their correlation with the outcome as well as which were temporary and which were permanent. We also analysed impact of myocardial revascularization on the outcome and correlation between risk factors and comorbidities with conducting abnormalities.

Material and methods: It was observational cohort study of 365 patients with AMI treated in The Institute of Cardiovascular Diseases of Vojvodina. We obtained the data of AMI type, accompanying conducting abnormalities, the outcome of hospitalisation, comorbidities, information about whether myocardial revascularisation had been done and whether implantation of temporary or permanent pacemaker or implantable-cardioverter defibrillator (ICD) had been conducted.

Results: The most common conducting abnormality and the one that had highest correlation with the outcome in AMI with ST elevation was III degree Atrioventricular block. Myocardial revascularisation had a positive effect on the outcome. Conducting abnormalities were mostly temporary. The most common risk factors and comorbidities were hypertension, hyperlipidemia and smoking.

Conclusion: Electrical impulse conducting abnormalities were very common in AMI, were mostly temporary and well treated by myocardial revascularisation, whereas permanent ones required permanent pacemaker or ICD implantation. Myocardial revascularisation had a significant impact on the outcome and higher survival rates. Many cardiovascular risk factors accompanied conducting abnormalities but smoking had significant correlation with highest number of them.

Key words: electrical impulse conducting abnormalities; acute myocardial infraction

The significance of biopsy of sentinel lymph node in endometrial cancer

Author(s): Aleksandar Radonjić

Domain: Surgery

Discipline: Gynecology - Pathology

Abstract:

Introduction: The sentinel lymph node (SLN) is the first node to receive afferent lymphatic drainage from a malignant tumor. The concept that a negative sentinel node implies that other nodes in this group are negative is accepted in malignant tumors of different localizations, which aims to prevent radical dissection of the lymph node and reduce postoperative complications. Endometrial cancer is a malignant neoplasm in which biopsy of the sentinel lymph node is in widespread use.

Objective: To determine the reliability of intraoperative assessment of lymph node status and to determine the degree of false-negative findings by immunohistochemical examination of sentinel lymph nodes in endometrial cancer.

Material and methods: The study was of retrospective type and included 9 patients with endometrial cancer. The detection of SLN was performed during surgery. The SLN pathohistological examination was performed according to the standard procedure. The surgical treatment, regardless of the findings of the SLN, ended with radical dissection of the lymph nodes. Clinical and pathological data from the hospital information system were used in the analysis.

Results: A total of 11 SLNs were detected in the study group of patients. The average number of SLNs per patient was 1. An “ex tempore” analysis, as well as a final pathohistological examination, did not find any metastases in the SLN. Metastases were not detected in the radically dissected lymph nodes of that region.

Conclusions: SLN biopsy could become a standard in the treatment of patients with endometrial cancer, allowing fair surgical treatment with avoidance of radical lymph node dissection and consequent reduction in the number and extent of operative complications.

Keywords: Sentinel lymph node; Endometrial cancer

IMPAIRED WOUND AND ANASTOMOSIS HEALING AS THE FIRST SYMPTOM OF PERIOPERATIVE COVID-19 INFECTION

Author(s): Kajetan Kiełbowski, Małgorzata Wojtyś, Konstantinos Kostopanagiotou, Henryk Janowski, Janusz Wójcik

Domain:Surgery

Discipline: Thoracic Surgery

Abstract:

Introduction: Perioperative Covid-19 infection is responsible for prolonged hospital stay and increased mortality. In autopsies, all major organs demonstrate endothelial cell inflammation with microvascular thrombosis. Clinical course of the disease can be non-specific, only the latest publications start to demonstrate impaired wound healing as early manifestation of perioperative Covid-19 infection. The aim of this study is to present complete thoracotomy and esophageal anastomosis dehiscence after uncomplicated thoracic surgeries associated with Covid-19 infection.

Materials and methods: Single-center, observational study with medical data prospectively collected and retrospectively reviewed. Patients admitted for elective surgeries were tested negative for Covid-19 infection and symptom free preoperatively.

Results: Unexplained complete thoracotomy and anastomosis dehiscence developed in 7 patients with mean age 65,7 years. Those patients underwent lung cancer surgeries, esophagectomies and lung transplantations. The mean time of postoperative dehiscence development was 13,6 days (range 1 to 34) while Covid-19 infection was confirmed after 21 days (range 9 to 37). Dehiscences were sudden and unexplained due to lack of suppuration and negative post-surgical wound swab culture or tissue necrosis. 6 Patients required explorative rethoracotomy, resuturing or introduction of esophageal stent. Laboratory markers showed elevated levels of C-reactive protein, Interleukin-6, D-dimers, and lactate dehydrogenase around the time of dehiscence. Death occurred in 3 patients while mean time of hospital stay was 40,9 days.

Conclusions: This is the largest study that presents perioperative Covid-19 infection manifesting as major wound and anastomosis dehiscence at the thoracic surgery department. Coronavirus infection can mimic surgical complications. All patients with unexplained surgical wound complications should undergo compulsory Covid-19 testing.

Comparison of two different time intervals between chemoradiation therapy and rectal surgery

Author(s): Vlada Bernotaitė

Domain:Surgery

Discipline: Abdominal Surgery

Abstract:

Introduction: We aimed to determine whether lengthening the time interval between chemoradiation (CRT) and surgery has a positive effect on treatment outcomes in patients with advanced rectal cancer.

Materials and methods: We evaluated 100 stage II and III rectal cancer patients at National Cancer Institute, Lithuania between 2018 and 2021. Patients were divided into two study groups (SG) according to treatment interval between surgery and CRT: SG1 (46 patients) and SG2 (54 patients) received chemoradiation 8 and 12 weeks before surgery respectively. Patients' demographics, level of carcinoembryonic antigen (CEA), and histological parameters were recorded. Post-operative complications were assessed using the Clavien-Dindo grading system. Data were analyzed using MS Excel and the SPSS program.

Results: SG1 consisted of 12 women (26%) and 34 men (74%), the mean age was 62.5 years ± 10.11 (40–85) in this group. SG2 consisted of 24 women (44%) and 30 men (56%), mean age was 66 years ± 10.31 (42–88). The Dworak tumour regression II and III grades were higher in the SG2 but the same with IV grade among SGs (II – III 56% vs 41% and IV 11% vs 11%, p=0.74). CEA level has significantly decreased in both SGs ($p<0.05$). In SG2 negative circumferential resection margin was more common than in SG1 (93% vs 89%, p=0.73). There was no significant difference in postoperative complications between SGs. 9 patients in SG1 had complications classified as grade III and more according to the Clavien-Dindo classification vs 13 in SG2.

