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BOOK OF ABSTRACTS

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Acta Medica Marisiensis
George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures
38, Gh. Marinescu St, 540139 Tîrgu Mureş, Romania
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EARLY DIFFERENTIAL DIAGNOSIS BETWEEN TAKOTSUBO CARDIOPATHY AND EVOLVING MYOCARDIAL INFARCTION. MANAGEMENT AND KEY SIGNS - CASE REPORT

Marina-Raluca Baciu[1], Elena Cozmescu[1], Iulia Grancea[1]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures

Background: Takotsubo Cardiomyopathy (TMC) is a hypokinetic left ventricular pathology, occuring mostly in menopausal women, after a high stress factor. Recent studies have demythied the belief that TMC is only benign and transient, correlating its pathophysiology with low estrogen levels, sympathetic hyperfunction, vasospasm and other mechanisms. Being a rare clinical entity, it can mask its etiology during the diagnosis of a patient with similar symptomatology as a myocardial infarction.

Objective: Our purpose was to highlight the importance of differential diagnosis, in order to avoid complications in cases like this one. Misdiagnosing patients with cardio-ischemic pathologies can have high-risk consequences.

Material and methods: A female patient, 70 years old, chronic smoker, known with grade III of arterial hypertension, was admitted at the Emergency County Hospital of Targu Mures, from another hospital, with a clinical picture of an anterior myocardial infarction, five days after its onset. The patient was asymptomatic and the EKG had a stationary aspect (elevated ST segment with negative T waves). Echocardiography showed a ventricular aneurysm, and confirmed the existence of an intracardiac thrombus, along with an ejection fraction of 35%. The paraclinic investigations were similar to the case of an ischemic pathology, along with high levels of troponine.

Results: Coronarography marked the misdiagnosis, showing that the coronary arteries were intact. The diagnosis was corrected to Takotsubo Cardiomyopathy with an akinetic ventricular apex, and the patient was given long-term anticoagulant medication.

Conclusions: It is important to understand that these two pathologies are often confused and that coronarography can help with differential diagnosis. Cases like this contribute to continuous medical education.

Keywords: Takotsubo Cardiomyopathy, Coronarography, Differential Diagnosis, Misdiagnosis

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AN UNEXPECTED CAUSE OF SYNCOPE- CASE REPORT

Sorin Nicolae Blaga[1], Mara Oaida[1], Simona Maria Țurcanu[1], Raluca Tomoaia[2], Dana Pop[1,2]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures
2. Cardiology Department, Cluj County Rehabilitation Hospital

Background: Atrioventricular block (AVB) is a conduction disorder which is classified in 3 types. 2:1 AVB is the most severe form of second-degree AV block, where every second p wave is blocked. It is caused by an unpredictable fail of the cells to conduct a supraventricular impulse to the ventricles.

Objective: We present the case, of an 84-year-old woman, which was admitted to the cardiology department of the Cluj County Rehabilitation Hospital for dyspnea on mild effort, which also appeared at rest and with a syncope produced one week before. The personal history of the patient revealed third degree hypertension, which was treated with losartan.

Material and methods: ECG performed on admission identified a 2:1 AVB. On auscultation, a 2/6 systolic murmur without irradiation was detected at the level of the aortic point. Thus, an associated aortic stenosis was suspected. Echocardiography revealed intermittent obstruction due to a septal bulge, with a gradient of 43 mmHg at rest and of 96 mmHg at Valsalva maneuver. There was also an associated mild pulmonary hypertension (pulmonary artery systolic pressure of 40 mmHg). The management of this patient included a dual chamber pacemaker implantation for the AVB, which has also been proven to reduce the gradients in the left ventricular outflow tract. The patient remained mildly symptomatic the following days. For further reduction of the ventricular obstruction, we associated a beta-blocker (metoprolol) combined with adequate hydration.

Results: On 1-month follow-up, the patient was asymptomatic at rest. Echocardiography showed no gradient at rest and a reduction of the pulmonary hypertension (PASP=31 mmHg).

Conclusions: The particularity of the case consists in the initially presumed etiology of syncope was the AVB. The incomplete resolution of the symptoms until complete treatment for LVOT obstruction was administered suggested the both mechanisms were involved (obstruction and AVB).

Keywords: AV block, hypertension, intraventricular obstruction, septal bulge

DECOMPENSATED HEART FAILURE WITH PRESERVED EJECTION FRACTION – THE CONSEQUENCE OF A DISGUISED AGENT

Elvira-Ioana Buda[1], Ionela Movileanu[2], Miruna Pepa[2], Ana Elena Cadar[1], Corina Ureche[3]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures
2. The Emergency Institute for Cardiovascular Disease and Heart Transplant of Targu Mures
3. Targu Mures County Emergency Clinical Hospital

Background: Heart failure with preserved ejection fraction (HFpEF) remains one of the leading causes of cardiovascular death. When compared to heart failure with reduced ejaction fraction, no treatment revealed reduced morbidity and mortality.

Objective: To discuss the importance of diagnosing the determinants of cardiac decompensation even when there is no relevant clinical picture.

Material and methods: We report a case of an 81-year-old female admitted to the hospital with the following symptoms and signs: fatigue and a noticeable limitation of physical activity for the last two weeks, nocturnal dyspnea and generalized edema without cough or fever. The past medical history includes hypertension, chronic heart failure (NYHA III) secondary to cardiomyopathy due to combined mitral and tricuspid (severe) regurgitation and permanent atrial fibrillation. At the physical examination, jugular vein distension was observed along with bilateral basal abolished vesicular murmur and diffuse sibilant crackles. The laboratory panel revealed leukocytosis absence and a NT-pro-BNP of 1100pg/ml with normal renal and liver function. Echocardiography pointed out the documented valvulopathies, a dilated left atrium and a preserved ejection fraction. Thereby cumulating with the result of the radiological investigations the diagnosis of right perihilar pneumonia was established.

Results: The clinical findings suggested acute decompensated heart failure in spite of the NT-proBNP and the preserved EF. The diagnosis was established based on the auscultation and chest X-ray despite to absence of boold markers. Considering the atypical clinical presentation, underdiagnosis of pneumonia occures in eldery patients. Knowing the triggering factors of heart failure exacerbations, the case was managed as an acute decompensated HFpEFdue to pulmonary infection.

Keywords: Heart failure, ejection fraction, pneumonia

HOW TO FIGHT A SUDDEN KILLER?

Ana-Elena Cadar[1], Elvira-Ioana Buda[1], Radu-Dorin Onicas[2]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures
2. Dr. Constantin Opris Baia Mare County Emergency Hospital

Background: Aortic Dissection is a rare pathology, which is often misdiagnosed and because of this there is a high mortality rate. The lesion starts by damaging the intima and creating something known as ‘false lumen’. This process can result in an aortic rupture or in ischemia of different organs, because of the low blood flow.

Objective: The purpose of this paper is to point out how easily this patology can be mistaken and how important it is to be diagnosed at its early stages.

Material and methods: In this paper, it is presented a 64 years old man, who shows up at the emergency room, presenting anterior thoracic pain, syncope at home, paraesthesia of the lower limb, all appeared after a medium effort. At first consultation, he is self-conscious, but a bit pale, anxious and with a swollen right lower limb, with absent femoral pulse and violent pain. Suspecting deep venous thrombosis, the investigation starts with a Doppler ultrasound exam, which invalidates this assumption. The laboratory investigation only shows a high blood urea and creatinine level. At the second clinical evaluation, the subject accuses another thoracic pain, of an intensity of 2 out of 10 and pain of the right lower limb. Now, it can be easily recognized the leg’s ischemia and after a new Doppler exam, the doctors detect an aortic dissection, which is confirmed by a computed tomography.

Results: The subject undergoes an emergency surgery, in which his ascending aorta is replaced with a number 36 Dacron prosthesis.

Conclusions: A clinical revaluation, a good differential diagnosis and a Doppler exam can save the life of anyone who is threaten by a sudden killer.

Keywords: aortic dissection, Doppler, differential diagnosis

THE QUALITY OF ONLINE INFORMATION ABOUT HEART ATTACK ON THE ROMANIAN AND ENGLISH LANGUAGE WEBSITES

Iulia Veronica Coman[1], Cristina Șulea[1], Tatiana Ursachi[1], Konrád Ottó Kiss[1], Valentin Nădășan[1]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures

Background: The quality of the online health-related information matters because a large number of patients with chronic diseases, including acute coronary syndromes, use the internet to obtain information but only a minority of them discuss the matter with their doctors. The validity of online information about these prevalent conditions remains unknown in most languages.

Objectives: The study aimed to assess the completeness and the accuracy of the online information about heart attack on the Romanian and English language websites addressing the general population.

Material and methods: The sample included 25 Romanian and 25 English websites selected from the Google results pages based on a set of inclusion/exclusion criteria. The quality benchmark was developed from the evidence-based literature with the contribution of two cardiologists. The completeness and accuracy of each website were rated by two independent evaluators and reported on a scale ranging from 0 to 10. Scores were compared using the t-test or Mann-Whitney test. Alpha was set at 0.05.

Results: The mean completeness score was 3.7 for the Romanian website and 6.6 for the English websites ($p<0.0001$). The mean accuracy score was 6.1 for the Romanian websites and 6.8 for the English websites ($p=0.1690$). None of the 25 Romanian websites had both completeness and accuracy scores above 7.5. On the other hand, 4 English language websites had both quality scores above 7.5: Mayo Clinic Health System's website, US (www.mayoclinic.org); National Health Service's website, UK (www.nhs.uk); National Heart, Lung, and Blood Institute's website, US; (www.nhlbi.nih.gov); and United States National Library of Medicine's health education website (medlineplus.gov).

Conclusions: Overall, the quality of online information about heart attack was moderate. Although the English sources were slightly superior regarding completeness, only a few websites had both quality indicators in the highest interval.

Keywords: heart attack, internet, consumer health informatics, health-related information, health education

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THE IMPORTANCE OF CT IN EVALUATION THE CORONARY FISTULAS

Marius-Catalin Cosma[1], Theodora Benedek[2], Andreea-Georgiana Nan[1], Anda-Nicoleta Nan[1], Rares Munteanu[1]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures
2. Center of Advanced Research in Multimodality Cardiac Imaging, Cardio Med Medical Center, Tiargu Mures, Romania

Background: Coronary artery fistulas represent an abnormal communication between the main supplying arteries of the heart and other vascular structures, bypassing the capillary network. CAFs are rare conditions and mostly asymptomatic but it can modify the hemodynamic parameters, when they are no longer silent.

