Clinical Vignette Symposium 2025

Book of Abstracts

University of Oklahoma –Tulsa

School of Community Medicine

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Dear Colleagues,

It is my pleasure to welcome you to the 14th annual Clinical Vignette Symposium (CVS) hosted by the OU School of Community Medicine. At CVS, trainees present interesting and unusual medical case studies in a conference setting. We look forward to learning the stories behind these unique case reports.

In addition to poster and podium presentations at CVS, authors have an opportunity to upload their work to the Open Science Framework (OSF). Posters and podium presentations uploaded to OSF will be more widely disseminated to a global community. Authors will also be able to include these presentations as citations on their Curriculum Vitae. Awards will be given to the top scoring posters. These awards may be used toward travel or publication fee expenses to further disseminate their scholarly work.

I would like to thank the Tulsa County Medical Society for their generous donation to this year's event. I would also like to thank the presenters as well as those who organized and are hosting CVS this year. We hope you enjoy CVS 2025.

Sincerely,

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Table of Contents

Oral Presenters……..……....7

Abstract #56 From Strawberries to Encephalopathy: Can Thiamine Save the Day?.....8
Abstract #83 Neurocysticercosis Causing Obstructive Hydrocephalus in a Patient with Endemic Exposure…….....9

Poster Presentations…….....10

Emergency Medicine…….....11

Abstract #30 Mitral Valve Endocarditis Found with Transesophageal Echocardiography After Negative Transthoracic Echocardiography...…….....12
Abstract #37 Spinal Epidural Abscess and Retropharyngeal Abscess Due to MSSA Bacteremia….....13
Abstract #63 Acute Respiratory Distress Due to Thyroid Compression of the Airway…….…....14
Abstract #73 Guillain-Barré Syndrome Presentation After Recent Initiation of Metformin……..……..15
Abstract #100 Cardiac Arrest Secondary to Ventricular Fibrillation with Dual Sequential Electrical Defibrillation……..….....16
Abstract #108 An Uncommon Presentation of Vasospastic Angina in an Uncommon Patient Demographic……...….17

Family & Community Medicine……..…….18

Abstract #24 A Case Study of a Humerus Fracture Resulting from Shoulder Dystocia……..……..19
Abstract #25 Pediatric Total Hip Arthroplasty: A Case Study…….....……...20
Abstract #28 Preexisting Atopy in Postpartum—A Possible Causative Factor for New Allergies…….....21
Abstract #34 Refractory Hypokalemia Due to Chronic Diuretic Use Despite Discontinuation……....22
Abstract #35 Greater Trochanter Fracture and Fixation in a Teenage Athlete…….……....23
Abstract #36 Tibial Midshaft Physeal Sparing Technique in a Pediatric Patient…….……....24
Abstract #52 Fungal Osteomyelitis Following Spinal Fusion…….…….....25
Abstract #58 Recurrent Allergic Fungal Rhinosinusitis: A Case Presentation and Treatment Insights.....26
Abstract #67 Complex Regional Pain Syndrome as a Complication of an Epidural Steroid Injection…....27
Abstract #79 Systemic Lupus Erythematosus Presenting with Elevated Liver Enzymes and Constitutional Symptoms……..……...….28
Abstract #82 Scurvy—Suspension Artist with Increased Bleeding…….…….29
Abstract #85 Carbon Monoxide Poisoning Management and the Possible Role of Timing……..……....30
Abstract #89 Localized Candida Tracheobronchitis Associated with Prolonged Inhaled Corticosteroid Use Following Influenza…….……...31
Abstract #98 Unintentional Weight Loss: Diagnostic Approach and Cancer Evaluation in Adults……....32

Internal Medicine……..……....33

Abstract #14 A Hole World of Trouble: Peritoneal Dialysis Involving a Pleuroperitonael Defect……....34
Abstract #49 A Case of Arginine Vasopressin Deficiency Following Whole Brain Radiation and Immunotherapy……..……..……....35
Abstract #54 Breaking the Silence: HSV Encephalitis Presenting as Mutism……..……....36
Abstract #61 Poor Response to Bariatric Surgery in Rai1 Genetic Mutations……..……...37
Abstract #62 Spontaneous Splenorenal Shunt Presenting as Adrenal Incidentaloma……..…….....38

Abstract #69 Eosinophilic Granulomatosis with Polyangiitis Masquerading as Myopericarditis……....39
Abstract #75 Unmasking the Culprit: A Rare Case of Chronic Muscle Weakness…….....40
Abstract #76 Management and Patient Education of Alpha-Gal Syndrome and Type II Diabetes……...41
Abstract #77 Pramlintide and Tirzepatide Combination Therapy for Increased Weight Loss in Diabetes and ESRD: A Bridge to Transplant…….....42
Abstract #78 Immediate Return of Hunger After Bariatric Surgery Associated with PHIP Variant..…….....43
Abstract #80 Unexplained Weight Gain in a Patient Treated with Valbenazine……..……44
Abstract #81 Severe Iron Deficiency Anemia Due to Hookworm and Ascaris Infection in a 27-Year-Old Male…….…...45
Abstract #88 The Pitfalls of "Cardiac Clearance"—A STEMI During Surgery……..……...…46
Abstract #101 Idiopathic Intracranial Hypertension Disguised as Multiple Sclerosis…….....47
Abstract #102 There's No Lyme in Oklahoma!.....48
Abstract #103 Type 3c Diabetes Presenting with Diabetic Ketoacidosis…….…....49
Abstract #104 Non-Calcified Pleural Plaques as a Presentation for Extramedullary Disease in Multiple Myeloma……..……..……50
Abstract #105 A Rare Entity: Medullary Carcinoma of the Colon……..……..51
Abstract #106 Severe Hypercalcemia Leading to ARDS in the Setting of Ectopic Parathyroid Hormone Secretion……..……....……52
.

Obstetrics and Gynecology……..53

Abstract #39 HIV/AIDs in Pregnancy with Atypical Pneumonia Secondary to Aspergillosis and Histoplasmosis……..…54
Abstract #50 A Cesarean Section Scar Ectopic Pregnancy Found to be a Partial Mole……..…55
Abstract #57 A Case of Rhabdomyolysis with Myositis Following Minimally Invasive Gynecologic Surgery……..……56

Pediatrics……..……57

Abstract #11 Pediatric Scrotal Trauma: Keeping a Wide Differential and the Use of Technology……. …58
Abstract #13 Late-Infantile Onset Metachromatic Leukodystrophy: A Case of Fatal Regression……59
Abstract #19 Incidental Finding of Rickets in a Child with Autism Spectrum Disorder…….……..…60
Abstract #20 Thyroid Storm in the Setting of a Pre-B ALL…….…….....61
Abstract #23 Human Herpesvirus 6 CNS Infection Associated with Seizures and SIADH.……..…62
Abstract #27 Bruising in Infant Mimics Child Abuse: Bleeding Disorder Revealed……..…..…..63
Abstract #33 Pediatric Encephalitis Following Mycoplasma Infection…….……...……64
Abstract #40 Disseminated Tuberculosis in a Healthy Adolescent Secondary to Medication Non-Compliance……..…...65
Abstract #53 Value of Endocrine Evaluation Following the Discovery of an Ovarian Teratoma……..…66
Abstract #60 Ovarian Tumor as a Cause of Vaginal Bleeding in a Prepubertal Child……..……..67
Abstract #70 DRESS Syndrome in an Adolescent…….……..…68
Abstract #71 Halo Scalp Ring with Secondary Bacterial Infection in a Late Preterm Infant……....69
Abstract #109 Caudal Regression Syndrome Undiagnosed by Prenatal Ultrasound……..…...70

Psychiatry…….....71

Abstract #21 Assertive Community Treatment Programs Mediate Treatment Between Mental and Physical Health…….....72
Abstract #41 Cannabis Hyperemesis Syndrome Mimicking Restrictive Eating Disorder in an Adolescent Female…….…….……..73
Abstract #42 Secondary Mania in Behavioral Variant Frontotemporal Dementia…….…....74
Abstract #45 Real Stress, Real Symptoms: A Clinical Case of Functional Neurological Disorder….…....75
Abstract #96 Cognitive Behavioral Therapy for Chronic Pain in a Young Adult…….…...76

Surgery……...77

Abstract #18 Alpha Gal Syndrome in Cerebrovascular Surgery……..…….…....78
Abstract #26 Rare Multifocal Emphysematous Osteomyelitis as a Complication of Metastatic Rectal Cancer…….....79
Abstract #44 Surgical Management of Congenital Anomalous Coronary Artery and Its Challenges….….80
Abstract #46 Medicinal Leech Therapy in Irradiated Microvascular Compromised Tissues……..……..81
Abstract #47 Infected Femoral Artery Pseudoaneurysm with Impending Rupture……..……..82
Abstract #48 Acute Abdominal Pain in the Setting of Sickle Cell Anemia……....83
Abstract #51 Type III Carotid Artery Aneurysm, Repaired Using Great Saphenous Vein Interposition Graft……..……..84
Abstract #72 A Gunshot Wound Pseudoaneurysm to the Upper Extremity……..……..85
Abstract #87 When Training Turns Troubling: A Clinical Case of Chronic Exertional Compartment Syndrome……..……..…..86
Abstract #93 Calciphylaxis in the Abdominal Pannus and Bilateral Hips of a Patient with End-Stage Renal Disease……..…87
Abstract #94 Modified Knickerbocker Technique for False Lumen Occlusion in Hyper-Acute Thoracic Aortic Dissection……..…88
Abstract #97 Endovascular Management of Superficial Femoral Artery Trauma……..…..…89
Abstract #99 From Abscess to Pseudoaneurysm: Surgical Management and a Novel Shunt Technique…….…....90
Abstract #107 A Rare Case of Gastropleural Fistula After Roux-en-Y Gastric Bypass……..……..…...91

Oral Presentations

Abstract #56 From Strawberries to Encephalopathy: Can Thiamine Save the Day?

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Introduction

Wernicke encephalopathy, a neurological disorder caused by thiamine deficiency, is often linked to alcohol use disorder but can also result from malnutrition due to food aversion. It is characterized by a triad of symptoms including ataxia, confusion, and ophthalmoplegia. Immediate thiamine supplementation is crucial for treatment. Oral Allergy Syndrome (OAS) is a condition characterized by an allergic reaction, usually to raw fruits or vegetables, causing itching or swelling in the mouth and throat. OAS can lead to food aversion, as individuals may avoid trigger foods to prevent discomfort. Few cases of Wernicke encephalopathy have been linked to oral allergy syndrome, specifically.

Case Description

A 34-year-old female with a history of autism, anxiety, and depression developed diplopia, dizziness, and nausea/vomiting. At an outlying facility, CT head, CTA head/neck, and MRI brain were unremarkable, along with HIV, TSH, urinalysis, blood culture, and tick panel testing. Without a known encephalopathic etiology, the patient was discharged home after 1 week and it was noted that her strength and her ability to ambulate were intact at time of discharge. However, her symptoms progressed, and she presented to our facility 1 week later. Upon initial evaluation, the patient was difficult to arouse, displayed severe generalized weakness, and nystagmus was observed in both eyes. Brain MRI was repeated, which revealed bilateral symmetric non-enhancing central periventricular FLAIR hyperintensity extending from the inferior medial thalami through the midbrain to the pons, consistent with Wernicke encephalopathy. IV thiamine was administered over the next 5 days, which led to significant daily improvement. On discharge, the patient was fully oriented, was ambulating independently, displayed improved strength, and no nystagmus was observed. The patient reported that she had developed a severe food aversion after experiencing an allergic reaction while eating lemon peppered chicken and strawberries 2 months prior to her symptom onset. She described the event as itchiness of her mouth, as well as throat swelling minutes after starting her meal. Her Thiamine level, drawn prior to replacement, was 30.2 nmol/L, with normal range being 74-222 nmol/L.

Discussion

This case highlights the need for physicians to consider vitamin deficiencies in patients presenting with neurological deficits. Sensitivity of brain MRI is around 50% early on in Wernicke encephalopathy. However, sensitivity increases with time, so repeat MRI should be considered if the encephalopathic etiology remains unknown. Oral allergy syndrome is most often a benign condition but can cause severe malnutrition and vitamin deficiencies if food aversion develops.

Abstract #83 Neurocysticercosis Causing Obstructive Hydrocephalus in a Patient with Endemic Exposure

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Introduction

Neurocysticercosis, the most common parasitic disease of the nervous system, accounts for over 1800 hospitalizations annually in the US. Humans acquire intestinal taeniasis by ingesting undercooked pork containing cysticerci, the larval stage of Taenia solium. Tapeworm carriers shed eggs in the stool, which can infect pigs or humans through fecal-oral transmission in areas. Patients' symptoms may range from mild complaints to more concerning clinical manifestations including seizures, hydrocephalus and ocular complications.

Case Description

A 50-year-old male presented in May 2024 with new-onset daily morning headaches. His medical history included two episodes of hemorrhagic strokes approximately 20 years prior. The second episode required a ventriculoperitoneal (VP) shunt placement. Concerned that his VP shunt was malfunctioning and causing his headaches, the patient was urgently referred to neurosurgery, and a CT head with and without contrast was performed. Imaging showed increased intracranial pressure, consistent with a non-functional shunt, identified as the likely cause of his headaches. In August 2024, after a vacation to Mexico, the patient reported worsening symptoms, including severe headaches, blurry and double vision, and gait abnormalities. Emergency neurosurgical intervention in Mexico revealed a clogged VP shunt, which was replaced. In September, the patient followed up with neurosurgery in the US, and imaging revealed a cystic lesion consistent with neurocysticercosis. He was referred to infectious disease for further evaluation and underwent medical treatment with steroids and anti-helminthic drugs.

Discussion

Headaches and intracranial hypertension are common presenting symptoms of neurocysticercosis Hydrocephalus and optic atrophy are rare complications which may require neurosurgical interventions. Ophthalmological manifestations of cysticercosis typically are due to direct intraorbital or intraocular involvement, parenchymal brainstem involvement, or secondary to hydrocephalus or increased intracranial pressure. Hydrocephalus can be controlled only by removal of obstructive intraventricular cysts or associated with either ventriculoperitoneal shunt or endoscopic third ventriculostomy. The prognosis for people with parenchymal neurocysticercosis is generally good after treatment. However, neurocysticercosis might cause significant incapacity and even death in young patients suffering from stroke secondary to neurovascular complications arising from central nervous system parasitic infection in the absence of cerebrovascular risk factors. His case highlights the complexities of diagnosing and managing neurocysticercosis, especially in a patient with a history of hemorrhagic strokes and a VP shunt. This case underscores the importance of considering neurocysticercosis in the differential diagnosis of headaches, especially in patients with relevant exposure history, such as travel to or immigration from endemic regions.

Poster Presentations

Emergency Medicine

Abstract #30 Mitral Valve Endocarditis Found with Transesophageal Echocardiography After Negative Transthoracic Echocardiography

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Introduction

Mitral valve (MV) endocarditis is an infection of the MV typically due to bacteria. Signs and symptoms of MV endocarditis are non-specific and include – chest pain, edema, Janeway lesions, headaches, weight loss, loss of appetite, and flu-like symptoms. A murmur may be heard. The incidence of MV endocarditis is reported to be increasing with case numbers of 15 per 100,000 persons currently. Risk factors for development of MV endocarditis include – age greater than 60 years, male, IV drug use, poor dentition, structural heart disease, valvular disorders, congenital heart disease and HIV infection.

Case Description

A 72-year-old male arrived at the emergency department via EMS due to fever and generalized fatigue. History of hyperlipidemia, chronic back pain, and neuropathy. Symptoms had been present for the last few days. Recently was seen by a pain specialist and received a steroid injection in the lumbar spine. Family reported the patient had an oral temperature of 106.0F prior to arrival of EMS. On exam patient was noted to be tachycardic, tachypneic, febrile, but with normal blood pressure. His temperature was 102.6F. Lung sounds were clear bilaterally; abdomen was soft and non-tender with no rash or wounds on skin exam. Laboratory studies - WBC 13.25, Hgb 11.5, Hct 36.9. CMP was unremarkable. Urine analysis was without UTI. ESR was 48. Viral testing was negative. Lactate was 1.42. CXR negative for pneumonia. CAP CT scan showed possible pyelonephritis and a small splenic infarct. Empiric abx were started. During his hospitalization, a TTE was negative for vegetations. MRI of the lumbar spine was negative for acute findings. Blood cultures positive for a gram-positive cocci. A TEE was completed and did show vegetations on the mitral valve. Antibiotics were continued and patient improved throughout his stay.

Discussion

MV endocarditis is a rare, but serious, cause of bacteremia. It is a diagnosis that must be considered in a febrile patient with no obvious source of infection. Blood cultures and echocardiography are key tests for investigation. TEE has a higher sensitivity than TTE for endocarditis. The primary treatment of endocarditis is antibiotics, but valvular replacement may be required in a patient that does not respond to antibiotics. Survival rate of endocarditis with treatment is 70%. The overall death rate for native valve endocarditis is 20%. Maintaining a broad deferential in the workup of a febrile patient is paramount.

Abstract # 37 Spinal Epidural Abscess and Retropharyngeal Abscess Due to MSSA Bacteremia

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Introduction

Spinal epidural abscess (SEA) is a rare and challenging diagnosis to make in the emergency department. Patients diagnosed with SEA are often seen in the Emergency Department (ED) multiple times and frequently have neurologic deficits by the time the diagnosis is made. Approximately 2/3 of SEA infections occur from *S. aureus.* Infection can occur from iatrogenic inoculation from procedures involving the spinal column or hematogenous spread from other sites of infection. Risk factors include IV drug use, indwelling vascular catheters, dialysis, cirrhosis, immunocompromised state, recent spinal procedures/surgery, and diabetes.

Case Description

A 66-year-old female without any known risk factors presented to the ED with neck pain and bilateral upper and lower extremity weakness. Onset of neck pain occurred six days prior after lifting birdseed. The pain was progressively severe, resulting in multiple ED visits where she was diagnosed with musculoskeletal pain. On day four she developed upper and lower extremity weakness that progressively worsened, resulting in loss of ambulation on presentation. On presentation, she was febrile at 104.1°F on arrival and tachycardic at 103. A neurologic exam found 1/5 strength in the bilateral lower extremities and 3/5 strength in the bilateral upper extremities. The WBC count was 15.8, ESR of 71, and CRP of 25.7. Due to concern for spinal epidural abscess, the patient was started on Vancomycin and Zosyn and given steroids. MRI of the cervical spine with and without contrast demonstrated a 1.6cm x 0.54cm anterior spinal epidural abscess at C5-C7 with severe cord compression, an incidentally found retropharyngeal abscess at C2-C4 measuring 2.6cm x 0.78cm, and early discitis and osteomyelitis at C6-C7. She underwent C3-T1 laminectomy and cord decompression with neurosurgery. Urine cultures, blood cultures, and anaerobic cultures from the epidural abscess grew MSSA. The patient was hospitalized for nine days and discharged to LTAC on an eight-week course of Ancef.

Discussion

Diagnosing spinal epidural abscess often requires multiple ED visits. Severe, localized back pain is the most common early sign and should prompt further testing, including ESR, or lead to emergent MRI if fever, risk factors, or neurologic abnormalities are present. This case highlights a patient with no known risk factors for SEA which demonstrates the importance of obtaining a thorough history, a detailed neurologic examination, and maintaining a high level of suspicion for patients presenting to an ED with neck or back pain.

Abstract #63 Acute Respiratory Distress Due to Thyroid Compression of the Airway

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Introduction

Acute respiratory distress is a condition encountered in the emergency department (ED) that if not identified quickly and treated effectively, can progress to respiratory arrest, and become fatal. A vital component of appropriate care is correctly identifying the causative factor. Infections, allergic reactions, asthma, and congestive heart failure may be common culprits, but they do not account for all cases. Although rare, an enlarged thyroid can cause compression of the trachea, airway obstruction, and acute respiratory distress.

Case Description

A 37-year-old female with a history of asthma presented to the ED via ambulance due to respiratory distress. The patient endorsed shortness of breath for 4 days and that she was treated at another facility on two separate occasions since onset of symptoms. Management during those encounters included use of albuterol, azithromycin, and steroids for suspected asthma exacerbation. Upon arrival, the patient was noted to be in acute respiratory distress, diaphoretic, and mild stridor was present during auscultation of the neck. Shortly thereafter, the patient rapidly decompensated, suffering a 30-60 second period of respiratory arrest while maintaining a pulse. The patient was given respirations with a bag valve mask (BVM) and given intramuscular epinephrine for suspected upper airway obstruction. She was then quickly intubated and her condition stabilized. Computed tomography (CT) scan of the chest with pulmonary embolism (PE) protocol was obtained which showed no PE, but diffuse bilateral alveolar consolidation thought to be likely due to a period of respiratory arrest. The patient had a goiter present on physical exam, without previous diagnosis of thyroid disease. Pertinent lab results included TSH: <0.0008, T3: 2.67, and T4: 1.3. A CT neck soft tissue with contrast was obtained, which demonstrated significantly worsened thyromegaly compared to a previous scan in 2022 with mass effect and likely "airway compromise in the absence of current ET tube". Otolaryngology was consulted and the patient underwent a total thyroidectomy. After the procedure, the patient was extubated, started on levothyroxine therapy, and discharged from the Intensive care unit.

Discussion

Assessment of the ED patient is often challenging due to complex patient histories and time limitations in acutely ill patients. Although thyroid compression of the airway is not a common cause of acute respiratory distress, this case highlights the importance of maintaining a broad differential when approaching a patient with respiratory distress. Quick action is vital, however misdiagnosis, such as that of asthma exacerbation, may result in delayed or inappropriate treatment.

Abstract #73 Guillain-Barré Syndrome Presentation After Recent Initiation of Metformin

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Introduction

Guillain-Barré Syndrome (GBS) is a rare autoimmune process that affects the peripheral nervous system that is characterized by bilateral ascending neurological deficits. GBS begins with paresthesias and typically progresses to muscular weakness and areflexia. Symptoms begin in the lower extremities and ascend as the disease progresses. The most feared complication of this disease process is when weakness or paralysis of the diaphragm leads to respiratory failure and death. Causes of GBS include: Campylobacter jejuni infection, viral illnesses, influenza vaccination, trauma, surgery, and medications. There are four subtypes of GBS with Acute Inflammatory Demyelinating Polyneuropathy (AIDP) being the most common variant in North America.

Case Description

A 45-year-old male with a past medical history of hyperlipidemia, hypertension, and prediabetes presented for evaluation of weakness in bilateral lower extremities that progressively worsened over the previous two days. The weakness started in his feet and ankles and then ascended to his entire lower extremities, causing a fall prior to arrival. He endorsed decreased sensation along with the reported weakness in his lower extremities. He denied recent travel, tick bites, diarrhea, vaccinations, neck/back pain, fevers, or chills. The only recent change he endorsed was starting metformin, which occurred approximately 3 weeks prior to this presentation. On exam, decreased sensation and diminished reflexes were appreciated in addition to the weakness in the lower extremities. Decreased sensation in the distal upper extremities was also present. Lab work and imaging found no significant cause of the patient's presentation. Neurology consulted and agreed with concern for GBS. Recommended initiation of treatment for GBS and performing serial pulmonary function testing. The patient received 5 days of IVIG with complete resolution of his symptoms.

