

Medical Student Poster # 1

Category: Clinical Vignette

Institution: American University of Integrative Sciences School of Medicine
Faculty Advisor: Remilekun O. Soile, MBChB, ACP Member - St. John-Providence
Presenter: Andre Halabu
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Collapsing-Type FSGS and the Questionable Appearance of Syphilis

Collapsing-Type Focal Segmental Glomerulosclerosis (FSGS) is a rare subtype of FSGS found in select cases of Nephrotic Syndrome and is characterized by sclerosis of some glomeruli. The clinical sequence of the glomerulopathy in this case makes for an unlikely diagnosis warranting further consideration.

A 43-year-old African woman presented with a blood pressure of 170/90 stating that she was concerned about her kidney function after consuming an herbal fertility tonic in western Africa in October of 2016. Upon hospitalization at that time due to bilateral pitting edema in her legs and face, her Creatinine was measured at 3.4mg/dL. She sought further treatment in the U.S. Given the symptoms of acute kidney failure, an HIV test was done and returned non-reactive. Urinalysis was positive for 1+ hematuria and 3+ proteinuria. Blood work showed Hypercholesterolemia. The patient later mentioned that she was also treated for Malaria and received IV anti-malarial medications. With a GFR of 22 mL/min/1.73 m², she was diagnosed with Chronic Kidney Disease, Stage 4. Clinical suspicion prompted a Hepatitis profile and RPR test. Negative Hepatitis profile and Positive RPR warranted Syphilis treatment. Kidney biopsy was notable for tubular atrophy and degeneration, interstitial fibrosis, and burgeoning podocytes.

This case exemplifies the complexity and multi-faceted approaches to diagnosing pathologies of the kidney. We also see the importance of complete detailed histories from patients with complete workups. Proper medical approach can help to prevent or slow the progression of very devastating and debilitating diseases.

Medical Student Poster # 2

Category: Clinical Vignette

Institution: American University of the Caribbean, School of Medicine

Faculty Advisor: Raymond Hilu, MD, FACP - St. John Hospital - Grosse Pointe

Presenter: Meghan Lane

Additional Authors: Leonard B. Johnson, MD FACP

Brevundi - What? Brevundimonas Diminuta as a Cause of Pneumonia and Sepsis in Cancer Patients

Introduction: Brevundimonas diminuta, previously known as Pseudomonas diminuta, is a non-lactose fermenting gram negative bacillus. Though rarely associated with nosocomial or community-acquired infections, the few cases that have been documented are typically in cancer patients.

Case: A 69 year old female with hypertension, COPD, end-stage renal disease and metastatic bone cancer of unknown primary on chemotherapy presented with a one day history of non-productive cough, right-sided pleuritic chest pain and right upper lobe infiltrate on chest x-ray. On examination, she was dyspneic and weak. Her heart rate was 99, blood pressure 97/65, temperature 99.3° F and there were diminished breath sounds in the right upper chest. She was admitted for healthcare-associated pneumonia and initially treated with vancomycin and cefepime. Vancomycin was discontinued after the sputum gram stain revealed gram negative bacilli. Blood cultures grew 2/2 sets B. diminuta and the patient was switched to cefazolin based on susceptibility testing. Follow-up blood cultures were negative as was transthoracic echocardiogram for any evidence of vegetations. The patient improved slowly and ultimately she was discharged on IV cefazolin to complete a 14 day course of therapy.

Summary: B. diminuta is a rare cause of clinical infections and is most often associated with infections such as pneumonia, infective endocarditis and peritonitis predominantly among patients with underlying malignancies. Isolates are typically resistant to aminoglycosides and fluoroquinolones but susceptible to cephalosporins. This case highlights the association of B. diminuta sepsis in patients with cancer.

Medical Student Poster # 3

Category: Research

Institution: American University of the Caribbean, School of Medicine

Faculty Advisor: Joseph Miller, MD, Member - Henry Ford Hospital System

Presenter: Meri Muminovic

Additional Authors: Dean Fouchia MD, Ahmed Amer MD, Joseph Miller MD

Effectiveness of Prophylactic Antibiotics in Mechanically Ventilated Comatose Patients

Effectiveness of Prophylactic Antibiotics in Mechanically Ventilated Comatose Patients: Systematic Review of Randomized Controlled Trials

ABSTRACT

Objective:

In comatose patients that require endotracheal intubation for airway protection, pneumonia frequently complicates their hospital course. Our primary objective was to determine if existing trials support the routine use of prophylactic antibiotics to decrease the incidence of pneumonia in comatose patients requiring endotracheal intubation.

Methods:

We searched major databases (PubMed, Web of Science, EMBASE, Scopus databases and Cochrane Central Register of Controlled Trials) from the years 1960-2017 for randomized controlled trials (RCTs) that compared antibiotic prophylaxis to usual care. The population were comatose patients that required endotracheal intubation for airway protection. Causes of coma included any brain insult such as stroke, cardiac arrest or trauma. The primary outcome was pneumonia occurring within 5 days of admission. A secondary outcome was mortality.

Results:

Of 34 articles found, there were 2 studies that were single-site RCTs and included in the systematic analysis. These trials included a total of 130 mechanically ventilated comatose patients. Sixty-six patients received prophylactic medication (cefuroxime IV or ampicillin-sulbactam and standard treatment). There was significant improvement in reduction of pneumonia but no significant reduction in mortality. Testing for heterogeneity was not feasible due to the low number of available studies.

Conclusions:

Antibiotic prophylaxis in mechanically ventilated comatose patients is associated with lower rates of early onset pneumonia in small, single-site trials. However, confirmatory trials are lacking to support wide adoption of this practice.