Conclusion: Lengthening the treatment interval could moderately increase Dworak regression II and III grades but it has no impact on the pathologic complete response rate in patients undergoing surgery for locally advanced rectal cancer. Therefore, further studies on this topic should be performed.

Electrocardiographic abnormalities in pulmonary embolism

Author(s): Patrycja Rozwadowska, Małgorzata Rodak, Patrycja Sowula, Agnieszka Roj

Domain:Internal Medicine

Discipline: Cardiology

Abstract:

Introduction:

Some ECG parameters may be helpful in the diagnosis and differential diagnosis of pulmonary embolism, but there are no abnormalities that clearly confirm it.

The aim:

Analysis of changes in the ECG for PE and relationship to clinical course of disease.

Materials and methods:

This is a retrospective, single-centre study, which involved 78 patients (pts; mean age: 65.2±17.2 yrs) with PE. Presence of thirteen ECG abnormalities associated with PE, including tachycardia, right bundle branch block (RBBB), ST-segment changes, was assessed in the admission electrocardiogram.

Results:

At least one ECG abnormality was found in 57 pts (73.1%). Right axis deviation was found in 10 pts (12.8%). Inversion of T waves in V2-V6 leads was the most common finding (30 pts – 38.5%). S1Q3T3 pattern appeared in 19 pts (24.4%). Right bundle branch block (RBBB) occurred in 8 pts (10.2%). ST-segment depression in I, aVL, V5-V6 leads was present in 11 patients. ST elevation in III, aVR and V1 leads was found in 6, 6 and 5 patients respectively. Patient with at least one ECG abnormality had higher HR (91.3±22.1 vs 72.7±9 bpm; $p=0.003$), lower arterial oxygen saturation (91.2±6.9 vs 97.2±1.8%; $p=0.006$), higher troponin level (0.1±0.2 vs 0.02±0.03 ng/ml; $p<0.001$), shorter pulmonary acceleration time (75.3±25.4 vs 94.9±27.8 ms; $p=0.01$) compared to subjects with normal ECG. McConnell's sign, shock and thrombolytic treatment were observed only in patients with abnormal ECG (17pts, 9 pts and 9 pts, respectively), $p<0.05$.

Conclusions:

The majority of patients with PE had at least one ECG abnormality. Inversion of T waves in V2-V6 leads was the most common finding. Presence of ECG changes was related to more severe course of disease.

Keywords

pulmonary embolism, electrocardiography, tachycardia, S1Q3T3, RBBB

Pulmonary embolism according to age - clinical characteristic, management and prognosis

Author(s): Patrycja Rozwadowska, Małgorzata Rodak, Agnieszka Roj, Patrycja Sowula

Domain:Internal Medicine

Discipline: Cardiology

Abstract:

Introduction: Pulmonary embolism (PE) is the third, after stroke and myocardial infarction, the most common cause of mortality from cardiovascular causes.

The aim: Comparison of clinical presentation, management and in-hospital prognosis in patients with PE in three age groups.

Methods & Materials: This is a retrospective, single-center study, which involved 101 patients (F/M: 40/61pts) with PE. Patients(pts) were divided into three groups according to age: young group (≤ 45yrs, mean age: 36±8.1yrs, n=27), control group (46-75yrs, mean age: 63.3±7.6yrs, n=44) and elderly group (≥76yrs, mean age:82.3±4.7yrs, n=30).

Results: Higher percentage of females was observed in the elderly group in comparison to the control group(63.3% vs 27.3%;p=0.002). The most common sign of PE was dyspnea – it occurred more often in younger pts (81.5% pts vs 59% of controls vs 63.3% of older pts;p=0.04). Troponin T and D-dimer levels increased with age:R=0.65, p<0.001 and R=0.4, p<0.001, respectively. Saddle PE affected 7.4% of young, 11.4% of control and 10% of older patients (p>0.05). The sPESI was the highest in the elderly group (1.3±0.7 vs 0.7±0.8 in control vs 0.4±0.8 points in the younger group; p=0.001). Elderly patients had a higher risk of in-hospital cardiac arrest (6 pts, 20% vs pts, 4.5% in the control group, p=0.043) and death (3 pts, 10% vs none of pts in the control group, p=0.03).

Conclusions: Dyspnea was the most common sign and was present more often in the younger group. Troponin T and D-dimer level correlated positively with age. The elderly group had poor in-hospital and predicted 30-day outcomes compared to other groups.

Keywords: pulmonary embolism, sPESI, in-hospital mortality

Targeting the phosphatidylinositol 3-kinase PI3K/ protein kinase B (AKT)/ mammalian target of rapamycin (mTOR) pathway in BC (breast cancer) and PC (prostate cancer)

Author(s): MATEUSZ WYLAŹ, ANNA KACZMARSKA, DAWID PAJOR, DOROTA GIL, JOANNA DULIŃSKA-LITEWKA

Domain:Preclinical

Discipline:medical biochemistry

Abstract:

Introduction: BC and PC are serious health problems in the entire world population. PI3K, AKT and mTOR consist of an important signaling pathway, that strongly influences the development and progression of these tumors. Therefore, the aim of the study was to identify inhibitors, which is a crucial clinical point in the treatment of cancer.

Materials and methods: The authors of the study analyzed over 150 scientific articles from recent years to identify the mutation catch points leading to the occurrence of BC and PC. The next step was to evaluate potential modern therapies using inhibitors of these pathways. The efficacy of drugs in terms of patient survival, reduction or inhibition of tumor growth, and reduction of metastasis was compared. In assessing of the effectiveness of the inhibitors, their side effects were also considered.

Results: Combination of PI3K inhibitors plus fulvestrant resulted in statistically significant improvement in advanced BC. The monotherapy with mTORC1 is effective in the treatment of BC and ineffective in the treatment of PC. Treatment of BC with the mTORC1 inhibitors can achieve a reduction in tumor mass by up to 77-99%. The greatest results of BC treatment with dual mTORC1/2 inhibitors can be obtained by the combination of MLN0128 (Sapanisertib) with trastuzumab. Specific AKT inhibitors can lead to significantly decreased proliferation rate in the group of patients with BC. Therapy with ipatasertib + antiandrogen seemed to be more effective in patients with CRPC in comparison to the single-agent therapy group.

Conclusion: The studies emphasize the key role of inhibitors PI3K/AKT/mTOR in clinical practice. Additionally review of over 150 scientific articles identified the advantages and disadvantages of single drugs used in monotherapy, the use of which in polytherapy may allow achieving much better therapeutic effects.