Discussion

Guillain-Barré Syndrome is a rare neurological disorder that has been associated with many triggers. Although this patient's presentation does not have a confirmatory answer to what triggered his symptoms, it does raise concern that Metformin could be the precipitating event that led to this presentation. Similar case reports of drug-induced GBS have been made but no clear cause and effect relationship have been found between any specific medication and GBS. When treating a patient with bilateral lower extremity weakness and sensation changes, a broad differential is important. When GBS is suspected, it is crucial to monitor the patient's work of breathing and inspiratory effort to avoid respiratory compromise.

Abstract #100 Cardiac Arrest Secondary to Ventricular Fibrillation with Dual Sequential Electrical Defibrillation

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Introduction

Sudden cardiac death (SCD) is the leading cause of death in the United States with an estimated 350,000 out-of-hospital cardiac arrests (OHCA) and approximately 290,000 in-hospital cardiac arrests (IHCA) occurring annually (1). Within both cohorts, demographics and comorbidities are similar (2). However, IHCA carries a more favorable survival rate, 25% versus 10%, and a higher survival rate at 30 days and 1 year (1,2). Interventions including chest compressions, ventilation, early defibrillation, and rapid correction of reversible causes of arrest are critical in the management of cardiac arrest (1).

Case Description

A 49-year-old male with a past medical history of hypertension, hyperlipidemia, and CAD with prior stent placement in 2017 presented to the emergency department (ED) with substernal chest pressure with associated shortness of breath and nausea. Symptoms progressively worsened over 2 hours prior to arrival. A pre-hospital EKG demonstrated ST-segment elevation meeting STEMI criteria in the inferior leads. He received 324mg of aspirin, 3 sublingual nitroglycerin, and 1 L of normal saline en route to the ED. Initially, the patient was alert, oriented, and conversing with ED staff. Just prior to transfer from the EMS cot to the ED stretcher, the patient became unresponsive with agonal respirations and then went into cardiac arrest. High-quality CPR was immediately initiated. Defibrillator pads were placed with an initial rhythm of ventricular fibrillation (VF). He was immediately defibrillated, and resuscitation was continued. After a second defibrillation attempt, the patient was given a bolus of amiodarone and switched to dual sequential electrical defibrillation (DSED). He remained in recurrent VF despite these efforts; therefore, lidocaine was administered. After approximately 45 minutes of resuscitation which included high-quality chest compressions, 14 dual sequential defibrillation attempts, amiodarone, and lidocaine, return of spontaneous circulation (ROSC) was obtained. The patient went emergently to the Cath lab for definitive management, then admitted to the ICU. He was discharged from the hospital less than 72 hours later completely neurologically intact and ambulatory.

Discussion

ACLS is the current standard in the initial rapid resuscitation of patients in cardiac arrest secondary to ventricular arrhythmia. Over the past several years there have been other modalities, such as DSED and early initiation of ECMO that have demonstrated increased rates of survival to hospital discharge and favorable neurologic outcomes (3,4). As clinicians, it is our responsibility to remain current with resuscitation modalities and their utilization to provide our patients with the best chance of meaningful recovery.

Abstract #108 An Uncommon Presentation of Vasospastic Angina in an Uncommon Patient Demographic

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Introduction

Vasospastic angina, previously known as Prinzmetal angina, is a variant of acute coronary syndrome (ACS) caused by transient intravascular spasm of coronary arteries that normally presents as chest pain. Vasospastic angina is typically associated with a younger cohort, but we present a case of suspected Vasospastic angina in an elderly male who presented with atypical symptoms.

Case Description

A 79-year-old male with no known history of cardiac disease presented to the emergency department with myalgia and muscle spasms. Patient reported symptoms had been present for the last three hours. He reported localized myalgia and spasm to the low back with radiation into the anterior chest. Pain was described as cramping and constant. Other associated symptoms included a new onset tremor to the right upper extremity. He denied associated dyspnea. Pertinent medical history included hypertension and remote history of smoking. On exam, initial vital signs were pertinent for blood pressure of 170/80. There were no significant findings on pulmonary or cardiac auscultation. Distal pulses were strong and equal in all four extremities. A coarse tremor was noted to the right upper extremity, but neurologic examination was otherwise non-focal. Patient's initial EKG demonstrated a normal sinus rhythm with a right bundle branch block with no evidence of acute ischemic change. His initial high sensitivity troponin was negative. CT angiogram (CTA) of the chest, abdomen, and pelvis demonstrated no aortic dissection or other acute abnormality. Per chest pain protocol, repeat EKG was obtained after 20 minutes which demonstrated ST depression in inferior and anterior leads with ST elevation in high lateral leads concerning for posterolateral STEMI. Cardiac catheterization lab was immediately activated and the patient received Aspirin, Ticagrelor, and a bolus of Heparin. On cardiac catheterization there was no hemodynamically significant stenosis or occlusion noted. Echocardiogram was functionally normal without evidence of Takotsubo cardiomyopathy. During observation, the patient's symptoms resolved spontaneously. Troponin peaked at 23.2. Patient received a working diagnosis of vasospastic angina and was discharged the next day on a calcium channel blocker and a high intensity statin with plans to return to Cardiology clinic in one month.

Discussion

Our case demonstrates that vasospastic angina, like many forms of ACS, can present atypically in elderly patients. This case underscores the importance of obtaining serial EKGs and maintaining a high index of suspicion of ACS during evaluation of individuals with symptoms that may represent anginal equivalents.

Family & Community Medicine

Abstract #24 A Case Study of a Humerus Fracture Resulting from Shoulder Dystocia

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Introduction

Shoulder dystocia is an obstetric emergency characterized by failure of the fetal shoulders to deliver after the head, occurring in approximately 1.2% of vaginal deliveries[1]. While largely unpredictable, risk factors for shoulder dystocia include low maternal height, maternal diabetes, birth weight over 4,250 grams, maternal BMI greater than 30, and a prolonged second stage of labor. Treatment emphasizes the importance of an effective team rapidly working together through various maneuvers to reduce maternal and neonatal morbidity[2]. Maternal injury can include third- or fourth-degree perineal tears and postpartum hemorrhage. For the neonate, shoulder dystocia can lead to brachial plexus injury, namely Erb's palsy, hypoxic-ischemic encephalopathy, clavicular and humeral fractures, and death[3].

Case Description

A 33-year-old G3P2A0 at 35 weeks gestation, with a PMHx of insulin-dependent type one diabetes mellitus and current preeclampsia, presents to the emergency department for irregular contractions that are becoming closer together. Upon evaluation, it was decided the patient would be induced preterm. During delivery, the neonate was unable to advance through the vaginal canal due to its arm being positioned at an angle resulting in shoulder dystocia. Upon delivery, swelling and limited range of motion of the neonate's right upper extremity were noted. X-rays revealed a displaced humerus fracture extending throughout the mid-shaft with anterior displacement of the distal fragment, per the radiologist. Orthopedic Trauma consulted on the neonate and placed a soft roll splint along the patient's arm for bulky immobilization. Orthopedics recommended follow-up x-rays in approximately two weeks to monitor callus formation at the fracture site. One week later, while the infant was still admitted after birth, orthopedics re-evaluated her grasp reflex, wrist flexion and extension, and ensured she was moving her fingers appropriately, effectively ruling out a radial nerve injury.

Discussion

While shoulder dystocia is a rare complication to develop, the neonate's weight plays role in their risk for getting caught on their mother's pelvis. Neonates weighing less than 4,000 grams at birth have a less than 1% chance of dystocia occurring, and the risk increases as the baby's weight increases. For neonates weighing between 4,000 and 4,500 grams, their risk increases to approximately 5-9% and continues to increase as the neonate's weight increases over 4,500 grams. A newborn's risk of dystocia is also increased due to maternal diabetes. The increased risk is due to multiple mechanisms, including higher likelihood of neonatal macrosomia and a greater abdominal-to-head circumference ratio than babies with non-diabetic mothers[4] .

Abstract #25 Pediatric Total Hip Arthroplasty: A Case Study

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Introduction

Total hip arthroplasties (THAs) are traditionally employed to treat degenerative hip conditions, such as osteoarthritis, in older adults, typically over 60 years of age. In pediatric cases, THA is uncommon but may be necessary for severe traumatic hip injuries where conservative approaches, open or closed reduction, fail to restore joint function. Unique challenges of pediatric THA stem primarily from skeletal immaturity, which can result in complications like leg length discrepancy, requiring multiple revisions as the child grows. Furthermore, prosthetic implant longevity is a significant concern, as young patients are likely to outlive the lifespan of their prostheses, leading to repeated surgeries. These challenges are compounded by increased activity levels of younger patients which serves to further accelerate prosthetic wear. Advances in surgical techniques and implant technology have improved outcomes, but questions remain regarding long-term durability and functional performance of implants in this age group.

Case Description

A 17-year-old male presented to the emergency department after colliding with a vehicle while driving a motorcycle, resulting in him sliding under the car and approximately 30 feet further. X-ray and CT imaging demonstrated a left femoral head fracture-dislocation with one piece of the femoral head posterior to the acetabulum and with the femur reduced to the acetabulum. Upon orthopedic evaluation, it was determined that non-elective surgery was required. Prior to the operation, orthopedics planned to perform an open reduction internal fixation (ORIF) of the femoral head or a THA. In the OR, the true nature of the femoral head fracture was discovered: multiple fracture fragments were displaced within the joint space and posterior/superior to the joint space. They also observed that there was no femoral head left attached to the femoral neck. Due to lack of connection between the head and neck and the fragmented head pieces not fitting together, it was decided a THA must be performed. Upon follow up, approximately one month later, the patient reported improvement of his left lower extremity pain.

Discussion

THAs are largely avoided in pediatric patients due to the potential of growth plate sequelae in the future. Since this patient presented in his late teens, concerns about growth plate complications were minimal. Studies of 10-year survival rate of implants in pediatric patients show they are 19% more likely to fail than implants in older patients. Long-term follow up of THAs in pediatric patients is limited, restricting knowledge on implant longevity.

Abstract #28 Preexisting Atopy in Postpartum – A Possible Causative Factor for New Allergies

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Introduction

Atopy is a common clinical finding in primary care, affecting more women than men. Pregnancy induces immunological changes in cell regulation and gene expression, leading to an immunocompromised state existing into the postpartum period. These immunological alterations may lead to heighted atopic symptoms during pregnancy and postpartum. This report details a postpartum patient with new food allergies and worsening eczema previously well-controlled.

Case Description

A 26-year-old female with past medical history of asthma and eczema presented 8 months postpartum for worsening eczema symptoms and new food allergies. The patient has a long-standing diagnosis of eczema which has been previously well controlled and was currently breastfeeding. She had an itchy throat immediately after consuming beer and a new reaction to shellfish. Her eczema flare seemed to also be influenced by certain foods. She was referred to an allergist and given triamcinolone 0.1% for topical use. She returned to the OU clinic to request a dermatology referral for eczema unresponsive to triamcinolone. Skin testing was recommended, which she did not complete. She was given medications for anaphylaxis (epinephrine, prednisone, famotidine). The dermatologist prescribed desonide 0.05% for her face and breast, desoximetasone 0.25% for other areas, and recommended regular use of emollients.

Discussion

Among eczematous eruptions during pregnancy, 20% occur in patients with preexisting atopy. In this case, the patient's eczema had been well controlled before her pregnancy and postpartum state. She responded to more potent topical steroids and emollients. The sustained development of new allergies remains uncertain, as the patient did not complete the skin testing, however her symptoms were consistent with a new allergic response. Studies show that immune cell lines change during pregnancy and continue into postpartum. When comparing women with existing allergies/asthma and those without, cytokine response to allergens is greater in women with existing atopy both during gestation and at 6 weeks postpartum. Serum markers of B Cell activation from naïve to mature state have been noted to be higher in pregnant/postpartum women with existing atopy. The effects of prolonged changes to the immune system into the postpartum period are not well documented. There is a need for studies to follow postpartum individuals with atopy over time and weigh the effect of breastfeeding on the severity of atopic and allergic symptoms. Preexisting atopy in postpartum individuals could provide a helpful explanation to both patients and practitioners in situations of worsening or new symptoms.

Abstract #34 Refractory Hypokalemia due to Chronic Diuretic Use Despite Discontinuation

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Introduction

Hypokalemia is a common clinical problem faced in the inpatient setting. Usual causes include poor oral intake, gastrointestinal or urinary losses, or transcellular shift. Typically, potassium levels normalize once the inciting factor resolves. In patients on chronic, stable diuretic therapy, potassium loss occurs only during the first two weeks of a change in therapy until a new steady state is established. Thus, in patients on chronic diuretic therapy, potassium supplementation is infrequently needed when either loop or thiazide diuretics are used alone and on a stable regimen. This case describes a patient with sustained refractory hypokalemia despite no clear inciting factors, on chronic diuretic therapy without recent change, requiring supplemental potassium.

Case Description

A 77-year-old male with past medical history of stroke, congestive heart failure, hypertension, type 2 diabetes, cirrhosis, atrial fibrillation, hyperparathyroidism, and hypothyroidism presented to the hospital after a syncopal episode prior to obtaining an outpatient renal ultrasound. Cardiac work-up was nonischemic and head/neck imaging was negative. Labs were remarkable for acute kidney injury, hypomagnesemia (1.4 mEq/L), and hypokalemia (2.7 mEq/L). Patient's last dose of furosemide was on the day of admission and discontinued during his stay. Magnesium was repleted and remained near normal, and potassium remained low despite continued repletion. Patient had no increased gastrointestinal losses, normal blood pH, and no new medications causing intracellular shift. Urine potassium to creatinine ratio was 0.62 mEq/g. Renal ultrasound was unremarkable. Renin and aldosterone levels were normal. Nephrology was consulted, who obtained a serum IFE, which was negative. The cause of hypokalemia was thought to be largely due to chronic diuretic use despite discontinuation. Patient was discharged with daily oral potassium supplementation, continued to hold his diuretic, and was scheduled for close outpatient follow up. He endorsed improvement of presyncopal symptoms, however repeat labs are still pending.

Discussion

The etiology of hypokalemia is usually efficiently identified and managed. Despite extensive work-up for this patient's hypokalemia, no conclusive cause was identified besides unlikely inadequate oral intake or diuretic therapy, however with no recent diuresis change. Usually, patients on stable chronic diuretic therapy do not require frequent lab monitoring or electrolyte supplementation. This case highlights a symptomatic patient who remained sensitive to electrolyte derangements, particularly hypokalemia, despite previous stability on chronic diuretic therapy. An important lesson learned is that reassessment and escalation of potassium supplementation are crucial in refractory hypokalemia cases.

Abstract #35 Greater Trochanter Fracture and Fixation in a Teenage Athlete

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Introduction
Greater trochanter fractures are a unique subtype of hip fractures that often occur concurrently with other injuries to the hip. Isolated greater trochanter fractures can occur with avulsion injuries in younger patients due to strong hip abduction and pathologic processes, or traumatic injuries in the elderly. Greater trochanter fractures displaced by more than one centimeter should be treated with open reduction internal fixation (ORIF) but otherwise can be managed nonoperatively. Displaced fractures are more concerning due to the risk of avascular necrosis (AVN) of the femoral head if the medial circumflex femoral artery is disrupted, as it travels over the greater trochanter.

Case Description
A 14-year-old male presented to the emergency department complaining of right hip pain after being tackled in a “dog-pile” manner while playing football. Radiographs of the right hip showed an isolated displaced right greater trochanter fracture. MRI confirmed the fracture to be isolated with no intertrochanteric nor intraarticular extension. Upon orthopedic consultation, it was determined that the next step of management should be ORIF. During the procedure, the fracture was visualized and then reduced by forcefully internally rotating the greater trochanteric apophysis. This was confirmed by fluoroscopic imaging intraoperatively. A semitubular Smith and Nephew plate was applied to the femur and screws were placed to hold the plate in place. Once the plate was placed, the surgeons then mobilized the patient’s hip to ensure there was no movement of the fracture. Once the procedure was complete and the patient was ready for discharge, the patient was released as touch down weight bearing with crutches with the goal to increase weight bearing over the next two to four weeks. The patient was seen in clinic for a two-week post-operative follow-up. On exam, the patient’s incision was well-healed, his sensation and motor functions were intact, and it was determined the patient would be allowed to continually increase weight bearing over the next few weeks. He then returned for eight-week follow-up and was doing well with no new issues.

Discussion
Urgent definitive treatment of a greater trochanter fracture can improve return to play and minimize the risk of traumatic damage to the medial circumflex femoral artery. However, ORIF of the greater trochanter can also jeopardize the medial circumflex femoral artery, putting the femoral head at risk of iatrogenic AVN. As such, extensive pre-operative planning is necessary to address both sources of risk and achieve the greatest patient outcome.

Abstract #36 Tibial Midshaft Physeal Sparing Technique in a Pediatric Patient

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Introduction

Tibial fractures in pediatric patients oftentimes require techniques to avoid physis damage that can lead to growth arrest. There are multiple physeal-sparing techniques (PST), including the use of various screws, sutures, and anchors. Common uses of these techniques are fractures of the tibial spine, such as avulsions of the ACL and tibial shaft features requiring intramedullary rod placement1. The intramedullary (IM) rod, also referred to as the IM nail, will be the predominant fixation method discussed in this case report. Avoiding damage to the physis is essential for proper growth of long bones throughout early development.

Case Description

An 11-year-old female presents to the emergency department with lower left leg pain after sliding into home plate during softball practice. Imaging revealed a spiral fracture of the distal tibia and an oblique fracture of the proximal fibula. It was determined that the patient would undergo open reduction internal fixation (ORIF) the following day. During the procedure, it was decided that a physeal sparing approach would be used. The procedure began by creating an incision over the patellar tendon and tibial tubercle so that a partially-threaded wire could be placed in the intramedullary (IM) canal medial and distal to the tubercle. Then an open awl was used to access the canal so a guidewire could be inserted through it across from the fracture site and into the distal tibia. Anatomic reduction could then be performed, and an IM nail was placed into the IM canal between the proximal and distal physis. Once the nail was inserted, two locking screws were placed at both ends of the nail. Upon follow up, the patient was doing well and had improved pain levels, her x-rays demonstrated that the fracture was well reduced and maintained.

Discussion

While literature on PST for tibia fractures is limited, recent studies are exploring the potential risks and benefits of this procedure in adolescents. The primary objective of the procedure is to preserve the patient's physis to prevent growth arrest, but additional benefits are being studied. For example, studies are evaluating whether the surgery will allow for earlier mobilization and weight-bearing. Researchers are also assessing the potential for fewer future reoperations and benefits to fracture healing.

Abstract #52 Fungal Osteomyelitis Following Spinal Fusion

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Introduction

Peri-spinal implant infections (PSII) are a serious complication of spinal surgery and in extreme cases can be fatal. Vertebral osteomyelitis is an infection of the vertebrae that can potentially spread to the spinal canal, but the infection can start in the vertebrae. The two primary bacterial pathogens responsible for vertebral osteomyelitis are *Staphylococcus aureus* or *Propionibacterium acnes*. Less commonly, vertebral osteomyelitis can result from a fungal infection, such as *Candida albicans*. Osteomyelitis due to a fungal infection is seen more commonly in patients that are immunocompromised or have indwelling IV catheters.

Case Description

A 76-year-old man underwent a lumbar laminectomy with posterior L3-S1 fusion for lower back pain that failed conservative treatment. Postoperatively, the patient suffered an acute stroke and developed osteomyelitis from L5-S1. Orthopedic surgery took the patient back to the OR for an Irrigation and Debridement (I&D) procedure, during which they removed the existing hardware and took intraoperative wound cultures, which grew *Candida albicans*. The patient was placed on micafungin 100 mg IV daily and fluconazole 400 mg PO daily. Approximately one week later, the patient returned to the OR for replacement of his pedicle screws. Although the L3-L5 region showed signs of bony erosion, the surgeon was able to replace the L3-L5 and iliac screws in their existing screw tracks and then place rods to fuse the lumbar vertebrae to the patient's sacrum. The patient tolerated the procedure well and upon follow up one month later he reported improvement in his level of pain as well as improved mobility. X-ray imaging at that time demonstrated decompression and intact instrumented fusion. The patient followed up with Infectious Disease three months after his final spine surgery. They reported that he was doing well and recommended that the patient take fluconazole indefinitely.

Discussion

This case is unique as it presents a patient with a rare post-surgical osteomyelitis due to *C. albicans*. In general, vertebral osteomyelitis must be treated swiftly and aggressively to avoid vertebral collapse, other complications include chronic pain and the potential for neurologic deficits or paralysis. Literature regarding fungal vertebral osteomyelitis is sparse but a systematic review by Asperges et al. found that 20.71% of all fungal osteomyelitis cases were due to *Candida spp*. infection, which was the second most prevalent organism after *Aspergillus spp*. (26.49%). The study also revealed that the most common site of fungal osteomyelitis was the vertebrae and having surgery was the largest risk factor.

Abstract #58 Recurrent Allergic Fungal Rhinosinusitis: Case Presentation and Treatment Insights

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Introduction

Allergic Fungal Rhinosinusitis (AFRS) is a subtype of chronic rhinosinusitis with polyps, involving a type 2 inflammatory response due to barrier dysfunction of respiratory epithelial cells. It presents with non-invasive fungal sinus disease with a fungus ball, and affected populations can include young, immunocompetent individuals in the Mississippi basin and southwest US, with an estimated incidence of 2.1-4.2% in Western countries. Patients must meet all five criteria for diagnosis: fungus on staining, nasal polyps, eosinophilic mucin without invasion, type 1 hypersensitivity reaction to fungus, and characteristic radiographic findings.

Case Description

A 37- year- old black female with reported "prior sinus surgeries for sinusitis" developed a persistent cough. She was prescribed Flonase, intranasal ipratropium, and prednisone for the cough suspected due to postnasal drip. A chest x-ray was normal, and a CBC showed low absolute eosinophils. Three weeks later, the patient returned with worsened symptoms and brown, clumpy, foul-smelling nasal discharge. A CT of her sinuses revealed almost complete opacification of the bilateral maxillary sinuses with central hyperdensities suggestive of fungal sinusitis. She presented to the hospital two days later with increased eosinophilia, and ENT did a bedside rigid endoscopic exam which showed AFRS and a suspected superimposed bacterial infection. She was discharged on clindamycin. An outpatient flexible laryngoscopy showed bilateral polyps with thick eosinophilic mucous. She underwent sinus surgery one month later with her frontal sinus bilaterally revised to have larger openings, and at clinic follow-up she underwent bilateral sinus debridement with moderate debris removed. She had another ENT follow up two months later with another nasal endoscopy showing no edema in her sinuses.