Institution: Central Michigan University School of Medicine

Faculty Advisor: Josephine Dhar, MD, FACP – Central Michigan University

Presenter: Renee Dhar

Additional Authors: Paritharsh Ghantasala and Dhara Patel

The Case of Non-Resolving Diffuse Infiltrates in a Previously Healthy Male

BACKGROUND: DiGeorge syndrome (DS), or 22q11.2 deletion syndrome (22Q11.2DS), is a rare autosomal dominant disorder characterized by abnormal facial features, congenital heart disease, hypoparathyroidism, immune deficiency & autoimmune disorders. We present a case of

Granulomatous Polyangiitis (GPA) occurring in a previously asymptomatic DS patient.

CASE PRESENTATION: Previously healthy 40 year old male admitted for dry cough, chest pain, shortness of breath, loss of appetite, weight loss (20 pounds) & dyspnea on exertion. Chest X-ray (CXR)=bilateral infiltrates. Patient didn't improve with antibiotics & was readmitted. CXR=bilateral diffuse infiltrates. HRCT=multifocal bilateral infiltrates upper (UL) & lower lobes, mediastinal lymphadenopathy and a new 4.5 cm RUL pulmonary nodule. Exam=negative except for lung findings and an old right ocular lateral rectus palsy. Family history:twin daughters diagnosed with DS. Genetic work up:22q11.2 deletion present in patient & daughters. Laboratory workup unrevealing:normal renal function,

negative urinalysis, negative tests for TB, HIV, Histoplasmosis, Coccidiomycosis, Influenza A & B, Hepatitis B & C, Cytomegalovirus, Mycoplasma,

Streptococcus, Legionella, Cryptococcus. Autoimmune workup:negative for rheumatoid factor, ANA, myeloperoxidase antibody. Bronchoscopy:inflammatory reactive cells, negative cultures for viruses, TB & Fungi. Transbronchial biopsy:non-caseating granulomas. Serine proteinase-3 antibody=high-positive. Treatment with high dose corticosteroids, rituximab & mycophenolate mofetil resulted in complete clinical response

DISCUSSION: GPA is an ANCA-associated, necrotizing vasculitis characterized by antibodies to serine proteinase-3 with 80% renal involvement.

GPA has a poor prognosis untreated & requires aggressive immunosuppressive treatment, and is rarely associated with DS.

CONCLUSIONS: Autoimmune diseases should be considered in patients with pulmonary infiltrates that don't respond to antibiotic treatment.

Institution: Central Michigan University School of Medicine

Faculty Advisor: Josephine Dhar, MD, FACP – Central Michigan University

Presenter: Kyle Schank

Additional Authors: Clark Yarber

Aortoenteric Fistula: An Unlikely Cause of Massive Gastrointestinal Bleeding

INTRODUCTION: Aortoenteric (AE) fistulas are a rare cause of GI bleeding that typically present with hematemesis and/or hematochezia. Typical symptoms upon presentation may include: abdominal or back pain, fever, shock, or a palpable abdominal mass. In any patient with sudden and massive GI bleeding, an AE fistula should be on the differential.

DESCRIPTION: A 67-year-old male presented to the ED complaining of vomiting blood. Medications included warfarin for a history of VTE. The patient's history and ROS were otherwise noncontributory. Vital signs were significant for tachypnea and hypotension. Physical exam was benign. EGD showed a nonbleeding, small linear ulcer in a hiatal hernia. A colonoscopy showed a medium-sized clean-based nonbleeding ulcer 25 cm from the anal verge and was otherwise nondiagnostic. The patient was discharged in stable condition. Shortly after, the patient had repeat massive hematemesis and a large bloody bowel movement. Repeat EGDs were nondiagnostic. An eventual CT angiogram of the abdomen demonstrated an outpouching of the abdominal aorta which measured approximately 7.4 x 5.7 x 6.4 cm. It extended off the right aspect of the infrarenal abdominal aorta and was consistent with contained rupture/pseudoaneurysm. Contrast indicated communication with the adjacent duodenum, consistent with an aortoenteric fistula.

DISCUSSION: AE fistulas are rare, but can present as catastrophic GI hemorrhage. In this scenario, the patient's workup was not conclusive and likely led to a delayed diagnosis. The AE fistula was suspected to be due to chronic duodenal ulceration extending into the aorta, however a definitive cause was not established.

Medical Student Poster # 6

Category: Clinical Vignette

Institution: Central Michigan University School of Medicine

Faculty Advisor: Josephine Dhar, MD, FACP – Central Michigan University

Presenter: Alyssa Stroud

Additional Authors: Travis Baes, MS4; Sukhmanpreet Singh, MD

Medication Induced Constipation Leading to Stercoral Perforation

Stercoral perforation is a rare, but severe, consequence of untreated constipation. It is caused by fecal impaction leading to pressure induced ischemic necrosis and subsequent perforation of the bowel wall. Many medications such as opiates, anticholinergics, and tricyclic antidepressants (TCA) can cause constipation that can lead to stercoral perforation. The incidence of colon perforations secondary to stercoral ulcers is 3.2%, with a mortality rate of 34%.

A 49 year-old female presented to the emergency department due to abdominal pain for two days. Physical examination demonstrated rebound tenderness and abdominal guarding. An abdominal CT revealed free air under the diaphragm localized around the duodenum, a moderate amount of fecal material in the bowel and free fluid in the pelvis. An emergent exploratory laparotomy was performed, which demonstrated feculent and purulent peritonitis secondary to a stercoral perforation of the sigmoid colon. This was followed by a subtotal colectomy with right end ileostomy and placement of a wound VAC. A complicated postoperative course followed. Investigation revealed a history of prescription opioid and TCA use, with no evidence of a bowel regimen.