Objective: The aim of this paper is to present the case of a 59-year-old male known as a patient with high blood pressure, previous stroke, chronic coronary syndrome manifested as stable angina, and a history of atrial fibrillation, presented in emergency conditions with acute chest pain and shortness of breath, with onset 2 days prior.

Material and Method: The clinical examination showed no signs of vitals instability. The electrocardiography revealed sinus rhythm, with right bundle branch block and left anterior fascicular block. Cardiac ultrasound examination revealed depressed LV systolic function with a 45% LVEF. The coronary CT angiography examination detected non-significant coronary atherosclerosis in the LAD artery, with a myocardial bridge in its proximal segment, and interestingly, two extra-anatomical fistulas: a coronary-pulmonary and a coronary-aortic fistula, located at the proximal segment of the LADA and RCA respectively. Coronary angiography showed a 60% atherosclerotic stenosis in the LAD.

Results: The treatment of this case consisted in percutaneous coronary drug eluting stent implantation in the proximal segment of the LAD, in order to reduce the blood flow in the fistula between the coronary artery and the aorta.

Conclusion: Most CAFs are clinically silent, but when they cause symptoms such as dyspnea, chest pain or fatigue, the fistulas are eligible to be investigated with noninvasive accurate technologies such as multi-slice computed tomography angiography or Magnetic Resonance Imaging. Therapeutic options in coronary fistulas include surgical or percutaneous closure of the vascular communication, generally indicated if the patient presents severe symptoms.

Keywords: noninvasive imaging, multi-slice CT, coronary artery fistula

25-YEAR-OLD PATIENT JOURNEY: FROM FLU TO DIFFERENT STAGES OF HEART FAILURE

Roxana-Florina Cristescu[1], Antonia Criste[1], Diana-Maria Coporan[1], Sorin Pescariu[1], Raluca Șoșdean[1]

1. Victor Babeș University of Medicine and Pharmacy Timișoara

Background: Heart failure (HF) is uncommon in patients under 30 years-of-age. When diagnosed, it is usually due to congenital heart disease, hereditary cardiomyopathies or myocarditis. Without proper treatment these may carry a considerable risk of refractoriness and/or sudden cardiac death (SCD).

Objective: The aim of this paper is to highlight the treatment strategies regarding dilated cardiomyopathy (DC) in a young patient, most probably secondary to myocarditis. The proper medical treatment may prevent the need of interventional or surgical procedures such as implantation of cardioverter-defibrillator (ICD) or heart transplantation.

Material and methods: A 25-year-old patient was admitted to the hospital with NYHA class IV HF symptomatology, after a history of prolonged flu. Standard investigations revealed DC with a severely reduced left ventricular ejection fraction (LVEF= 20-25%), moderate functional mitral and tricuspid regurgitations and narrow QRS complexes. Cardiac magnetic resonance revealed post-myocarditis lesions. Treatment with a beta blocker, loop diuretic, aldosterone receptor blocker and angiotensin converting enzyme inhibitor (ACEI) was initiated. The ACEI was replaced 3 months later with a combination of neprilysin inhibitor and angiotensin II receptor blocker (Sacubitril/Valsartan).

Results: With the initial treatment, LVEF improved to 25-30%. The need of an ICD for primary prevention of SCD was considered, because of the LVEF<35%. With the second treatment though, LVEF increased to 43% in 1 month and to 50-55% after 3 months, with only mild mitral and tricuspid regurgitations. HF symptoms improved to NYHA class I. No additional treatment was needed.

Conclusion: This post-myocarditis dilated cardiomyopathy in a young patient confirms that the administration of the proper medical treatment for HF can significantly improve the contractility of the myocardium, by that remitting the functional valvulopathies and decreasing the risk of SCD. The need of supplemental interventional or surgical procedures was therefore prevented.

Keywords: dilated cardiomyopathy, heart failure, neprilysin inhibitor

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CHALLENGES IN THE TREATMENT OF ISCHEMIC CARDIOMYOPATHY AND HYPERTENSION IN MULTIPLE-DISEASED PATIENT

Renata Drăgan[1], Andreea-Bianca Suciu[1], Maxim Drăgan[1]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures

Background: Cardiovascular diseases are the most prevalent and lethal diseases worldwide. These conditions are more frequent and more damaging in elderly persons. The objective of this case report is to highlight the complexity and the difficulty in the treatment of cardiovascular dysfunctions and the comorbidities associated with them.

Objective: The assessment of the efficacy of medication in treating a typical patient with ischemic heart disease and essential hypertension combined with a complex set of comorbidities (diabetes miellitus, chronic gastritis, asthma) in order to illustrate the contrasting outcomes of the medication.

Material and methods: A 74-year-old female patient, diagnosed with ischemic heart disease and essential hypertension, congestive heart failure NYHA III, type II diabetes miellitus and chronic gastritis, was admitted with progressive exertional dyspnea, fatigue, epigastrialgia and bilateral leg edema. After she was diagnosed with the earlier diseases the patient followed treatment diligently, but her evolution progressively worsened. Electrocardiography revealed atrial fibrillation with slow rhythm and old myocardial infarction, echocardiography revealed third degree mitral valve regurgitation and third-degree tricuspid valve regurgitation, mid-range systolic insufficiency with 45% ejection fraction. Gastroscopy showed severe chronic gastritis and positive H. pylori.

Results: Patient was successfully treated and had a favorable outcome after adjustment of the medication; however, the further complications contrasted the efficiency of the treatment due to the coexistence of conflicting pathologies.

Conclusions: The success of the management of cardiovascular patient depends on the severity of the disease and the associated maladies. In this case the most effective solution is ambiguous due to the precarious and synergetic nature of the problems.

Keywords: hypertension, ischemic heart disease, congestive heart failure, chronic gastritis

CARDIAC ARREST DUE TO DRUG-INDUCED HYPERKALEMIA - CASE REPORT

Ioan-Octavian Fanea[1], Anda Cerghizan[1]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures

Background: Drug induced hyperkalemia is a clinical condition defined by a serum potassium concentration over 5 mmol/L. It may be asymptomatic, however, eventually leading to cardiac arrest, it poses significant diagnostic and management issues.

Objective: The following paper aims to describe the dangers of improper pharmaceutical associations leading to hyperkalemia.

Material and methods: We present the case of an 83-year-old female patient known with hypertension, diabetes type 2, aortic stenosis and permanent atrial fibrillation under treatment with Diurex, Tarka, Captopril, Dabigatran and Caduet. She was brought to UPU, SCJU Tîrgu Mureş after being found in her home in cardiorespiratory arrest by asystole and resuscitated twice with success. Laboratory analysis revealed hyperkalemia (K=8.18 mmol/l), hyperglycemia with metabolic acidosis and clotting disorders (INR=3.8, aPTT=93). The cranial CT exam showed a 4 mm subacute left parietal subdural hematoma. The chest radiograph revealed pulmonary fibrosis. ECG detected an infra-hisian escape rhythm with a heart rate lower than 40beats/min.

Results: The specific treatment was initiated with external pacing and the restoration of hydroelectrolytic balance. Considering the unstable INR, the indication for anticoagulation and the subdural hematoma, LMWH were introduced into therapy. The evolution was favorable.

Conclusion: Increased awareness of drugs that can induce hyperkalemia and monitoring are essential for the prevention of the mortality related to drug-induced hyperkalemia.

Keywords: drug-induced hyperkalemia, cardiac arrest, hematoma

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CONGENITALLY CORRECTED TRANSPOSITION OF THE GREAT ARTERIES

Roxana Maria Farcas[1], Andra Ioana Florea[1], Marian Pop[1]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures

Introduction: Congenitally corrected transposition of the great arteries (ccTGA) is a acyanotic cardiac malformation, characterized by atrioventricular and ventriculoarterial discordance, with an incidence of 1/33000 live births. In ccTGA, the morphological left ventricle connects to the right atrium and the pulmonary artery and the right ventricle to the left atrium and the aorta.

Objectives: We report on the imaging assessment of a young patient with ccTGA and discuss the treatment options for his particular case.

Material and methods: A 20-years-old male was admitted in the cardiovascular surgery clinic complaining of asthenia and exertional fatigue. Echocardiography showed an enlarged left atrium, a slightly enlarged (57 mm) hypokinetic systemic ventricle, with a moderate dysfunction. A 22 mm ventricular septal defect (VSD) with right-left septal flow was described. ECG gated cardiothoracic CT angiography was performed using a right-heart opacification dedicated protocol establishing the diagnosis of congenitally corrected transposition of large vessels, ventricular septal defect (20 mm), pulmonary bicuspid valve with subvalvular pulmonary stenosis. Thoracic and abdominal situs inversus were described. No signs of pulmonary hypertension were found; this presumably due to the pulmonary trunk stenosis, protecting the pulmonary circulation.

Results: The patient remained stable since diagnosis (1 year old), with excellent clinical status, with yearly follow-up expected.

Conclusion: The long term impact for the ccTGA is satisfactory, but there are still several common problems: tricuspid valve surgery may be needed due to the increased blood flow pressure; bradycardia, or heart block, will require a pacemaker implantation; a heart transplant may be considered if the muscle is to weak to pomp properly the blood. These can occur more often in the fourth and fifth decades. Patients with ccTGA require lifelong yearly follow-up in a specialized center.

Keywords: Congenitally corrected transposition of the great artery, Ventricular septal defect, Pulmonary stenosis

AN AORTO-CORONARY BYPASS WITH ISOLATED AUTOLOGOUS INVERTED SAPHENOUS VENOUS GRAFT ON ANTERIOR DESCENDING ARTERY AND MARGINAL OBTUSE ARTERY, IN A CASE OF ALCAPA SYNDROME IN ADULTHOOD

Andra Ioana Florea[1], Roxana Maria Farcas[1], Denisa Maria Mateescu[1], Marian Pop[1]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures

Background: Anomalous origin of left coronary artery from pulmonary artery (ALCAPA), also known as Bland-White-Garland syndrome, is a rare congenital cardiac malformation. It occurs in 1 in 300.000 births and accounts for 0.25-0.50% of all congenital heart malformations. If left untreated, majority of neonates (90%) die in the first year.