Discussion

AFRS is a frustrating disease process for patients due to its relapsing nature. Prior mainstays of treatment were sinus surgery and topical corticosteroids, with oral steroids and systemic antifungals for refractory disease. Biologic therapies are increasingly being used for AFRS, though AFRS patients were excluded from clinical trials on biologic treatments for nasal polyposis. Dupilimab (Dupixent) use has been reported for AFRS, which is thought to work through blocking the IL-13 and IL-4 contribution to type 2 inflammatory responses. Case studies have shown that Dupixent used in patients who have failed multiple sinus surgeries and medical treatments significantly improved reported symptoms and decreased eosinophilia. AFRS treatment can involve nasal sprays and surgery. Dupixent is promising and may be adopted as a mainstay of treatment following further studies in the future.

Abstract #67 Complex Regional Pain Syndrome as a Complication of an Epidural Steroid Injection

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Introduction

Complex regional pain syndrome (CRPS) refers to chronic pain that typically presents with neurological symptoms, which can vary in severity and duration among individuals. Common symptoms include pain out of proportion to exam, skin color changes, and inflammation. It is estimated that 5 - 26 per 100,000 people per year are diagnosed with CRPS, and it is more common in females. This condition can have debilitating symptoms, impacting patients' quality of life and their ability to perform day to day activities.

Case Description

A 56-year-old woman presented to her pain management physician for bilateral cervical epidural injections. She had received these injections in the past with no adverse reactions. Shortly after, she started to experience lightheadedness, dizziness, and severe left arm pain and paralysis. The patient was sent to the ER for assessment. Examination revealed a flaccid arm and decreased sensation on the left side. The rest of her exam, including cardiovascular, respiratory, and other neurological systems were normal. Some diagnoses on the differential included cervical nerve impingement, CRPS, and cerebrovascular accident. Pneumocephalus and an unusual cord abnormality seen on MRI raised suspicion that the injections received earlier in the day were delivered in the intraspinal space. She followed up with a sports medicine physician who diagnosed her with CRPS. Over the following year, many treatment plans were made including the administration of gabapentin, amitriptyline, and corticosteroids. This patient also completed many weeks of physical and occupational therapy. Her progress has been undulating, and she has not returned to baseline. She developed a claw-type deformity and palmar atrophy in her left hand. She is unable to extend her fingers at the MCP joint, and wrist extension and flexion elicit pain. The patient is still seeing occupational therapy and sports medicine in hopes of finding a treatment plan that alleviates her pain, improves her range of motion, and enhances her quality of life.

Discussion

Epidural injections are frequently performed to alleviate pain due to a variety of spinal pathologies. Complications occur in less than 5% of cases, with CRPS accounting for only a small fraction. Due to its rarity, CRPS can be challenging to diagnose and treat effectively. Further treatment options could include sympathetic nerve blocks and peripheral nerve stimulation. This case highlights the importance of early detection and intervention in CRPS, and the need for proper epidural injection techniques.

Abstract #79 Systemic Lupus Erythematosus Presenting with Elevated Liver Enzymes and Constitutional Symptoms

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Introduction

Systemic lupus erythematosus (SLE) is a chronic autoimmune disease with diverse clinical manifestations. Hepatic involvement in SLE is relatively uncommon, particularly as an initial manifestation, and may mimic other liver disorders. Studies have reported that liver involvement occurs in approximately 3% to 9.3% of SLE patients. This case highlights a presentation of SLE with significant liver enzyme elevations, complicating the initial diagnosis.

Case Description

A 21-year-old female presented for hospital follow-up after an emergency department visit for two weeks of fatigue, anorexia, headache, cough, and a painless, non-pruritic rash. Initial laboratory evaluation showed elevated liver enzymes (AST 299 U/L, ALT 194 U/L), leukopenia (WBC 1.9 x10^9/L), and mild anemia (Hb 11.3 g/dL). The infectious workup was negative, except for Epstein-Barr virus IgG positivity. Imaging revealed no acute abnormalities. At follow-up, she reported worsening fatigue, back pain, joint pain, and worsening rash on her palms, upper arms, and lateral chest. She disclosed unintentional 12-lb (10.58%) weight loss, intermittent cold sweats, and alopecia. Physical exam revealed a scattered macular rash. Repeat labs demonstrated worsening transaminitis (AST 624 U/L, ALT 328 U/L), further anemia (Hb 9.8 g/dL), leukopenia (WBC 2.4 x10^9/L), elevated ANA titers (1:320 and 1:1280), and mildly elevated ESR. Autoimmune hepatitis workup revealed elevated IgG and anti-smooth muscle antibody positivity, but liver biopsy was non-diagnostic for autoimmune hepatitis. Over subsequent months, she experienced progressive fatigue, frailty, and worsening skin findings, including ulcerations on her elbows, knees, and ankles. She developed periarticular tenderness and swollen hands and feet. Given her evolving symptoms, SLE was suspected, and she was initiated on prednisone, with symptomatic improvement. Rheumatology evaluation confirmed SLE, and she was started on hydroxychloroquine and mycophenolate. Liver enzyme abnormalities normalized with treatment, suggesting hepatic involvement as part of SLE rather than a distinct autoimmune hepatitis.

Discussion

SLE presenting with transaminitis can pose a diagnostic challenge. While liver dysfunction can be seen in a significant proportion of SLE patients, some studies suggest it is not typically the primary presenting manifestation. This case highlights the need to consider SLE in young patients with multisystem symptoms, particularly when liver enzyme abnormalities accompany constitutional and dermatologic findings. Prompt recognition and initiation of immunosuppressive therapy can lead to significant clinical improvement and resolution of liver abnormalities.

Abstract #82 Scurvy- Suspension Artist with Increased Bleeding

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Introduction

Scurvy, vitamin C deficiency, is a diagnosis we learned about occurring in sailors after long sea voyages without fresh produce. Scurvy was first documented in 1550BC by an Egyptian practitioner who recommended treatment with onions and vegetables. In the U.S, scurvy incidence is 7.1%. Due to its rarity in the U.S., it is not the first diagnosis on a differential for increased bleeding. Treatment is supplementation with vitamin C rich foods or with over-the-counter supplements. With treatment symptoms will resolve within three months, except severe bony abnormalities.

Case Description

A 34-year-old female presented to free clinic complaining of excessive bleeding. The bleeding started 2 ½ months prior when she performed as a human suspension artist. She described excessing bleeding after removal of the skin hooks with fatigue. The patient had childhood epistaxis and gum bleeding with tooth brushing. She notes hemorrhage after hysterectomy. The significant finding on physical exam was conjunctival pallor. Labs ordered: CBC, CMP, HIV screen, Hepatitis panel, Factor VIII Ristocetin cofactor, vWF Panel and Vitamin C level. Her only abnormal laboratory results were: Hct 46.6, Glucose 150 (Non fasting), AST 48, ALT 56, Vitamin C 0.2 (normal 0.3-2.7mg/dL). The clinic attempted to reach the patient via telephone and patient portal to discuss lab results and schedule a follow up appointment. In spite of repeated phone and portal messages, patient has been lost to follow up.

Discussion

Vitamin C deficiency is one of the oldest diagnosed nutritional deficiencies. In the U.S. overall prevalence of scurvy is 7.1%, but in lower income patients with food insecurity, it can increase to 40%. Symptoms can appear after just 4 weeks of inadequate intake. Besides diet, smoking, eating disorders, malabsorption, bariatric surgery, food allergies, type 1 diabetes can also lead to vitamin C deficiency. Vitamin C deficiency causes defective collagen synthesis. Clinical symptoms include bleeding gums, bruising, petechia, anemia, fractures, osteopenia, corkscrew hairs and hemarthrosis. Anemia is the most common co-occurring lab finding. Vitamin C levels l <0.2mg/dL indicate severe deficiency. Given low prevalence, some patients are diagnosed later after extensive workups for more common diagnoses. A broad differential for patients with suggestive symptoms and social determinants of health can lead to a quick diagnosis. Treatment can be started with a goal of up to 1000mg of vitamin C daily using food or supplements. Symptoms will resolve within a few weeks.

Abstract #85 Carbon Monoxide Poisoning Management and the Possible Role of Timing

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Introduction

Carbon monoxide (CO) poisoning is a potentially lethal condition resulting from inhalation of CO gas, which is colorless, odorless, and tasteless. Due to its high affinity for hemoglobin, more than 200 times that of oxygen, CO binds to hemoglobin, forming carboxyhemoglobin, thereby reducing the blood's oxygen-carrying capacity. The insidious nature of CO exposure often makes initial diagnosis challenging, as symptoms can mimic those of other common conditions such as viral illnesses, fatigue, or depression.

Case Description

A 62-year-old female presented to ED for concerns of injuries sustained after apartment complex fire. On arrival, she reported chest pain, shortness of breath, headache, and dizziness. The patient was watched in the ER from 5pm-1am when the inpatient team was called for admission. Vital signs showed normal blood pressure, tachycardia (105bpm), respiratory rate of 22 breaths/min, and oxygen saturation of 99% on room air. Her carboxyhemoglobin level was elevated to 0.36 on arrival to ED. Troponin levels were negative, and arterial blood gas revealed pH 7.35, PaCO2 35mmHg, PaO2 70mmHg, and HCO3 22mEq/L. Other laboratory results were unremarkable. Upon examining the patient, she was saturating 100% and no supplemental oxygen was given to the patient for the duration of stay in the ER. Upon admission to the general medical floor, the decision was made to place immediate high flow oxygen therapy on the patient and continue to trend carboxyhemoglobin to ensure the levels were decreasing. The patient’s symptoms improved, and she remained stable overnight, requiring no escalation to hyperbaric oxygen therapy. She was handed off to the day team in good condition.

Discussion

This case illustrates the successful management of acute CO poisoning through prompt recognition by the inpatient team and high flow oxygen therapy, despite the initial delay. This case underscores the importance of rapid intervention in cases of CO poisoning to prevent severe complications and improve patient outcomes. The patient's symptoms and carboxyhemoglobin levels were effectively reduced, leading to a favorable recovery without delayed neurologic sequelae. In this particular case, there was no further need to escalate therapies to manage the acute CO poisoning. However, if the initial therapies did not work then hyperbaric oxygen therapy would have been added. The current research recommends that we start high flow oxygen therapy immediately regardless of clinical status., but there could be more research on how effective these treatments are when they are not given immediately such as in this case.

Abstract #89 Localized Candida Tracheobronchitis Associated with Prolonged Inhaled Corticosteroid Use Following Influenza

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Introduction

Candida tracheobronchitis is a rare fungal infection of the tracheobronchial tree caused by strains of candida yeast classified into localized and diffuse subtypes. Localized subtype is usually associated with local mucosal damage, while the latter is usually more influenced by the patient's immune status. Localized tracheobronchitis from candida is rare in immune-competent patients, making diagnosis challenging.

Case Description

A 67-year-old woman with mild COPD, hypertension, and paroxysmal atrial fibrillation consulted her primary care doctor for worsening cough with a few episodes of hemoptysis over the last month. She reported being diagnosed with influenza approximately 2 weeks before symptom onset. Initial workup for TB and lung malignancy were unrevealing. She was diagnosed with hemoptysis secondary to cough from uncontrolled asthma. Her asthma therapy was escalated from moderate to high-dose inhaled corticosteroid/long-acting beta-agonist. A month later, she returned with worsening cough and sore throat. Physical exam revealed white plaques on her pharynx, sparing the tongue. Throat swabs for Gonorrhea/chlamydia and an STI panel, including syphilis and HIV, were negative. A KOH prep of the oropharynx revealed numerous yeast, leading to a diagnosis of oral thrush. She was treated with nystatin solution for 7 days. The patient returned after finishing treatment and reported improvement in her oral lesions and sore throat but had no improvement in her cough and worsening hemoptysis. Inhaled corticosteroid therapy was stopped, and the patient chose ENT referral for laryngoscopy over systemic antifungals. Direct laryngoscopy showed her to have multiple erosive lesions in her trachea, and culture revealed *Candida albicans*. She was started on systemic antifungal treatment with fluconazole 200 mg for 2 weeks. Symptoms initially improved for the first week, but she had one further episode of hemoptysis. Fluconazole treatment was extended for 2 more weeks, after which the patient had full symptoms resolution. Repeat laryngoscopy revealed improvement on gross inspection.

Discussion

This case illustrates the potential for fungal tracheobronchitis following a viral Upper respiratory infection in patients using inhaled corticosteroids (ICS). While oral thrush is a commonly recognized side effect of ICS use, fungal tracheobronchitis in otherwise immunocompetent individuals is rarely observed and thus not a common concern for most clinicians. This case highlights the importance of keeping a broad differential and recognizing fungal tracheobronchitis early to prevent poor outcomes in a disease with high morbidity and mortality.

Abstract #98 Unintentional Weight Loss: Diagnostic Approach and Cancer Evaluation in Adults

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Introduction

Unintentional weight loss (UWL), which is defined as at least 5% or more loss of body weight in a 6–12-month period. In the adult and older adult population has an annual incidence rate of about 13%. There are several different causes of UWL including sociologic, psychologic, and physiologic causes, and a readily available cause is not determined in 6-28% of cases. Far too often weight loss is associated as a normal part of aging. A complete and thorough work up in these cases is extremely important as it increases the rate of morbidity and mortality.

Case Description

A 63-years-old male presented to our clinic for general follow-up for chronic medical conditions, including hypertension, type 2 diabetes mellitus, and joint pains. After reviewing the chronic problems, he reported unintentional weight loss of over 20 pounds in the past 9 months. Patient denied changes in appetite or taste, dark stools, or shortness of breath. At this time, a colonoscopy, low dose CT lung (patient was a smoker), and basic lab work including CBC, CMP, and TSH were ordered. His CMP and TSH were both normal. However, his CBC revealed a WBC of 58 cells/µL. A repeat CBC, blood smear, and urgent referral to hematology/oncology were ordered. Patient had CBC and blood smear performed 4 days later which revealed a WBC of 69 cells/µL and blood smear showed likely malignancy. A subsequent bone marrow biopsy revealed a diagnosis of Primary myelofibrosis MF 1, with a 5-year survival rate of 29%.

Discussion

The cause of the patient's UWL is malignancy, which accounts for 19-36% of UWL cases. Weight loss is a common symptom of malignancy, occurring in 31-87% of cases. Ruling out malignancy in the case of UWL will look different for each patient, which will include taking a detailed history and physical exam. In this patient's case, a colonoscopy and low dose CT scan were ordered because of his history, including active cigarette smoker. It is also important to investigate other causes of UWL including pharmacologic factors, cognitive or mental health issues, endocrine disorders, and more. Studies show that when the initial evaluation is inconclusive, further work up is required within 6-28 months. Identifying and addressing the causes of UWL is a vital responsibility of any physician.

Internal Medicine

Abstract #14 A Hole World of Trouble: Peritoneal Dialysis Involving a Pleuroperitoneal Defect

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Introduction

Peritoneal dialysis utilizes the peritoneum to exchange fluid and waste products for those with end stage kidney disease. However, 1.6% of peritoneal dialysis patients can develop hydrothorax with the vast majority (88%) being right-sided. While this is a rare complication of peritoneal dialysis, a pleuroperitoneal communication is anticipated in patients with recurrent pleural effusion coinciding with the beginning of peritoneal dialysis therapy and is detectable using a variety of measures.

Case Description

The patient is a 42-year-old female with a history including end stage kidney disease on peritoneal dialysis, failed kidney transplant on immunosuppressive medications, and hypertension, who presented to the emergency department for worsening shortness of breath. On chest x-ray, she was found to have a right-sided pleural effusion. A thoracentesis was performed removing 1700 mL of fluid, and she was discharged. She returned to the emergency department a couple of days later with the same symptoms. Another thoracentesis was performed removing 1600 mL of fluid. The glucose levels in both pleural effusions were 394 and 488 respectively, while the corresponding serum glucose levels were 116 and 110. The patient had been on hemodialysis until just a couple months prior when she began peritoneal dialysis treatment. The glucose levels of the pleural effusions suggested the pleural effusion consisted of dialysate. A CT peritoneography study demonstrated a peritoneal defect was allowing peritoneal dialysate to enter the pleural space. The patient already had an AV fistula that was patent, so hemodialysis was reinitiated. Pleural fluid studies were negative for peritonitis. Up to the present date, the patient has not had the peritoneal defect repaired and has remained on hemodialysis.

Discussion

The increased intraperitoneal pressures caused by peritoneal dialysis can take advantage of an already present diaphragmic defect to force dialysate into the pleural space precipitating a hydrothorax, which commonly presents with shortness of breath as the lung is unable to fully expand. A chest x-ray can detect the hydrothorax, and a thoracentesis can be performed to extract the pleural fluid for analysis. This case is a reminder that patients on peritoneal dialysis are best served by keeping pleuroperitoneal defects high on the list of differential diagnoses to be ruled out in the event they experience recurrent pleural effusion.

Abstract #49 A Case of Arginine Vasopressin Deficiency Following Whole Brain Radiation and Immunotherapy

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Introduction
Arginine vasopressin deficiency (AVP-D), formerly known as central diabetes insipidus (CDI), is characterized by reduced secretion of antidiuretic hormone (ADH), resulting in hypotonic polyuria and hypernatremia. AVP-D commonly arises from hypothalamic-pituitary axis disruptions, including tumors, trauma, or surgical interventions. This report presents a case of AVP-D in a patient with urothelial carcinoma and brain metastases, likely secondary to recent whole-brain radiation (WBR) therapy. Immune checkpoint inhibitors (ICI), another potential contributor, are also considered.

Case Description
A 66-year-old male with urothelial cancer and metastases to the bone, liver, and brain presented with generalized and bilateral lower extremity weakness. One week prior, he had completed a month long WBR for metastases involving the dura and tentorium, with no evidence of hypothalamic or pituitary involvement. He had also received immunotherapy (Padcev) one year earlier. During hospitalization, hypernatremia (152 mmol/L) was noted on day three, accompanied by profound polyuria. Insufficient fluid intake and sodium overload were ruled out. Laboratory workup revealed low urine osmolality (130 mOsm/kg), high serum osmolality (330 mOsm/kg), and a urine output exceeding 5 liters per day. A water deprivation test showed no improvement in serum sodium, consistent with AVP-D rather than ADH resistance. The patient was started on desmopressin therapy, resulting in increased urine osmolality and decreased serum sodium levels, confirming AVP-D. He was discharged with nightly desmopressin and scheduled for outpatient nephrology follow-up.

Discussion
WBR is a rare but recognized cause of AVP-D, particularly in oncology patients. High-dose radiation can induce inflammation, ischemia, or fibrosis, impairing ADH production and leading to AVP-D. In this patient, the acute onset of symptoms after completing one month of high dose WBR implicates radiation as the primary cause. ICIs, which are associated with immune-related endocrinopathies, may also play a role in AVP-D. Although the patient's last ICI dose was over a year ago, these agents can cause delayed endocrine effects, potentially contributing to hypothalamic-pituitary dysfunction. This case underscores the importance of recognizing WBR and ICIs as potential etiologies of AVP-D, particularly in oncology patients, to ensure timely diagnosis and management.

Abstract #54 Breaking the Silence: HSV Encephalitis Presenting as Mutism

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Introduction

Various subtypes of encephalitis, such as NMDA encephalitis, have been associated with mutism, but literature has rarely reported mutism in HSV encephalitis. The gold standard for establishing the diagnosis of herpes encephalitis is the detection of herpes simplex virus DNA in the cerebrospinal fluid (CSF) by polymerase chain reaction (PCR). We report a case of presumed HSV encephalitis presenting with mutism and stereotypy, where HSV PCR was negative, yet the patient responded positively to IV acyclovir therapy.

Case Description

A 34-year-old female without neurological or psychiatric history presented to the emergency department with acute altered mental status, mutism, and stereotypic arm movements. One day prior, the patient had not exhibited any of these deficits until her husband arrived back home from a haircut and found her in this acute state. She was recently diagnosed with a sinus infection for intermittent headache, dizziness, and cough and had received an intravenous infusion of NSAIDs and B complex vitamins from a Guatemalan pharmacy just 1-2 days prior to hospitalization. After initial evaluation, the patient was empirically started on IV acyclovir for concern of viral encephalitis. EEG revealed focal slowing in the left temporal region followed by brain MRI which revealed edema and cortical thickening in the left temporal lobe. Lumbar puncture revealed mildly elevated protein and mildly decreased glucose, with gram stain revealing many WBCs but no organisms. CSF encephalitis profile revealed elevated West Nile Virus IgG and HSV IgG. Though HSV PCR was negative, HSV encephalitis was diagnosed due to imaging findings and rapid clinical improvement with IV acyclovir. The patient received a 2-week course of IV acyclovir and at time of discharge was fully alert, oriented, and felt close to her baseline.

Discussion

This case highlights the importance for physicians to consider HSV encephalitis even in the setting of atypical presentations. This patient presented with profound stereotypic arm movements and mutism, a rarely reported examination finding in HSV encephalitis. However, HSV encephalitis is associated with a 70% mortality if untreated and any delay in treatment leads to higher morbidity and mortality. Withholding appropriate therapy for concern of inaccurate diagnosis is not worth the risk. CSF HSV PCR has also been associated with a higher false negative rate when drawn early in the disease course. This demonstrates the need to consider the entire clinical picture, including physical examination, EEG findings, and MRI findings in any patient presenting with possible HSV encephalitis.

Abstract #61 Poor Response to Bariatric Surgery in Rai1 Genetic Mutations

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Introduction
The retinoic acid-induced 1 gene (Rai1) is a transcriptional regulator whose loss of function can cause Smith-Magenis Syndrome, an autosomal dominant genetic disorder with symptoms consisting of severe obesity, hyperphagia, hyperlipidemia, and autism phenotypes. Bariatric surgery is the most effective therapy for weight loss in patients with class II and III obesity. Weight loss after bariatric surgery normally occurs rapidly over the first few months post-surgery. However, here we report two cases of patients with mutations in Rai1 with poor weight loss following bariatric surgery.

Case Description
The first patient is a 55-year-old female with class 3 obesity and binge eating disorder who underwent Roux-en-Y gastric bypass surgery for weight loss. She had genetic testing which revealed heterozygous sequence variants in genes PCSK1, MECP2, and Rai1. Her BMI pre-bariatric surgery was 56.7. After her Roux-en-Y, she experienced a quick return of appetite and very slow weight loss with a reduction of BMI to only 53.6 one month after surgery. The patient was re-started on semaglutide and experienced more rapid weight reduction on this medication. The second patient is a 52-year-old female with class 2 obesity who also underwent Roux-en-Y gastric bypass surgery. She received genetic testing that revealed heterozygous sequence variants in genes NTRK2, RPGRIP1L, and Rai1. Her BMI pre-bariatric surgery was 39.58. She reported quick appetite return post-surgery and experienced weight regain after 5 months. Her BMI dropped to 37.97 one-month and 35.74 three months post-surgery. At 5 months post-surgery, she experienced a 2-pound weight regain with BMI increasing to 36.04. At this time, the patient was restarted on semaglutide and had success in improved weight loss on this medication.