This case demonstrates that although rare, stercoral perforation can lead to significant patient morbidity and mortality. Medication induced constipation is a leading, but preventable, cause of stercoral perforation. Approximately 3% of adults are prescribed opiate pain medications for chronic pain, 40% of which suffer from opiate-induced constipation. It is important for practitioners to recognize patients at risk for medication induced constipation and treat them with appropriate bowel regimens.

Medical Student Poster # 7

Category: Clinical Vignette

Institution: Michigan State University - College of Human Medicine

Faculty Advisor: Churlson Han, MD, ACP Member – Michigan State University College of Human Medicine

Presenter: Ronak Chhaya

Additional Authors: Aparna Das, MD

A Rare Case of Sweet Syndrome as the Initial Presentation of Late-Onset Systemic Lupus Erythematosus

Introduction:

This is the case of a patient presenting with altered mental status (AMS) who developed vesicular lesions across her face and chest. She was diagnosed with Sweet Syndrome, a rare inflammatory disease seen in older women. Her case is likely related to Lupus, either discoid or hydralazine-induced, which she has no prior history of. There are approximately 20 reported associations of Sweet Syndrome and SLE, with 4 cases linked to Hydralazine.

Case Presentation:

This patient is a 65 year-old female with a history of ESRD and hypertension presenting with AMS. She was receiving dialysis when she began speaking incomprehensibly and acting aggressively, despite normal behavior initially. Her BP was 230/110, Glucose 191 and stroke scale score 11. CT head and CTA head and neck were unremarkable. Her encephalopathy resolved after blood pressure control with Hydralazine. Over the next 4 days, she had intermittent AMS, hypertension, fevers and developed 0.5-5cm palpable purpuric lesions and rash across her face and chest. She had negative workup for Meningococcal and Cryptococcal Meningitis. Positive ANA and Chromatin antibodies, despite negative SPEP, alongside low platelets and white count caused suspicion for late-onset SLE. Dermatology was consulted and made their diagnosis of Sweet Syndrome with biopsy. Patient's symptoms were responsive to Prednisone.

Discussion:

This case represents a rare case of Sweet Syndrome as initial presentation of Lupus, based on 4/11 criteria: discoid rash, hematologic disorder, immunologic disorder and ANA. It is possible but remains unclear whether this Lupus was directly induced by Hydralazine.

Medical Student Poster # 8

Category: Research

Institution: Michigan State University - College of Human Medicine

Faculty Advisor: Churlson Han, MD, ACP Member – Michigan State University College of Human Medicine

Presenter: Haben Debessai

Additional Authors: Megan Masten, Andrea Kubicki, Kirsten Salmela, Reena Pullukat

Expert Opinions on Access to Healthcare for Immigrants

Norway has a universal healthcare system, where all legal residents have equal access to healthcare regardless of socioeconomic status, country of origin, or area of residence.

Due to the constant increase of migrants/refugees to Norway, it is advantageous to reevaluate how access to healthcare is unique for these populations. This study therefore aimed to investigate the quality/access of healthcare for migrant populations from the perspective of both researchers and providers involved in migrant health. For the study, interviews and focus groups were conducted among professionals with expert opinions on immigrant healthcare services in Norway. The interview consisted of

four standardized questions addressing the pros and cons of the Norwegian healthcare system, experience working with immigrants, barriers to care, and health issues specific to immigrant populations. The study team conducted interviews with researchers, physicians, and healthcare professionals. From a preliminary analysis it is apparent that language and medical provider cultural competency are major barriers to care for immigrant populations. Following the study in Norway, a second focus-group study is currently being conducted with physicians and healthcare providers in the state of Michigan. Accrualment of study participants has been accomplished through personal networks and contacts provided by MSU College of Human Medicine. The ultimate goal of this research project is to compare the Norway and Michigan studies, in order to compare the similarities and differences between the two vastly different healthcare systems for immigrant populations. We hope that this information will help influence positive changes for immigrants in the healthcare system.

Institution: Michigan State University - College of Human Medicine

Faculty Advisor: Churlson Han, MD, ACP Member – Michigan State University College of Human Medicine

Presenter: Mayank Gupta

Additional Authors: Kathleen Louis

Addressing Medical Complexities in Rural Settings: A Case Study

Introduction: Rural patients often present with complex medical concerns, and tend to utilize the emergency department (ED) to manage their immediate symptoms. To address these rural health disparities, clinics can employ patient-centered medical home (PCMH) principles, which involve a team-based biopsychosocial approach. This creates a unique plan for high utilizers of the health care system, and significantly reduces costs.

Case presentation: This study is a case report of a 56-year-old Caucasian male, with debilitating anxiety, agoraphobia, OCD, PTSD, and substance abuse. He presented to the ED with recurrent anxiety attacks 5 times over the course of 3 months. A typical ED visit for this patient involved CT scans, labs, and EKGs, costing up to \$3000 per visit.

Management: The ED referred him to a rural health clinic employing PCMH principles. The multidisciplinary team addressed each aspect of the biopsychosocial model by beginning him on long-term anxiety medications, counseling him for his OCD and addiction, and employing shared decision-making to improve his health literacy. This involved educating him regarding the importance of routine primary care visits, as opposed to ER visits.

Discussion: With this PCMH approach, the patient has not visited the ER in the past year, and stopped smoking and drinking alcohol. He is currently applying for a job, which was not possible before due to anxiety. This approach provided comprehensive care to the patient and can be used to create a personalized plan for high utilizers of the health system, to reduce costs and effectively treat complex medical needs.