Objective: To assess the surgical correction strategy and pre/postoperative imaging diagnosis options in a case of adult ALCAPA patient.

Material and methods: A 45 years-old female was admitted at Cardiovascular and Transplant Emergency Institute of Târgu Mureș, complaining of retrosternal pain during mild physical activities and palpitations. Her history consists of apical myocardial infarction and dyslipidemia. Coronary computed tomographic angiography and cardiac catheterization were performed, revealing the anomalous origin of the left coronary artery from the pulmonary artery. An aorto-coronary bypass, with isolated autologous inverted saphenous venous graft on anterior descending artery and marginal obtuse artery was performed, with circulatory support to hypothermia (33°C). Calafiore was administered for cardioplegia. End to side anastomosis was performed between the marginal obtuse artery and anterior descendent artery and an inverted autologous saphenous venous graft. The aberrant coronary ostium from the pulmonary artery trunk was closed by double layer suture. Following reperfusion and reheating of the patient, the heart entered in maintained sinus rhythm.

Results: There were no complications during surgery and the evolution of the patient was favorable. On clinical follow-up, the patient was completely asymptomatic. 6 months later, a follow-up CT was performed showing excellent opacification of by-pass and branches.

Conclusions: ALCAPA is rarely found in adult patients, because few patients survive past childhood without surgical repair. Nowadays, due to early diagnosis using CT angiography, echocardiography with color flow mapping and improved surgical techniques, the prognosis for patients with Bland-White-Garland syndrome has dramatically improved.

Keywords: ALCAPA, Bland-White-Garland syndrome, cardiac malformation, saphenous graft

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A CONGENITAL LONG QT SYNDROME IN AN ATYPICAL PATIENT – A CASE REPORT

Matei Iurea[1], Simona-Maria Turcanu[1], Emanuela-Gabriela Hategan[1], Cristina Marii[1]

1. Iuliu Hațieganu University of Medicine and Pharmacy Cluj-Napoca[1]

Background: The congenital long QT syndrome is a genetic heart disease that affects the repolarization of the ventricles after a heartbeat due to a genetic disorder in the gene that encodes potassium heart channels in the heart tissue. Patients suffering from this condition are at risk for sudden death or arrhytmias.

Objective: The purpose is to present a case report of an atypical patient suffering from congenital Long QT syndrome.

Material and Method: A 51-year-old female patient presented to the Emergency Department in an altered state following 7 days of antibiotics treatment for a systemic infection, affirmatively with no significant improvements. Shortly after being seen by a doctor in the ED, the patient became unconscious an resuscitation was needed. During the same night, the patient went through several episodes of ventricular tachycardia end even developed torsades de points. All the electrocardiograms displayed a QTc value of more than 480 ms.

Results: As the Cath lab results later revealed no pathological abnormalities, a genetic disorder was considered, especially as the family history included unexpected deaths at relatively young ages. The Schwartz score was set to be bigger than 4 so a form of congenital long QT syndrome was considered. Genetic tests were ordered which later revealed an abnormality in the KCNQ1 gene that encodes a potassium rectifier channel, which led to the final diagnosis.

Conclusions: Although in most of the cases, patients suffering from Congenital Long QT syndrome develop symptoms until they reach their fourth decade of their life, this condition can manifest much later, especially if it is triggered by certain medication.

Keywords: Congenital long QT syndrome

BROKEN HEART SYNDROME

Simona-Andreea Mehno[1], Maria-Irina Moldovan[1], Bogdan Solomon[1]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures

Background: The broken heart syndrome was described for the first time in Japan, it's also called Takotsubo syndrome or stress cardiomyopathy. This pathological entity affects more frequently postmenopausal women, which suffering from an emotional shock or major stress (from the outside or from the inside) resulted from the discharge of catecholamine with the appearance of transient coronary syndrome. It has the appearance of a heart attack with enzymatic, echocardiographic and electrocardiographic changes.

Objective: The objective of this paper is to present the importance of internal stressors in the heart.

Material and methods: We present the case of an 84-year-old female with multiple comorbidities (diabetes mellitus 2, diabetic polyneuropathy, hypertension, ischemic cardiomyopathy, chronic kidney disease) which presented in the emergency service with aphasia, hemiparesis and affected hemodynamic status. After investigations she was diagnosed with stroke but after 3 hours she presented an increase of cardiac enzymes (CK-MB:38,5;troponin I:5792), electrocardiographic changes: ST segment elevation, irregular rhythm and negative T wave; echocardiography showed: akinetic apex and hypercontractile basis, left ventricular systolic dysfunction with ejection fraction 40%, the patient did not accuse any pain. In the following the patient underwent a coronarography.

Results: Coronarography did not highlight any blockages in the heart vessels so the heart attack was excluded. Following this procedure, paraclinical results and major stress(stroke), she was diagnosed with Takotsubo syndrome.

Conclusions: This syndrome affects predominantly women in postmenopausal period, being caused by catecholaminergic unbalances and related complications. It's a special situation in which trigger of this syndrome was a stroke.

Keywords: stroke, Takotsubo syndrome, stress

A CHALLENGING CASE REPORT OF TRANSTIBIAL AMPUTATION DUE TO FIBULAR FRACTURE

Cosmin Constantin Mutu[1], Daniela Toma[1]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures

Background: The univentricular heart is defined as a category of complex congenital malformations which have as a common element the fact that both the systemic and pulmonary circulation is supported by a single functional ventricular cavity. The clinical manifestations are dependent on the absence or presence of pulmonary outflow obstruction. The patients with no pulmonary stenosis display congestive heart failure and failure to thrive. Obstruction of the aorta may worsen the congestive heart failure. In this condition, it is preferable to have some degree of pulmonary stenosis preventing pulmonary over circulation. The surgical treatment is palliative and has to be followed by a Fontan procedure.

Objective: Presenting the management of patients with univentricular heart.

Material and methods: We present a case of an 8-months-old girl known by the Institute of Cardiovascular Disease and Transplant of Târgu Mureş since October 2019. The patient comes from the second physiological pregnancy of the mother, with a premature birth at 34 weeks at home. The clinical examination revealed signs of congestive heart failure with an oxygen saturation of 85% and a systolic-diastolic murmur. The patient was following chronic treatment with diuretics and ACE inhibitors. The echocardiography revealed tricuspid atresia with concordant blood vessels, non-restrictive ASD with a right-to-left shunt, double VSD, moderate pulmonary stenosis, large patent ductus arteriosus with a left-to-right shunt. A catheterization was realized to measure the average pulmonary pressure and pulmonary vascular resistance which revealed a pulmonary artery pressure of 15 mmHg and resistance of 2.13 Wood/m2.

Results: The patient was accepted for palliative surgery - partial cavo-pulmonary anastomosis (Glenn).

Conclusions: In the absence of treatment most patients die in the first year of life, therefore the clinical care and palliative surgical procedures are important for the protection of the myocardium and pulmonary circulation.

Keywords: univentricular heart, tricuspid atresia, Glenn shunt

ACUTE MYOCARDIAL INFARCTION DUE TO CORONARY ARTERY ANEURYSM- A RARE LATE COMPLICATION IN A PATIENT WITH KAWASAKI DISEASE

Andreea-Georgiana Nan[1], Theodora Benedek[1,2], Marius-Cătălin Cosma[1], Anda-Nicoleta Nan[1], Ana-Maria Alexandra Muscalu[1]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures
2. Clinic of Cardiology, Emergency Clinical County Hospital of Targu Mureș, Romania

Background: Kawasaki disease is mostly a pediatric pathology, a vasculitis of the medium sized arteries, that usually affects children under 5 years old. Some of the symptoms include fever, inflammation of tongue and mouth, lymphadenopathy. The damage of the heart refers to the coronary arteries or the heart muscle. Most children recover completely. In rare cases, Kawasaki disease can lead to heart complications such as coronary thrombosis, aneurysms, stenoses.

Objective: The purpose of this paper is to present the case of a 53-year-old overweight, dyslipidemic, diabetic woman, known with Kawasaki disease, admitted in the emergency department with severe constrictive retrosternal pain, associated with shortness of breath and nausea.

Material and methods: The physical examination presents a 53-years old obese, diabetic woman, BP: 140/90 mmHg and HR 85 bpm, normal breathing, normal cardiac and pulmonary sounds. No swollen superficial lymph nodes. White cell count 12,750, platelets count 348,600, LDL cholesterol 123 mg/dL, total cholesterol 239 mg/dL, triglyceride 504 mg/dL, serum high sensitivity troponin-I 0.13 ng/mL, creatine kinase myocardial brain (CK-MB) 148 ng/mL.

The 12-lead ECG showed sinus rhythm, 85 bpm, intermediate QRS axis, ST-segment elevation in inferior leads, presence of Q wave, showing a prior inferior wall myocardial infarction. The coronary angiogram revealed an 11 mm aneurysm in the proximal segment of the LAD artery, with no significant luminal stenoses. The left circumflex artery was normal, while the RCA presented multiple aneurysmal enlargements, with the diameter up to 9 mm, without any significant stenoses.

Results: Considering the paraclinical and clinical examination, the revascularization was not a therapeutic option in this case. The treatment included statins, Ezetimibe, antiplatelets and blood pressure control medication.

Conclusion: Adult patients with a history of Kawasaki disease may present acute myocardial infarction or coronary syndromes leading to sudden cardiac arrest.

Keywords: Kawasaki disease, STEMI, coronary aneurysms

CARDIAC RUPTURE AND TAMPONADE IN A COCAINE USER - CASE REPORT

Thanas Shituni[1], Cătalin Andrei Zăgan[1], Claudiu Ionuț Sântean[1], Adriana Mitre[1], Radu Bălău[1]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures

Background: Myocardial rupture (MR) is a laceration of the heart wall. It is most commonly seen as a serious sequela of an acute myocardial infarction (MI). MR can lead to a cardiac tamponade (CT). CT refers to the accumulation of fluid or blood inside the pericardial cavity, resulting in compression of the heart influencing the cardiac output. Cocaine induces coronary artery vasoconstriction, intracoronary thrombosis, and accelerated atherosclerosis which can lead to a myocardial ischemia.