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DIABETIC FOOT ULCERS - A SERIOUS HEALTH CARE PROBLEM

Author(s): Elisha Taylor, Fayez Fahal, Ivan Novakov

Domain:Surgery

Discipline: Vascular surgery

Abstract:

DIABETIC FOOT ULCERS – A SERIOUS HEALTH CARE PROBLEM

Introduction: Foot ulceration is one of the leading causes of hospitalization for patients with diabetes mellitus. The aim of this study is to present how serious this complication and its management can be, along with its impact on the health system.

Patients and methods: A total number of 147 [male 105 (71.42%), mean age 68.62 years] hospitalized patients with diabetic foot ulcers were included in this two year retrospective monocentric study. The type of ulcers and their surgical treatment was established. The duration of hospitalization, and the ulcers outcomes and inpatient health costs were determined.

Results: The number of males was significantly higher than that of females ($p<0.01$). The number of patients at age ≥ 65 was significantly higher - 98 (66.67%). Of the patients admitted with diabetic foot ulcers; 58 (39.46 %) presented with cellulitis, 38 (25.85 %) with abscess and 51 (34.69 %) with gangrene. The surgical treatments included: local care (in 84 patients), toe amputation (in 29), transtibial amputation (in 8) and transfemoral amputation (in 26). The mean hospital stay was 12.98 days, and death was established in 12 patients (8.16 %). Direct inpatient costs for patients with diabetic foot ulcers treated by transtibial and transfemoral amputation was on average 201.35 EUR/daily, and for the rest of the patients - an average of 142.60 EUR/daily.

Conclusion: This study presents diabetic foot ulcers as an important health care problem, with a relatively long hospital stay and a need for most patients to continue local conservative treatment in outpatient clinics. The study also presents high, direct inpatient costs in the treatment of this diabetic complication.

THE 24-HOURS BLOOD PRESSURE PROFILE IN OVERWEIGHT AND OBESE INDIVIDUALS

Author(s): Paulina Sytek, Dorota Nowicka, Agnieszka Rabiza, Patrycja Rzesoś, Dawid Lipski MD, PhD

Domain:Internal Medicine

Discipline: Cardiology

Abstract:

Introduction: According to the European Society of Cardiology, 75% of hypertensive patients suffer from obesity. The 24-hour ambulatory blood pressure monitoring (ABPM) provides parameters correlating stronger with cardiovascular risk than office blood pressure. Our study aimed to evaluate the influence of obesity on the 24-hours blood pressure (BP) profile in treated individuals with essential hypertension.

Materials and methods: The study included 1345 hypertensive patients (48% females, mean age=56 years), who underwent ABPM, medical interview, and measurements, including height and weight. Patients registered their wake-up times, and the ABPM data were grouped according to the subject's wake-up time. Sleeptime BP was defined as the average BP recorded 5-1 hours before a patient woke up. Activity time BP was defined as the average BP recorded 14-10 hours before a patient woke up. Statistical analysis was performed with STATISTICA 13.3 software.

Results: The patients were divided into groups according to their body mass index (BMI) (BMI<25, n=355; BMI 25-30, n=551; BMI 30-35, n=292; BMI≥35, n=147). Sleeptime systolic blood pressure (SBP) gradually rose in the following groups compared to patients with BMI<25 (respectively: 114.5mmHg, 116.1mmHg, 118.8mmHg vs. 112.6mmHg, all $P<0.05$). Activity time diastolic blood pressure (DBP) was lower in patients with BMI≥35 than in patients with BMI<25 (80.9mmHg vs. 82.7mmHg, $P<0.05$). There were no significant differences in activity time DBP between the remaining groups, activity time SBP, and sleeptime DBP.

Conclusion: Obesity increases sleeptime SBP, decreases activity time DBP, and has no contribution to activity time SBP and sleeptime DBP. To our knowledge, this is the first study on the influence of obesity on 24-hours BP profile performed on such a large sample of individuals.

Percutaneous catheter-directed treatment relieves ECG ischemic patterns in patients with acute pulmonary embolism.

Author(s): Natalia Kachnic, Natalia Bukała, Maria Smorąg, Marianna Zygmunt
Domain:Internal Medicine
Discipline: Cardiology
Abstract:
Introduction
Electrocardiographic (ECG) abnormalities in acute pulmonary embolism (PE) include sinus tachycardia, right axis deviation, complete or incomplete RBBB, SIQIII,TIII and repolarization abnormalities. The latter phenomenon is not sufficiently explained. As acute right ventricle overload and dilatation may lead to subendocardial ischemia it is hypothesized that in two groups of leads, author(s)ly in "inferior wall" (II,III,aVF) and in precordial (V1-V3) leads, ST depressions and T wave inversions may occur. They are considered to be an independent risk factor for worse in-hospital outcome, however little is known about their dynamics in the course of PE. Therefore, we aimed to describe ECG effects of unloading of right ventricle with percutaneous catheter-directed treatment (PCDT) in patients with right ventricular dilatation.
Results
Three hundred and twenty patients with PE between 2019-2022 were consulted with Pulmonary Embolism Response Team (PERT) dedicated for 3,3-million inhabitants region. Among them we identified twenty patients classified as high-intermediate risk PE with positive markers of myocardial damage who underwent PCDT. No patient had bundle branch block and all QRS were narrow. At the admission patients presented ischemic patterns in at least two of inferior wall leads (inf) such as ST depressions (STD, 35%) or T-wave inversions (TWI, 40%) and similarly in at least two right precordial leads (rp): STDrp in 5% and TWIrp in 50%. Within 72-hours after PCDT we observed clinical improvement which was followed by improvement in ischemic patterns, especially in regression of TWIinf (to 10%,p=0.03) and followed by improvement trend in STDinf which decreased to 15% (p=0.13), TWIrp to 40% (p=0.72) and of STDrp to 0%. These findings were followed by regression in number of leads where following phenomena were present: STDinf decreased from 1(0-2) to 0(0-1; p=0.05) and TWIinf from 1(0-2) to 1(0-1; p=0.03). Parallelly we observed heart rate decrease from 107,5 (92.5-120) to 80 (71-94, p<0.0001) beats per minute, significant clinical improvement and decrease in serum levels of troponin and NT-proBNP.
Conclusions:
ECG signs of myocardial ischemia in patients with PE and RV dysfunction relapse after successful PCDT of PE. An improvement, aVF is early seen within first 72 hours particularly in inferior wall leads presented as decrease of TWI and STD.

Comparison of the frequency and nature of infanticide in the 1930s, 1970s, and today in the materials of the Department of Forensic Medicine in Cracow.

Author(s): Gabriela Kanclerz, Gabriela Sszypuła, Patrycja Szczepaniak, Maria Komisarz, Wojciech Koziołek

Domain:Public Health

Discipline: Public Health

Abstract:

Introduction: Infanticide is a specific type of homicide in which a woman kills her child during or shortly after birth. Such an offense can be committed actively and passively, often leaving no visible traces in an autopsy of a newborn. Our aim was to analyze the frequency and type of infanticides in years 1930-1939, 1971-1980, and 2012-2021.