Institution: Michigan State University - College of Human Medicine

Faculty Advisor: Churlson Han, MD, ACP Member – Michigan State University College of Human Medicine

Presenter: Adam Kudirka

Additional Authors: Dylan Hutchison, Tareq Al-Baghdhadi, Anthony Kudirka & Vita McCabe

A Novel Mediastinal Neoplasm Treated with Robotic Assisted Exoneration

Mediastinal germ cell seminomas are rare. Vascular tumors are uncommon mediastinal masses making up <1% of all mediastinal masses. We report a case of a 20-year-old male presenting with a concurrent germ cell seminoma and vascular angioma in the anterior mediastinum, surgically resected by transthoracic robotic assisted surgery. Primary extragonadal malignant germ cell tumors (EMGCTs), such as germ cell seminoma, are rare and account for only 2-5% of malignant germ cell tumors. The mediastinum is the most common site of EMGCTs accounting for 50-70% of EMGCTs. Mediastinal hemangioma is a vascular neoplasm made up of capillaries or veins, typically benign. Hemangiomas of the mediastinum are rare tumors with fewer than 100 having been reported. In this case we present an atypical hemangioma concurrent with an extragonadal germ cell seminoma occurring within one encapsulated mass in the patient's anterior mediastinum. These two neoplasms separately are extremely rare, however, the incidence of these two neoplasms occurring together represent a unique situation that based upon review of the literature has not been reported before. This case report presents the clinical and surgical decisions used to treat this novel presentation.

Institution: Michigan State University - College of Human Medicine

Faculty Advisor: Churlson Han, MD, ACP Member – Michigan State University College of Human Medicine

Presenter: Yeji Park

Additional Authors: Hassan Zreik, Heather Laird-Fick, MD, MPH, FACP

Risk of Venous Thromboembolism (VTE) with Asymptomatic May-Thurner Anomaly

Introduction: May-Thurner Syndrome (MTS) is compression of the left common iliac vein by the right common iliac artery, predominantly affecting young to middle aged women. MTS has been associated with deep venous thrombosis from compression of the left iliac vein. The risk of future deep venous thrombosis in an asymptomatic individual without evidence of current or past thrombosis is unclear, as is selection of appropriate management.

Case: A 36-year-old female with a history of patent foramen ovale and atrial septal aneurysm with new onset neurologic symptoms underwent venous Doppler ultrasound of the lower extremities and magnetic resonance venography of the pelvis to exclude venous thrombosis and embolism as the cause of her symptoms. The Doppler showed no evidence of acute or chronic thrombosis. The MRV showed May-Thurner anomaly. The patient asked if she should do anything to prevent future blood clots.

Methods: We performed a PubMed Clinical Query using the search term “May Thurner Syndrome”, categories etiology, diagnosis, therapy, prognosis and clinical prediction guides, and broad scope. This returned a total of 132 articles.

Discussion: Studies estimate the prevalence of DVT in MTS at 50%, but the incidence of DVT in asymptomatic patients is likely underestimated. Conservative treatment is usually recommended but can be tailored. This patient was placed on dual antiplatelet treatment for two years given comorbid conditions, but then discontinued them against medical advice.

Institution: Michigan State University - College of Human Medicine

Faculty Advisor: Churlson Han, MD, ACP Member – Michigan State University College of Human Medicine

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Resolution of Neurologic Symptoms in a Woman with ASA and PFO with PFO Closure

Resolution of neurologic symptoms in a woman with ASA and PFO with PFO closure

Hassan Zreik, Yeji Park, Heather Laird-Fick, MD, MPH, FACP

Introduction: Atrial septal aneurysms (ASA) are uncommon in the general population, but frequently associated with patent foramen ovale (PFO). The combination has been associated with increased risk of stroke, particularly in younger adults. Percutaneous closure devices offer a safe and effective way to reduce the risk of recurrent neurological events.

Case: A 38-year old female presented with a history of dyspnea, near syncope on exertion and migraine headaches without aura since her teen years. Her migraine was complicated within the previous year by a single episode of left-field visual loss lasting one hour, and subsequent development of visual scotomata prior to headaches. MRI of the brain showed nonspecific white matter changes. Because of the persistence of her cardiac symptoms, a transthoracic echocardiogram was obtained, which revealed a large ASA. She underwent a bubble study, which was positive, followed by a transesophageal echocardiogram that confirmed the presence of a PFO. The patient elected to undergo percutaneous closure of the PFO and was treated for 2 years with aspirin and clopidogrel. Her migraine frequency decreased and she had no further episodes of visual loss.

Discussion: This case illustrates the effectiveness of percutaneous closure of PFO with ASA in preventing neurological symptoms. Risk of complications with newer devices and antiplatelet therapy are small. The role of PFO closure in the absence of ASA or for uncomplicated migraines is controversial.

Medical Student Poster # 13

Category: Research

Institution: Michigan State University - College of Osteopathic Medicine

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Presenter: Abe Al Hage

Additional Authors: Eslam Kersha, Krystle Gish

Attitudes of Students, Residents, and Clinicians Towards the Use of OMM

Purpose: To understand factors driving the decline in OMM, and the future effect of the ACGME.

Methods: Specifically designed questionnaires were used to assess the attitudes of three groups of participants: pre-clerkship students; clerkship students; and residents and physicians. All participants were recruited through email invitations that described the purpose of the study and contained links to letters of consent and questionnaire surveys. The questionnaires were administered through an online survey tool and participation was voluntary, anonymous, and without compensation. Before beginning the study approval (exempt status) was obtained from the Institutional Review Board at Michigan State University.

Results and Preliminary Conclusions: Although reasons for the declining use of OMM remain uncertain, the results of this study highlight common themes that are beginning to emerge. For example, several of the factors identified here also appeared in previous studies conducted by independent investigators, including the amount of time it takes to perform OMM; the proficiency of the student or clinician administering the procedure, and the confidence required to do so.