Objective: Our aim is to expose the risks of cocaine use on the heart function, in order to prevent ischemic events and cardiac rupture.

Material and methods: We present the case of a 46-year-old patient with cocaine addiction, admitted to the Cardiovascular Surgery Clinic from Targu Mures. The patient is hospitalized for dyspnea associated with a precordial pain having sudden onset of moderate intensity without irradiation, tachycardia and arterial hypotension. Thoracic CT examination reveals intrapericardial fluid. Transthoracic echocardiography shows hypertrophic left ventricle with severely depression of systolic function, global hypokinesia and a solution of continuity in the area of apex. Laboratory analysis detects metabolic acidosis and a high level of troponin. These pathological results lead to a diagnosis of left ventricular rupture with CA after a coronary spasm induced by cocaine use. The patient, hemodynamically unstable and with an orotracheal intubation, is directed to the operating room for surgical intervention.

Results: The extraction of intrapericardial collection and the surgical treatment of the left ventricle was performed by sealing with a patch of the heterologous pericardium through the use of Bioglue and Surgicel resulting in a favourable cardiovascular postoperative evolution. The patient presented severe psychomotor agitation and a withdrawal syndrome when stopping sedatives. The patient was transferred to psychiatry for specialized treatment.

Conclusions: Considering the information presented above, we have shown some of the risks associated with cocaine use and cardiovascular consequences.

Keywords: Cocaine addiction, Cardiac tamponade, Myocardial rupture

PROGRESSIVE RHEUMATIC HEART DISEASE IN AN ELDERLY WOMAN: PITFALLS IN TREATMENT AND PATIENT COMPLIANCE

Andreea-Bianca Suciu[1], Renata Drăgan[1], Maxim Drăgan[1]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures

Background: Rheumatic heart disease (RHD) is defined as the cardiac inflammation triggered by autoimmune reaction to group A streptococci (GAS) typically occuring after an streptococci pharingitis. Chronic disease with valvular fibrosis leads to stenosis and/or insufficiency which can cause remodeling of cardiac chambers and heart failure.

Objective: This case underlines the difficulties in managing complications of the disease's evolution.

Material and Method: A 66-year-old female patient, currently presented severe decompensated symptoms being previously diagnosed with RHD at the age of 18, atrial fibrillation and congestive heart failure NYHA III. She reported the following symptoms: fatigue, progressive exertion dyspnea, palpitations and the medical exam revealed hepatomegaly, jaundice, serous pericardic and thoracic collections. Protocol was followed by routine EKG, echocardiography, abdominal ultrasound and MRI, CTangiography. Additional history noted that the patient had indication of mitral valve replacement but refused the surgical treatment. As per protocol, the management included thoracic draining, diuretics, anticoagulants, beta blockers and digoxin.

Results: The patient was discharged in two weeks and after two months, blood tests showed increased bilirubine with total bilirubine of 30 mg/dl. Electrocardiography highlighted permanent atrial fibrillation. Echocardiography revealed severe mitral stenosis with secondary pulmonary hypertension and global cardiomegaly with a 50 %FE. CTangiography and MRI confirmed stasis in inferior vena cava territory associated with gall bladder hydrops. Thus, the diagnosis of secondary hepatomegaly (in the absence of hepatitis antibodies or bile duct obstruction) due to heart failure was made.

Conclusions: Prognosis of the patient's disease is significantly reduced by hepatic stasis and gallbladder hydrops being very difficult to treat. Managing these complications could be very challenging as they impose high risk surgical interventions which makes the case particularly unpredictable.

Keywords: heart failure, hepatomegaly, jaundice, gallbladder hydrops.

TOTAL BIOLOGICAL AND TOTAL TRANSAORTIC AORTO-MITRAL RECONSTRUCTION FOR AORTO-MITRAL ENDOCARDITIS: THE ROLE OF AORTIC NEOCUSPIDIZATION

Szabolcs Gergely[1], Shubhra Sinha[2], Rares Munteanu[1], Marta Ambrus[1], Umberto Benedetto[2]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures
2. University Hospitals Bristol NHS Foundation Trust, Bristol, UK

Background: Multiple valve involvement and annular destruction are some of the more challenging cases we encounter in endocarditis.

Objective: We advocate a completely transaortic solution for aorto-mitral continuity endocarditis, where the aortic annulus is of sufficient size and the mitral pathology is limited to the anterior leaflet.

Material and methods: A 55-year-old gentleman was admitted with sepsis and shortness of breath.

Transthoracic echocardiography demonstrated a disrupted aortic valve with vegetations, severe aortic regurgitation and a possible anterior mitral valve leaflet (AMVL) vegetation along with mild central mitral regurgitation. After delivering anterograde cold blood cardioplegia directly to the ostia, we obtained a three-dimensional view of both valves via a single incision. The patient had adequately sized aortic root (3.9 cm) which allowed us to easily grasp the AMVL, and excise the affected A2 segment. A patch of bovine pericardium was trimmed to size and sewed in situ using a continuous suture with the parachute technique. Glutaraldehyde-treated autologous pericardium was used to carry out aortic neocuspidization in a supra-aortic fashion. The commissural coaptation was secured by pledgets and additional sutures.

Results: Post-operative transesophageal echocardiography showed no significant aortic or mitral regurgitation and low gradients across both valves. The total aortic cross clamp and the cardiopulmonary bypass time were 63 and 87 minutes, respectively.

Conclusion: An excellent view of both valves can be obtained via a single incision, which should reduce cardiopulmonary bypass times as well as the risks of bleeding in coagulopathic patients. Mitral reconstruction is achievable after entire debridement of the aortic valve, if the lesion is limited to the AMVL and the root is of sufficient size. In addition, a total biological valve solution using autologous pericardium aortic neocuspidization could eliminate the need for lifelong anticoagulation and reduce the incidence of patient-prosthesis mismatch.

Keywords: aorto-mitral continuity, endocarditis, transaortic, neocuspidization

A RARE CONGENITAL HEART DISEASE ASSOCIATED WITH SUPRAVENTRICULAR RECURRENT ARRHYTHMIAS IN A YOUNG PATIENT – A CASE REPORT

Ioan Andrei Tilea[1], Elena Tighineanu[1], Maria-Andrada Jiga[1], Dragos-Gabriel Iancu[1], Ioan Tilea[1]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures

Background: Supraventricular arrhythmias are commonly seen in congenital heart disease (CHD) patients. Clinical findings, serial EKG recordings and multimodality imaging offer the possibility of a precise anatomic diagnosis of the structural heart defect and identify the type of arrhythmia.

Objective: The purpose of this case-report is to present a rare CHD diagnosed incidentally in a young patient without previous significant medical history and to emphasize the role of a step-by-step diagnostic assessment.

Material and methods: A 29-year-old. Caucasian male was admitted in a Cardiology unit, complaining of fatigue, palpitations, dizziness and breath shortness with a presumptive diagnosis of arrhythmogenic right ventricular dysplasia (ARVD) based on an ambulatory rest EKG recording. At admission no evident physical findings, except a mild midsystolic pulmonary murmur. Serial EKG recordings, 24-hours Holter monitoring and multimodality imaging studies - transthoracic echocardiography (TTE), cardiac magnetic resonance imaging (MRI) and computed-tomography (CT) were scheduled to clarify the arrythmia and underlying anatomic features.

Results: EKG recordings identified inferior atrial rhythm, narrow, lifted P waves, short PQ interval, and atrial tachycardia with variable block (6:1, 4:1, 2:1, 1:1). TTE described minor mitral regurgitation, moderate tricuspid regurgitation, dilated and volume overload of right cardiac chambers and mild elevated estimated systolic pulmonary artery pressure (24 mmHg). Cardiac CT and MRI described a rare CHD: partial anomalous pulmonary venous connection (PAPVC) – right upper pulmonary vein drainage to the superior vena cava and sinus venosus type atrial septal defect, a pulmonary-systemic flow ratio (Qp/Qs) of 1.8 with an indexed right end-diastolic right ventricle volume of 111 ml/m^2. Patient was scheduled for right-heart catheterization in order to determine the operability criteria.

Conclusions: PAPVC is a rare CHD and is associated with the presence of supraventricular arrythmia and development of pulmonary hypertension. In young patients with suggestive symptoms cardiac disease complex multimodality imaging is mandatory.

Keywords: congenital heart disease, young patients, symptoms, multimodality imaging, surgical treatment

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INCOMPLETE ADULT'S COMMON ATRIOVENTRICULAR CANAL

Raluca Ionela Truța[1], Madalina Blaga[1], Ioan David Pop[1]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures

Background: Incomplete common AV canal is a congenital heart defect with a frequency of 2-5% from all cardiac malformations, which consists into an abnormal formation of the inferior part of the SIA and the superior part of the SIV.

Objective: The purpose of this paper is to present a case of cardiac dysfunction due to the presence of common atrioventricular canal in which even if the right moment for surgery has been exceeded, the benefit is impressive.

Material and Method: We present a case of a 22 years old male known with incomplete atrioventricular canal with left to right shunt, who accused moderate fatigue and dyspnea. The patient was hospitalized in the Cardiovascular Surgery Clinic of the Institute for specialized investigations. We highlighted atrial and ventricular sept defect and severe mitral regurgitation due to the cleft of the anterior mitral valve. The elective treatment is surgical. We have taken into consideration the patient's age and we practiced mitral and tricuspid plasticity. Also, we closed the atrial and ventricular defect.

Results: The postoperative course of the patient was affected by complications caused by bowel obstruction through incarcerated evisceration. Adhesion syndrome.

Conclusions: The incomplete common atrioventricular canal, associated with atrial and ventricular defect is a cardiac malformation which has indication for surgery in the first years of life. A major role in the evolution of the disease is represented by the left to right shunt and the degree of mitral regurgitation, both of them being causes of cardiac decompensation. The surgery may be beneficial, even if the optimal moment has been exceeded, in selected cases, with the condition of a good myocardial function.

Keywords: common atrioventricular canal, ventricular septal defect, cleft of the mitral valve.