Materials and Methods: We searched dissection protocols from archives of the Cracow Department of Forensic Medicine to take into account not only cases of certain infanticides, but also cases of abandonment of children without a tangible cause of death, who could potentially be victims of infanticide.

Results: We analyzed 295 cases, 7 of them in years 2021-2021, 134 in years 1971-1980, and 154 in years 1930-1939. In years 2012-2021 of the 7 considered cases, 5 were certain infanticides (one active and 4 passive), in the other two cases, the abandoned carcass of a newborn was decomposed. In years 1971-1980, of the 134 analyzed cases, 46 were certain infanticides (19 active and 27 passive). In 38 cases, due to decomposition, it was not possible to confirm or rule out infanticide. We also discovered 5 cases of stillborn, abandoned newborns. In 21 cases, the direct cause of death was perinatal trauma, and in 23 cases abandoned children were underdeveloped. In the years 1930-1939, of 154 analyzed cases, 40 were certain infanticides (15 active and 25 passive). In 30 cases, due to damage, it was not possible to confirm or rule out infanticide. We discovered six cases of stillborn abandoned newborns. In 18 cases, the direct cause of death was perinatal trauma, and in 61 cases abandoned children were underdeveloped.

Conclusions: Despite the fact that today infanticides are quite rare, even 50 years ago they were quite common, occurring almost as often as in the 1930s.

SIGNIFICANCE OF CURRENT PREOPERATIVE FACTORS IN OUTCOME PREDICTION OF OLDER PATIENTS OPERATED DUE TO PANCREATIC NEOPLASMS

Author(s): Natalia Maria Zmysłowska

Domain:Surgery

Discipline: Oncology

Abstract:

Introduction: Despite a huge improvement in surgical technique and perioperative care in the field of pancreatic oncological surgery, the risk of morbidity and mortality is still significant. Especially in the elderly in which natural reserves are depleted.

Aim of the study: The aim was to investigate preoperative prognostic factors predicting postoperative outcomes of elderly patients operated due to pancreatic neoplasm.

Material and methods: Preoperative, perioperative data and postoperative outcomes were collected. The inclusion criteria were: age ≥60, radical surgical treatment due to pancreatic neoplasm or periampullary area. Analysis was performed using chi2, U Mann-Whitney or Kruskall-Wallis tests and Spearman correlation.

Results: 103 patients met the inclusion criteria. The age median was 72 years (60-90) and there was a predominance of female (54.37%). Patients were divided into three age groups: 60-69 (n=39), 70-79 (n=53) and ≥80 (n=11). There were no significant differences in preoperative BMI, polypragmasy or number of comorbidities, but Charlson Comorbidity Index (CCI) and ASA were significantly higher in older groups. A variety of Perioperative outcomes were analyzed, but no significant differences were revealed. Only length of stay differed significantly with medians: 8, 13 ,8 days respectively (p=0.0432). Analyzing various laboratory results, the only significant difference referred to the lymphocytes, with median values decreasing with age (p=0.0256). Comparing patients with CD <3 or ≥3 there were no significant differences in preoperative features, laboratory or perioperative results. Correlations between preoperative features and laboratory tests vs postoperative outcomes were tested, but none of them were strong or moderate.

Conclusions: The results indicate that currently available preoperative data or laboratory tests do not allow to predict further postoperative course. We also did not reveal any differences between patients with severe or mild complications. In the light of the results, we conclude, that current methods used to describe elderly patients' status are insufficient to predict their outcomes.

The correlation between sufficient information on episiotomy and satisfaction with their health care provider among Latvian woman

Author(s): Anna Jete Gauja, Sabīne Bebere

Domain:Surgery

Discipline: Gynaecology-Obstetrics

Abstract:

INTRODUCTION: Episiotomies have been believed to help prevent a larger vaginal tear during birth. Current evidence suggests that routine episiotomies are not recommended to reduce complications. Episiotomy is considered when clinical circumstances place the patient at high risk of third or fourth-degree laceration or when the fetal heart trace is of concern and a delay in a vaginal delivery is unacceptable.

AIM: To understand the correlation between satisfaction with health care providers and obtaining sufficient knowledge on surgical procedure - episiotomy.

METHODS: A structured questionnaire was developed and carried out online in February of 2022 to evaluate the knowledge of episiotomy among pregnant women and women who have given birth in the previous three years (years 2019 - 2021). A total of 1394 subjects were included in the study.

RESULTS: The included subjects were in the age range from 18 to 46 with a mean age of 30.84 ± 4.847 years. 640 (45.9 %) of all women have experienced episiotomy, and 55.1% of these respondents more disagreed or disagreed completely with conceiving a substantial amount of information on episiotomy. A positive correlation ($r=0.172$, $p < 0.001$) was found between satisfaction with the health care provider's attitude and approach to the patient and having obtained sufficient information on episiotomy before childbirth.: CONCLUSION

This correlation demonstrates the fact that a more informed patient is more satisfied with their clinicians' approach toward them as their patients. This study suggests that the educational work of pregnant individuals should be increased to work towards a more patient centralised health care system.

Fear of Perineal Lacerations: Experience and Understanding among Latvian Women

Author(s): Sabīne Bebere, Anna Jete Gauja

Domain: Surgery

Discipline: Obstetrics and Gynecology

Abstract:

INTRODUCTION

The literature describes various methods for preventing large-scale lacerations; these preventions should be discussed between the pregnant woman and the healthcare provider or during antenatal classes. Tearing during childbirth is a common occurrence among women who have a vaginal birth. There are several practical evidence-based interventions for reducing the risk of perineal lacerations.

AIM

Assess knowledge of perineal lacerations among Latvian pregnant women and women who gave birth in recent years (2019 - 2021).

METHODS

A questionnaire was developed to assess the experience and understanding of perineal lacerations and their prevention. An online survey was conducted in February of 2022. A total of 1,394 subjects were included in the study.

RESULTS

The subjects included were in the 18 to 46 age range with a mean age of 30.84 ± 4.847 years. 23.7% (n=330) were pregnant and the remaining 76.3% (n=1064) were in the postpartum period. 734 (52.7%) of the respondents received insufficient information or were not informed about avoiding perineal lacerations, and 325 (44.3%) of these respondents admitted to being afraid of having lacerations. In addition, 399 (28.7%) were well informed, and of those 190 (47.6%) were still afraid of lacerations.

CONCLUSION

A significant number of women admitted they were afraid of lacerations and did not have sufficient information on the prevention of perineal lacerations. The study demonstrates that the prevention of this complication should be a more frequent topic between pregnant people and their healthcare providers and more must be done to reduce fear related to lacerations.