Nearly 60% of the third and fourth year students in this study specifically cited a lack of support from attending physicians a significant contributory factor. Very few of our participants (less than 20%) felt that OMM lacked therapeutic efficacy.

A final observation, unique to this study, was that participants at all levels of training agreed that the ACGME would have a negative impact on OMM use in the future

Institution: Oakland University William Beaumont School of Medicine

Faculty Advisor: Lynda Misra, DO, FACP – Oakland University William Beaumont School of Medicine

Presenter: Mohammed Ahmed

Additional Authors: Kavitha Chinnaiyan

Coronary CT Angiography Offers Effective Triage of Acute Chest Pain with Predictable 5-Year Safety Outcomes

Introduction

Coronary CT angiography (CTA) is an excellent tool for triage of low-to-intermediate risk patients presenting to the emergency department (ED) with acute chest pain. Although it is useful for real-time triage of such patients, few data exist regarding long-term outcomes of such approach.

Methods

Patients presenting to the ED with acute chest pain and undergoing coronary CTA, with at least 5-year follow-up data were identified from the Beaumont CT registry. Demographics, CTA findings and downstream clinical outcomes including all-cause mortality, acute coronary syndrome (ACS), and revascularization were evaluated.

Results

Ninety-seven patients (mean age, 51 years \pm 11) were identified. Cardiovascular risk factors included hypertension in 42.2% of patients, diabetes in 9.3%, current smoking in 23.6%, and hyperlipidemia in 43.8%. Sixty-four patients (66.0%) had no coronary stenosis, 12(12.4%) had mild stenosis (1-25%), 14(14.4%) had moderate stenosis (26-70%), 6(6.2%) had severe stenosis (71-99%), and 1(1.0%) had complete occlusion. At 5-year follow-up, 6 patients (6.2%) died, 2 with no stenosis, 2 with mild, and 2 with severe. Four patients were revascularized, 3 with severe stenosis, 2 of whom died, and 1 with complete occlusion. Across all categories, there were no instances of new ACS.

Conclusion

In patients with \leq 70% coronary stenosis as stratified by coronary CTA, 95.6% experienced no adverse events including deaths, revascularizations, or new ACS. In those with $>$ 70% stenosis, 28.6% died and 57.1% were revascularized. Outcomes support a key role for coronary CTA in current algorithms for triage and risk stratification of patients with acute chest pain.

Institution: Oakland University William Beaumont School of Medicine

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Presenter: Tolulope Ifabiyi

Additional Authors: Felix O. Orelaru, Fatima Ali-Ahmed (MD)

Paraesophageal Hernia: The Hidden Cause of Shortness of Breath

The differential diagnosis for chronic shortness of breath (SOB) is vast and potentially challenging, particularly with atypical causes, such as hiatal hernia.

An obese 77-year-old female with a history of smoking and presumed COPD with multiple exacerbations presented with progressive exertional SOB. Her SOB had woken her up at night with no improvement with albuterol. She complained of a “swollen” throat, making it difficult to breathe, mild cough, and difficulty swallowing. She denied weight loss. Her lungs were clear and no oropharyngeal swelling was noted. She was in no respiratory distress with SpO₂ 97% on room air. She was treated with DuoNeb and prednisone for suspected COPD exacerbation, which partially alleviated her symptoms. A CXR was negative. A CT PE was negative, but revealed a hiatal hernia (HH). She was started on omeprazole for reflux. Further investigation for dysphagia and HH included a chest CT and barium esophagram. Surprisingly, imaging revealed a large retrocardiac HH, of the mixed type. The GE junction and almost all of the stomach were observed above the diaphragm. The patient declined surgical intervention. However, since the initiation of omeprazole, the patient’s SOB improved significantly. She subsequently underwent pulmonary function test, which ruled out her presumed diagnosis of COPD. Since then, the patient was weaned off albuterol.

Dyspnea, particularly during exertion and/or while supine is a well-documented symptom associated with HH; however it is under-recognized and often misdiagnosed as demonstrated in our case. Therefore, when evaluating dyspnea, atypical causes should be included in the differential.

Institution: Oakland University William Beaumont School of Medicine

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Presenter: Felix Orelaru

Additional Authors: Ifabiyi Tolulope, Gbadamosi Bolanle M, Ezekwudo Daniel, Jaiyesimi Ishmael.

Case Study: Dermatomyositis with Concurrent Gastric Adenocarcinoma

Case Presentation: 51-year-old woman presented in the summer of 2015, with a diffuse, itchy, shiny erythematous rash on her face and trunk. She was started on prednisone, which had little effect. Patient denied myopathy but reported fatigue, and had high creatine kinase values.

Investigations: A muscle biopsy obtained from the left quadriceps showed rare endomysial lymphocytes but no myopathy or vasculitis. Paraneoplastic dermatomyositis was suspected and an abdominal CT scan showed thickening of the gastric cardia, haziness and enlarged 2.1 x 1.2cm lymph nodes within the gastrohepatic ligament. EGD revealed a large fungating ulcerated mass extending to the gastro-esophageal junction. Biopsy of the mass showed poorly differentiated infiltrating gastric adenocarcinoma with clear cells. PET scan confirmed CT scan abnormalities.

Management and Follow-up: Patient was started on Neoadjuvant chemotherapy with Epirubicin, 5-FU and Oxaliplatin. After 3 cycles, repeat PET scan showed improvement in the primary lesion. Patient underwent proximal gastric and omentum gastrectomy. Pathology report after surgery showed a stage IIIa (ypT3pN2M0) tumor. She declined to get 5FU, Oxaliplatin and Epirubicin per protocol after surgery and was only placed on Oxaliplatin. PET Scan after Oxaliplatin showed evidence of FDG avid recurrent disease and she was placed on concurrent chemotherapy with Capecitabine and radiation. Following radiation, PET scan showed metastases in the liver and lung. Taxol and Herceptin were started because her tumor expressed HER-2-neu oncogene, and she achieved partial remission. Weeks later, she presented to the emergency room with changes in mental status and CT head revealed brain metastasis.