Discussion
Disruption of hypothalamic satiety signaling pathways in patients with mutations in Rai1 is thought to be the cause of obesity in these patients. Rai1 directly regulates expression of brain-derived neurotrophic factor, whose deficiency is associated with obesity and hyperphagia. Bariatric surgery remains the most effective treatment for obesity. Rapid weight loss is normally seen within the first few months post Roux-en-Y gastric bypass, and patients have shown ~30% weight reduction at 1-year post-surgery follow-up. To our knowledge, these are the first reported cases of bariatric surgery failure in patients with genetic mutations in Rai1. Further research is needed to understand the lack of response to bariatric surgery in these patients. This also leads to future research in prospectively assessing food noise in post-bariatric surgery patients to monitor surgical success.

Abstract #62 Spontaneous Splenorenal Shunt Presenting as Adrenal Incidentaloma

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Introduction

Splenorenal shunts are a known phenomenon in cirrhotic patients whereby increased portal hypertension leads to angiogenesis and offloading of venous blood flow from the spleen to the liver. This occurs by creation of new vasculature that carries blood from the spleen to the left renal vein. We present a case of a spontaneous splenorenal shunt in a patient which presented as an initial diagnosis of an adrenal mass.

Case Description

The patient is a 49-year-old man with past medical history of psoriatic spondylitis on clobetasol, methotrexate, and certolizumab who presented for emergency department visit follow up. Initially, the patient went to the emergency room for hematuria and a CT abdomen was performed demonstrating an indeterminate 1.8 cm solid nodule in the left adrenal gland and underlying hepatocellular disease and splenomegaly. Dedicated CT adrenal imaging was ordered at this follow up appointment which revealed the adrenal lesion to be a spontaneous splenorenal shunt in which a loop of vein from the shunt overlaid the left adrenal gland and may have been mistaken for a mass on previous imaging. Due to the high incidence of splenorenal shunt in cirrhosis, workup for liver disease was performed and careful history was taken. The patient has no history of excessive alcohol use and no history of IV drug use. He did have a history of hepatitis C exposure via needle stick injury but follow up testing revealed he did not have the virus. Follow up testing for HIV and viral hepatitis were negative and right upper quadrant ultrasound revealed liver steatosis but no evidence of cirrhosis. Patient was advised of the increased risk of encephalopathy with splenorenal shunt, and he confided he had had several episodes in recent history of feeling confused and disoriented. He was advised to go to the hospital should he begin feeling confused or disoriented again. He was also referred to gastroenterology for further evaluation.

Discussion

This case illustrates an important differential for adrenal mass that is not commonly presented. Particularly in patients with thrombocytopenia, portal hypertension, or known-liver disease; splenorenal shunt should be considered as a possible differential for an adrenal mass. This is pertinent not only in ruling out other causes such malignancy, but also because splenorenal shunts can have an impact on patient morbidity and mortality; hepatic encephalopathy is more common in patients with splenorenal shunts and must be considered more cautiously.

Abstract #69 Eosinophilic Granulomatosis with Polyangiitis Masquerading as Myopericarditis

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Introduction

Eosinophilic Granulomatosis with Polyangiitis (EGPA) is a necrotizing vasculitis of small to medium sized vessels that was first described in 1951. Formerly known as Churg-Strauss, it is an anti-neutrophil cytoplasmic antibody (ANCA) vasculitis, alongside granulomatosis with polyangiitis (GPA) and microscopic polyangiitis (MPA). EGPA is distinguished from GPA and MPA by its association with asthma, rhinosinusitis, and peripheral eosinophilia. The prevalence of EGPA has been estimated to be 1 to 3 per 1 million and ANCA is positive in only 30-40% of cases. EGPA most commonly presents in the fourth to sixth decades of life. The prognosis is good, with a 5-year survival of greater than 90%. The variability of symptoms and the potential for multiorgan involvement make diagnosis and treatment challenging. This case illustrates a cardiac presentation in a 24-year-old man.

Case Description

A 24-year-old man with history of asthma and rhinosinusitis presented with chest pain and an elevated troponin I (1.8 ng/L). The pain was worse when supine. He also reported shortness of breath and numbness in his left palm. CT chest showed bilateral pulmonary nodules. Patient was noted to have peripheral eosinophilia. Patient denied recent history of febrile illness, viral infection, or illicit drug use.

Given his age and clinical presentation, we deferred coronary angiography and pursued Cardiac Magnetic Resonance (CMR). CMR revealed subepicardial and pericardial late gadolinium enhancement and elevated T1 values, meeting Lake Louise criteria for myopericarditis. Coronary computed tomography revealed normal coronaries. Patient was started on Ibuprofen and colchicine. Given the patient's history of asthma and sinusitis, and now pulmonary and cardiac involvement, we ordered an ANCA serologic test to further assess for possible EGPA. ANCA serology was found to be negative. Following multidisciplinary discussion, despite negative ANCA serology, patient met 4 of the 6 key features of EGPA and no further testing, including biopsy, was needed. Patient was started on Solu-Medrol 500 mg daily for 3 days and transitioned to prednisone at discharge.

Discussion

In patients presenting with myocarditis, it is important to determine the etiology as this can inform management. This patient met the following criteria for EGPA: asthma, migratory lung infiltrates, mononeuropathy, and peripheral blood eosinophilia. Negative ANCA serology does not exclude EGPA, and in fact this is commonly the case in EGPA patients with cardiac involvement. High-dose corticosteroids followed by a taper is recommended for new-onset cases with asthma. Early treatment provides prompt symptomatic relief and can prevent permanent cardiac dysfunction.

Abstract #75 Unmasking the Culprit: A Rare Case of Chronic Muscle Weakness

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Introduction

We present a case of rare statin-associated immune-mediated myopathy that occurs in just 2-3 in 100,000 statin users. Antibodies against HMGCR cause an autoimmune necrotizing myopathy requiring immunosuppressive therapy with treatment guidelines based on observational studies only. This report demonstrates typical presentation and successful recommended treatment of this disease but further research on its pathophysiology and controlled study of treatment efficacy is needed.

Case Description

A 59-year-old male patient with PMH of Type 2 Diabetes Mellitus (T2DM), hypertension, and hyperlipidemia on atorvastatin for 4 years presented with progressive proximal muscle weakness leading to inability to perform ADLs. Reported gradual progression of symptoms over 1 year. Initial workup included CK 26,957 U/L, AST 363 U/L, ALT 267 U/L, LDH 1,996 U/L, and urinalysis with 3+ blood and 0 RBCs. Notably, creatinine, potassium and phosphorous were within normal limits. Atorvastatin was held and fluids initiated without improvement of symptoms. Acute hepatitis panel, Beta-2-microglobulin, AFP, CA 125, CA 19-9, CEA, HIV, and ANA panels were negative. Muscle biopsy was obtained then 1 mg/kg/d of steroids was initiated, with marked symptom improvement from 2/5 to 5/5 strength in all extremities. HMGCR IgG Ab >200 units and muscle biopsy displaying findings of scattered frequent regenerating and necrotic muscle fibers with limited chronic lymphoid inflammation and increased MHC-1 staining characteristic of HMGCR-related Immune Mediated Necrotizing Myositis (IMNM) confirmed the diagnosis. Steroids were increased to 2 mg/kg/d and 70 mg IVIG initiated. The patient was discharged with outpatient IVIG infusions for 5 months and a prednisone taper.

Discussion

HMGCR-associated IMNM is a myopathy associated with MHC allele DRB1*11:01 and statin use. Speculated to be caused by compliment-mediated destruction secondary to upregulation of HMGCR and its antibody, biopsy is characterized by regenerating and necrotic muscle fibers, increased MHC1 and MAC sarcolemmal staining, and limited chronic lymphoid inflammation. T2DM may be associated with increased susceptibility, particularly in the setting of atorvastatin use. Classic presentation includes proximal muscle weakness with frequent truncal involvement and absence of extra-muscular symptoms. Treatment begins with statin discontinuation and may include IVIG, steroids, methotrexate, rituximab, azathioprine, or mycophenolate mofetil to achieve remission. IVIG is most effective, even as monotherapy or in refractory disease. Current recommendations are based on observational data only; controlled trials are needed to assess efficacy of treatments. One such ALKIVA study is an ongoing Phase 2/3 randomized placebo-controlled trial assessing response of IMNM, dermatomyositis, and anti-synthetase syndrome to treatment with efgartigimod SC in 240 patients.

Abstract #76 Management and Patient Education of Alpha-Gal Syndrome and Type II Diabetes

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Introduction

Alpha-gal syndrome (AGS) is an allergy to red meat and other mammalian products resulting from sensitization to galactose-α-1,3-galactose through tick bites and treated by elimination of these products from the diet. Due to its delayed onset and rarity, AGS can be challenging to recognize. In comparison, type II diabetes is more common, well studied, and has thorough treatment guidelines. Both conditions pose challenges for patients in understanding and adapting to their diagnoses. This highlights the importance of patient education in managing both common and rare diseases.

Case Description

A 71-year-old female presented to the ER for a pruritic rash that began the night before, hours after eating a hamburger. By morning, the rash had worsened, and she had developed swelling around her face and eyes. She also reported increased thirst and a carb-heavy diet. On examination, her eyes were swollen shut, and an urticarial rash was noted on her back, face, and legs. Labs showed hyperglycemia and electrolyte derangement with a blood glucose of 469 mg/dL, sodium 131 mmol/L, magnesium 1.6 mg/dL, and potassium 3.5 mmol/L, without acidosis. She had an elevated white blood cell count of 12.9 K/cmm, and her HbA1c was >14%. She was admitted for management and tested negative for tick-borne disease, but alpha-gal IgE was elevated at 99.9 kUA/L. The diagnosis of type II diabetes was made, and urticaria and angioedema were attributed to AGS based on her positive IgE. Fluids, insulin, and electrolytes were administered, and her rash and swelling improved with antihistamines. The patient was educated on avoiding red meats, provided an epinephrine auto-injector, and started on a mixed insulin regimen and metformin. Diabetes education, including diet and insulin regimen, was provided, and primary care follow-up was arranged.

Discussion

This patient faces significant challenges in managing unfamiliar diagnoses. She needs patient education that goes beyond checking a box to include various teaching methodologies based on her learning style. It is important not to assume that concepts such as proper diet in managing diabetes or the risks of medication non-adherence, are universally known. Given this patient's limited prior knowledge, repeated assessment of her understanding was crucial to ensuring she could make informed decisions and manage her new medications and dietary restrictions. This case emphasizes the need for thorough, customized patient education and assessment of health literacy to support successful disease management.

Abstract #77 Pramlintide and Tirzepatide Combination Therapy for Increased Weight Loss in Diabetes and ESRD: A Bridge to Transplant

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Introduction

End stage renal disease remains one of the highest mortality pathologies in America. While renal transplant is curative, 10% of adults have severe obesity (BMI >40) which precludes transplantation evaluation. Tirzepatide is a GIP/GLP-1 receptor agonist approved for diabetes (T2DM) that has shown to decrease total body weight by 14.8% after 72 weeks (in patients with diabetes). Pramlintide, an amlyin analog, is an approved therapy for patients with T2DM and has been shown to produce 6-7% TBW in obesity. To date, no studies have examined combining tirzepatide with pramlinitide for diabetes and obesity. Here we present a patient who lost further weight by combining therapies.

Case Description

A patient was referred to a multidisciplinary bariatric program for obesity treatment to be evaluated for renal transplant. Patient BMI at baseline was 54 and needed to be 38 to be considered for transplant. Diabetes regimen was 540 units of regular insulin daily. Patient was started on tirzepatide for diabetes and titrated to maximum dose. After reaching a weight plateau, patient was then started on pramlintide.

Discussion

Patient was treated for 20 months with tirzepatide and lifestyle changes and lost 25.1% TBW, achieving a BMI of 40. However, patient reached a plateau and was unable to lose additional weight, despite maximal lifestyle changes. Pramlinitide therapy was initiated at a low dose of 60mg BID, triggering an additional TBW reduction of 2.6% over 8 weeks. Dose was gradually titrated to 240mg daily and weight loss continued without plateau. Patient also decreased their total daily requirement insulin dose to 110 units. Patient has lost 27.6% TBW without plateau and has begun renal transplant evaluation. In conclusion, combining tirzepatide with existing amlylin analog pramlinitide may provide additional benefits for patients with diabetes and obesity. Further studies warrant examining this relationship to explore new avenues of treatment in such cases.

Abstract #78 Immediate Return of Hunger after Bariatric Surgery Associated with PHIP Variant

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Introduction

The rising prevalence of obesity and related comorbidities has spurred research into its genetic basis. This research aims to identify factors contributing to an individual's susceptibility to developing the disease and predict the response to emerging and well-established therapeutic options, such as metabolic bariatric surgery (MBS). One of the most significant changes patients experience after MBS is a shift in their hunger levels. In the short term, many individuals report a substantial reduction in appetite, led by intricate hormonal and neural pathways that are altered with surgery to improve energy homeostasis. A recent review by van der Meer et al. calls attention to the insufficient evidence to support the involvement of genetic variants in short-term outcomes after bariatric surgery, suggesting the need for more studies identifying carriers of gene variants that could potentially predict suboptimal short-term responses to MBS.

Case Description

A 48-year-old female with class 3 obesity due to mc4 pathway disruption, and type II diabetes mellitus with long term use of insulin, was treated with laparoscopic sleeve gastrectomy for weight control. The patient experienced significant hunger soon after surgery, necessitating an adjustment to a higher dose of a GLP-1 agonist only 4 weeks following the procedure. The patient was found to have the PHIP gene variant on monogenic obesity genetic panel testing.

Discussion

The failure of metabolic bariatric surgery is multifactorial and depends on the definition used. Proposed definitions include insufficient weight loss, weight regain, and/or failure of remission of comorbidities. While some case series have highlighted rare genetic mutations associated with limited long-term benefits of the surgery——very few cases of pronounced short-term failures have been reported. Understanding the causes of insufficient hunger suppression after bariatric surgery is key to improving patient outcomes. Meta-analyses have shown that postprandial GLP-1 levels increase with MBS, without a similar effect on fasting GLP-1 levels. Failure of appetite suppression shortly after surgery may be partly attributed to this phenomenon, thereby supporting the adjunctive use of GLP-1 agonists to replenish basal levels and improve hunger control as hypothesized in a review article by Nursel Çalık Başaran et al. More research is needed to link these findings to specific genetic variants. This clinical vignette describes a rare immediate response to metabolic bariatric surgery in a patient with the PHIP gene variant, contributing to the identification of genetic patterns that could eventually be used to tailor therapy for patients in the future.

Abstract #80 Unexplained Weight Gain in a Patient Treated with Valbenazine

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Introduction

Valbenazine (Ingrezza) is a vesicular monoamine transporter-2 (VMAT2) inhibitor approved for the treatment of tardive dyskinesia (TD). While common side effects include sedation and dry mouth, weight gain has not been recognized as an adverse effect. We present a case of significant weight gain in a patient with a history of Roux-en-Y gastric bypass following the initiation of valbenazine therapy.

Case Description

A 56-year-old female with a history of Roux-en-Y gastric bypass (2008), unspecified mood disorder, psychosis, anxiety, depression, and complex regional pain syndrome developed TD secondary to long-term antipsychotic use, including haloperidol (2020–2022). Valbenazine was initiated in August 2023 for TD. At the time of initiation, the patient's weight was 75.9 kg, consistent with her long-standing post-bariatric surgery baseline (~73 kg). Over 17 months of therapy, her weight progressively increased to 86.2 kg (total gain: 10.3 kg). She denied significant dietary or lifestyle changes, and comprehensive workup—including thyroid function, HbA1c, cortisol levels, and lipid panel—was unremarkable. An esophagogastroduodenoscopy in September 2024 confirmed a healthy Roux-en-Y gastrojejunostomy without anatomical abnormalities. Given the temporal relationship, weight gain was attributed to valbenazine, as no alternative explanations were identified. Lifestyle interventions were initiated, and discontinuation of valbenazine was discussed. However, given significant improvement in TD symptoms, the patient chose to continue the medication despite the weight gain. Ongoing follow-up is planned to monitor weight and metabolic health.

Discussion

This case highlights weight gain as a potential underrecognized side effect of valbenazine. VMAT2 inhibition may alter hypothalamic regulation of appetite or metabolism, though the exact mechanism remains unclear. The patient's history of gastric bypass underscores the significance of this finding, as her weight had been stable for over 15 years. Clinicians should monitor for weight changes in patients on valbenazine, particularly those with predisposing factors for metabolic complications. Weight gain may represent an undocumented adverse effect of valbenazine. Further studies are warranted to elucidate its metabolic effects and guide clinical management.

Abstract #81 Severe Iron Deficiency Anemia Due to Hookworm and Ascaris Infection in a 27-Year-Old Male

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Introduction
Iron deficiency anemia (IDA) is a common condition worldwide, often resulting from chronic blood loss, malnutrition, or gastrointestinal malabsorption. Parasitic infections, particularly hookworm infections, are recognized as a significant cause of IDA, especially in developing regions. This case report discusses the clinical presentation, diagnosis, and treatment of a patient with severe IDA caused by hookworm and possible Ascaris infection.

Case Description
A 27-year-old Hispanic male with no significant past medical history, who immigrated to the United States eight months ago from Mexico and presented with complaints of progressive malaise and headaches over a five-month period. Initial laboratory investigations revealed a critically low hemoglobin level of 4.5 g/dL, which improved to 7.7 g/dL following transfusion with two units of packed red blood cells (PRBCs). The patient reported chronic use of ibuprofen but denied any overt gastrointestinal bleeding, melena, or hematochezia. A gastrointestinal workup, including esophagogastroduodenoscopy (EGD) and colonoscopy, was performed to identify the source of anemia. EGD revealed LA Grade B reflux esophagitis, mild non-erosive gastritis, and multiple live hookworms in the duodenum. Colonoscopy findings included suspected Ascaris lumbricoides in the cecum, with the rest of the colonic mucosa appearing normal. The patient was treated with albendazole for the parasitic infections and iron supplementation to address the iron deficiency. A follow-up plan was established to monitor for the resolution of the anemia and to ensure eradication of the parasitic infections. On follow-up, there was an improvement in the patient's symptoms and hemoglobin levels, confirming the effective treatment of the underlying cause of anemia.

Discussion
This case underscores the importance of considering parasitic infections such as hookworm and Ascaris as potential etiologies in patients presenting with severe iron deficiency anemia, particularly in those from or traveling to endemic regions. A thorough clinical history, appropriate use of endoscopic investigations, and timely initiation of targeted therapy are crucial for achieving favorable outcomes. This case also highlights the broader public health implications of parasitic infections as a cause of anemia worldwide and the need for increased awareness and preventive strategies.

Abstract #88 The Pitfalls of "Cardiac Clearance" – A STEMI During Surgery

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Introduction

Cardiac risk stratification is one of the most common reasons to consult a cardiologist, which can range from evaluating functional status with metabolic equivalents, non-invasive testing like stress testing, coronary CT angiography, to invasive coronary angiography. Pre-test probability, symptoms, sensitivity/specificity of testing in addition to risk of coronary angiography are all important factors to consider when choosing a test.

Case Description

A 60-year-old man undergoes femoral bypass surgery. After the patient was given protamine at the end of surgery, anesthesia notices tombstone appearance on telemetry then PEA cardiac arrest. Cardiology is called to the operating room and diagnostic left heart catherization is performed during CPR, which showed left main thrombotic 90% stenosis, left anterior descending 100% occlusion, mid-diagonal in-stent restenosis, proximal LAD with 90% thrombus, and circumflex 80% ostial disease. Cardiology performed ballon angioplasty on these arteries. CPR was done for over an hour with return of spontaneous circulation. Impella device was placed, patient was taken to cath lab. He had stents placed in the above arteries, Impella was removed. The patient was seen by cardiology 3 days prior to surgery for cardiac risk stratification and had normal chemical stress myocardial perfusion and normal ejection fraction on echocardiogram, no wall motion abnormalities. Balanced ischemia on stress test was suspected, and due to severe claudication from peripheral artery disease, he never exerted himself enough for anginal symptoms. The patient remained intubated in the ICU, developed small subdural and subarachnoid hematomas, DAPT was continued per neurosurgery recommendations. The patient was discharged home 5 days post-arrest with no neurological deficit.

Discussion

The decision to resort to invasive coronary angiography for pre-operative risk stratification is difficult, especially in this patient who was evaluated by cardiology so close to surgery date. This patient's absence of symptoms made a decision that would postpone surgery seem superfluous, so MPS was obtained to help guide decision-making. The patient was not a candidate for coronary CTA due to his history of previous percutaneous intervention. This case is an example of the pitfalls of cardiac risk stratification and the importance of understanding the sensitivity and specificity of cardiac testing. Nucler stress testing has ~86% sensitivity, 74% specificity, making false negative rate ~15%, so it is important to remember that in a patient such as this one with a higher pre-test probability (known severe PAD, history of CAD/remote PCI, smoking), balanced ischemia is a condition that can cause false normal stress testing.

Abstract #101 Idiopathic Intracranial Hypertension Disguised as Multiple Sclerosis

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Introduction
Multiple sclerosis (MS) and Idiopathic Intracranial Hypertension (IIH) can both be difficult diagnoses to identify and confirm. IIH can present with similar symptoms to MS and should be considered if the diagnostic workup does not meet the McDonald criteria for MS (i.e., objective evidence of attacks over time and central nervous system lesions). We present a case admitted by Neurology to a hospital medicine service for an expedited workup of suspected MS. We aim to (1) briefly review the diagnostic criteria for each condition, and (2) highlight disambiguating features.

Case Description
A 28-year-old woman with a medical history of presumed MS, epilepsy, an implanted vagus nerve stimulator, migraines, and class I obesity was admitted to the hospital for bilateral lower extremity weakness and blurry vision in the left eye. Her outpatient neurologist recommended admission due to concerns about an acute MS exacerbation and the need for an expedited workup. Although the patient was suspected to have MS, confirmatory imaging had never been conducted because of presumed incompatibility between the MRI and the vagus nerve stimulator. The University of Oklahoma Internal Medicine teaching service admitted the patient and consulted Neurology to assist with the workup. Given compatibility issues with the implanted vagus nerve stimulator, the team obtained MRI studies of the brain and orbits, but not the spine. Imaging showed nonspecific punctate foci of T2/FLAIR hyperintensities but did not show specific evidence of demyelinating disease or optic nerve inflammation. Lumbar puncture (LP) did not show oligoclonal bands suggestive of MS, but the opening pressure was 31 cm H2O (upper limit of normal 25 cm H2O). The patient will follow up with outpatient neurology and monitor for symptoms or imaging changes that may meet diagnostic criteria for MS. The pattern of symptoms and significantly elevated opening pressure on LP made IIH a possibility. The patient was started empirically on acetazolamide.