CD276, VTCN1 and HHLA2, members of B7 family, as promising targets for immunotherapy in CRC

Author(s): Sylwia Mielcarska, Miriam Dawidowicz, Agnieszka Kula, Paweł Kiczmer, Hanna Skiba, Błażej Ochman, Elżbieta Świętochowska

Domain: Preclinical Sciences

Discipline: Oncology

Abstract:

Introduction: Colorectal cancer (CRC) is third most common diagnosed neoplasm and the second cause of cancer-related deaths worldwide[1,2]. Despite of immense impact of anti-PD/PDL1 therapy on cancer treatment, current immunotherapies are effective only in 15% of patients with deficient mismatch repair microsatellite instability (MSI) tumors[3]. For that reason, searching for potential immune targets is pivotal for development of new effective treatment strategies in CRC. The aim of the study was to evaluate expression of CD276, VTCN1 and HHLA2-novel and promising targets for immunotherapy[4–6], in CRC tumors in relation to clinicopathological features of patients.

Materials and methods:

116 patients were enrolled in the study. Expression of CD276, VTCN1 and HHLA2 in cancer cells as well as MSI/MSS status of the tumors, MVD, budding and number of CD8 cells were determined with the use of IHC staining in 84 cases.

Additionally, concentrations of these molecules in tissue homogenates obtained from 95 CRC patients were measured with the use of ELISA kits.

Results: In IHC staining CD276 was expressed in 35%, VTCN1 in 71%, HHLA2 in 98% of CRC specimens. 23% of tumors were MSI. There was no association between MSI/MSS status and expression of HHLA2 and CD276, while VTCN1 expression was more frequent in MSS tumors. In tissue homogenates, the tumor levels of CD276 and VTCN1 were positively associated. The tumor CD276 level was positively correlated with the T feature, whereas the tumor level of VTCN1 correlated negatively with number of CD8 cells in tumor.

Conclusion: CD276, VTCN1 and HHLA2 are expressed in CRC tissue and are associated with parameters of patients, but they exhibit different prevalence . Further exploration is required to elucidate the mechanisms and therapeutic potential of B7 family.

CHI3L1 in the regulation of extracellular matrix remodeling and cancer immune escape in colorectal cancer.

Author(s): Błażej Ochman, Sylwia Mielcarska, Agnieszka Kula, Miriam Dawidowicz, Karol Żmudka, Julia Robotycka, Elżbieta Świętochowska

Domain: Preclinical Sciences

Discipline: Oncology

Abstract:

Introduction:

Colorectal cancer (CRC) remains the second most lethal cancer worldwide. The leading cause of high mortality in metastatic CRC[1].

CHI3L1 (YKL-40) is a protein secreted mainly by macrophages and epithelial cells. CHI3L1 is considered to be a regulatory molecule in cancer progression and metastasis[2,3].

The study aimed to investigate in silico potential interactions between CHI3L1, MMP-8, IL-17A, and PD-L1 in CRC and to assess levels of these molecules in tissue homogenates obtained from CRC tumors.

Materials and methods:

To investigate potential interactions and correlations between studied molecules we performed in-silico analysis using Tumor Cancer Genome Atlas (TCGA), Gene Expression Omnibus (GEO), and STRING. We used the GEO database containing microsatellite unstable CRC samples. Using STRING we have constructed protein-protein interactions (PPI) network of examined molecules and their downstream signaling pathways.

Finally, we evaluate the concentrations of investigated proteins in tumor and margin tissues derived from 48 CRC patients with the use of ELISA kits.

Results:

TCGA and GEO database analysis revealed a significant correlation between examined molecules, except CHI3L1 and PD-L1 in the GEO database.

STRING analysis did not provide direct interactions between CHI3L1 and examined molecules, although showed indirect interactions. In tissue homogenates. We observed significantly higher expression of CHI3L1, MMP-8, IL17A, and PD-L1 in CRC tumor tissue compared to tumor-free margin tissue. Levels of CHI3L1 correlated positively with those of MMP-8 ($p<0,0001$, $R=0,71$), IL17A ($p<0,026$, $R=0,36$) and PD-L1 ($p=0,044$, $R=0,32$)

Conclusion:

CHI3L1 may participate in the remodeling of the extracellular matrix. CHI3L1 can potentially mediate cancer immune escape by affecting PD-L1 expression. CHI3L1 may be an important agent in cancer progression and metastasis and has the potential to become a therapeutic target in CRC therapy.

RELIABILITY OF ANTERIOR GLENOID DEFICIENCY MEASUREMENT USING 3D MULTIPLANAR RECONSTRUCTION (MPR) OF MAGNETIC RESONANCE IMAGING (MRI) IN PATIENTS WITH SHOULDER INSTABILITY.

Author(s): Sebastian Rauhut, Jan Niziński, Bartosz Antonik, Agata Kaczmarek, Filip Jakubowski, Piotr Tuczyński, Julian Sławski, Jakub Stefaniak, Przemysław Lubiatowski

Domain: Surgery

Discipline: Orthopedics

Abstract:

Introduction: Shoulder instability is a common condition that occurs especially in an sportive group of patients. Especially where recurrent it has been associated with both humeral head and glenoid bone loss. Accurate measurement of the glenoid bone loss, which is the major risk factor for planning surgery can be assessed by CT or MRI multiplanar imaging and is crucial to the pre-operative planning. Several measurements including Pico method have been used for quantifying the extent of the glenoid bone loss. It is being calculated by dividing the area of the glenoid bone loss by the area of the best fitted circle in the glenoid surface and is being expressed in percent sign. The aim of the study is to compare intra and inter-observer reliability of glenoid deficiency using MRI.

Materials and Methods: MRI images of 80 patients with history of shoulder dislocation were reviewed with Osirix software. Six observers with basic experience (medical student) measured width, height, area of the glenoid, erosion edge length, area of bone loss, Pico index of all 80 cases twice, with at least one week interval between measurements. Reliability and repeatability was calculated using intra-class correlation coefficient (ICC) and minimal detectable change with 95% confidence (MDC95%).

Results: Pico index intra-observer ICC value was 0,86 (95% CI; 0,83 - 0,89), MDC95% value was 45,8%. Pico Inter-observer reliability ICC value was 0,76 (0,61 - 0,45), MDC95% value was 56,4%.

Conclusion: 3D MPR MRI measurement of anterior glenoid lesion using Pico index is characterized with good reliability, with slightly better intra-observer results. On the other hand, this method might be correlated with substantial error which should be taken under consideration when making clinical decision.