WPW SYNDROME AND RECURRENT SVT IN A 7-YEAR OLD: A CASE REPORT

Simona-Maria Țurcanu[1], Sorin Nicolae Blaga[1], Matei Iurea[1], Marius Bichescu[1], Gabriel Cismaru[1]

1. Iuliu Hațieganu University of Medicine and Pharmacy Cluj-Napoca

Background: Wolff-Parkinson-White (WPW) syndrome is a heart conduction system disorder (ventricular preexcitation) as a result of the existence of an electrical accessory pathway. It is characterized by a short PR interval (<120 ms), a widened QRS complex (>120 ms) and a positive or negative delta wave on the ECG. The accessory pathway is represented by the bundle of Kent, structure situated in the atrioventricular fibrous septum.

Objective: Our main goal is to present the medical approach we preferred for a 7-year old patient with paroxysmal supraventricular tachycardia (SVT) related to WPW syndrome which was diagnosed at 3 months old without the prescription of antiarrhythmic drugs but carefully supervised.

Material and methods: A patient known with WPW syndrome presents into our unit complaining of 3 short episodes of palpitations during the past three days. They lasted for about 1 minute each with a frequency of 150 beats per minute. The ECG revealed an aspect that suggested preexcitation with left posteroseptal accessory pathway; echocardiography highlighted an atrial septal aneurysm but overall a heart with no other abnormalities; blood pressure of 105/60 mmHg. The final diagnosis was WPW syndrome and recurrent SVT with the recommendation of undergoing radiofrequency ablation plus a daily dose of 10 mg of Propranolol until the procedure. Electrophysiologic study findings: mapping system displayed “sticked” AV potentials at the coronary sinus ostium. Radiofrequency ablation on the spot led to the vanish of accessory pathway conduction.

Results: The main outcome was the loss of preexcitation. Post intervention 24 hours holter monitoring indicated a normal aspect. The stress test confirmed widening of PR interval and disappearance of the delta wave.

Conclusion: Radiofrequency ablation is a minimally invasive procedure that represents one of the best options in treating arrythmias improving quality of life among patients.

Keywords: radiofrequency ablation, electrophysiologic study, WPW syndrome, SVT

PREGNANCY IN A WOMAN WITH CONGENITAL HEART DISEASE

Adina-Elena Ursache[1], Valentin-Gabriel Tanase[2], Diana-Andreea Vascul[1], Andrei-Gabriel Zanfir[1], Adina-Elena Tanase[2]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures
2. Grigore T. Popa University of Medicine and Pharmacy Iași

Background: Nearly all of the human birth defects are represented by congenital heart diseases (CHD). As a result of the improvements that have been made in this field in the past four decades, plenty of women with CHD are nowadays expected to reach childbearing age and to carry a pregnancy.

Objective: Taking into consideration the fact that a pregnancy in a woman with CHD is considered a risk of mortality for both mother and child, this case report aims to emphasize the complications that might occur during pregnancy and postpartum, as well as the evolution of the patients in cause.

Material and methods: This case report presents a 27-years old woman with complex CHD (single ventricle with double ejection, atrial septal defect with a bidirectional shunt, tricuspid valve atresia, hypoplastic right heart syndrome, and rudimental right ventricle) who got pregnant unwillingly.

The patient didn’t receive any surgical treatment for her cardiac malformation, yet she managed to carry her pregnancy until the 32nd week of gestation. Bearing in mind the previous facts, several paraclinical examinations were performed during pregnancy and postpartum: cardiac ultrasonography and Doppler ultrasound.

Results: According to the Doppler ultrasound, the placental circulation had been affected, so the fetus had an intrauterine grow restriction. On the 32nd week of gestation, the mother gave birth prematurely by C-section to an alive newborn who had no congenital heart disease. As far as the mother was concerned, she developed pulmonary vascular disease, Eisenmenger’s syndrome and heart failure. Fortunately, both mother and child had a favorable postpartum evolution.

Conclusions: Recent advances had improved the survival rate and function of reproductive-age women with CHD, so now they could be able to bear both pregnancy and delivery.

Keywords: pregnancy, single ventricle

CHALLENGING DIAGNOSIS OF METHEMOGLOBINEMIA IN NEONATAL CYANOSIS: A CASE-REPORT

Andrei-Gabriel Zanfir[1], Ana Zanfir[2,3], Diana Vladea[1], Adina-Elena Ursache[1], Ovidiu-Andi Zaharie[1]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures
2. CMI "Dr. Ana Zanfir"
3. Municipal Hospital Campina

Background: Neonatal cyanosis is a challenging diagnosis in pediatric cardiology. Causes are variable including cardiac and respiratory diseases or infections. Although rare, cyanosis may be associated with methemoglobinemia and therefore this diagnosis must be taken into consideration when the other causes are excluded.

Objective: In this clinical case, our aim is to present a newborn with cyanosis and hypoxemia. Since cardiac, respiratory and infectious causes were excluded and cyanosis didn't improve, the diagnosis of methemoglobinemia was suspected.

Material and methods: We present the case of a female neonate, born at 37 weeks of gestational age, weighing 2675 g. The Apgar scores were 8 and 9 at 1 and 5 min. The pregnancy was uneventful and there was no relevant family history. The infant was asymptomatic until 48 hours of life, when pulse-oximetry screening detected hypoxemia with saturations of 89%. There were no signs of respiratory distress, however, she had a moderate cyanosis that persisted until day 15. Echocardiography and chest radiography were normal, also septic-screening was negative. A MetHb-level of 7.8% was found on the seventh day of life. MetHb rose to a maximum of 16% on day 11 and after, the level decreased slowly.

Results: Oxygen-therapy was started based on the peripheral oxygen saturation (SpO_2), with no increase. The arterial blood gases revealed saturations of >94%, therefore the therapy was stopped. By day 11, an oral ascorbic-acid treatment was started (25 mg/day), which was discontinued at 3 months. At discharge, she was asymptomatic. MetHb levels decreased significantly (8 weeks: 5.6%; 10 weeks: 2.7%).

Conclusions: This case report shows a rare cause of methemoglobinemia in newborns that should be considered in the differential diagnosis of a cyanotic newborn, especially when the more common causes are excluded. Invasive procedures or tests could be avoided in a well-appearing cyanotic baby with elevated MetHb and normal arterial pO_2.

Keywords: Methaemoglobinaemia, Cianosis.

MISDIAGNOSED MYOCARDITIS AND ITS SEQUELAE TOWARDS A 15-YEAR-OLD PATIENT: A CASE-REPORT

Andrei-Gabriel Zanfir[1], Gabriela Doros[2], Diana-Andreea Vascul[1], Ovidiu-Andi Zaharie[1]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures
2. Victor Babeş University of Medicine and Pharmacy Timişoara

Background: Myocarditis is an inflammatory disease of the heart that can lead to long-term sequelae. The clinical presentation widely ranges, sometimes mimicking myocardial infarction.

Objectives: The aim is to present a case-report of a young boy with severe chest pain mimicking heart attack, with a typical STEMI aspect on ECG, that finally proved to be acute myocarditis.

Materials and methods: A 15-year-old boy presented to the Emergency Department (ED) for acute severe chest pain of more than one hour. Two days before he had presented fever and diarrhea. The ECG revealed acute STEMI, like in myocardial infarction. The Troponin-I value was 50ng/mL(normal<0.5ng/mL), CK-MB 80ng/mL(normal<5ng/mL), and AST 87U/l (normal 10-40U/L), all elevated. Dynamically, the cardiac biomarkers increased: Troponin-I 14585ng/L(normal<40ng/L), CPK-MB 119ng/ml(normal<0.5ng/mL). D-dimer were 0.748µg/mL(normal<0.5µg/mL). Based on ECG changes he was diagnosed with pericarditis and sent to the pediatric cardiology unit, where precordial pain disappeared, but cardiac biomarkers extremely increased. Troponin I increased to 30000 ng/L and troponin T became 1640pg/mL. The echocardiography revealed an ejection fraction (EF) of 60%, with apparently normokinetic heart and small amount of anterior pericardial fluid. Speckle tracking revealed a GLS of -20.6%. The serology was negative for: Coxsackie virus, Parvovirus, Adenovirus and Rotavirus. No angiocoronarography was done. Heart MRI confirmed acute diffuse focal myocarditis. A NSAI and vitamins treatment was initiated.

Results: After treatment and bed rest, the general condition significantly improved. ECG normalized in 6 days. Cardiac biomarkers decreased, CK-MB reduced to 0.5ng/mL, Troponin-I to 1942ng/L and Troponin-T to 683pg/mL. At Speckle echocardiography GLS achieved -24.6%. The patient was discharged with normal LV function (EF-64%) and normal cardiac biomarkers, in a follow-up program.

Conclusions: The diagnosis of myocarditis in children is a challenge, due to the unspecific and heterogeneous clinical presentation. Cardiac biomarkers and echocardiography are mandatory, but cardiac MRI is the gold standard tool in the diagnose of myocarditis.

Keywords: Myocarditis, Echocardiography, Pericarditis

1 TO 2 TACHYCARDIA – CASE REPORT

Andrea Alexandru[1], Zoltán Salló[2]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures
2. The Heart and Vascular Center of Semmelweis University

Background: Non-reentrant AV nodal tachycardia was first reported in 1975. It is a rare arrhythmia, which is characterized by a single atrial impulse that gives rise to two ventricular depolarizations. In patients, the most commonly reported symptoms are palpitations and dyspnea. The DAVNNT is very important, because it was demonstrated that this is mimicking different types of arrhythmias like atrial fibrillation and supraventricular tachycardia.

Objectives: We report a case of a woman with palpitations, who was initially misdiagnosed with paroxysmal atrial fibrillation, but during the catheter ablation non-reentrant tachycardia was confirmed.

Materials and methods: A 50-year-old female patient was admitted to the Heart and Vascular Center of Semmelweis University with frequent palpitations. Earlier, she was diagnosed with paroxysmal atrial fibrillation in 2016 and referred to our institute for catheter ablation. She did not have any significant disease in her medical history. Transthoracic echocardiography showed good heart function, without wall movement disorder or valve disorder. Transesophageal echocardiography was normal: without thrombus in the left atrium. Her ECG showed atrial fibrillation. After the paraclinical examination and preoperative preparation, pulmonary vein isolation was performed by catheter ablation. During the procedure, non-re-entrant tachycardia was spontaneously started. The ECG showed a P wave followed by two narrow QRS complexes. After confirmation of the diagnosis, additional radiofrequency applications were delivered at the typical slow pathway region. After 15 minutes the arrhythmia was non-inducible, dual AV nodal conduction was not demonstrable. The procedure was finished in the sinus rhythm.