Medical Student Poster # 17

Category: Research

Institution: Oakland University William Beaumont School of Medicine

Faculty Advisor: Lynda Misra, DO, FACP – Oakland University William Beaumont School of Medicine

Presenter: Fred Qafiti

Additional Authors: Sangeeta Kaur MD, Ray Bahado-Singh MD MBA

Efficacy of a Risk-Assessment Model for Six-Week Postpartum Exam Non-Adherence

The aim of this study is to model the probability that a patient will return for her six-week postpartum visit in order to best identify at-risk patients. In a retrospective case-control study of 587 patients who received prenatal and perinatal care at Beaumont Hospital Royal Oak, seven variables were tested for correlation with patient adherence to the American Congress on Obstetrics and Gynecology (ACOG) guidelines (a wellness exam at 3-7 weeks postpartum). Variables that demonstrate significant ($p < .05$) odds ratios of postpartum exam adherence will be incorporated into a logistic regression model. The model will be cross-validated with an excluded subset of the data using receiver operating characteristic (ROC) curve analysis. Of 587 patients, 68.1% attended their postpartum visit within the timeframe recommended by ACOG. Initial analysis of the dataset shows that 5 of the 7 selected variables significantly correlate to a patient's return to the 6WPP exam: age older than 24.0 years at delivery, OR (95% CI) = 2.13 (1.39, 3.28), married = 1.95 (1.36, 2.80), Medicaid health insurance = 0.49 (0.33, 0.73), primiparity = 1.59 (1.10, 2.30), and gestational age greater than 16.0 weeks at the initial obstetric visit = 0.51 (0.36, 0.72). Two variables demonstrated no significant correlation to 6WPP exam adherence: Cesarean section = 0.92 (0.64, 1.30), and gestational age greater than 37 weeks at delivery = 0.59 (0.32, 1.07). These preliminary results provide a strong basis on which to develop a clinically applicable model.

Medical Student Poster # 18

Category: Research

Institution: Oakland University William Beaumont School of Medicine

Faculty Advisor: Lynda Misra, DO, FACP – Oakland University William Beaumont School of Medicine

Presenter: Eman Sahloul

Additional Authors: Bassel Atassi, MD

Cancer Care at Times of Crisis and War: The Syrian Example

As Syria enters its fifth year of conflict, the number of civilians killed and injured continues to rise sharply. Along with this conflict comes the rapid decline of medical care – specifically, cancer care. To determine physician and equipment availability, cancer screening and management, and possible solutions relative to different major cities inside Syria, a survey was distributed to physicians inside Syria through the help of humanitarian organization Syrian American Medical Society (SAMS). Online surveys were distributed to both certified oncologists working in cancer clinics and general physicians working in rural and mobile clinics inside Syria. Variables assessed include: physician specialty, location, population, cost, regional situation (besieged vs. government-controlled), and resource availability and access. Results were stratified by location and physician specialty. Survey results revealed a larger shortage of specialized physicians, screening and management options, and inhibited accessibility in besieged areas compared to government-controlled regions. Both government-controlled and besieged cities reported limited or no targeted agents, radiation therapy, clinical trials, bone marrow transplant, PET scans, MRI, and genetic testing. We concluded that the Syrian civil war has resulted in suboptimal oncology care in the majority of the region. Taking into consideration specific deficiencies in cancer care, we recommend several solutions that may serve to better the level of care in Syria: patient education on medical documentation and self-examination, online consultation, and cheap, effective screening methods. Implementing these recommendations may change the course of cancer care in a country quickly deteriorating into the worst crisis of the century.

Institution: Oakland University William Beaumont School of Medicine

Faculty Advisor: Lynda Misra, DO, FACP – Oakland University William Beaumont School of Medicine

Presenter: Rachel Shercliffe

Additional Authors: Kathleen Dass, MD

A Case of Anaphylaxis/ Angioedema After Sildenafil Exposure

Sildenafil is a phosphodiesterase-5-inhibitor used to treat erectile dysfunction. Common adverse events include headache, vasodilation, and rhinitis. Rarely, allergic hypersensitivity reactions can occur.

A 74-year-old male presented with tongue swelling. 2 weeks prior, the patient was advised to start as needed sildenafil by his urologist. After his first dose, he developed tongue swelling within 15 minutes. Symptoms were associated with vomiting, cough, and abdominal pain. He has no prior personal or family history of swelling. The patient is not taking ACE inhibitors, aspirin, or NSAID's. He tried placing ice cubes on his tongue without relief. Ultimately, symptoms resolved within 24 hours, and he did not seek further care until today's visit. He has strictly avoided sildenafil, but was looking for an alternative medication. After a literature search did not provide information regarding cross-reactivity between phosphodiesterase-5-inhibitors, the patient was offered an office drug challenge to avanafil. An emergency plan for anaphylaxis was reviewed, and he was discharged with epinephrine. After 6 weeks, the patient returned without further angioedema or anaphylaxis episodes. The risks and benefits of the challenge were explained. The patient had a successful graded dose challenge to avanafil. He has not had any further hypersensitivity reactions.

Sildenafil, a commonly prescribed medication, rarely causes allergic hypersensitivity reactions. Cross reactivity between phosphodiesterase-5-inhibitors has not previously been established. This is the first case to describe tolerance of avanafil after anaphylaxis with associated angioedema to sildenafil. Further, this case illustrates the importance of obtaining a thorough history and reporting adverse effects.