Discussion
This case presents a difficult diagnosis due to overlapping symptoms between MS and IIH, complicated by anchoring bias from a presumptive diagnosis. Clinicians should consider MS mimics like IIH in their differential and should know disambiguating history, exam, and test characteristics.

Abstract #102 There's No Lyme in Oklahoma!

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Introduction
Zoonotic diseases such as tick-borne illness are an infrequent but important cause of severe infection and hospitalization. Multiple tick-borne illnesses can be contracted via a single tick bite when the pathogens share a common vector. Diagnosis of Lyme Disease (B. burgdorferi) is difficult; consideration of pre-test probability and a two-tiered testing approach is recommended in which positive or equivocal enzyme-linked immunoassay (EIA) results are followed by confirmatory Western Blot (WB) analysis.

Case Description
A previously healthy 51-year-old man presented to an Oklahoma Emergency Department in November for 2 weeks of progressive malaise with new-onset fever. He was encephalopathic, febrile (103.3F), and quickly decompensated to septic shock requiring vasopressor support. Broad-spectrum antibiotic therapy with intravenous ceftriaxone and vancomycin. Blood and urine cultures would return negative. Chest CT ruled out bacterial pneumonia and a respiratory swab was negative for viruses and atypical bacteria. Repeat physical exam on hospital day 2 noted persistent high fever and mottling of lower extremities consistent with livedo reticularis. Workup was expanded to include additional infectious and inflammatory processes. Hepatitis and HIV panels would return negative. Auto-immune panel and ANCA evaluation ruled out autoimmune process and vasculitis. Multiple inflammatory markers were significantly elevated, including D-Dimer >10,000, ESR 79, CRP 33, and Ferritin >3,000. Additional imaging ruled out blood clots in the lungs and extremities as a cause for the D-Dimer elevation. Ultimately, serology was positive for E. chaffeensis 1:640 IgM antibody and 1:1024 IgG antibody, consistent with acute Ehrlichiosis infection. Anti-Borrelia antibody testing was equivocal; reflex WB was positive for B. burgdorferi IgM and negative for B. burgdorferi IgG. Upon further questioning, the patient reported a tick bite while working outdoors 1 month prior to admission and noted no travel outside Oklahoma within the past year. He was transitioned to oral doxycycline therapy and was ultimately discharged home.

Discussion
When presenting with nonspecific symptoms, tick-borne disease can be a diagnostic challenge, requiring a high index of suspicion. E. chaffeensis and B. burgdorferi co-infection is possible via co-transmission from the Ixodes tick. While Erlichiosis is endemic to Oklahoma, Lyme is exceedingly rare with only a handful of confirmed cases each year. Due to high specificity of two-tier Lyme testing and acute symptoms <2 weeks duration, this case is believed to represent an acute Ehrlichiosis and Lyme co-infection in the state of Oklahoma. In the absence of known erythema migrans, E. chaffeensis was likely the primary driver of disease.

Abstract #103 Type 3c Diabetes Presenting with Diabetic Ketoacidosis

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Introduction

Type 3c diabetes, otherwise known as pancreatogenic diabetes, is a type of diabetes that develops in people with chronic pancreatitis. In this disease there is chronic inflammation that leads to cellular destruction of both alpha and beta cell dysfunction concurrently. Diabetic ketoacidosis (DKA) rarely complicates Type 3c, as along with insulin deficiency, these patients also have a concomitant deficiency of glucagon. The disease is most commonly misdiagnosed as type 2 diabetes mellitus and may be overlooked.

Case Description

A 40-year-old transgender thin appearing female with T2DM, history of pancreatic stones, chronic pancreatitis s/p pancreatic stenting, and gastric sleeve presented for evaluation of nausea, vomiting, diarrhea, and left sided abdominal pain. Found to have E. coli bacteremia secondary to UTI and in DKA (BHB of 2.8 mmol/L, glucose of 454 mg/dL, ketonuria, and metabolic acidosis with an anion gap of 18 mmol/L and bicarb of 17 mmol/L). Her A1C was >14%. Approximately 6 months prior she received pancreatic stenting and gastric sleeve and during hospitalization was also diagnosed with T2DM. Previously had not had DKA and states that she was told she did not need any medications to treat her diabetes. Patient's glucose levels during hospitalization were highly sensitive to insulin, requiring quick transition from drip to subcutaneous insulin. It was elected to start patient on 3 units of long acting. However, this too was held due to hypoglycemic event of 56 requiring D10 at 50 mL/h for patient to recover. Due to history, insulin sensitivity, and a c-peptide of 0.1 ng/mL, her diagnosis of T2DM was questioned. To elucidate the right diagnosis an autoimmune workup was initiated of which were negative including glutamic acid decarboxylase, IgG islet cell antibody, insulin antibody, and zinc transporter 8 antibody.

Discussion

In this patient the major hormones involved in lipolysis and ketone body production would be catecholamines, cortisol, and growth hormone. Catecholamines can stimulate lipolysis and fatty acid production even in the presence of insulin and exert a prominent effect on adipose tissue, specifically in events of high stress. Since the production of insulin and glucagon are impaired, the other catabolic hormones mentioned above are the key contributors to the process of ketogenesis. Especially in the event of acute stress, catecholamines might be the dominant hormone involved in lipolysis and ketone body production. DKA may be the first manifestation of this pathology, and if not properly evaluated, the diagnosis of type 3c diabetes can be missed.

Abstract #104 Non-Calcified Pleural Plaques as a Presentation for Extramedullary Disease in Multiple Myeloma

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Introduction

Multiple myeloma is a condition characterized by abnormal proliferation of plasma cells in the bone marrow. In rare cases, multiple myeloma can proliferate in areas outside the bone marrow. This occurs through direct growth from skeletal tumors following cortical disruption and hematogenous spread to other organs. This is known as extramedullary disease.

Case Description

A 61-year-old male re-presents to the ED for chest pain radiating to his back. Three weeks ago, the patient presented for similar symptoms. Work up at that time revealed anemia, thrombocytopenia, and a CT scan with several areas of non-calcified pleural plaques. In addition to the continuance of pain, patient was also complaining of generalized debilitating weakness. At this visit, chest radiograph revealed bilateral pleural effusions and labs were significant for anemia and hypercalcemia. Patient was admitted and underwent thoracentesis with fluid studies initially indicating an exudative process. An MRI of the chest was ordered several days later due to concern for lung cancer. This showed diffuse, homogenous, low bone marrow signal with multiple associated paravertebral soft tissue masses concerning for myeloma and a thoracic mass. Soft tissue masses extended into the spinal canal from T2 to T6. Weakness at this point was thought to be due to spinal cord compression. Neurosurgery was consulted for decompression of the thoracic spine. Myeloma work up was started and revealed kappa chains at 11.98 mg/L and lambda light chains 13,352 mg/L. Pleural studies returned revealing atypical plasma cells concerning for plasma cell neoplasm and the thoracic mass was biopsied showing a plasmablastic neoplasm. Given these findings, the patient underwent a bone marrow biopsy showing plasma cells accounting for nearly 100% of marrow cellularity diagnosing multiple myeloma with extramedullary disease.

Discussion

This case illustrates the importance of recognizing extramedullary manifestations of multiple myeloma. Extramedullary disease manifests as plasmacytomas commonly found in skin and soft tissue but they can involve many sites such as the pleura in this case. It is worth keeping extramedullary multiple myeloma on your differential, in the right clinical context, when you have pathology involving these areas. Early identification of extramedullary multiple myeloma is paramount due to its rapidly progressive nature.

Abstract #105 A Rare Entity: Medullary Carcinoma of the Colon

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Introduction

Medullary colon cancer (MCC) is an extremely rare subtype of colorectal cancer (CRC), accounting for less than 3% of all colon cancer. It is distinguished by its undifferentiated histology and is more frequently associated with microsatellite instability. It commonly arises in the proximal colon and is more prevalent in older individuals, particularly females over the age of 65. It has a more favorable prognosis compared to poorly differentiated adenocarcinoma. It is often very challenging to diagnose MCC due to its rarity and overlap with other poorly differentiated cancers. This case details a male patient with no family history of gastroenterological malignancies, requiring repeat biopsies to diagnose Stage III MCC.

Case Description

An 83-year-old male with a history of coronary artery bypass grafting and deep vein thrombosis, maintained on aspirin, clopidogrel, and warfarin, presented with abdominal pain, hematochezia, a 10-pound weight loss. His anemia, with a hemoglobin level of 8 g/dL, was initially attributed to the effects of triple antithrombotic therapy. A colonoscopy revealed a partially obstructing colonic mass in the hepatic flexure with a malignant appearance. However, initial histopathological evaluation identified the lesion as a mucosal prolapse polyp with lymphoid follicle formation and focal surface erosion. Due to the high suspicion of malignancy based on endoscopic findings, a repeat colonoscopy was performed to obtain additional tissue samples, which subsequently confirmed the diagnosis of medullary adenocarcinoma.

Discussion

The incidence of MC is estimated to be 0.027% of all colorectal carcinomas and is rarely metastatic. Our patient, an older male did not fit the typical demographic profile of this disease, which is more common in females with genetic predisposition. MC lacks definitive diagnostic criteria, with variable histopathological and immunohistochemical findings. The tumor exhibited typical MC markers (CK AE1/AE3, BerEp4, calretinin) but lacked intestinal differentiation markers (CDX2, CDX20). Preoperative histology was nonspecific, showing poorly differentiated malignant cells, and a definite diagnosis was only achieved after a repeat colonoscopy with ample tissue sampling. Immunohistochemistry confirmed MLH-1 and PMS-2 loss, indicating defective mismatch repair (dMMR). Positive MLH1 promoter methylation ruled out Lynch syndrome, confirming a sporadic etiology. Since dMMR tumors do not respond to fluorouracil-based chemotherapy, this influenced treatment decisions. MC differs from conventional adenocarcinoma in presentation, immunoprofile, and management. While its prognosis is generally favorable due to low metastatic potential, further studies are needed to define diagnostic and prognostic criteria for metastatic cases.

Abstract #106 Severe Hypercalcemia Leading to ARDS in the Setting of Ectopic Parathyroid Hormone Secretion

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Introduction

Hypercalcemia is a common cause of hospital admission, and is often a result of dehydration, medications, malignancy, or over-production of parathyroid hormone. The definitive treatment for symptomatic patients with hypercalcemia related to overactive parathyroid gland(s) is surgical removal. Ectopic (or misplaced) parathyroid glands are a result of abnormal migration of the gland during fetal development, and occur in approximately 2-43% of individuals, with an incidence around ~16% in individuals with overactive parathyroid. In the setting of hyperparathyroidism, ectopic parathyroid glands pose a unique diagnostic and therapeutic challenge.

Case Description

A previously healthy 63-year-old man presented for evaluation of sciatic nerve pain and fatigue, incidentally, found to have severe hypercalcemia (17.4 mg/dL) with acute renal failure. Hypercalcemia was found to be parathyroid-mediated with PTH >2000 pg/mL; Sestamibi scan did not show evidence of localized parathyroid adenoma. Patient's hypercalcemia and renal failure were refractor medical therapy, so hemodialysis was initiated. He was discharged home on hemodialysis with plans for outpatient follow-up with otorhinolaryngology for exploratory neck surgery. Unfortunately, his clinical status declined, and he was re-admitted for severe fatigue and dehydration, with worsening hypercalcemia despite compliance with hemodialysis and medications. Daily hemodialysis with low calcium bath was initiated; however new-onset hypoxic respiratory failure developed without evidence of infection or volume overload. ENT performed extensive neck dissection with intraoperative PTH monitoring; only three of the four parathyroid glands were able to be localized and excised. The source lesion was not identified, with PTH postoperatively remaining elevated >1600 pg/mL. Patient ultimately developed acute respiratory distress syndrome and refractory shock, requiring mechanical intubation. He was transitioned to comfort-measures per family request and compassionately extubated prior to expiring.

Discussion

Severe hypercalcemia is an uncommon but important cause of acute respiratory distress syndrome, resulting from the preferential deposition of calcium in lung tissue. Prognosis depends on early diagnosis and treatment of underlying hypercalcemia, which can be particularly difficult in the setting of an ectopic parathyroid adenoma. Inferior ectopic glands are most commonly intrathymic (62%) or anterosuperior mediastinal (30%). The most sensitive imaging for localizing ectopic parathyroid adenomas is a multiphase 4DCT. With a sensitivity between 79-91%, it is highly efficacious particularly for preoperative localization. Unfortunately, access to this imaging modality is typically only available at quaternary care and large academic medical centers. We recommend early referral to a 4DCT-capable medical center if the culprit lesion is not visualized on initial imaging.

Obstetrics and Gynecology

Abstract #39 HIV/AIDs in Pregnancy with Atypical Pneumonia secondary to Aspergillosis and Histoplasmosis

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Introduction

Aspergillus and Histoplasma are pathogenic fungi transmitted through inhalation. Immunocompromised individuals, including those with HIV/AIDs, are at higher risk of developing invasive fungal infections, which are associated with increased morbidity and mortality. These infections often require hospitalization for antifungal therapy, but treatment can be particularly challenging in certain groups, such as pregnant individuals. Additionally, due to the success of current HIV treatments, these opportunistic infections are now rarely seen by clinicians, which may be especially problematic in areas without access to subspecialist care.

Case Description

A 27-year-old G1P0 presented to the OB emergency room after suicide attempt. During evaluation, she was found to have a fever in the setting of a respiratory infection and untreated HIV. She was admitted to the antepartum service for psychiatric consultation and further evaluation. Due to medication noncompliance, she had developed AIDs. An Infectious Disease specialist was consulted. She started antiretroviral therapy, antibiotics for pneumocystis prophylaxis, and empiric antibiotic treatment of her respiratory infection. Despite antibiotic treatment, she developed pneumonia with sepsis and was admitted to the ICU. A comprehensive work-up led to a diagnosis of fungal pneumonia secondary to aspergillosis and histoplasmosis. Initial treatment for the fungal infections was voriconazole. However, due to fetal toxicity risks associated with voriconazole, her regimen was changed to amphotericin B, which was found to not pose risks to pregnancy. The patient improved and was discharged from the ICU to the antepartum service. She delivered via cesarean section at 36 weeks due to Maternal Fetal Medicine recommendations, and the infant was admitted to the NICU.

Discussion

In 2016, approximately 6,000 people live with HIV/AIDs in Oklahoma. Of those, an estimated 2,700 have AIDS. Pregnant individuals with HIV/AIDs were not reported. Comprehensive guidelines exist for evaluation and management of people with HIV/AIDs in pregnancy. On review, limited research exists of pregnancies complicated by invasive fungal infections, especially in the setting of HIV/AIDs. Additionally, our patient had a co-infection of Aspergillosis and Histoplasmosis. Antifungal therapy is complicated in pregnancy due to teratogenic effects. Due to the complex nature of this patient, utilization of a multidisciplinary team was necessary for her care. Consultation with Maternal Fetal Medicine, Infectious Disease, and Pharmacy was invaluable in this case and allowed for risk-benefit discussions to determine the best treatment, which led to our use of amphotericin B.

Abstract #50 A Cesarean Section Scar Ectopic Pregnancy Found to be a Partial Mole

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Introduction

An ectopic pregnancy is a life-threatening condition that requires prompt action to prevent maternal morbidity and mortality. Cesarean scar pregnancies are rare among ectopic pregnancies and demand close attention to ultrasound findings because they can resemble normal intrauterine pregnancies. Molar pregnancies, classified as complete or partial moles, are rare, non-viable gestations that form from the abnormal proliferation of trophoblasts and account for less than 1% of all pregnancies. Molar pregnancies are dangerous because they have the potential to advance to malignancy even with adequate treatment. It is exceedingly rare to have a molar pregnancy implant ectopically in a cesarean section scar, with only a handful of cases reported in the last two decades; this is one such case.

Case Description

A 27-year-old gravida 4, para 2 female at 7 weeks, 5 days gestation was transferred to our hospital for management of a cesarean scar ectopic pregnancy. She had two prior cesarean sections. Presumptive diagnosis was made when an ultrasound showed a low-lying gestational sac extending into a defect in the anterior uterine wall at the location of a previous C-section scar. Prior to transfer, the patient was experiencing only vaginal spotting and no pain. While in transit to our facility, the patient had developed heavy vaginal bleeding and severe midline abdominal pain. Due to the acute deterioration in condition and concern for uterine scar rupture, she was taken to the OR emergently for an exam under anesthesia (EUA) with possible hysterectomy. During EUA, a significant amount of products of conception passed vaginally. The cesarean scar was explored manually and found to be intact, with no uterine wall defect appreciated. Decision was made in the OR to perform suction dilation and curettage and forego hysterectomy given her clinical stability and reassuring exam findings. The patient did well postoperatively and was discharged on POD#1. Final pathology showed “immature chorionic villi with dimorphic morphology and mild trophoblastic proliferation, favor partial hydatidiform mole.” Subsequently, the patient was recommended to have b-HCG levels monitored until negative.

Discussion

This case demonstrates the importance of considering all management options in the event of a cesarean scar ectopic. It is also considerably novel to have a molar pregnancy in such a location. Our team implemented real-time decision-making skills that prioritized patient safety and mitigated risk associated with additional interventions that became unwarranted in an unexpected way.

Abstract #57 A Case of Rhabdomyolysis with Myositis Following Minimally Invasive Gynecologic Surgery

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Introduction

Rhabdomyolysis is a rare condition characterized by the acute necrosis and breakdown of muscle fibers, leading to the release of intracellular muscle components into the bloodstream. The incidence rate is approximately 0.66 per 100,000 individuals.

Case Description

A 39-year-old female with no significant past medical and past surgical history of cesarean section and tonsillectomy presented to the hospital for a previously scheduled vaginal hysterectomy with bilateral salpingectomy, and anterior and posterior colporrhaphy for uterovaginal prolapse. Her surgery was uneventful without apparent complication, she was in the dorsal lithotomy position for approximately 4.5 hours. She was admitted to the floor for observation overnight and on postoperative day #1 was meeting milestones for discharge, her only complaint was mild edema and tenderness in bilateral hips, though she was able to ambulate without complaint. Her physical exam was benign. She returned to the emergency department on postoperative day #3 for worsening hip pain, back pain, and leg swelling. Physical exam revealed bilateral thigh edema and tenderness. Lab values were significant for creatinine kinase of 22,348, D-dimer of 7,475. Creatinine of 0.59 and BUN of 8. Lactate was 0.5. Her CBC was normal, and CMP revealed transaminitis of 707 and 322 for AST and ALT, respectively, consistent with shock liver. Imaging studies were negative for pulmonary embolism but showed muscle hypoattenuation of lower paraspinal, bilateral gluteal, and bilateral upper thigh musculature suggesting myositis. She was admitted to the hospitalist and placed on fluids and IV antibiotics, and given supportive care, she showed significant improvement over the next 24 hours with lab values significantly downtrending. Her labs and clinical status continued to improve over the next few days. On postoperative day #6 she is still admitted to the hospital however discharge is anticipated soon.

Discussion

This case illustrates the potential for rare complications after surgery that may or may not be related to the surgery itself. Discussion of this case between care teams agreed it is unclear if patient positioning could have played a role in the cause of her acute rhabdomyolysis versus an underlying etiology that may be genetic in nature versus an anesthetic complication such as malignant hyperthermia. It was recommended that the patient have a muscle biopsy and genetic testing outpatient for further workup. Early recognition of this condition was critical in preventing potentially debilitating or even life-threatening sequela.

Pediatrics

Abstract #11 Pediatric Scrotal Trauma: Keeping a Wide Differential And the Use of Technology

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Introduction

The prevalence of testicular rupture in the pediatric population in the United States is <1% of trauma-related injuries [1], only 1.5% of which are ultimately diagnosed as testicular rupture [2]. Rupture should be considered if there is trauma, paroxysmal unilateral scrotal pain, and scrotal swelling [3]. The use of ultrasound should be used in all testicular injuries, except degloving injuries, which can cause scrotal skin avulsion. Without intervention, pediatric testicular injuries may result in necrosis and death. [1]

Case Description

A 12-year-old male with ADHD and sensory processing disorder presented to the pediatric emergency department with a chief complaint of testicular pain after a rope swinging injury. Upon presentation, patient with hypertension and tachycardia. Associated symptoms included multiple episodes of non-bloody, non-bilious vomiting. He was able to urinate normally without hematuria. Physical exam showed normal penis, scrotum was intact, and a green-colored contusion on the right testicle. Swelling was noted to the right side of the scrotum, and the right testicle was unable to be palpated. The left testicle was palpated and non-tender. Cremasteric reflex was absent bilaterally. At this time, differential diagnosis included testicular hematoma, testicular rupture, testicular torsion, hydrocele, and scrotal swelling. Scrotal ultrasound showed right testicular rupture with lack of arterial flow, large right hydrocele, and unremarkable left testicle. Patient was taken emergently to surgery. During scrotal exploration surgery, patient found to have right-sided testicular rupture and bilateral congenital, incidental testicular torsions and underwent surgical repair for all abnormalities without complication.

Discussion

Testicular rupture requires surgical repair, and early identification of testicular trauma is critical for effective treatment as emergent surgery can salvage the testicle in 80-90% of rupture cases [1]. Blunt scrotal trauma is more common in males 6-12 years of age, often from sport-related injuries or motor vehicle accidents. In adolescents greater than 12, sport injuries and motor vehicle accidents are frequent causes of trauma, but assault should also be considered [4]. This case emphasizes the importance of performing a thorough history and physical exam while keeping a wide differential, illustrating the importance of combining a thorough clinical evaluation, advanced imaging technology, and timely surgical intervention. Future investigation is needed to determine if scrotal trauma may be prevented by protective gear or if there is influence on future fertility.

Abstract #13 Late-Infantile Onset Metachromatic Leukodystrophy: A Case of Fatal Regression

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Introduction

Metachromatic Leukodystrophy (MLD) is a rare autosomal recessive lysosomal sphingolipid storage disorder that causes progressive demyelination of the central and peripheral nervous system through deficient activity of the lysosomal enzyme arylsulfatase A (ARSA). It is the most common cause of inherited leukodystrophy in children with a poor prognosis. This case of late-infantile onset (before age 3) MLD demonstrates the importance of recognizing regression of developmental milestones. There are promising developments in the use of gene therapy and stem cell transplants to delay progression of the disease if given early; however, at the time of diagnosis this patient could not be helped by these treatments.