Results: Ablation of the slow pathway is the best treatment for this type of arrhythmia.

Conclusions: Sometimes this rare arrhythmia is misinterpreted as atrial fibrillation, and some of these cases are detected in the electrophysiology laboratories when they were referred for pulmonary vein isolation.

Keywords: DAVNNT, 1 to 2 tachycardia, arrhythmia

THE USAGE OF MECHANICAL CIRCULATORY ASSIST DEVICES IN TREATMENT OF END-STAGE HEART FAILURE

Alexandru Antoniu Stan[1], Horatiu Suciu[1]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures

Background: Mechanical circulatory support seems to gain more and more field in the treatment of end-stage cardiac failure, in patients after heart surgery unable to maintain cardiac output after CPB, in patients on transplantation lists, waiting for a donor and also in non-cardiogenic shock.

Objective: The purpose of this study is to analyses and compare the types of patients benefiting from mechanical assist device therapy in terms of efficiency and mortality rates at IUBCvT Targu Mures.

Material and methods: This is a retrospective, observational study in which were enrolled all patients with heart failure treated with mechanical circulatory assist devices between January 2017 and December 2019 at IUBCvT.

Results: 51 patients (35-males, 16-females; 42-adults, 9-children) were treated with assist devices, with a mean age of 61 years, part of the NYHA IIIB and NYHA IV heart failure categories. Associated renal failure was the most common both effect of heart failure and mortality increaser with an OR=4,00and p=0.03. Patients with ischemic cause of heart failure or with associated ischemic disease had a higher mortality then patients without ECG abnormalities (OR=4,2 and p=0,033). We found slightly similar mortality comparing the moment of the device implantation, in OR or in ICU for both ECMO and IABP. In ischemic disease IABP seems to have a lower mortality (Chi square=1,822) but the survival curves are not significantly different. A higher value than 8mmol/l in Lactate level at the implantation of IABP strongly increased the mortality (Chi-square=7.619, p=0.0058).

Conclusions: Despite the current trends of replacing IABP because of its questionable results, in ischemic heart failure it still plays an important role for patients with high doses of inotropic support, increasing the coronary flow. Renal disfunction and ischemic cause of heart failure increase mortality both in OR and ICU implantation of assist devices.

Keywords: ECMO, IABP

REGION-RELATED COMPARATIVE ASSESSMENT OF PATIENTS' QUALITY OF LIFE LIVING WITH AN ICD POST-MYOCARDIAL INFARCTION

Bernadett-Miriam Dobai[1], Dan Dobreanu[1]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures

Background: Implantable cardioverter-defibrillator (ICD) therapy with or without cardiac resynchronization therapy (CRT) is a common procedure among patients who experienced myocardial infarction. It is well-known that living with an ICD changes patients' quality of life (QoL), although the psychosocial and region-related differences are less explored.

Objective: The purpose was to perform a comparative assessment of the psychosocial impact induced by an ICD in two distinct groups of patients with myocardial infarction, but with similar demographic data characteristics: a local group including patients from Romania (RO, n=12) and an international group (INT, n=12).

Material and methods: All patients completed a survey focusing on cardiac devices' psychosocial impact over patients' QoL.

Results: The structure of the two groups was similar; device indication was mainly secondary prevention. CRT-D implant ratio was similar (25% RO vs. 33.33% INT) with an identical ICD shock percentage (41.67%). Patients' perception of information about decision making of device implantation in the RO group was higher (100% RO vs. 41.67% INT, p=0.002), however INT group had a higher educational level (8.33% RO vs. 41.67% INT academic education, p=0.06). The INT group considered the provided information insufficient. Patients mood was affected by ICDs in significantly different ways (better 75% RO vs. 16.67% INT, p=0.005). Patients from the INT group felt more frequently anxious (28.57%), yet grateful (10.71%); the RO group felt mainly confident (26.67%) and calm (26.67%) and is not worrying about the illness or device (87.5% RO vs. 33.34% INT, p=0.007).

Conclusion: Unquestionably cardiac devices have a major impact on patients' QoL, however the two groups' awareness, attitude, and perception of information regarding heart condition and device differs. An individualized approach is important to improve patients' QoL.

Keywords: Quality of life; ICD

WHEN AHT IS NO LONGER MUNDANE

Alexandra-Elena Borla[1], Madalina-Georgiana Pavelescu[1], Sergiu Crisan[1], George Bojescu[1], Oana Coborosanu[1]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures

Background: The bicuspid aortic valve is the most common congenital anomaly of the heart. A congenitally bicuspid aortic valve has 2 unequally sized leaflets compared to the normal aortic valve that has 3 equally sized leaflets with 3 lines of cooptation. 20% of cases with bicuspid aortic valve are associated with aortic coarctation.

Objective: The purpose of this report is to highlight the importance of early diagnosis of congenital heart disease, in order to avoid possible complications and at the same time, to outline the chosen intervention technique.

Material and methods: We present the case of a 53-year-old female patient who was admitted for further investigations due to the following: AHT, slight limitation of physical activity, dyslipidemia, intermittent claudication in the lower limbs. There are high AT values in the upper limbs that do not respond to treatment. Angiography has exposed hypoplastic arteries in the right lower limb while the arteries of the left lower limb appear to be better developed. The EKG shows a ST segment elevation and negative Q-waves. The echocardiography emphasizes a left hypertrophic ventricle with preserved systolic function, mitral and tricuspid regurgitation, aortic ectasia at the VS level, aortic arch coarctation below the left subclavian artery and patent foramen ovale. As a treatment method, balloon angioplasty was performed to implant a stent at the level of the coarctation, through a left femoral approach, in order to extend the arterial lumen.

Results: The postoperatory evolution of the patient was favorable, with the control of AT and thus reducing the AHT medication.

Conclusions: The particularity of this case represents the aortic coarctation as an uncommon cause of AHT. The investigations begin with the onset of the symptomatology. However, in a routine investigation the asymptomatic patients may present: HTA, discrepancy of AP between the upper and lower limbs and weak pulse in the lower limbs.

Keywords: AHT, coarctation, valve, angioplasty, claudication

FETAL AORTIC COARCTATION – A DIAGNOSIS CHALLENGE

Adina-Elena Ursache[1], Valentin-Gabriel Tanase[2], Diana Vladea[1], Beatrice Elena Velescu[1], Adina-Elena Tanase[2]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures
2. Grigore T. Popa University of Medicine and Pharmacy Iași[2]

Background: Aortic coarctation (CoA) represents the narrowing of the aorta. In this situation, the heart has to pump harder, so blood could get through the affected part of the aorta. This pathological condition is considered the most frequently omitted ductal-dependent cardiac defect on neonatal screening and also one of the most difficult diagnoses to set prebirth.

Objectives: The aim of this report is to emphasize the accurate steps that are taken for diagnosing a fetal CoA.

Materials and methods: This case report presents a 30-years old woman, 32 weeks pregnant, who presented herself to the hospital for the first evaluation of the pregnancy. Therefore, an ultrasound had been performed, so the current condition of the fetus could be identified.

Results: The results revealed an intrauterine growth restriction, with a 3-week difference between the gestational age and the chronological one, a major discrepancy between the dimensions of the right and the left ventricle, fibroelastosis of the right ventricle's wall, and suspicion of fetal aortic coarctation.

Specific measurements and techniques had been performed, including the following: diameters of both isthmus and arterial duct, isthmus/ductal ratio, and Z-scores that were obtained due to the previous diameters. The ratio of the isthmus to ductal diameters and the Z-scores were specific for the diagnosis of aortic coarctation.

Conclusions: All being said, we would like to underline the importance of detecting a prenatal fetal coarctation since it improves survival and reduces neonatal morbidity. Bearing in mind that the treatment is usually successful, there should be also mentioned that this condition requires a careful lifelong follow-up.

Keywords: fetal aortic coarctation, Z-scores, prenatal diagnosis

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CLINICAL ASPECTS OF A CARDIAC TUMOR

Sergiu Ioan Rus[1], Razvan-Gabriel Pricope[1], Andreea-Eliza Cazacu[1], George Alexandru Serbac[1], Istvan Adorjan Szabo[1]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures

Background: Primary cardiac tumors are rarely seen in the clinic. Approximately 80% of them are benign and 20% are malignant. Most of these tumors are asymptomatic and they are found accidentally during evaluation for a seemingly unrelated problem or physical issue. The symptomatic cases are discovered through obstruction of circulation, interference with heart valves, or by direct invasion of the myocardium or of the adjacent lung or embolization, each of them being specific and giving signs or symptoms depending of the localization of the tumor.

Objectives: We are going to discuss about a case of an 82 years old female patient, its particular aspects and as well as its evolution.

Materials and methods: The patient presents into the Cardiology section of the Mureș County Clinical Hospital, with a worsening chronic respiratory failure, congestive heart failure NYHA III, right basal pneumonia, severe secondary pulmonary hypertension and an intracavitary formation in the right atrium that is detected at a routine Echocardiography. Initially we suspected an endocarditis. In such cases the election procedure is the transesophageal echocardiography (TEE), which was obviously performed. During hospitalization, the patient's evolution was favorable with significant remission of symptoms, given the fact that she was under diuretic, anti-aldosterone, conversion enzyme inhibitor, anticoagulant and antibiotic treatment with ceftriaxone.

Results: We performed a transesophageal echocardiography, who detected on the anteromedial wall of the right atrium towards the aorta, a round formation of approximately 1.2x1 cm, with regular contour, without vegetation appearance.

Conclusions: According to the literature, cardiac tumors showed a very low prevalence. In our case TEE showed to be a special examination method that differentiated and excluded the diagnosis of endocarditis from tumors.

Keywords: cardiac tumor, endocarditis, transesophageal echocardiography

SUBCLAVIAN STEAL SYNDROME – CASE REPORT

Antonia-Lucia Comșa[1], Teodor Agape[1], Mădălina Georgiana Pavelescu[1], Eliza Russu[1], Lucian Mărginean[1]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures

Background: The phenomenon known as “subclavian steal” is an uncommon and frequently asymptomatic condition, secondary to a proximal subclavian lesion, which may produce a reversed flow in the ipsilateral vertebral artery. The severe narrowing of the proximal subclavian artery, mostly due to atherosclerotic plaques, leads to significant loss in the cerebral and upper limb vascularization.