The effects of adverse childhood experiences (ACE) on the development of diabetes Mellitus (DM) and primary hypothyroidism in adults

Author(s): Mariam Alavidze

Domain: Internal Medicine

Discipline: psychiatry and endocrinology

Abstract:

OBJECTIVES

Globally DM and hypothyroidism are leading endocrine disorders. The etiology of DM and hypothyroidism is complex and the influence of toxic stress on it is yet to be explored.

Few studies report high scores of ACE in DM patients. Our study aims to investigate the effect of ACE on endocrine diseases, specifically DM, insulin resistance, and primary hypothyroidism in a local population. This study aims to understand ACE effects on the risk of developing DM, IR, and/or hypothyroidism in adulthood and uncover the risk factors related to it.

MATERIALS AND METHODS

A cross-sectional study was conducted. 123 adults over 21 years old who were clinically diagnosed with diseases were investigated using an ACE (scores ranging from 0-4+) survey and CDC guidelines for risk factors for ACE.

RESULTS

42 participants had only one disorder (8 hypothyroidism (25% with 4+ACE scores), 27 DM (40.7 with 4+ACE), and 7 IR (28.6% with 4+ACE). 81(77%) simultaneously had 2 disorders associated with the highest ACE scores. 27 participants had both DM and hypothyroidism with an average of 3.5 ACE score. 54 had hypothyroidism with an IR (average ACE score of 2.6).

ACE with a score of 4+ is associated with significantly increased odds of DM in adulthood. (OR=2.51, 95% CI 5.32, 1.18)

The ACE wasn't associated with IR (OR=0.65, 95%CI 1.34, 0.31).

ACE was associated with hypothyroidism (OR=1.34, 95%CI 3.04, 0.59)

Although when there was an overlap of IR with hypothyroidism, a high ACE score was observed (OR=1.78, CI 95% 6.28, 0.51)

Participants with both DM and hypothyroidism had the strongest association with ACE. (OR=3.26, 95% CI 9.29, 1.14)

CONCLUSION

Results of the study suggest that a high ACE score predisposes the development of DM, hypothyroidism, and IR with hypothyroidism. This opens new avenues to develop preventive and management strategies for this diseases.

Central nervous system influence of electromagnetic field emitted by a cell phone during a 15-minute conversation in young adults.

Author(s): Jakub Popielak, Gabriela Kanclerz, Urszula Sołdaj, Sylwia Lefek
Domain: Preclinical Sciences
Discipline: Medical Biophysics
Abstract:
Introduction: We are surrounded by devices which are sources of radio frequency electromagnetic field (RF-EMF). Activities such as making a phone call expose us to unknown doses of RF-EMF with the potential to affect the central nervous system. The purpose of the study was to investigate the effect of a 15-minute phone call on the functioning of the central nervous system in young adults.
Materials and methods: We used saccadometer, a device that tests involuntary eye movements, which in the literature show patterns characteristic of various diseases of the nervous system, e.g. dementia or Huntington's disease. Each study participant was first subjected to two saccadometer tests, dynamic and anti-saccadic, followed by a 15-minute standardized telephone call. Finally, both saccadometer tests were repeated. The latency, duration, and peak velocity characterizing saccades were analyzed. An exposimeter was applied to measure the RF-EMF amplitude over time. We also collected basic data (age, sex) from the participants.
Results: 15 individuals (8 women) between the ages of 18 and 25 with a mean age of 22 were examined. There were no statistical differences between the latency, duration, and peak velocity of dynamic and antisaccadic tests before and after exposure ($p=0.206$; 0.076; 0.124 for dynamic and $p=0.183$; 1.000; 0.549 for antisaccadic tests, respectively). The mobile phone was configured to use the 3G standard with a frequency of 900 MHz. The average amplitude of the electric field component was 0.020 V/m during the conversation. The background was at the level of 0.008 V/m.
Conclusions: In our study, we did not obtain statistically significant changes in any of the compared parameters. This may be due to the lack of a measurable effect of exposure of 15 minutes to a 900 MHz RF-EMF on the nervous system, but another reason may be the too small test sample.

THE INFLUENCE OF PEERS ON MARIJUAN USE IN ADOLESCENTS IN NOVI SAD

Author(s): Bojana Jovančević
Domain: Preclinical
Subdomain: Epidemiology
Abstract:
Introduction: Cannabis use in adolescence has a major impact on the individual. The effects contribute to social, physical and mental problems. Socializing with peers who use psychoactive substances increases the likelihood of cannabis use in adolescents.
Goal: To determine the prevalence of the cannabis use in adolescents in Novi Sad and the differences in prevalence depending on the risky behaviors of their friends.
Material and methods: The research was a cross-sectional study that encompassed 1067 first grade students from 19 high schools in Novi Sad in 2017. The instrument was a questionnaire of the European School Survey on Abuse of Alcohol and Other Drugs.
Results: The prevalence of marijuana abuse in Novi Sad was 12.0%. It was higher in students from the city (13.1%) or suburban areas (13.6%) compared to students from the village (5.8%) ($p<0.05$). It was higher among students whose majority/all friends smoke (23.1%) than those whose friends don't (10.1%) or a few friends smoke (5.5%) ($p<0.001$). Respondents whose friends use alcohol have used marijuana significantly more common (15.2%) than those who have only a few (6.4%) or don't have such friends (10.5%) ($p <0.001$). More than half of students whose friends use marijuana have tried it (54.0%). Only 3.0% used marijuana ($p <0.001$) among those who don't have such friends.
Conclusions: The prevalence of marijuana use in adolescents in Novi Sad is high. Prevalence is higher among pupils whose friends smoke, drink alcohol, get drunk, use cannabis, tranquilizers, ecstasy or inhalants

Comparison of histopathological characterisitc between age groups in patients with rectal cancer – what surgeon can learn from it

Author(s): Jerzy Krzeszowiak

Domain: Surgery

Subdomain: general surgery

Abstract:

Introduction: Rectal cancer is one of the most common malignant neoplasms in adult population. Its incidence is increasing with age, but despite the wide range of available multimodal treatment of rectal cancer data about tailored approach with regard to the biological age for elderly is still insufficient.

Aim: The aim of the study was to investigate the differences in histopathological outcomes between <65 and ≥65 years old groups and determine whether there is a significant difference in cancer staging between these groups with attempt to explain its possible reasons.

Materials and Methods: 73 patients operated due to malignant rectal neoplasms between December 2019 and October 2021 in our Department were included. Other diseases, lack of histopathological examination or only intraoperative examinations were exclusive for the study. Patients were divided into two age subgroups and analyzed in terms of histopathological outcomes using Chi2 or U Mann-Whitney tests and Spearman Correlation.