Case Description

A 34-month-old male presented to the hospital with a history of global regression of developmental milestones. He was born term and was previously healthy with normal development until 28 months of life. After a 6-month period of worsening regression he was unable to speak, stand, or chew, and was directly admitted by his pediatric neurologist to be evaluated for gastrostomy tube placement due to moderate-severe oropharyngeal dysphagia and moderate malnutrition. On exam, he had diffusely increased muscle tone without purposeful movement; in response to painful stimuli, he would cry but not withdraw. Distal tendon reflexes were absent, Babinski up-going. Baseline labs were unremarkable, but a chest x-ray identified moderate bilateral perihilar interstitial infiltrates, presumably due to aspiration. Differential diagnoses included leukodystrophic disease in addition to Duchenne or Becker muscular dystrophy, Tay-Sachs or Niemann-Pick disease, and mitochondrial disease. The child obtained an MRI brain with and without contrast which found symmetric hyperintensity within bilateral cerebral white matter, selenium of corpus callosum, and posterior limbs of internal capsules consistent with demyelination. He was discharged after seven days following gastrostomy tube placement and advancement of feeds. After discharge, genetic screening revealed a pathogenic homozygous variant in ARSA gene consistent with MLD. He was subsequently transitioned to hospice care.

Discussion

Leukodystrophies are a rare but devastating genetic disease in both children and adults. Emerging treatments involving hematopoietic cell transplantation and ex vivo gene therapy are only effective if given pre-symptomatically or very early after symptom onset. At the time of presentation, this child's symptoms had progressed beyond the ability of current therapies to prevent ongoing regression and death. This case underscores the role of pediatric care providers in evaluating developmental milestones, recognizing deviation, and referring for appropriate specialist evaluation.

Abstract #19 Incidental Finding of Rickets in a Child with Autism Spectrum Disorder

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Introduction

Food selectivity is one of the characteristics present in children with Autism Spectrum Disorder (ASD), putting this population at risk for nutritional deficiencies such as Rickets, iron deficiency anemia, scurvy, dry eye, and Wernicke encephalopathy. This case report highlights the clinical challenges present in children with ASD and provides classic imaging findings of Rickets found in this case.

Case Description

A 5-year-old boy with non-verbal ASD presented to the emergency department for poor oral intake, emesis, diarrhea, jaw swelling, and fever for the past 2 days. Laboratory evaluation showed leukocytosis with neutrophilia, hypocalcemia, and a positive rapid Strep A test. He was admitted for moderate dehydration and inability to tolerate oral medication. On admission examination showed bilateral tonsillar enlargement without erythema or exudates he was started on IV antibiotics and IV fluids. His mother reported that he had been refusing food for 48 hours, and due to food selectivity at baseline he would only eat French fries. Further laboratory testing showed hypophosphatemia, confirmed hypocalcemia, low vitamin D, and elevated parathyroid hormone (PTH) level consistent with secondary hyperparathyroidism. A more focused physical examination showed bowed legs and pigeon chest. Skeletal X-rays showed fraying, splaying, and cupping of the metaphysis most prominent in the distal long bones as minimal growth arrest lines. He was diagnosed with Rickets and nutritional service was consulted. Nutritional supplements, ergocalciferol, calcitriol, potassium phosphate, and thiamine were started. His labs showed improvement and upon discharge, the mother was instructed to continue to follow up with the patient's primary care physician and nutritionist.

Discussion

About 63.8% of children with ASD have vitamin D insufficiency and about 28.8% have vitamin D deficiency. Children with food selectivity are at an increased risk for vitamin deficiencies A, B6, C, D, K, calcium, copper, docosapentaenoic acid, docosahexaenoic acid, iron, and zinc. One of the biggest challenges of this case was the refusal of the child to take oral supplementation and the abstinence of food intake secondary to severe food selectivity. The child's sensory background in the setting of bacterial pharyngitis might have exacerbated this. Parent education was important encouraging them to try a variety of food while working with a multidisciplinary team centered around feeding therapy.

Abstract #20 Thyroid Storm in the Setting of Pre-B ALL

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Introduction

Thyroid storm is a potentially lethal manifestation of thyrotoxicosis. Central nervous system involvement is the added factor to hyperthyroidism that encompasses thyroid storm. Common findings in the setting of thyroid storm include: high fever, tachycardia, central nervous system upheaval ranging from agitation to coma, gastrointestinal irritation, significant perspiration or palpitations, and eyelid troubles such as lid lag or retraction. To confirm the diagnosis, thyroid function tests show a decreased TSH with an increased free thyroxine and/or total triiodothyronine. This condition is rare and leads to multiorgan dysregulation or even death. Though it is commonly associated with Graves' disease, a form of auto-immune mediated thyrotoxicosis, it has also been seen in cases involving surgery, infection, trauma, illness, or childbearing. In this case, thyroid storm is present without any typical precipitating factors.

Case Description

An 11-year-old child presented with exquisitely painful superficial neck tenderness. This previously healthy child was diagnosed with pre-B ALL seven days prior and undergoing chemotherapy treatment (including vincristine and daunorubicin). The child was found to be tachycardic and febrile. Although thyroid studies at admission were unremarkable, another thyroid panel was obtained, which showed a decreased TSH at 0.014ulU/mL (0.70-4.17ulU/mL), increased T3 at 542ng/dL (71-180ng/dL), and elevated free T4 at >7.7ng/dL (0.70-1.9ng/dL). Thyroid autoimmune studies, including anti-TPO and anti-thyroglobulin, were unremarkable. A CT head and neck was obtained showing diffuse edema, symmetric, throughout the deep spaces of the neck, as well as the prevertebral spaces. A blood culture was acquired which grew gram positive rods. The child was treated with IV antibiotics, along with potassium iodide, propranolol, methimazole, and hydrocortisone. After about 5 days, the free T4 trended down, and the tenderness resolved. Methimazole was stopped after 2 weeks, and the child later developed hypothyroidism. Subsequent imaging revealed necrotic thyroid tissue, further supporting a diagnosis of bacterial thyroiditis.

Discussion

Findings of bacterial thyroiditis possibly induced by chemotherapy, coupled with quick-developing hypothyroidism, is uncommon. In the absence of a recent surgery or trauma, this case is unique in that it occurred in the setting of a recent cancer diagnosis and without any evidence of autoimmunity. Without swift recognition and appropriate therapy, the diagnosis can be fatal. Hyperthyroidism should be a differential when a patient presents with fever and tachycardia.

Abstract #23 Human Herpesvirus 6 CNS Infection Associated with Seizures and SIADH

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Introduction

Human herpesvirus-6 (HHV-6) is a ubiquitous virus that is typically linked to benign conditions like exanthema subitum (roseola) in infants, but primary infection can sometimes lead to more severe neurological manifestations. HHV-6 primary infection in the CNS may lead to neurological complications such as seizures, limbic encephalitis, mesial temporal lobe epilepsy, and multiple sclerosis. This infection can affect both immunocompetent and immunocompromised individuals, contributing to various CNS-related disorders.

Case Description

A 5-month-old infant with a history of otitis media (AOM) and diaper candidiasis presented with 4 days of fever (up to 101.7°F), followed by a pink maculopapular rash that initially appeared on the torso and spread to the neck. On day 5 of illness, the infant experienced a 3-5 minute seizure, accompanied by vomiting, irritability, decreased post-ictal alertness, hypertonia, and increased spitting. Laboratory findings revealed significant hyponatremia (Na 120 mmol/L), low serum osmolality, high urine osmolality and urine sodium was 25 mmol/L. The infant had mild liver enzyme elevation and normal chest x-ray. A head CT showed a small focus of calcification or possible petechial hemorrhage in the right centrum semiovale. A lumbar puncture was performed, and the CSF PCR for HHV-6 was positive, but no white blood cells were present. The infant was immunocompetent, so antiviral treatment was not initiated. Intravenous ceftriaxone and vancomycin were administered until blood and urine cultures returned negative after 24 hours. Brain MRI was normal. Sodium levels were corrected to 135 mmol/L with isotonic saline by day 6, but hyponatremia recurred after discontinuation of fluids. By day 7, the infant was successfully weaned off fluids and the hyponatremia was thought to be secondary to syndrome of inappropriate antidiuretic hormone secretion (SIADH). The infant was diagnosed with HHV-6 CNS infection complicated by SIADH and seizures and was discharged on day 10 of illness with clinical improvement.

Discussion

This case highlights the rare but significant association between HHV-6 infection, seizures, hyponatremia and SIADH in an immunocompetent infant. The combination of fever, rash, hyponatremia, and seizures in such cases necessitates a comprehensive workup to identify the underlying cause. Close monitoring of sodium levels and careful fluid management are essential to prevent further complications, such as seizures, in the setting of SIADH.

Abstract #27 Bruising in Infant Mimics Child Abuse: Bleeding Disorder Revealed

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Introduction

Bleeding disorders are an important consideration when working up bruising of a child that is suspicious for child abuse. 1.2 million individuals are affected by hemophilia globally, with Hemophilia A being most common with a rate of 1 to 4000-5000 live male births. It is an inherited X-linked recessive disorder leading to deficiency in factor 8, though there have been cases of sporadic mutations causing the disorder. Age of diagnosis is dependent on severity of disease and family history, with positive family history and severe disease likely to be diagnosed earlier in life. Bleeding sites vary with CNS and extracranial bleeds more common in infancy, while bruising, joint bleeds, and musculoskeletal bleeds are more common in older children.

Case Description

A five-month-old was initially seen by primary care physician (PCP) after bruising was noted by mother. PCP referred the infant to the ER to obtain further work up. The patient was born at 39 weeks via SVD without complication or NICU stay and received vitamin K injection. Besides a lump with overlying bruise on lower back, there was no past pertinent medical history. The infant did undergo circumcision without complication or excessive bleeding. No pertinent family history was reported, though father was adopted with unknown family history. There was a previous DHS case in which the mother lost custody of another child who is now 13 years old. Physical exam noted bruising of left upper arm, sacrum, chest wall inferior to left nipple with hematoma, and left proximal arm lateral to axilla with swelling. CBC remarkable for elevated platelets to 421, CMP unremarkable, PT/INR was normal, PTT was elevated to 112.9 and 161.9. Factor 8 level was markedly low at 1% and factor 9 level was normal at 47%. Additionally, the infant tested positive for rhino/enterovirus. The skeletal survey was negative for fractures and CT head was without hemorrhage. The pediatric hematology/oncology team was consulted and diagnosed severe hemophilia A.

Discussion

A physician will likely always be suspicious of child abuse in an infant who presents with unexplained bruising, as it is a diagnosis that one does not want to miss. However, it is important to consider multiple etiologies, such as hemophilia, when an infant presents with unexplained bruising. There is a potential risk of misdiagnosis if a physician fixates on any one possible diagnosis leading to incomplete or unnecessary history, exam, and workup.

Abstract #33 Pediatric Encephalitis Following Mycoplasma Infection

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Introduction

Encephalitis is a complex, debilitating and sometimes fatal neurologic condition to which children are especially prone. Postinfectious encephalitis is a rare but recognized complication of various infections, including Mycoplasma pneumoniae with mechanisms that may include an autoimmune component. Symptoms may range from mild cognitive or motor dysfunction to more severe cases including movement disorders, seizures and altered mental status.

Case Description

A previously healthy 23-month-old born term presented to the emergency department with 2 weeks of cough, congestion, decreased appetite and complex neurological symptoms including difficulty walking and regression of speech with acute otitis media found to have an RPP positive for Mycoplasma and Rhino/Enterovirus suggestive of postinfectious encephalopathy. Initial physical exam revealed stable vitals, intact extra-ocular movements, normal tone, and difficulty sitting with an ataxic, high stepping, broad based gait requiring assistance. No clonus, nystagmus or meningeal signs were noted on exam. CT head showed no intracranial abnormalities. Labs were obtained, including CBC, CMP and urine drug screen which were unremarkable. Throughout hospitalization, physical exams revealed lip smacking, abnormal tongue movements, hyperreflexia, and mild chorea of lower extremities. Due to ongoing ataxia, regression of milestones and worsening neurological status, MRI brain and lumbar puncture were urgently performed to allow for initiation of therapy. MRI brain showed no intracranial abnormalities, while LP was only remarkable for CSF with WBC of 11 and 81% lymphocytes. Pediatric Neurology was consulted with recommendations for starting high dose Solumedrol in addition to obtaining MRI spine, 2-hour EEG, ANA, ANCA, RF and thyroid peroxidase antibody which were all unremarkable. Encephalitis and meningitis panels were negative. An autoimmune encephalitis panel was unable to be sent due to lack of CSF. Physical, occupational and speech therapy were consulted with gradual improvement in gross and fine motor skills. There was continued lack of improvement in aphasia. Episodes of extreme agitation consisting of thrashing and biting started shortly after initiating high dose steroids. Pediatric Psychiatry was consulted and recommended starting Quetiapine, which resulted in temporary improvements in agitation. A steroid taper was initiated following a 5-day course of high dose Solumedrol and the patient was discharged to inpatient rehab.

Discussion

This case underscores the complexity of diagnosing and managing pediatric encephalitis in addition to highlighting the importance of considering postinfectious encephalitis in a child with neurological symptoms following a common respiratory infection like Mycoplasma pneumonia. The use of steroids, close monitoring of psychiatric symptoms and early rehabilitation are crucial in optimizing recovery.

Abstract #40 Disseminated Tuberculosis in a Healthy Adolescent Secondary to Medication Non-Compliance

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Introduction

Disseminated tuberculosis (TB) is a severe subtype where mycobacterium tuberculosis bacteria spreads from the lungs to multiple organs through the bloodstream or lymphatic system. It often occurs in immuno-compromised populations. Symptoms are varied and may include fever, night sweats, weight loss, fatigue, and organ-specific issues. Diagnosis typically involves imaging, blood tests, and tissue sampling. Treatment requires prolonged use of multiple antibiotics over several months with the standard of care being rifampin, isoniazid, pyrazinamide, and ethambutol (RIPE). Untreated disseminated TB can be fatal, underscoring the importance of early detection and comprehensive care.

Case Description

A 17-year-old adolescent presented with abdominal bloating, nausea, and progressive anorexia with intermittent severe abdominal pain found to be hypotensive and tachycardic with microcytic anemia. Other labs were significant for ferritin 650 ng/mL, CA-125 744 U/mL, and CRP 13.6 mg/dL. CT abdomen/pelvis showed small right pleural effusion, multiple multifocal rim enhancing cystic lesions in retroperitoneum, and multiple necrotic lymph nodes. Pediatric hematology/oncology and OBGYN were consulted and ruled out malignancy. Pediatric surgery was consulted as these lesions caused partial bowel obstruction treated with bowel rest and NG tube decompression. Upon further chart review, the adolescent had a history of disseminated TB with multi-organ involvement as well as medication non-compliance that had been signed off on by the Health Department as treatment complete almost one year prior. TB QuantiFERON was positive. CT head showed a concerning lesion which prompted an MRI revealing a caseating solid granuloma of the left frontal lobe. Pediatric infectious disease recommended obtaining tissue samples to rule out multi-drug resistant tuberculosis. Treatment was withheld until tissue samples could be obtained. After multiple obstacles with sending pathology for testing with prolonged wait time, the decision was made to resume treatment with rifampin, moxifloxacin, pyrazinamide, and ethambutol given that the adolescent non-compliance was more than treatment resistance. Prior to discharge, pathology confirmed mycobacterium tuberculosis, but did not provide sensitivities. They were discharged home with the importance stressed of close follow up with the Health Department, primary care physician, and ophthalmologist to monitor visual acuity while taking ethambutol.

Discussion

Disseminated tuberculosis is a life-threatening condition that requires prompt diagnosis and extended treatment with antibiotics to prevent severe complications and mortality. This adolescent's course of illness was complicated by difficulties with language barrier, inaccurate approval of initial treatment as complete, and prolonged wait time for tissue sample results. Early intervention and comprehensive medical care are essential for improving outcomes in affected individuals.

Abstract #53 Value of Endocrine Evaluation Following the Discovery of an Ovarian Teratoma

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Introduction

Ovarian Teratomas are the most common type of germ cell tumor of the ovaries and are most often benign. They typically present during a female's reproductive years of 13 years old or later. Teratomas contain multiple layers of germ cells, and can have different components such as hair, adipose tissue, bone, and sebaceous material. Ovarian teratomas may also contain hormone-secreting cells such as thyroid hormone, androgens, prolactin, and others. This report investigates an ovarian teratoma in a school-aged child that also presented with premature adrenarche, which instigated a further hormonal workup by pediatric endocrinology.

Case Description

An 8-year-old female presented to the pediatric emergency room with worsening localized right lower quadrant and thigh pain with dysuria. The initial diagnosis was of constipation in the emergency room due to previous irregular bowel movements. Further investigation via a transabdominal ultrasound revealed a complex mass with solid and cystic components on the right ovary and fallopian tube. This mass was confirmed to be an ovarian teratoma with ovarian and fallopian tube torsion by CT. Initial screening labs and cancer markers were within normal limits except for cancer antigen 19-9. After a salpingo-oophorectomy, the child was referred to pediatric endocrinology due to noted early development of pubic hair. Endocrine lab values were normal for her Tanner stage of development. Endocrine evaluation revealed Tanner stages 1 breast and 3 pubic hair. She was diagnosed with premature adrenarche based on lab and physical exam. No other interventions were done, but continued follow-up is necessary due to the potential for complications.

Discussion

Due to the potential for endocrine consequences if the teratoma was to secrete hormones, this case needed to be followed. With the patient being abnormally young for this presentation, and the addition of the early development of body hair, there are long-term worries when a child presents with premature adrenarche. In this specific case there were no abnormal hormone markers, but that does not ensure there will be no consequences in the long term. The risk for polycystic ovarian syndrome is increased, along with central adiposity which needs to be monitored. Overall, this case further establishes the need for complete endocrine evaluation after removal of ovarian teratomas from prepubertal children.

Abstract #60 Ovarian Tumor as a Cause of Vaginal Bleeding in a Prepubertal Child

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Introduction

Ovarian tumors are typically diagnosed in women over the age of 21, with benign tumors being more common in premenopausal women and malignant tumors being more common in postmenopausal women. Symptoms of ovarian tumors vary, but most commonly present with abnormal uterine bleeding. Ovarian tumors are rare in children but are important to rule out. Here, we present an unusual case of a 5-year-old child who was diagnosed with an ovarian tumor following episodes of abnormal uterine bleeding.

Case Description

A 5-year-old female presented to pediatric endocrinology for vaginal bleeding. The bleeding began two months before presentation and continued for approximately 5 days before it subsided. One month later, the bleeding returned. No signs of trauma or abnormal behavior were noted by the primary care provider. Medical history was significant for high birth weight at 36 weeks, due to gestational diabetes in her mother, and jaundice. BMI was >99th percentile. The child denied vision changes, nausea, vomiting, or headache. Physical exam was significant for Tanner Stage 2 breast development bilaterally with Tanner Stage 1 pubic hair development and no clitoromegaly. No palpable abdominal masses or tenderness were noted. Wrist x-rays showed skeletal development consistent with an 11-year-old—significantly advanced from her chronological age. Central precocious puberty or an ovarian mass were suspected, given elevated inhibin A and B levels: 1017 pg/mL and >1300 pg/mL, respectively. GnRH stimulation test showed normal LH of 0.02 mIU/mL, low FSH of 0.09 mIU/mL, not consistent with central precocious puberty, and elevated estradiol of 227 mIU/mL increasing concerns for an ovarian tumor. CA-125 was negative, which decreased suspicion for a malignant ovarian mass. hCG was also negative. Lactate dehydrogenase, testosterone, and sex hormone binding globulin were within reference ranges. Ultrasound showed a 10cm mass on the right ovary with cystic and solid components. The mass was successfully removed 2 months later, at which time it had grown by 2cm. Pathology confirmed that the mass was a sex cord stromal tumor.

Discussion

Although ovarian tumors are rare in children, they can be aggressive, so a high index of suspicion is warranted. It is important that sex cord stromal tumors, as in this case, as well as other types of ovarian masses such as dysgerminomas, Sertoli-Ledig cell tumors, and embryonal carcinomas are not overlooked when a pediatric patient presents with findings such as vaginal bleeding, advanced bone age, and early puberty.

Abstract #70 DRESS Syndrome in an Adolescent

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Introduction

Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS) is a syndrome with characteristic rash, multi-organ involvement, lymphadenopathy, and lab abnormalities including eosinophilia and atypical lymphocytosis. Well-known offending agents include anticonvulsants, allopurinol, and antibiotics. DRESS is relatively uncommon in pediatrics, but it can be a potentially life-threatening hypersensitivity reaction. Timely diagnosis and treatment are necessary to prevent mortality or lasting complications.

Case Description

A 16-year-old male with past medical history of asthma, acne vulgaris, and depression presented with 1 week of fever, malaise, rash, emesis, diarrhea, and back pain. His physical exam revealed diffuse maculopapular rash, anasarca, cervical and supraclavicular adenopathy. His only recent medication was minocycline for acne, which was discontinued 3 weeks prior to presentation. Relevant family history included maternal T Cell lymphoma. Labs showed leukocytosis, eosinophilia (1.5), hyponatremia, transaminitis, and hyperbilirubinemia. Inflammatory markers were elevated including CRP (26.38), ESR (24), along with LDH (466) and ferritin (1,592). Initial etiology was thought to be infection, and he was started on doxycycline and ceftriaxone. Extensive work-up guided by infectious disease consultant was largely negative, and there was no improvement in symptoms in 72 hours. Hematology/oncology was consulted, and CT imaging showed splenomegaly, enlarged cervical, abdominal, and upper pelvic lymph nodes. Lymph node, bone marrow, and skin biopsies were not concerning for an oncologic process. Given the initial presentation, eosinophilia, exposure of minocycline, and clinical worsening of rash with doxycycline and NSAID use, DRESS syndrome became the working diagnosis. Per Allergy and Immunology recommendations, he was started on 4 days of methylprednisolone and a 6-week oral steroid taper resulting in rapid clinical improvement. Repeat labs showed improvement in inflammatory markers, rash, swelling, and fever. Symptom duration and severity along with extensive work up were significant sources of anxiety that required anxiolytic therapy.

Discussion

DRESS syndrome symptoms may manifest within 2-6 weeks of medication exposure, which in this case was likely minocycline. Prompt identification of DRESS and discontinuation of offending agent is critical. Additionally, care involved multiple subspecialties including psychiatry. Close follow up is needed to monitor sequelae such as recurrence, liver injury, myocarditis, autoimmune disease, or serious viral infections.

Abstract #71 Halo Scalp Ring with Secondary Bacterial Infection in a Late Preterm Infant

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Introduction

Halo scalp ring is a term used to describe a region of alopecia on the scalp that arises in the perinatal period and has been associated with both caput succedaneum and infants born to a woman who is pregnant for the first time. It is caused by impaired blood flow to the affected tissue in the setting of head compression during birth with resulting necrosis. While the resulting alopecia may be temporary, permanent scarring may occur.