Institution: Oakland University William Beaumont School of Medicine

Faculty Advisor: Lynda Misra, DO, FACP – Oakland University William Beaumont School of Medicine

Presenter: Danielle Yee

Additional Authors: Adam Skrzynski MD, Kathleen Dass MD

A Case of Anaphylaxis After Fluarix Administration

Anaphylaxis is a life-threatening allergic reaction requiring immediate treatment. Anaphylactic reactions to vaccinations are rare and need to be further evaluated with skin prick tests to not only the immunizing agent, but also to the other components.

A 25-year-old woman presented with a four-day history of symptoms following receipt of the quadrivalent influenza vaccine. Within three hours of being vaccinated, she experienced abdominal pain, diffuse urticaria and rigors. Because of her worsening condition, she sought help in the emergency room and was given intravenous methylprednisolone, ondansetron, diphenhydramine and normal saline. Her urticaria resolved within 45 minutes. She was discharged home but sought additional care three days later because of persistent chest tightness, new onset bronchospasm, pleuritic chest pain, nausea, diarrhea, facial swelling, urticaria, and lack of appetite. Vital signs were within normal limits. Oropharynx was without erythema or obstruction. Lungs were clear to auscultation bilaterally, and heart was regular with no ectopy or murmurs. Abdomen was soft, nontender and nondistended. The patient demonstrated dermatographism. Epicutaneous testing to egg and history were not consistent with an IgE-mediated allergy. Intradermal testing with the Fluarix vaccine diluted 1:100 was subsequently performed with appropriate controls. The patient had a 5 mm/ 15 mm wheal and flare response.

This case illustrates the potential severe allergic reaction to Fluarix and the value of proper diagnostic testing. If skin tests are positive, under medical supervision, the influenza vaccine can still be given in titrating doses or the patient may forgo the vaccination, as ours chose to do.

Institution: Ross University School of Medicine

Faculty Advisor: Benjamin Diaczok, MD, FACP - St. Joseph - Oakland

Presenter: Mohammad Azam

Additional Authors: Monica Nicola MD; Rovin Saxena MD; Susan Thapa, MPH; Rushal Patel; Junaid Khan; Sarah Sadek; Chirine El-Mokdad.

How Reliable are Our Blood Pressure Measurements? A Cross-Sectional Comparison of Different Blood Pressure Measurement Tools

Background

Unlike the critical care units where invasive methods like the arterial line are used for vitals measurements, on the general medical floor, vitals are routinely monitored with Dinamap Pro™, and a newer telemetry system, one of which is Sotera™. The purpose of this study was to compare the accuracy of these different methods for blood pressure measurement.

Methods

Each patient's blood pressure was measured using Sotera™, Dinamap™ and a manual sphygmomanometer. Measurements were performed on each patient twice, once in the morning (9-11 am) and once in the evening (2-4 pm). Readings for systolic, diastolic, mean arterial pressure were analyzed and compared using analysis of variance (ANOVA), followed by individual comparisons using Tukey's method if ANOVA test was statistically significant.

Results

In this study, 37 patients underwent blood pressure measurement. Based on the ANOVA test, we observed statistically significant differences only in systolic measurements between the three methods ($p=0.05$). The observed difference occurred between manual sphygmomanometer and Dinamap Pro™ (mean difference: 7.9 mmHg, 95% CI: 0.15, 15.7).

Conclusion

Based on our data, Dinamap Pro™, which is the more common of the three methods in the hospital setting appeared to show a significant difference in the systolic blood pressures. This study shows evidence that Dinamap Pro™ blood pressure measurements should be used with caution when making medical care decisions for our patients. We also concluded that the newly implemented Sotera™ telemetry system showed no significant difference with manual sphygmomanometer measurements, and can be reliably used on the medical floor.

Institution: Ross University School of Medicine

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Presenter: Joseph Banno

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It Started with Candida and Ended with Fusarium Species, (or Something Else?)

Fusarium is a rare and ubiquitous fungus, found in the soil. It is associated with superficial, locally invasive, and disseminated infections in immunocompromised patients. Fusarium infections has been associated with traumatic skin injury and burns.

A 64-year-old asian male former farmer, with a past medical history of uncontrolled diabetes mellitus type 2, presented to the emergency department with a foot ulcer. A week prior, his primary care doctor had drained a chronic painless cyst over the foot and started oral Bactrim. On admission, the patient was not septic but the ulcer appeared purulent and necrotic, with bleeding. He had debridement and was started on empiric antibiotics, vancomycin and cefepime. Preliminary wound cultures showed growth of candida, which was suspected to be a skin contaminant, but fluconazole was added. He failed to respond and three days later, the final culture report indicated a growth of Fusarium species. He had further debridement and was started on liposomal amphotericin B. He was discharged on oral voriconazole after visible improvement. The ulcer was healing at outpatient follow up 2 weeks later. Two months after discharge, the Department of Health and Human Services corrected the cultures to be Phaeoacremonium species.

Our case highlights the challenges associated with preliminary cultures that grow fungus. It is important not to assume contamination when a preliminary culture report shows yeast growth. Moreover, nonhealing ulcers in diabetics with positive fungal cultures should also raise the suspicion for invasive fungal species which requires prompt and aggressive therapy.

Medical Student Poster # 23

Category: Clinical Vignette

Institution: Ross University School of Medicine

Faculty Advisor: Benjamin Diaczok, MD, FACP - St. Joseph - Oakland

Presenter: Joshua Gleason

Additional Authors: Bill Christian

Exercise-Induced Rhabdomyolysis with Acute Kidney Injury

Introduction: Rhabdomyolysis is a syndrome characterized by muscle necrosis and the release of intracellular muscle components into the circulation. Creatine kinase (CK) levels are markedly elevated, and myalgia and myoglobinuria may be present. Acute kidney injury (AKI) is a common manifestation of rhabdomyolysis. We report a case of exercise-induced rhabdomyolysis with AKI.