Objective: To describe an appropriate therapeutic approach of a patient diagnosed with left subclavian artery occlusion associated with subclavian steal syndrome.

Material and methods: 60-year-old male patient, recently hospitalized in the vascular surgery department for left forearm and hand claudication during medium level physical activities, associated with low temperature and paresthesia of the distal limb. The angiography revealed the 18 mm occlusion of the left subclavian artery, located at 16 mm from its origin, but also a 50% focal eccentric stenosis of the right vertebral artery and flow reversal in the left vertebral artery, whose blood supply is retrograde through the right vertebral artery and left carotid artery, via posterior communicating artery. The primary diagnosis was left subclavian artery occlusion. Other findings include cerebral atherosclerosis, central vestibular syndrome, bilateral carotid atherosclerosis and other associated cardiovascular and pulmonary diseases. The procedure was performed with a balloon-expandable stent which provided a complete recanalization with improved angiographic blood flow.

Results: The evolution was favorable for the patient who maintained hemodynamic and pulmonary stability, without any complications. Symptoms improved considerably the next day after the procedure.

Conclusions: Proximal subclavian artery stenosis or occlusion may represent a trigger for subclavian steal syndrome and may cause neurological or upper limb dysfunctions. Due to the collateral circulation, the investigations often reveal the reversed flow in the ipsilateral vertebral artery. Angioplasty and stenting represent the therapy of choice that ensures a good evolution of the patient.

Keywords: subclavian steal, reversed flow, atherosclerosis, angioplasty

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ACUTE PULMONARY EMBOLISM IN A PATIENT WITH LUNG NEOPLASIA – A CASE REPORT

Elisa Mihaela Piltu[1], Codrut Oprita[1], Alexandra-Elena Borla[1], Ioan Andrei Tilea[1], Daniel Cozlea[1]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures

Background: Pulmonary embolism (PE) is a pathologic condition which results from thrombotic obstruction of the pulmonary arteries and their branches. From an epidemiological point of view PE has an annual rate from 39-115 per 100 000 population according to the 2019 ESC guidelines.

Objective: We present a case of a 57 y.o. Caucasian woman, admitted for dyspnea, wheezing, tachypnoea, asthenia, fatigue and chest pain, symptoms started 3 days before. Clinical data, lab tests and multimodality imaging studies revealed an acute PE due to a procoagulant status secondary to lung neoplasia with multiple secondary disseminations.

Material and methods: From her personal history we noticed a former smoker (720 packs/year), cachexia (BMI=16,4 kg/m^2), chronic obstructive pulmonary disease (COPD), ischemic cardiomyopathy and epilepsy.

Blood gas values (arterial) expose hypoxia (pO2=52,3 mmHg) associated hypercapnia (pCO2=76,1 mmHg) and a slight acidosis (pH=7,33). Plasma D-dimer test was positive. Rest EKG showed: SR, HR=82 bpm, intermediate QRS axis, and ischemic changes on the anterior wall of left ventricle – negative T-waves V2-V6. No typical EKG findings were recorded (e.g.: SIQIIITIII pattern). Angio CT pulmonary angiogram (CTPA) shows a mass filling defect that affects the right middle lobe. An extensive inhomogeneous mass in the right inferior lobe and partly in the middle lobe with cystic and necrotic areas which surround the inferior vena cava. Similar structures are also found in the right diaphragmatic pillar (22/47 mm) and next to the cardiac apex (18/19 mm).

Results: CTPA establishes the diagnosis of PE and highlights the neoplastic extension. Considering PEPSI score (8.9%) the patient has a high risk of mortality. Supportive measures and long-term anticoagulation with adjusted doses of LWMH, close monitoring was considered.

Conclusions: Pulmonary embolism is one of the most unexpected and deadly complications that can occur especially to patients at risk. An individualized approach in front of a patient with multiple comorbidities must be performed.

Keywords: Pulmonary embolism, dyspnea, neoplasia

INFECTED RUPTURED RIGHT COMMON FEMORAL ANEURYSM AS A MANIFESTATION OF ALPORT SYNDROME – CASE REPORT

Ioan-Octavian Fanea[1], Vasile Adrian Mureșan[1], Reka Kaller[1]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures

Background: Alport syndrome is a rare genetic disorder that causes a defect in type IV collagen, a fundamental component of basement membranes, being mainly characterized by progressive kidney disease, hearing loss and eye abnormalities. Additional symptoms may occur in certain individuals. Several cases of intracranial, aortic and arteriovenous fistulas (AVFs) aneurysms were reported.

Objective: The purpose of this work is to present a successfully treated case of an infected ruptured aneurysm of the right common femoral artery.

Material and methods: A 51-year-old female patient, known with Alport syndrome, hearing impairment, end stage chronic kidney disease reliant on hemodialysis on a left radio-cephalic AVF with a pseudoaneurysm, anemia and severe arterial hypertension, presented with poor general condition, high temperature, a pulsating right inguinal swelling and right thigh paresthesia. The intraoperative diagnosis revealed an infected ruptured right common femoral aneurysm.

Results: The procedure consisted of a femoro-femoral bypass using a reversed saphenous vein graft. In the following 1 and a half months the patient underwent another 3 operative interventions for hemorrhage control, the last one having an uneventful outcome. During the second admission to the clinic the patient also presented a substantial growth of the pseudoaneurysm of the left radio-cephalic AVF, which needed to be closed and replaced by a brachiocephalic one for future hemodialysis.

Conclusions: The particularity of the case consists of the infection of the aneurysm, which greatly increased the complexity of the therapeutic procedure, but more importantly, it is represented by the association between the right common femoral aneurysm and the Alport syndrome, to our knowledge, this being the first reported case.

Keywords: right common femoral aneurysm, Alport syndrome, left radio-cephalic AVF, hemodialysis

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PERIPHERAL ARTERY DISEASE IN PATIENTS WITH COMORBIDITIES

Narcis-Florin Ungureanu[1], Adriana Mocian[1], Adrian Mureșan[1], Tania Bianca Ungur[1], Eliza Russu[1]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures

Background: Peripheral artery disease (PAD) is a common artery disease defined as atherosclerotic occlusive disease of lower extremities. PAD is associated with increased risk of lower extremity amputation because of narrowed arteries and is also a marker for atherothrombosis in cardiovascular, cerebrovascular and renovascular beds. Patients with PAD therefore have an increased risk of myocardial infarction, stroke and sudden death.

Objective: The objective of this paper is to point that the presence of diabetes mellitus greatly increases the risk of PAD, as well as accelerates its course, making these patients more susceptible to ischemic events and other comorbidities compared to patients without diabetes.

Material and methods: An 82-year-old patient emerges in January, 2019, accusing nausea, vomiting, diffuse abdominal pain, started 5 hours before hospitalization, known for a history of hypertension and diabetes. Clinical signs associated with non-invasive investigations: EKG, cardiac necrosis enzymes advocate for the diagnosis of acute non-STEMI myocardial infarction, followed by coronarography without momentary indication of revascularization. The patient returns for periodic control in February, without subjective accusations.

In September, the patient was admitted urgently accusing pain in the lower left limb 7/10, being known in the history of thrombotic microangiopathy, type 2 unbalanced diabetes associated with renal and vascular complications, essential HTA, old myocardial infarction, dyslipidemia. AngioCt, hemolithogram, nephrology, cardiologist and diabetes consult.

Results: Regarding the investigations and clinical signs, the patient is diagnosed with gangrene and thrombotic angiopathy. The right halo is disarticulated, followed by endarterectomy at the superficial femoral artery and the right popliteal artery.

Conclusion: In patients with peripheral arterial disease (PAD), diabetic patients in association with other comorbidities have worse arterial disease and a poorer outcome than nondiabetic patients. Many patients with critical ischaemia are elderly, affected by multiple co-morbidities and at high operative risk.

Keywords: peripheral artery disease, endarterectomy, thrombotic angiopaty

NON-REENTRANT AVN TACHYCARDIA: DIFFERENTIAL DIAGNOSIS

Andrea Alexandru[1], Zoltán Salló[2]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures
2. The Heart and Vascular Center of Semmelweis University[2]

Background: The non-reentrant AVN tachycardia is a rare form of tachycardia, which is characterized by a single atrial impulse that gives rise to two ventricular depolarizations, this is because, the sinus beat run simultaneously over the fast and slow pathways. This is a relatively rare arrhythmia, which is not covered by the current guidelines, it may occur more often than we thought.

Objectives: We review the current literature and present the reported initial mistaken diagnosis.

Materials and methods: We searched the abstract, which was accessible on PubMed, between 1990.01.01 and 2019.01.01. We used these keywords**:** DAVNNT, non-reentrant tachycardia, non-reentrant AV nodal tachycardia, double fire. We included case reports published in English. We found a total of 51 published cases. The mean patient age was 46 years, with regular distribution between male and female gender. The most prevalent clinical presentation was palpitations and dyspnea (90%), but one patient did not report any symptoms, this was observed during routine monitoring of his ECG. Initially, most patients had multiple misdiagnosis, until they got the correct diagnosis (85%). In these cases, the most common incorrect diagnosis was non-specific atrial fibrillation (45%) and supraventricular tachycardia (30%), other differential diagnoses that mimic a DAVNNT was rare. The slow AV nodal pathway ablation is treatment with immediate success (95%).

Results: Patients diagnosed with DAVNNT initially presented with various symptoms, which had been mistaken as atrial fibrillation or supraventricular tachycardia.

Conclusions: This rare phenomenon seems to be more common than previously thought, but curative treatment exist, this is the slow pathway catheter ablation.

Keywords: DAVNNT, non-reentrant AVN tachycardia, arrhythmia

PATENT DUCTUS ARTERIOSUS IN ADULT

Ana-Cosmina Vodă[1], Alexandra Maria Văduva[1], Marius Harpa[1]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures

Background: Patent ductus arteriosus (PDA) is a medical condition in which the ductus arteriosus fails to close after birth. Because most patients with PDA are diagnosed and treated when they are infants, this is a relatively rare congenital heart defect among adults.