Case Description

An 11-day-old infant, born at 35 weeks 5 days due to maternal preeclampsia, presented with worsening scalp lesions. Birth history included 36 hours of labor, Cesarean section, respiratory distress requiring CPAP, and hyperbilirubinemia treated with phototherapy. The infant was initially treated for seborrheic dermatitis with secondary bacterial infection using ketoconazole shampoo and mupirocin. However, with progression of the infection and new cellulitis of the left great toe, the infant was admitted for further management. Due to age and the presence of skin infections in more than one location, the infant underwent a full septic workup including lumbar puncture with CSF studies as well as wound and blood cultures. Serum studies were mostly unremarkable, except for mild CRP elevation. Wound cultures ultimately showed diphtheroids, and later, an incision and drainage revealed MRSA, resistant to clindamycin, erythromycin, and oxacillin. Intravenous clindamycin and cefazolin were started. Pediatric dermatology identified the scalp lesion as a halo ring, recommending daily ketoconazole shampoo plus either mupirocin or petroleum jelly, and follow-up with dermatology and plastic surgery for potential alopecia. After resolving cellulitis and improving scalp lesions, the infant was discharged on oral antibiotics. The infant continues outpatient care with pediatric dermatology and is responding well to treatment.

Discussion

Halo scalp ring may be under reported due to lack of representation in pediatric literature. This case underscores the correlation between caput succedaneum and the development of a halo scalp ring in infants resulting from prolonged pressure necrosis secondary to slow progression of labor. Additionally, this case highlights the importance of having a high clinical suspicion for development of a secondary bacterial infection in an infant from a difficult or prolonged labor who has a scalp lesion, even in the absence of delivery assistance tools.

Abstract #109 Caudal Regression Syndrome Undiagnosed by Prenatal Ultrasound

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Introduction
Caudal Regression Syndrome (CRS) is a rare congenital anomaly affecting the growth and development of the distal spine and lower extremities, initially diagnosed primarily via prenatal anatomy ultrasound. We present a case in which a neonate was not diagnosed with CRS until after delivery, upon observation of hypoplastic lower extremities and bilateral club feet prompting further workup.

Case Description
A neonate was born via c-section with bilateral club feet and hypoplastic lower extremities. At 34 weeks gestation, prenatal ultrasound reported possible bilateral club feet, but did not indicate sacral agenesis. Upon physical exam, the neonate had resistance to hip extension making the Barlow/Ortolani maneuver difficult, left inverted club foot, right everted club foot, well-perfused hypoplastic lower extremities, good symmetric tone and strength, no gluteal fold, and spinal column appearing short with hypoplastic coccyx and hip dysplasia. Renal ultrasound was unremarkable, spinal cord ultrasound showed absent sacrum and otherwise unremarkable spinal cord. Pelvic x-ray confirmed an absent sacrum with 5 lumbar type vertebrae and intact pelvis. Echocardiogram revealed a small to moderate patent foramen ovale with left to right shunt, with normal biventricular size and function. Further referrals were made to manage conditions surrounding the neonate's CRS diagnosis, including physical therapy for improving hip range of motion, pediatric urology to manage development of neurogenic bladder, pediatric gastroenterology to manage development of neurogenic bowel, genetics to identify potential underlying mutations, pediatric neurosurgery to evaluate for potential surgical intervention due to neurologic impairment, and pediatric orthopedics for casting of bilateral club feet and sacral reconstruction to improve mobility and quality of life.

Discussion
Prenatal anatomy ultrasounds have greatly assisted in the early diagnosis, preparation, and treatment of neonates born with congenital anatomic anomalies. However, there are limitations to this study and unavoidable factors that influence visibility of the fetus. This case study emphasizes the importance of a thorough neonatal physical exam despite sufficient prenatal health care. Neonates born with Caudal Regression Syndrome present with varying severity, the worst of which can be life threatening due to cardiac, digestive, and/or renal complications. It is crucial to diagnose these patients in a timely manner to provide care and improve the quality, and longevity, of life for these neonates.

Psychiatry

Abstract #21 Assertive Community Treatment Programs Mediate Treatment between Mental and Physical Health

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Introduction

People with serious mental illness (SMI) historically benefit from assertive community treatment (ACT) programs through their integrative multidisciplinary teams and effective approach to treatment and prevention medicine. Patients' SMI often improves with medication and therapy management; however, barriers to adequate primary care decrease quality of life and increase co-morbidities. Common barriers to primary care access for patients with SMI are poor insight, economic challenges, substance use, and homelessness. Systemic barriers for ACT programs implementing a robust primary care service are staff shortages, lack of adequate training, and insufficient funding for visits and screenings. This case demonstrates the instrumental benefit an ACT program can provide to individuals with comorbid mental and physical health conditions.

Case Description

Female patient in her 40's, with a history of schizoaffective disorder, bipolar type, polysubstance use disorder, and prostitution, joined the OU Integrated Multidisciplinary Program of Assertive Community Treatment (OU-IMPACT) team in 2005. In 2012 she was diagnosed with HIV and started Complera daily for treatment. Despite continuous care from OU-IMPACT, the patient was hospitalized at TCBH and Hillcrest-Parkside on multiple occasions for psychosis. She trialed several injections and medications to help treat her psychiatric disorder but became treatment resistant. In 2020, patient became homeless after losing her housing with sober living. She recently found housing. In 2024, she complained of worsening upper respiratory symptoms. Patient labs indicated worsening HIV Viral load. She had a history of noncompliance with antiretroviral medications and was resistant to initiating treatment due to her incorrigible delusions of not having HIV. IMPACT continued to partner with her Internist and patient reluctantly agreed to antibiotics.

Discussion

It was difficult to care for the patient's treatment-resistant psychosis and acquired immunodeficiency syndrome (AIDS) due to noncompliance, poor insight, and mistrust in providers. IMPACT served as a bridge for the patient's treatment of schizoaffective disorder and HIV-AIDS by collaborating between the multidisciplinary team and an internist. The weekly IMPACT nurse palpated the patient's lymph nodes and noted a worsening cough which quickly led to a consultation with the internist. Without events such as this, from the IMPACT team, our patient would not survive her chronic illnesses. Our team addressed systemic barriers by implementing monthly team meetings with the internist and hiring fully trained staff. Therefore, we feel that ACT programs should incorporate or improve their primary care access for patients. The result leads to improving quality of life and lowering comorbidities in PACT patients.

Abstract #41 Cannabis Hyperemesis Syndrome Mimicking Restrictive Eating Disorder in an Adolescent Female

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Introduction

Cannabis hyperemesis syndrome has become prevalent in recent years in the United States due to lax regulation and perceived hyper-medicalization of cannabis products. Symptoms and subsequent consequences of cannabis hyperemesis can result in a clinical picture that has significant overlap with restrictive eating disorders, including anorexia nervosa and avoidant-restrictive food intake disorder, making diagnostic clarification challenging.

Case Description

A previously healthy 15-year-old female presented to the hospital for weight loss of sixteen pounds over a two-month period, with current BMI of 14.3. Her mother reported that she started losing weight due to nausea that began months prior. The patient reported occasional episodes of vomiting, wearing baggy clothing to school, and eating 1 full meal per day with difficulty due to nausea. However, she denied issues with body image and said that she wanted to gain weight. She denied any episodes of self-induced vomiting, use of laxatives, diuretics, or weight loss medications, binge-eating episodes, restrictive diets, or excessive exercising. Laboratory tests were normal. Urine drug screen was positive for THC. Estradiol levels were low with normal LH and FSH. Physical examination revealed a slender body habitus, but negative Russel's sign. Additional history revealed patient started using cannabis 1 year prior. She smoked 1 blunt several times per week and occasionally used a cannabis concentrate via vape pen. A diagnosis of cannabis use disorder was made along with suspicion for an eating disorder. Patient was placed on a standardized eating protocol with firm meal schedules and 24-hour supervision. In a few days, she gained 0.6 kilograms of weight and tolerated protocol. Esophagogastroduodenoscopy biopsy results later revealed candida esophagitis. Brief motivational interviewing was conducted and fluconazole started for the candidiasis.

Discussion

Cannabis hyperemesis syndrome has emerged due in part by higher-potency product availability. While this patient displayed an underweight BMI, rapid weight loss, and some restrictive eating, her features were largely suspected to be a result of chronic nausea, which most likely arose from consistent and heavy cannabis use. A confounding factor may be the candida esophagitis, which can also suppress appetite and induce nausea, but cannabis has been implicated in the alteration of the gut microbiome and the growth of *Candida albicans*. This case highlights that the consequences of long-term cannabis use disorder may disguise as an eating disorder.

Abstract #42 Secondary Mania in Behavioral Variant Frontotemporal Dementia

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Introduction

Frontotemporal dementia is a common cause of early-onset dementia that prominently presents with neuropsychiatric symptoms. The behavioral variant of the disease has been characterized by core symptoms like disinhibition and apathy, but other mood and behavioral manifestations may also cloud the clinical picture, making diagnosis complex.

Case Description

A 60-year-old female presented with paranoia, anorexia, religious delusions, compulsive behavior, apathy, decreased sleep, and labile mood for several weeks. Patient had no prior mental health or medical history. Symptoms developed abruptly and over several weeks. There was no history of substance use, but a family history of attempted suicide. Physical and neurological examination was unremarkable. Extensive laboratory workup, including autoimmune serologies, were negative. Lumbar puncture revealed slight elevation of cerebrospinal fluid protein. MRI was negative, but fludeoxyglucose-18 (FDG) positron emission tomography (PET) of brain uncovered biparietal hypometabolism. A provisional diagnosis of behavioral variant of frontotemporal dementia was made. Empiric intravenous immunoglobulin was given with little improvement. Due to the terminal nature of the illness, the patient began hospice, where lithium was initiated experimentally at 300 mg and titrated to 600 mg per day. After a few weeks, symptoms resolved. During outpatient psychiatric follow-up, a diagnosis of bipolar disorder due to another medical condition with a manic-like episode was added.

Discussion

Frontotemporal dementia can lead to a variety of neuropsychiatric symptoms. While there is a second peak age-of-onset of primary bipolar disorder, after the age of 50, this case had an interesting finding on neuroimaging that evidences underlying brain pathology along with meeting criteria for possible FTD. Current data suggests that a manic-like syndrome can be the initial presentation but may complicate diagnosis or derail the importance of diagnosing dementia. The manic features differed slightly from expected as mood was not overly irritable or elevated, rather labile, and dysphoric. The apathy, anorexia, and compulsive behaviors support the diagnosis of frontotemporal dementia while the decreased sleep and religious and persecutory delusions fit with mania. Secondary mania still responds to mood stabilizers like lithium. Overall, frontotemporal dementia should be considered in an older person presenting with new-onset mania with no prior mental health history.

Abstract #45 Real Stress, Real Symptoms: A Clinical Case of Functional Neurological Disorder

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Introduction

Functional Neurological Disorder (FND) is a psychiatric disorder characterized by uncontrollable motor and sensory symptoms that can cause significant distress, impacting a person's daily life. Although the cause of FND remains unknown, it has been suspected to result from a combination of physical and psychological stressors or trauma. Individuals with FND may experience symptoms ranging from mild to severe functional deficits. In most cases, the diagnosis of FND is considered a diagnosis of exclusion.

Case Description

A 28-year-old female presented to the ED with paresthesia and knee buckling. She was seen one month prior with sudden onset of left facial and left arm numbness accompanied by a severe headache. One month later, she returned with complaints of persisting numbness now affecting her face, upper back, and bilateral feet. She was also unable to walk without assistance due to weakness. A full neurology and general work up were completed. On psychiatry examination, the patient reported that she was a full-time student and recently started a new project requiring long hours. She was also the caretaker for multiple children. Due to her history, negative lab work, and negative imaging findings, the patient was diagnosed with FND. She received pain medications, electrolyte supplementations, and glucocorticoids. Discharge recommendations were made to reduce life stressors, and follow-up with physical therapy, neurology, and therapeutic services in the outpatient setting.

Discussion

FND is considered a rare condition but is becoming more prevalent. It can affect all ages, races, and genders. The work up of FND can be extensive and include multiple modes of imaging and lab testing to exclude serious acute illnesses, which can delay diagnosis. The implementation of interdisciplinary care is vital in correctly diagnosing and treating FND. Not only do lab studies and imaging need to be obtained, but a thorough history is needed to understand if there are underlying psychosocial factors that may be causing unexpected symptoms. By involving providers from multiple specialties, a faster diagnosis of FND may be determined, allowing the patient to receive faster treatment. There are two main modalities of treatment for FND: physical therapy and cognitive behavioral therapy (CBT). CBT is commonly used to help patients manage stressors that may cause their neurological symptoms. Physical therapy is used to help patients regain control of their motor and sensory symptoms. Other innovations have been trialed for brain and muscle stimulation, but results have yet to be proven effective.

Abstract #96 Cognitive Behavioral Therapy for Chronic Pain in a Young Adult

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Introduction

Pain is defined as "an unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage." Chronic pain is a complex condition influenced by physical, psychological, and social factors. Cognitive behavioral therapy (CBT) has become a first line treatment of chronic pain. A recent meta-analysis showed that CBT for chronic pain should be used in clinical treatment, and it had more robust evidence when compared to pharmacological and physical management studies. The goal of CBT for chronic pain is to reduce pain and emotional distress associated with pain, increase adaptive thoughts and behaviors, decrease maladaptive thoughts and behaviors, and improve self-efficacy in treating pain.

Case Description

Patient is a 22-year-old Hispanic female with social phobia, somatic symptom disorder, and insomnia. She began regular psychiatric follow up at 16 years old and was initially diagnosed with GAD, social phobia, and sleep issues. Patient experienced significant physical symptoms of nausea, stomach pain, racing heartbeat, sharp pain in chest, arm pain, throat issue, so extensive GI workup and cardiology workup has been completed. Medical workup so far has been negative/normal for EGD, colonoscopy, abdominal CT, and EKG, gastric emptying exam for stomach pain, swallowing study, abdominal ultrasound. Neck CT showed some lymphadenopathy leading to ENT referral. Later, concern for neck discomfort with trouble swallowing presented. Patient was referred to CBT for somatic symptom concerns at age 21 for somatic symptom disorder.

Discussion

At the beginning of treatment, emphasis was placed on learning about pain, how to treat pain, and problem solving; especially with navigating pain treatment and the healthcare system. During the course of treatment, focus was placed on locus of control, increasing adaptive thoughts, activity pacing, and relaxation strategies. Additionally, the patient was educated on sleep hygiene, with eventual improvement in sleep. Patient's anxiety notably improved and the patient was able to cope well with large stressors, for example, significant health problems of family members. Although she continued to express concern for somatic symptoms, her ability to manage these symptoms has improved. Patient also has notably more control of her overall health and outlook. This case elicits further evidence that CBT for chronic pain should be an early intervention for individuals who present to primary care or psychiatry clinics with somatic concerns. Earlier intervention may lead to overall better outcomes for patients as they navigate diagnostic workups and complex healthcare systems.

Surgery

Abstract #18 Alpha Gal Syndrome in Cerebrovascular Surgery

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Introduction

Alpha gal syndrome is a type 1 IgE mediated allergic reaction which can lead to anaphylaxis when patients are exposed to galatcose-alpha-1,3-galactose (alpha-gal). This oligosaccharide is commonly found in red meat and mammalian derived products. The syndrome develops due to bite from the lone star tick. This allergic reaction poses a problem when utilizing certain drugs and surgical products. This causes unique considerations for the hospitalized patient undergoing major cerebrovascular surgery. We will discuss 2 alpha gal cases performed by different surgeons in the setting of carotid stenosis.

Case Description

Our first experience with alpha gal occurred in a 71 y/o woman with past history of hypertension, alpha-gal syndrome, and hypercholesterolemia without history of tobacco use. She was referred for asymptomatic carotid stenosis noted on screening carotid duplex and was scheduled for Right carotid endarterectomy. All mammalian derived products were removed from the OR plan. The patient underwent general anesthesia with neurological monitoring. Initial operative plan included utilizing anterior jugular vein for our carotid patch closure but on evaluation this was too small to be considered an acceptable size match. Thus, we selected a Getinge hemashield platinum woven Dacron patch. The second case involved a younger 56-year-old man who presented with symptomatic right sided carotid stenosis with left facial droop, slurred words, and left arm weakness. He was medically unknown except for alpha gal syndrome. On arrival neuro intervention performed carotid angiogram which revealed a heavily calcified lesion with 90% stenosis according to NASCET criteria which was not amenable to stent placement. Vascular surgery was consulted, and the patient underwent right carotid endarterectomy. We performed standard exposure of the carotid bifurcation with vascular control which revealed no neurological changes. Pre-op we selected a gore PTFE patch for carotid closure as well as gore CV-6 suture for carotid arteriotomy closure. He was discharged on post-op day 1 on aspirin, plavix, and rosuvastatin. Both cases were anticoagulated with argatroban and wounds closed with vicryl and monocryl.

Discussion

Alpha gal syndrome poses a challenge to the standard carotid endarterectomy use of heparin and a bovine patch. Despite the hemashield patch having a collagen coating in Case 1 the patient did not have a reaction to it. We selected PTFE in the 2nd case to avoid any possibility of reaction to collagen exposure. Both patients had an uneventful post op course. There is limited literature about vascular surgery and alpha gal syndrome.

Abstract #26 Rare Multifocal Emphysematous Osteomyelitis as a Complication of Metastatic Rectal Cancer

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Introduction

Emphysematous osteomyelitis (EOM) is a rare and life-threatening subtype of osteomyelitis that is typically a complication of immunocompromising conditions, inflammatory bowel disease, or malignancy. Commonly implicated organisms are gastrointestinal anaerobes such as Enterobacteriaceae or clostridium species. Few cases of EOM exist in current literature. We present a patient with advanced rectal cancer and poor access to care who developed multifocal EOM.

Case Description

A previously healthy 50-year-old male initially developed episodic hematochezia and decreasing stool caliber while incarcerated 1 year ago. Family history was notable for colon cancer in his father at age 51 however, the patient did not receive colon cancer screening. He first presented with bilateral buttock and perianal abscesses. Intraoperative anoscopy revealed a low rectal mass with multiple perirectal abscesses with fistulation. Abscesses were drained and the rectal mass was biopsied, which demonstrated adenocarcinoma. The mass was determined to be unresectable, and a diverting loop colostomy was performed later in the same admission. He completed a course of antibiotics with resolution of abscesses. The patient was discharged with outpatient oncology follow-up. One month later, the patient presented to our ED with intractable low back pain and septic shock. Multiple draining sites of perianal abscesses were healed with no active infection. Pertinent labs included a WBC of 26.21; CRP of 42.6 mg/dL (0-0.8 mg/dL). Blood cultures were negative. CT imaging identified intraosseous gas involving the sacrum, pelvis, multiple thoracic and lumbar vertebrae, left femur, and several ribs bilaterally. A diagnosis of EOM was suggested, and broad-spectrum antibiotics were initiated by our infectious disease team. CT guided biopsies of the left femoral neck and L1 vertebral body yielded necrotic tissue. Gram stains were negative, but cultures were eventually positive for clostridium novyi, a pathogenic obligate anaerobe. Despite gradual improvement, the patient developed sudden onset left hemiplegia and was found to have a brain metastasis involving the right parietal lobe that was resected with resolution of neurologic deficits. Following completion of antibiotics, the patient was discharged to acute rehabilitation.

Discussion

The advanced nature of this patient's cancer facilitated dissemination of gastrointestinal anaerobes to distant sites. However, it remains unclear if bony metastases preceded EOM foci. Full body scans were suspicious for bony metastasis near areas of EOM, but biopsies containing necrotic tissue neither confirmed nor ruled out malignancy. Ultimately more research is needed to classify the relationship between metastatic cancer and EOM, and to identify modifiable risk factors of this complication.

Abstract #44 Surgical Management of Congenital Anomalous Coronary Artery and its Challenges

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Introduction

An anomalous coronary artery is a rare congenital condition with various subtypes, the most common of which is the Anomalous Aortic Origin of the Right Coronary Artery (AAORCA). All subtypes have a spectrum of clinical presentations, ranging from asymptomatic to sudden cardiac death (SCD). Although anomalous coronary arteries are highly associated with SCD in young adults, data suggests this risk is lower with AAORCA.

Case Description

In this case, a 30-year-old male with a history of obesity presented to outpatient cardiology to obtain cardiac clearance for bariatric surgery. Due to suspected ST segment changes on outpatient ECG in addition to a suspicious history including exertional dyspnea, the patient was referred for an exercise cardiovascular stress test. This exam revealed ST elevations on ECG during exercise and due to concern for ischemia a coronary angiography was completed which identified the AAORCA. This was also confirmed on the cardiac CT scan. Cardiothoracic surgery was consulted for surgical correction. Due to the known poor attrition rate of vein grafts following Coronary Artery Bypass Graft (CABG) procedures, especially considering the patient's young age, a surgical reimplantation technique was planned instead. During surgery, this approach was attempted, and while the patient initially tolerated this well, due to intraoperative spasm of the vessel he began to appear unstable and experienced a brief episode of ventricular fibrillation on cardiac monitoring. As a result, a saphenous vein bypass graft approach was immediately completed. The patient recovered well following ICU admission and was discharged home in stable condition.

Discussion

This case demonstrates that due to the highly variable and controversial surgical treatment options for the management of AAORCA, it can be quite challenging to select a specific approach. In addition, unpredictable circumstances such as the one presented in this case, can complicate the planned surgical technique, and may ultimately necessitate the most familiar approach with CABG despite the undesirable late attrition of vein grafts. This case also demonstrates the valuable role of obtaining cardiac clearance prior to an elective procedure when indicated by the clinical presentation.

Abstract #46 Medicinal Leech Therapy in Irradiated Microvascular Compromised Tissues

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Introduction

The word "leech" originates from the Anglo-Saxon term laece, meaning "physician." The use of medicinal leeches, known as hirudotherapy, has a rich history that dates back as early as 1500 BCE. A major modern indication of leeches is reducing venous congestion and promoting tissue salvage in patients with compromised skin flaps.

Case Description

An 82-year-old female presented with right facial and tongue swelling after wide local resection of squamous cell carcinoma (SCC) with reconstruction in the right facial and buccal parapharyngeal spaces. She had a history of recurrent SCC, previously treated with chemoradiation. The SCC's aggressive behavior led to extensive tissue loss and destruction of the maxilla and mandible, requiring a complete parotidectomy with facial nerve dissection and intraoral reconstruction with a latissimus dorsi skin paddle six months after chemoradiation. To address the compromised microvascular free tissue, medicinal leeches were applied on post-operative day three to reduce venous congestion, alleviate swelling, and mitigate pain. However, by post-operative day ten, the latissimus dorsi flap displayed signs of venous congestion and necrosis, which ultimately required debridement. Medicinal leeches were selected for this patient given her significant venous congestion and compromised free tissue following extensive reconstruction in a previously radiated field. Despite this approach, tissue salvage was unsuccessful, potentially due to the underlying vascular compromise from prior radiation and the extensive nature of the tumor resection. This case illustrates the challenges of post-reconstructive care in patients with recurrent SCC in irradiated tissue and highlights the limitations of leech therapy in situations with significant vascular compromise.