Results: There were 35 patients <65 and 38 ≥65. Age median and male percentage were 57 vs 71.5 and 77.14% vs 68.42% respectively. Most common etiologies were: adenocarcinoma (68.49% vs 71.43%), mucinous adenocarcinoma (11.43% vs 5.26%) and tubular adenocarcinoma (6.71% vs 10.53%). The difference in histopathological types distribution was not significant. In both groups most common histopathological features were: pT3, pN0 and G2 with no significant differences in distribution. Lymphatic, vessel and neural invasion were more often in younger group, but only difference in lymphatic invasion was significant. In both groups most common resection was RO, there were also no significant differences in numbers of resected and positive lymph nodes. In all patients age was significantly correlated with lower grading and lower number of resected nodes. In group <65 male sex was negatively correlated with lymphatic invasion.

Conclusions: Histopathological results of both groups are comparable. It proves that age is not a risk factor of greater malignancy in patients operated due to rectal cancer.

Frontal sinus mucocele with orbital complication

Author(s): Vuk Spiric

Domain: Surgery

Subdomain: Otorhinolaringology

Abstract:

Background

Paranasal sinus mucocele is a cyst like formation filled with thick mucous secretion. It is usually more aggressive with expansive growth in comparison with retention cysts. Sometimes it produces bone destruction and causes severe complications.

Case report

45 years old male patient with complains of medium to severe left frontal headache. Clinical exams revealed elastic round swelling in left orbit medial corner. After CT evaluation massive cystic to solid expansion was confirmed.

Management

Patient was treated with antibiotic nasal decongestants and pain killers. After CT examination he underwent surgical intervention, incision and drainage. Content of cyst was sterile, patient was monitored and drainage was maintained for several days. Patient's condition significantly improved and he was discharged from hospital after 6 days.

Discussion

Mucocele of paranasal sinus in general does not have a very complicated management, sometimes because of localization, especially in frontal and ethmoid sinus. They can sometimes cause endocranial and exocranial complications, and that is why they require surgical treatment.

ECG PATTERNS TO DISTINGUISH ACUTE AND CHRONIC RIGHT VENTRICULAR OVERLOAD.

Author(s): Marianna Zygmunt, Natalia Bukała, Maria Smorąg, Natalia Kachnic
Domain: Internal Medicine
Subdomain: Cardiology
Abstract:
Introduction: Right ventricle (RV) overload can be caused by pressure overload, which can be a chronic condition, like in a pulmonary arterial hypertension (PAH), or acute, like in a pulmonary
embolism (PE). So far little is known about different ECG patterns in resting ECG in those conditions in a direct head-to-head comparison. Therefore, the aim of the study was to assess different patterns of ECG signs of RV hypertrophy in patients with acute and chronic right ventricle overload and comparable hemodynamics.
Methods: We assessed all patients treated in the reference pulmonary circulation disease centre, treated between 2010 and 2022. To be eligible one should have either diagnosis of PAH without structural heart diseases or acute PE with at least intermediate-high mortality risk complicated with acute RV dilatation and treated percutaneously.
Results: Among 145 with PAH and 31 with PE who had confirmed RV dilatation in echocardiography. With a use of propensity score we matched 30 patients from each group with similar mean pulmonary artery pressure (33.3±7.6 in PAH vs 32.9±7.9, p=0.85) and we observed several differences in major ECG patterns of RV hypertrophy/enlargement. Patients with PAH were characterized by higher amplitude of R in V1(0.294 ± 0.27mV vs 0.108 ± 0.113mV;p=0.0001), S in V5 (0.664±0.4mV vs 0.442±0.307mV; p=0.02), S in V6 (0.429±0.297mV vs 0.310±0.3=280 mV;p=0.02). Sokolow-Lyon criterion for RV hypertrophy was also higher in PAH than in PE (0.961±0.510 mV vs 0.650±0.33mV;p=0.0004) and its value above threshold of >10.5 mm was more often fulfilled in PAH than PE (43.3% vs 6.7%,p=0.003).
Conclusion: ECG signs of RV hypertrophy are more prevalent in chronic setting of pressure overload, despite similar pressures. Sokolow-Lyon criterion for RV hypertrophy is rare and can distinguish between chronic and acute pressure overload setting.

A comparative analysis of histopathological outcomes between geriatric and nongeriatric patients with gastric cancer

Author(s): Kuba Kupniewski

Domain: Surgery

Subdomain: General Surgery

Abstract:

Introduction: Although the incidence of gastric cancer is falling in many countries, it remains the third-leading cause of death from cancer. Incidence is known to increase with age, however the data on this disease relating specifically to the elderly is still lacking.

Aim: The aim of this study was to assess the differences in histopathological outcomes between patients <65 and patients ≥65 years in age, and to determine whether there are any significant differences in gastric cancer staging between these groups.

Materials and Methods: We included 83 patients operated in our department for gastric neoplasms between December 2019 and October 2021. Patients were excluded if their gastric pathology was not of neoplastic origin. Patients were divided into two groups based on age and analyzed using Chi-square, Mann-Whitney U, and/or Spearman correlation tests.

Results: 38 patients were <65, while 45 were ≥65. The median age in the younger group was 57.5 with a range of 28-64, while the median age in the geriatric group was 72 with a range of 65-87. The most common etiology was signet ring cell carcinoma in the younger group, and tubular adenocarcinoma in the geriatric group. This difference was determined to be significant. The most common histopathological traits were pT4a, pN0, and G3 for the younger group and pT4a, pN2/3a, and G3 for the older group. The difference in nodal staging was not determined to be significant, however. Although both groups primarily had G3, differences in the distribution of grading for differentiation were found to be significant. There were no significant differences in terms of radicality, the number of resected nodes, positive nodes, or in terms of lymphatic, vessel, or neural invasion.

Conclusion: Histopathological results for both groups are comparable, with no differences suggesting that age is a significant risk factor for less favorable malignancy.

Systematic review: The importance of patient reported outcomes in elderly patients undergoing pancreatic surgery.

Author(s): Jerzy Krzeszowiak, Kuba Kupniewski

Domain: Surgery

Subdomain: General Surgery

Abstract:

Introduction

Partial or total pancreatic resections are the procedures connected high risk of morbidity, mortality, and long time of postoperative recovery. It is especially important for elderly patients in which crucial is not only increased life expectancy, but also the quality of life. There is still no sufficient data about the influence of this type of surgery on further patient reported outcomes in the group of elderly.

Aim of the study

The aim of the study was to perform a systematic review of current studies on postoperative evaluation of patient reported outcomes (quality of life, functional and cognitive status) in patients ≥65 years old who underwent partial or total pancreatic resection.