Objective: We expose the complexity of the surgical procedure in an adult with PDA.

Material and methods: We present a 30 y.o. female with PDA, whose diagnosis was confirmed by echocardiography. The patient presented with symptoms as dyspnea and fatigue. Following cardiac catheterization, the patient presents with mild pulmonary hypertension, with increased pulmonary vascular resistance, but non-prohibitive. Surgery must be performed before the pulmonary circulation is overloaded leading to irreversible pulmonary hypertension. Considering the age at which the diagnosis of PDA was confirmed, the surgery requires certain precautions due to the histological structure of the ductus. Thus, Cardiopulmonary bypass is established and also deep hypothermia gradually to 22 degrees C. Incision is made at the level of the trunk of the pulmonary artery, taking into account the left to right shunt through the PDA. The patent ductus arteriosus with a diameter of 1 cm and length of 2 cm is dissected and highlighted. PDA is cut and sutured, this maneuver is performed by deep hypothermic circulatory arrest. After all the procedures, the suture of the pulmonary artery, unclamping of the aorta, reperfusion of the myocardium, reheating is performed.

Results: The postoperative evolution was favorable, the patient being discharged after five days.

Conclusion: Due to the fact that this condition was detected so late, the correction procedure required more complicated maneuvers, than correction shortly after birth that could also be performed by medication.

Keywords: PDA, Cardiac catheterization, reperfusion, shunt

AORTO-BIFEMORAL BYPASS AND PERCUTANEOUS TRANSLUMINAL ANGIOPLASTY IN CASE OF LERICHE SYNDROME

Mădălina-Georgiana Pavelescu[1], Alexandru Ionescu[1], Alexandra Borla[1], Antonia-Lucia Comșa[1], Eliza Russu[1]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures

Background: Leriche Syndrome, also commonly referred to as aortoiliac occlusive disease is determined by arterial insufficiency, secondary to the accumulation of atheromatous plaques. As clinical signs, we can identify intermittent claudication, impotency and very low to absent pulse in the femoral artery.

Objective: The purpose of this presentation is to emphasize the importance of symptomatology in the presence of risk factors when it comes to an appropriate therapeutic behavior and also to highlight the chosen interventional technique.

Material and methods: We are presenting the case of a 56 years old woman, which came to the Vascular Surgery Department with the following symptoms: intermittent claudication in the lower limbs and instable angina, to which we can associate risk factors as: obesity, and essential hypertension. The laboratory tests show a high level of total cholesterol and high LDH, frequently associated with atherosclerosis. The levels of creatinine and urea are also raised and can imply a renal disfunction. The abdominal CT scan signals atheromatous plaques at the emergence of the left renal artery and abdominal aortic occlusion in the distal segment and the common iliac artery. Angiocoronarography revealed an atheroma in the second segment of the anterior descending branch. The elected diagnosis is Leriche Syndrome, and as a result there was performed an exploratory laparotomy, abdominal aorta and bilateral femoral arteries adhesiolysis, and Aorto-bifemoral By-pass with a Gore-Tex Graft.

Results: The postoperative evolution was favorable, with resuming of intestinal transit and physiological micturition. The surgical wound is healing without pathological secretions and the restoration of blood flow in the aorto-bifemoral by-pass.

Conclusion: Often, patients with arterial occlusive disease are asymptomatic. Therefore, it is important to consider the most important risk factors associated with paraclinical examinations like angiocoronarography and angioCT.

Keywords: Leriche, atherosclerosis, claudication, cholesterol

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REPAIR OF INFRARENAL ABDOMINAL AORTIC ANEURYSM WITH AN AORTOBIFEMORAL BYPASS GRAFT

Ioan David Pop[1], Raluca Ionela Truta[1], Sergiu Ioan Rus[1], Cedric Kwizera[1], Vasile Adrian Muresan[1]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures

Background: An aortic aneurysm is a dilatation larger than 3 cm, resulted from a loss of elastic lamina and smooth muscle cells. If left untreated, the arterial wall weakens and progressively dilates until rupture, which causes a massive bleeding associated with high mortality rates.

Objective: We present the case of a man that suffers from infrarenal abdominal aortic aneurysm (AAA) with parietal thrombosis and no signs of active bleeding, who undergoes aortobifemoral bypass (AFB) surgery. After AFB the patient develops hemoperitoneum, hemoretroperitoneum and right ureteral stenosis by hematoma compression for which he undergoes another surgery.

Material and methods: A 63 years old male patient was admitted in the emergency room in poor general condition, presenting a 3 day long lower left back pain irradiating in the abdominal region, abdominal distension and tenderness, confirmed by CTA as infrarenal AAA of 13/8 cm diameter, extended on both common iliac arteries.

Results: After an adequate preoperative preparation, under GA and OTI, the following procedures were done: exploratory laparotomy, discovery of the infrarenal AAA, systemic heparinization, aortic and iliac clamping, longitudinal arteriotomy, endoaneurysmorraphy, bilateral tunnelisation, AFB with 16/8 mm Dacron prosthesis, iliac blunt suture, closure of the retroperitoneal space after declamping and hemostasis, drainage, laparorraphy, skin suture, bandage. After the surgery the patient develops a diffuse hemorrhage which required a multidisciplinary approach.

Conclusions: Treatment options for the repair of infrarenal AAA are open surgical repair (OSR) and endovascular aneurysm repair (EVAR). Currently, EVAR is the primary treatment method for the repair of infrarenal AAA due to improved short-term morbidity and mortality outcomes. The particularity of this case consists in two facts: the patient's aorto-iliac anatomy doesn't allow the EVAR, so OSR is performed, as well as the multidisciplinary approach of the complications resulted.

Keywords: abdominal aortic aneurysm, aortobifemural bypass, EVAR, OSR

RUTHENIUM COMPLEXES WITH POTENTIAL VASODILATING ACTION

Iulia Andreea Ciobanu[1], Antonia-Lucia Comșa[1], Roberta Jeane Bezerra Jorge[1], Natalia Cavalcante Barbosa Lima[1]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology of Targu Mures

Background: Arterial hypertension is a multifactorial comorbidity responsible for causing lesions in several organs. Although there are several treatments for blood pressure, there is still no treatment that can be considered ideal, requiring a constant search for new alternatives. Ruthenium complexes are potential NO donors, being able to promote relaxation of the vascular musculature. Due to the usage limitations of other vasodilators, it resulted a greater development of metallo-complexes that were more stable offering a greater bioavailability of NO, also promoting a better antihypertensive-effect.

Objective: The evaluation of the ruthenium complex FOR811A efficacy and potential like a hypotensive agent. The assessment of the complex effects on normotensive rats' cardiac system.

Material and methods: The mice are anesthetized with Cetamine® and Xilazine® that were administrated by intraperitoneal route. It is positioned on a heated surgical table keeping the temperature at 37 ºC, then a catheter is introduced in the left ventricle to measure the intraventricular pressure and volume. Moreover, another catheter is inserted in the inferior Cava Vein, so that the drugs can be injected. The catheters are connected to the PowerLab system to process the signals and results.

Results: In the preliminary studies with FOR811A, a metallo-complex, showed a potent vasodilator action, even with usage of some blockers. FOR811A preparations pretreated with a blocker, showed only a slight reduction in concentration-dependent power in those of the compound that contained NO, with these results is possible to affirm that FOR811A has a strong involvement with NO donors.

Conclusion: FOR811A - have actions on the NO-sGC-cGMP pathways and also on potassium channels, evidenced by subsequent in-vitro and in-silico tests. This research, being a pioneer in metallic-complexes, is important in cardiovascular pharmacology progress. Furthermore, this study attempts to elucidate the mechanism of these compounds until the possible discovery of new drugs capable of acting in the NO pathway.

Keywords: Ruthenium-complexes, hypotensive agent, catheter

SELECTION CRITERIA AND RESULTS IN PATIENTS WITH SEVERE AORTIC STENOSIS TREATED BY TRANSCATHETER AORTIC VALVE IMPLANTATION

Adrian Vangheli[1], Elkahlout Ayman[1], Voichița-Ileana Sârbu[1]

1. George Emil Palade University of Medicine, Pharmacy, Science, and Technology Targu Mures

Background: Transcatheter Aortic Valve Implantation (TAVI) gains more field in the treatment of severe symptomatic aortic stenosis, as multiple randomised clinical trials demonstrated its superiority in efficiency, safety profile and cost-effectiveness, not only in high and intermediate-risk patients, but even in low-risk population.

Objective: The aim of this study is to point out the criteria we used in patient selection for TAVI and to evaluate its results by efficiency, safety profile and mortality rates at IUBCvT Targu Mures.

Material and Methods: This is a bidirectional, observational study in which were enrolled all patients with severe aortic stenosis treated by TAVI between november 2016 – february 2020 at IUBCvT.

Restults: 57 patients (27-males, 30-females) underwent TAVI, with a mean age of 80,2 years and a mean EuroSCORE-II=4,06% (CI=3,39-4,73%). The following criteria were determinant in patient's selection: >75 years (91,2%), EuroSCORE-II≥4% (35,1%), frailty (49,1%), limited mobility (21,1%), previous cardiac surgery (8,8%), deformed/iradiated chest (8,8%), porcelain aorta(1,8%). After the procedure, the mean aortic gradient has reduced from 57,63 to 11,55 mmHg (p<0,001), number of significant aortic insufficiency dropped from 52,6% to 14% (OR=0,1616;p<0,001) and number of severe mitral regurgitation – from 26,3% to 5,3% (OR=0,1902;p=0,013). 12 patients (21,1%) have encountered early complications, most common: new-onset pacemaker – 7 (OR=9,1429, p=0,031) and stroke – 2. The 30-day all-cause mortality rate is 1,8% and at 2-years it reaches 38,9%, while the 2-years mortality rate of cardiovascular cause is only 16,7%.

Conclusions: Comparing our results to those from major trials with similar population characteristics (ex. SURTAVI Trial), we revealed similar results in terms of efficiency - significant lower gradients and a globally improved cardiac performance. In terms of safety-profile, results lower risk of new-onset pacemaker, equivalent risks of stroke, major vascular complications and 30-day mortality, while 2-years mortality rates were significantly higher, most likely because of lower life expectancy and less performant health-care system in Romania.

Keywords: aortic stenosis, TAVI

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