Discussion

This case accentuates the importance of careful patient selection and highlights the potential limitations of medicinal leeches in patients with a history of extensive chemoradiation and recurrent SCC. While medicinal leeches may provide short-term relief in reducing venous congestion, additional interventions or alternative therapies such as topical nitroglycerin ointments or anticoagulation/thrombolytics may be required for successful long-term outcomes in high-risk patients.

Abstract #47 Infected Femoral Artery Pseudoaneurysm with Impending Rupture

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Introduction

A pseudoaneurysm (PSA) or "false aneurysm" is an outpouching of one or two layers of the vessel wall, typically caused by trauma or infection. In contrast, a true aneurysm involves all three layers of the vessel wall. This case highlights the management of an infected femoral artery PSA.

Case Description

A 57-year-old man with a history of hypertension, coronary artery disease, type 2 diabetes mellitus, dyslipidemia, and right lower extremity (RLE) acute limb ischemia presented for evaluation of a left groin mass. He reported a history of RLE acute limb ischemia, which was managed with angiograms every 3-4 months, thrombolysis, and shockwave lithotripsy. All angiograms were performed via left CFA percutaneous access. For the month prior to admission, the patient was diagnosed with a left groin hematoma and bacteremia, which were managed with outpatient intravenous antibiotics. Upon evaluation, the patient was found to have a large left femoral pulsatile mass with overlying skin changes and purulent bloody drainage. A computed tomography angiography (CTA) scan confirmed the diagnosis of an infected left CFA pseudoaneurysm. Due to concerns about impending rupture, the patient underwent a series of operative interventions. The first operation involved retroperitoneal exposure of the external iliac artery (EIA), excision of the left CFA pseudoaneurysm, wide excisional debridement of the surrounding soft tissue, and harvest of the left great saphenous vein (GSV). The GSV was then used for interposition grafting from the left EIA to the left CFA. The patient also had a left groin wound vac placed, along with an incisional wound vac on the left abdominal wall. During the second operation, in addition to a washout and debridement, the patient underwent a left sartorius muscle flap with wound vac placement. The patient recovered well from the left lower extremity interventions (LLE); however, due to chronic tissue loss and absent motor function in the RLE, he required an elective above-knee amputation. He has since healed from all surgical interventions and is ambulatory with a right lower extremity prosthesis.

Discussion

Infected femoral artery pseudoaneurysms have a mortality rate of 2.5-5%. Early diagnosis and prompt surgical intervention are crucial to minimizing the risk of rupture and death. This case highlights the importance of the management of infected femoral artery pseudoaneurysms, as well as the devastating sequelae of delays in vascular surgery consultation. It also underscores the need for further medical education to improve physician and provider knowledge on the management of vascular conditions.

Abstract #48 Acute Abdominal Pain in the Setting of Sickle Cell Anemia

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Introduction

Diagnosing the etiology of acute abdominal pain in sickle cell patients is a unique challenge that cannot be managed using traditional treatment algorithms. Not only does the presentation of acute abdominal pain in sickle cell crisis closely resemble peritonitis, but sickle cell crises also have the potential for unique GI complications.

Case Description

A 65-year-old man with past medical history of sickle anemia presented to the ED with acute chest and abdominal pain typical of previous sickle cell crises. He was started on IV fluids, opioids, and enoxaparin. Over the next 24 hours his abdominal pain worsened and CT without contrast showed cecal and ascending colonic pneumatosis with concern for ischemic bowel. Labs were significant for WBC of 16.8 and lactate of 2.9. Piperacillin and tazobactam were started and a CT with contrast found less apparent pneumatosis and newly noted cholelithiasis. The patient was monitored on bowel rest for 2 days without any improvement or further deterioration. On day 4, RUQ ultrasound showed cholelithiasis and gall bladder thickening. On day 5, MRCP confirmed cholelithiasis but was negative for inflammatory changes or ductal dilation. Since admission, daily labs were significant for elevated WBC, AST, ALT, alkaline phosphatase, and direct bilirubin. Given these labs and no resolution in symptoms the decision was made to perform diagnostic laparoscopy with laparoscopic cholecystectomy. Liver scarring was noted and liver biopsy returned moderately increased reticuloendothelial iron, slight sinus dilation with changes suggesting hemorrhage into the space of Disse. Patient's abdominal pain improved post-operatively without complication and he was able to be discharged on post-op day 3.

Discussion

DISCUSSION: A patient in sickle cell crisis with abdominal pain can have certain signs and symptoms suggestive of an acute surgical abdomen such as leukocytosis, severe abdominal pain with guarding and rigidity, elevated cholestatic labs, and tachycardia. Measures of bilirubin and LDH are not helpful as they are often elevated at baseline in sickle cell anemia. Over half of homozygous sickle cell patients will develop pigmented gall stones and have a greater risk for cholestatic pathologies. In addition, 39% of patients in sickle cell crises develop hepatic complications such as hepatic sickle cell crisis, hepatic sequestration, and intrahepatic cholestasis. Sickle cell crises can also lead to acute mesenteric ischemia or ischemic colitis with necrotic bowel perforation (Girdle Syndrome). This case highlights the diagnostic hurdles and unique differential of acute abdominal pain in sickle cell patients.

Abstract #51 Type III Carotid Artery Aneurysm, Repaired Using Great Saphenous Vein Interposition Graft

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Introduction

Extracranial carotid artery aneurysm (ECAA) makes up 0.4-1.9% of all peripheral artery aneurysms with etiologies including atherosclerotic, infectious, traumatic, dissection, tissue disorders, irradiation, or post-endarterectomy complication. Presentation can range from painless pulsatile neck mass to cerebrovascular accident to, rarely, rupture. Despite the rarity of this disease process, multiple treatment methods have been described. We present a case of a patient with Type III carotid artery aneurysm treated with resection and reconstruction with great saphenous vein (GSV) interposition graft.

Case Description

A 70-year-old man with history of hypertension, tobacco use, and coronary artery disease s/p percutaneous intervention and stents presented to the ED with right eye vision loss. He took a nap the day prior and upon waking, noted complete vision loss in the right eye. He took aspirin, presented to his ophthalmologist where he was diagnosed with retinal artery occlusion, and was subsequently admitted to the hospital. He denied other neurologic deficits. Physical exam was significant only for reduced central vision of the right eye. Imaging including CT angiogram head/neck, carotid Duplex ultrasound, and vein mapping ultrasound demonstrated 1.5 cm plaque-filled aneurysm of the proximal right internal carotid artery (ICA) and carotid bifurcation resulting in up to 80% stenosis on CT (NACET criteria), 60% stenosis of left ICA, and adequate saphenous vein diameter bilaterally. He was discharged on anticoagulation per his request due to personal obligations and returned two weeks later at which time he underwent right ICA aneurysm resection, carotid artery endarterectomy, and reconstruction. Operative techniques included leaving the posterior wall of the aneurysm intact and reconstruction with harvested right GSV for an interposition graft. The patient tolerated surgery well and discharged on postoperative day two.

Discussion

Types I and II ECAA are most common; however, due to the overall rare nature of ECAA, current studies have been unable to demonstrate consensus on optimal treatment strategies. Recent data suggest that short-term mortality and ipsilateral stroke rates are low in asymptomatic patients treated nonoperatively. Symptomatic patients should be treated surgically to decrease thromboembolic complications. Operative treatment options include resection with reconstruction, bypass without resection, endovascular treatment, or ligation - with ligation typically being reserved for emergency situations due to its increased risk of stroke. A viable option in resection and reconstruction is to leave the posterior wall of the aneurysm intact to provide stability while performing an interposition graft. Further research and international registry development would be beneficial to establish evidence-based treatment guidelines.

Abstract #72 A Gunshot Wound Pseudoaneurysm to the Upper Extremity

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Introduction
Brachial artery injuries account for 25-33% of all peripheral arterial injuries and 40-55% of all upper extremity arterial injuries. Traumatic lesions of the axillary artery are only 15–20% of all axillary arterial injuries of the upper limb. This report highlights a case of a patient with a gunshot wound to the left upper extremity and management and treatment of this injury.

Case Description
A 37-year-old male with a history of multiple back surgeries presented to the trauma bay as a level 2 trauma. He sustained a gunshot wound to his left upper extremity. There were no concurrent head injury, loss of consciousness, or neck trauma. He reported an immediate feeling of burning sensation to his left arm with pain with active and passive range of motion. On examination in the trauma bay Glasgow coma scale (GCS) was 15/15 and examination of his left upper extremity revealed a palpable hematoma on the lateral aspect adjacent to the primary entry, a graze wound on the lateral aspect of his elbow, and palpable distal pulses (radial & brachial) with multiphasic Doppler signals. There was no gross bony deformity in the left upper limb. Patient was hemodynamically stable and underwent CT angiographic imaging that revealed a left axillary artery pseudoaneurysm. The patient underwent conventional angiography in a hybrid OR suite which confirmed the axillary artery with a 2 cm pseudoaneurysm. The patient underwent endovascular intervention with a covered stent graft and completion angiography confirmed exclusion of the pseudoaneurysm with no further extravasation.

Discussion
Soft signs of injury include: small or moderate sized stable hematomas, adjacent nerve injury, shock, and proximity of the wound to major vascular structures. In upper extremity trauma it is imperative that patients' axillary region be examined as sometimes injury can be hidden by the truncal anatomy. In conclusion, a high level of suspicion due to the location or mechanism of injury combined with targeted imaging is imperative in recognizing life-threatening vascular injury. Moreover, this case highlights the availability of endovascular approaches and hybrid OR capabilities in the expedient management of urgent intervention.

Abstract #87 When Training Turns Troubling: A Clinical Case of Chronic Exertional Compartment Syndrome

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Introduction
Compartment Syndrome is a condition where pressure in a muscle compartment increases at such a rapid or severe rate that damage can be caused to the nerves, vessels, and muscles therein. This commonly occurs due to a crush injury, broken bone, sudden interruption and then resumption of arterial flow, or surgical complication. However, in rare circumstances this can be caused by exercise or exertion and is known as Chronic Exertional Compartment Syndrome (CECS). Individuals experiencing this condition will have increased compartment pressures and associated pain in the extremities during activity that then resolves with rest. Accurate diagnosis can be challenging as these symptoms also present in patients with vascular conditions.

Case Description
A 33-year-old transgender male on chronic hormonal therapy presented to the vascular surgery clinic with complaints of bilateral lower extremity pain with activity. This pain began five years ago after completing a running training program and has since worsened. He described pain within 2-3 minutes of walking and immediately when walking backwards. Compression stockings and aspirin gave little to no relief. He longed to be able to go for hikes again. On examination, he was healthy appearing and his lower extremities had no skin, muscle, or pulse abnormalities. His lower extremity MRA, arterial duplex US, and ABI's were unremarkable. Increased compartment pressures after exertion were found both in office and a diagnostic dynamic BLE angiogram confirmed the diagnosis of Chronic Exertional Compartment Syndrome. The decision was then made to perform bilateral fasciotomies using lateral incision to release the anterior and lateral compartments and medial incision to release the posterior compartments. The surgery was without complications. His symptoms had greatly improved at his post-operative follow-up appointment.

Discussion
Chronic Exertional Compartment Syndrome is a relatively rare condition most commonly found in athletes. As this is an uncommon pathology, there may be a delay in diagnosis and therefore a delay in effective treatment (i.e., fasciotomy). A thorough history, examination, and measuring of dynamic compartment pressures, if strongly suspected, are best practice when evaluating CECS patients. This case illustrates the importance of incorporating these elements into the work up of patients presenting with these symptoms.

Abstract #93 Calciphylaxis in the Abdominal Pannus and Bilateral Hips of a Patient with End-Stage Renal Disease

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Introduction
Calciphylaxis, also known as calcific uremic arteriolopathy (CUA) is a rare and severe condition that presents with skin ischemia and necrosis. It is histologically defined by the deposition of calcium in the arterioles and capillaries of the dermis and subcutaneous fat. There are numerous medical conditions that can induce calciphylaxis, such as hyperparathyroidism, malignancies, liver disease, and autoimmune diseases but it is most common in patients with End Stage Renal Disease (ESRD) on dialysis. The condition is very unpredictable and remains difficult to treat. The mortality rate is very high, around 40% at six months and 44% at one year. Mortality in these cases is usually due to sepsis, organ failure, or infection. This case report illustrates the complications of calciphylaxis and further highlights the need for multidisciplinary team care in preventing the high morbidity associated with the condition.

Case Description
A 70-year-old woman with atrial fibrillation (on warfarin), ESRD on dialysis, Morbid obesity, and type II diabetes mellitus with severe neuropathy presented with necrotic wounds on her lower abdominal pannus. She underwent wound debridement and started on antibiotics. Her condition worsened, with more necrosis in the abdominal wound and starting a similar process in her bilateral hip areas. She needed multiple debridements and wounds were managed with negative pressure therapy. Deep cultures showed vancomycin-resistant enterococci and multiple drug-resistant Citrobacter. Pathologic findings included fat necrosis, calcium deposition, and intravascular fibrin thrombi consistent with calciphylaxis. The nephrology team started sodium thiosulfate (which inhibits adipocyte and vascular calcification), Sensipar, and Revela. They discontinued all calcium and vitamin D supplements. The wound care team managed her wound vacs. Plastic surgery was consulted for abdominal wound closure and skin graft.

Discussion
Treating calciphylaxis requires a team approach with early diagnosis, medical management, multiple surgeries, and treating the underlying cause. There is limited evidence and treatment remains very challenging. Managing this disease requires a team of specialists, including general surgeons, nephrologists, infectious disease experts, a wound care team, and plastic surgeons. Although some new treatments have been developed, there is still no clear agreement on the best approach. To improve survival and quality of life in this severe disease, a collaborative, multidisciplinary effort is essential.

Abstract #94 Modified Knickerbocker Technique for False Lumen Occlusion in Hyper-Acute Thoracic Aortic Dissection

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Introduction

In thoracic aortic dissections, thrombosis of the false lumen is the key to successful aortic remodeling. In cases of chronic dissection with persistent false lumen, several endovascular techniques exist for management of the false lumen such as Candy-Plug, STABILISE, Knickerbocker, coil embolization or FEVAR extension. Knickerbocker Technique was introduced in 2012 and represents a fenestration method to achieve false lumen occlusion proximal to the celiac trunk. Here we present a use of modified Knickerbocker technique for occlusion of false lumen in a case of hyper acute descending thoracic aortic dissection.

Case Description

A 56-year-old female with a history of tobacco smoking, obesity and Grave's disease who presented after syncope and fall preceded by sudden chest pain. She was hypotensive, somnolent, and complaining of pain in the left lower chest. Computed tomography imaging revealed an acute type $B_{4, 10}$ thoracic aortic dissection with rupture and left hemothorax. Impulse control was initiated, and she was taken to the operating room emergently for endovascular repair of the dissection and aneurysmal degeneration. The right common femoral artery was accessed, and cannulation of true lumen was confirmed using angiography and intravascular ultrasound (IVUS). IVUS also demonstrated complex intimal flap distal to the left subclavian artery (LSA) and the ruptured segment of the descending thoracic aorta (DTA). A 31 mm x 31 mm x 20 mm GORE® TAG conformable thoracic stent graft was placed in DTA distal to the LSA. Angiography demonstrated DTA with reduced flow into the false lumen with persistent retrograde filling from the level of the celiac artery (CA) into mid-DTA without extravasation. Given this finding and the risk of ongoing hemorrhage, a distal extension (40 mm x 40 mm x 15 mm stent) was placed ending a few centimeters proximal to the CA. This was followed by Knickerbocker angioplasty using a GORE® Tri-Lobe balloon to rupture the septum. Angiography demonstrated no retrograde filling of the false lumen. Mesenteric vessels, and bilateral iliac arteries, and LSA remained patent. Prior to completion of the case a left sided tube thoracostomy was performed to evacuate the hemothorax. The patient recovered well from this surgery without any signs of end-organ or spinal ischemia and was discharged from the hospital 10 days later.

Discussion

This case highlights a modified version of the Knickerbocker technique using a GORE® stent graft to induce false lumen thrombosis and prevent ongoing hemorrhage in a hyper acute complicated DTA dissection with rupture.

Abstract #97 Endovascular Management of Superficial Femoral Artery Trauma

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Introduction

Endovascular management of vascular surgery is an alternative to traditional open surgery in select patients. Prior studies have evaluated its application in select injuries. This case highlights the utility of minimally invasive techniques to manage peripheral vascular trauma with superficial femoral artery (SFA) injury.

Case Description

A 57-year-old male presented to the hospital after an accidental firearm discharge, resulting in multiple pellet wounds to the left thigh, extensive soft tissue damage, and acute limb ischemia. Distal pulses in the left lower extremity were absent, but the patient remained hemodynamically stable with no other associated injuries. A computed tomography angiogram revealed complete occlusion of the mid-superficial femoral artery (SFA) and significant subcutaneous damage with retained foreign bodies. Given the technical challenges, high postoperative morbidity of an open surgical approach, and lack of optimal conduit, a decision was made to perform a lower extremity angiogram with endovascular intervention to restore SFA flow. The patient underwent a left lower extremity angiogram via right common femoral artery access, confirming the SFA occlusion and absent tibial runoff. The lesion was successfully crossed using a Glidewire, followed by mechanical thromboembolectomy of the SFA and tibial arteries. A covered stent was placed in the SFA, and a left lower extremity four-compartment fasciotomy was performed due to the prolonged ischemia time. At the conclusion of the procedure, palpable distal pulses and triphasic Doppler signals were noted. The patient was discharged in stable condition on oral antiplatelet and anticoagulation therapy. Postoperatively, the patient was evaluated multiple times. His fasciotomy sites healed well with negative pressure wound vac therapy. However, his soft tissue injury became complicated by a local infection, requiring superficial debridement. He experienced mild motor and sensory deficits but regained his baseline functional status with no disability. Serial duplex ultrasound surveillance showed a patent SFA stent with triphasic Doppler waveforms and a normal ankle-brachial index.

Discussion

This case highlights the safety and efficacy of endovascular therapy in managing peripheral vascular trauma, particularly in avoiding the morbidity of open surgery in contaminated traumatic wounds. However, there are several factors to consider, including the surgeon's comfort with vascular techniques and the availability of hospital resources.

Abstract #99 From Abscess to Pseudoaneurysm: Surgical Management and a Novel Shunt Technique

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Introduction
Pseudoaneurysms (PSAs) are a common and often challenging problem for vascular surgeons. When planning treatment, factors such as the etiology, anatomic location of the PSA, technique for proximal and distal control, and the patient's overall clinical status must be carefully considered. However, an accurate diagnosis is essential before proceeding with treatment. This case presents a suspected arm abscess, which was later determined to be an infected PSA requiring urgent intervention, including emergent transfer, operative repair, and a novel intraoperative technique for shunt creation.

Case Description
A 38-year-old woman with a remote history of intravenous drug use (IVDU) presented after undergoing incision and drainage for a presumed right arm abscess, which was complicated by hemorrhagic shock. A tourniquet was applied, blood products were administered, and the patient was transferred for vascular surgery evaluation. Upon arrival, the patient was immediately taken to the operating room for repair of the PSA. Proximal and distal control of the brachial artery was obtained. To minimize ischemia time, a shunt was required; however, due to the small caliber of the vessels, an appropriately sized shunt was unavailable. As a result, a modified shunt was created using two 4F sheaths, 3-way stockcocks, and IV extension tubing. The surrounding tissue was debrided, and interposition bypass was created using left great saphenous vein. Notably, the brachial artery exhibited numerous needle marks, indicating prior repetitive arterial trauma. Patient tolerated the initial operation without issue and returned to the OR for further debridement, bypass coverage and wound vac placement. During her hospital stay, the patient disclosed more recent intravenous drug use than initially reported. She was discharged on postoperative day seven with a wound vac and a six-week course of intravenous antibiotics. Follow-up in the clinic revealed that the bypass remained patent, the wound healed via secondary intention, and the patient was satisfied with the cosmetic outcome.

Discussion
This case illustrates a common, yet complex scenario encountered by vascular surgeons. It emphasizes the importance of accurate preoperative diagnosis, patient transparency, and innovative problem-solving, particularly in cases requiring novel techniques like modified shunt creation. The ability to adapt to intraoperative challenges and use available resources creatively can significantly improve patient outcomes.

Abstract #107 A Rare Case of Gastropleural Fistula After Roux-en-Y Gastric Bypass

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Introduction

Staple line leaks are a known complication following bariatric surgery, occurring in 2-5% of patients who undergo Roux-en-Y gastric bypass and sleeve gastrectomy. Late gastropleural fistulas due to a perforated ulcer are an exceedingly rare subtype of this complication that has been documented in less than 1% of all bariatric surgeries and can ultimately be lethal if not recognized and managed appropriately. Here, we discuss a patient with a late gastropleural fistula involving the gastric remnant presenting over twenty years after undergoing Roux-en-Y gastric bypass.

Case Description

Our patient is a 51-year-old female with a history of Roux-en-Y gastric bypass in 2004 who presented to the emergency department with tachycardia and hemoptysis after two to three weeks of pneumonia symptoms including one hospitalization at an outlying facility. During this hospitalization, the patient was told that she “had a hole in her lung” but did not undergo any intervention for it. The patient denied pulmonary disease otherwise and denied tobacco use. Computer tomography of the chest and abdomen at our facility demonstrated concern for a large pulmonary abscess communicating with the gastric fundus. Labs on admission were significant for leukocytosis, anemia, and lactic acidosis. Inpatient upper GI study did not demonstrate an anastomotic leak and EGD did not demonstrate a fistula via the gastric pouch, suggesting a connection of the pleura with the gastric remnant likely due to a perforated ulcer. Approximately two weeks later, after failing medical management, the patient underwent operative repair of the fistula including left posterolateral thoracotomy, fistula ligation, diaphragm repair, left lower lobectomy, and chest tube placement by cardiothoracic surgery. The patient tolerated this well, the chest tubes were removed by post-operative day #6, and she was discharged home on post-operative day #8.

Discussion

Staple line leaks are well-known complications of bariatric surgery that typically present in the early post-operative period with tachycardia and abdominal pain. High suspicion is necessary to identify a late gastropleural fistula in patients who have undergone bariatric surgery who may present with chronic or recurrent pulmonary infections. Surgical repair alongside a multidisciplinary team (general surgery, bariatric surgery, cardiothoracic surgery, pulmonology, infectious disease, etc.) is often indicated for definitive management.