Methodology

Databases such as: PubMed, Web of Science and Embase were searched using combinations of terms: 'older patients' AND 'pancreatoduodenectomy' OR 'pancreatic resection' AND 'quality of life' OR 'patient reported outcomes' OR 'functional outcomes. 4935 studies were identified and additional 19 papers were found via Google Scholar. After removing duplicates remained 2354 studies. After tittles and abstracts evaluation 66 works were included into full-text eligibility assessment. Finally, 5 studies were included into the review. The methodology of the review was designed following PRISMA guidelines.

Results

5 included studies described 1816 patients. In 373 of them QoL assessment was performed, using: EORCT QLQ-PAN26, SF-367v2, FACT-Hep and EORTC QLQ-C30 questionnaires. All of the patients were ≥65 years old and were undergoing pancreatoduodenectomy, total pancreatectomy or distal pancreatic resection from either open or laparoscopic approach. Three of included studies were retrospective while another two prospective. The results of all included studies indicated gradual return or even increase of quality of life, functional and cognitive status, comparing to the preoperative level. In all of the studies only chronological age was analyzed, with no regard to the biological age of the patients.

Conclusions

In the short-term pancreatic surgery has an important impact on patient reported outcomes in the elderly. Long-term results in the patients with no complications prove that pancreatic procedures do not decrease quality of life and in some cases increase. Current literature is insufficient and does not show the real postoperative course of older patients.

A systematic review of the effects of liver resection on the quality of life of geriatric patients

Author(s): Kuba Kupniewski

Domain: Surgery

Subdomain: General Surgery

Abstract:

Introduction:

Patient reported outcomes, quality of life, functional status, and cognitive status are just as important as the preservation of life for many elderly patients. There are many studies on the mortality and perioperative morbidity of geriatric patients undergoing liver resection, but no systematic review has yet been made to analyze the potential changes to quality of life after liver resection.

Aim: The aim of the study was to systematically review the published literature on changes related to quality of life of patients ≥65 years of age who underwent liver resection.

Methodology: PubMed, Web of Science, and Embase were searched without time limits using a search key. 4616 works were identified. After duplicates were removed, 404 publications remained whose titles and abstracts were assessed for inclusion. 45 papers were selected, 11 of which were finally included in the review. This systematic review was conducted according to PRISMA guiedelines.

Results: The review included 11 studies analyzing 940 patients (8 retrospective, 3 prospective). The assessment used elements of a comprehensive geriatric assessment, quality of life scales using the EORTC QLQ-PAN26, SF-36, FACT-Hep and EORTC QLQ-C30 questionnaires. The results of all included studies showed a gradual return of the quality of life, functional and cognitive state to the preoperative level or an increase in quality of life. A number of shortcomings have also been identified in the current literature that do not fully reflect the postoperative reality of the elderly. All studies used chronological age without analyzing aspects of the patients' fragility.

Conclusions: In the short term, liver surgery can have a significant impact on quality of life, but in the long-term patients primarily improve or return to baseline. The analyzed works do not fully reflect the postoperative reality of the elderly, however, and further well-designed research on this subject is needed.

THE EPIDEMIOLOGICAL TRENDS OF TUBERCULOSIS INFECTIONS IN THE PAST 5 YEARS

Author(s): Mary Matthew

Domain: Internal Medicine

Subdomain: Infectious Diseases

Abstract:

Mycobacterium tuberculosis(MtB) is the causative agent for tuberculosis. In Ukraine, this highly contagious chronic disease has a high prevalence and mortality rate. According to WHO, the incidence rate in Ukraine has decreased significantly in recent years, falling from more than 127 cases per 100 000 people in 2004-2005 to 42.2 cases per 100 000 people in 2020. Much progress has been made in reducing MTB cases in Ukraine.

AIM

Aim of this study was to monitor the epidemiological trends of MtB in the Sumy Region(in Ukraine) for 5 years.

METHODS

Data from the electronic TB patient registry (e-TB Manager) were used. For the 5-year period, a total of 3148 TB patients were recorded. The number of TB cases was then divided into the following years: 2017, 2018, 2019, 2020, and 2021. We also monitored the outcomes of new MtB trends after the introduction of devices for molecular genetic diagnostics (specifically PCR) in multidisciplinary medical centers in the city.

RESULTS

Throughout the 5 years, the number of TB cases decreased steadily. For the years 2018, 2019, 2020, and 2021, the reduction percentages were 8.14%, 15.43%, 44.4%, and 43.3%, respectively. Furthermore, Rifampicin-Resistant Tuberculosis (RR-TB) was recorded at a higher rate (50%) than other forms of TB after PCR diagnostics were introduced in 2018.

DISCUSSION

The drastic reduction in TB cases can be attributed to the use of more effective diagnostics and treatment methods.

PANCREATIC NEOPLASMS – WHAT CAN WE LEARN FROM THE SURGICALLY RESECTED LESIONS

Author(s): Apolonia Miążek, Sabina Kolawa, Jakub Kenig M.D. Pf.D. Prof. UJ
Domain: Surgery
Subdomain: General Surgery
Abstract: Pancreatic cancer is one of the most lethal neoplasms, with a 5-year survival rate of 6%. At the time of diagnosis, only 20% of lesions are suitable for resection, which remains the only curative treatment. As European population is aging rapidly, and PC affects mainly elderly patients, this is an increasingly relevant issue.

Our study aimed to analyse resected primary pancreatic neoplasms with a particular focus on comparing the prognostic features of Pancreatic Cancer between geriatric and non-geriatric patients.

Histopathological records of patients hospitalised in the University Hospital in Kraków between 2019 and 2021 were reviewed. All patients with primary pancreatic neoplasms and complete data were analysed. A total of 101 cases were divided into two age groups: ≥65 years old (n=55) and <65 yo (n=46). For Pancreatic Cancer

cases (n=60), we compared stage, as well as pT and pN independently, grade, PNI (perineural invasion), BVI and LVI (blood and lymphatic vessel invasion), total number of harvested versus metastatic lymph nodes and R (residual tumor). We also performed an analysis of CA19-9 concentration, searching for correlations with age and cancer features. Statistical analysis was thoroughly performed using Fisher exact and Mann-Whitney U tests as well as Spearman's rank correlation. There was no divergence in the distribution of histological types between the age groups (p=0.061). For Pancreatic Cancer, the differences between stage, grade and CA19-9 concentration were not statistically significant. We found that elevation in

CA19-9 was correlated with more metastatic lymph nodes, higher stage and grade, and positive margins in resection. The findings of this study show that Pancreatic Cancer in patients qualified for

surgery have similar stage, grade and count of positive lymph nodes regardless of chronological age. These analysed prognostic factors do not seem to be to the detriment of geriatric patients. Further research involving postoperative quality of life and survival is needed to draw reliable clinical conclusions.

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