Case Report: A 32-year old Caucasian male with no significant past medical history presented to an in-patient clinic with dark urine and muscle pain. The patient reported starting high intensity interval training (HIIT) 3 days prior. Blood urea nitrogen (BUN) was 15 mg/dL, serum creatinine (Cr) of 8.6 mg/dL and urea of 203 mg/dL were recorded. Rhabdomyolysis was suspected with a creatine kinase (CK) of 262800 U/L. Dipstick urinalysis revealed 3+ blood, urine myoglobin of 725 mg/dL, specific gravity < 1.005, and trace protein and ketones. On admission he received intravenous Furosemide 20 mg/h and sodium bicarbonate injection 50 mL 8 hourly. By the 4th day his myoglobinuria had cleared from dirty brown to normal. Muscle swelling subsided and creatinine dropped to 2.6 mg/dL on the 7th day. He was transferred to the ward on the 8th day where IV infusions were stopped. Kidney function tests were within normal limits and he was discharged after 10 days.

Conclusion: The purpose of this case report is to increase awareness of rhabdomyolysis and AKI requiring admission especially in healthy patients. This complication can be prevented by undertaking exercise gradually. If it occurs aggressive fluid resuscitation is the key management.

Institution: Ross University School of Medicine

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Subacute Combined Degeneration- May Not be Vitamin B12 Deficiency Alone

Introduction

Subacute combined degeneration (SCD) presents with weakness, paresthesia and ataxia. While vitamin B12 deficiency is still the most common cause of SCD, we report an emerging etiology that may become more prevalent.

Case presentation

A 39-year-old male with history of nitrous oxide (N₂O) abuse presented with multiple falls due to bilateral lower extremity weakness and ascending paresthesia. Neurological exam revealed diminished temperature and vibration sensation and depressed reflexes in lower extremities. Routine laboratory evaluation was unremarkable. MRI spine was not suggestive of demyelination. CSF analysis was normal. Vitamin B12 level was low and homocysteine and methylmalonic acid were elevated. Intrinsic factor blocking antibody was positive. Patient was administered parenteral Vitamin B12 and oral folate. His strength and numbness improved the next day and he was discharged on oral Vitamin B12 and folate. His symptoms resolved at one month follow up with oral replacement indicating lower likelihood of pernicious anemia as sole etiology.

Discussion

The abuse of nitrous oxide is increasing with nearly 10% of adolescents reporting use. It often presents with paresthesia and ataxia with or without MRI evidence of cervical spinal cord demyelination. Recorded cases show normal or low normal Vitamin B12 levels. The mechanism of injury is thought to be inactivation of methionine synthase.

Conclusion

N₂O can cause functional vitamin B12 deficiency and present as SCD. Early identification and management with vitamin B12 supplementation and concomitant counseling to ensure cessation can minimize morbidity and mortality.

Medical Student Poster # 25

Category: Clinical Vignette

Institution: Ross University School of Medicine

Faculty Advisor: Benjamin Diaczok, MD, FACP - St. Joseph - Oakland

Presenter: Rushal Patel

Additional Authors: Mohammad Azam MS4, Krunal Patel MD

When Will It be the End of the Propofol Era?

Intro:

Propofol, a widely used medication for emergent intubation and sedation, has been associated with a dose dependent syndrome known as Propofol related infusion syndrome (PRIS). PRIS has an incidence of approximately 1% and is characterized by metabolic acidosis, myocardial depression, rhabdomyolysis, and kidney failure. Although Propofol has been generally considered a safe medication and the incidence of PRIS is rare, there are irreversible adverse effects that must be appreciated.

Case:

An 81-year-old male with a history of compensated diastolic heart failure (EF 35% by TTE in 2015), reactive airway disease, congenital right hemidiaphragm, and chronic CO₂ retention, who presented to the ER after 1 round of CPR at home due to unresponsiveness. In ER, patient was intubated (GCS 6) with 50ml of Propofol which resulted in sudden hypotension (158/83 to 76/54) and metabolic acidosis. Patient was resuscitated with 4L of normal saline boluses and transferred to ICU. Within 30 minutes of arrival to ICU, patient developed high peak ventilatory pressures, metabolic acidosis and acute hypoxia on ABG, and ultimately, flash pulmonary edema. Subsequently patient was given Lasix, and gradually his condition improved.

Conclusion:

Propofol has fallen out of favor in larger hospitals but some community hospital still use it. With the unknown mechanism of action of Propofol further investigation is required to assess the effects on myocardium. This case makes a strong argument to avoid the use of Propofol and seek alternate medications for induction and anesthesia which avoid the adverse effects of Propofol on the myocardium.

Medical Student Poster # 26

Category: Clinical Vignette

Institution: Ross University School of Medicine

Faculty Advisor: Benjamin Diaczok, MD, FACP - St. Joseph - Oakland

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Additional Authors: Dr. Scott Friedman, Dr. Matthew Wells

Incidental Finding of Adult Extra-Cardiac Rhabdomyoma after Resection of a Spindle-Cell Lipoma

Here we describe an unexpected finding in the course of treating our patient's pre-op diagnosis of a lipoma, as suggested by ultrasound of a compressible subcutaneous mass on our patient's left upper back. After surgical excision, dermatopathology report suggested an adult rhabdomyoma in conjunction with a spindle-cell lipoma. Very few case studies show concurrence of both mesenchymal soft tissue tumors. This case report highlights the importance of clinical skin exams provided by a dermatologist and the importance of dermatopathologists in accurate diagnosis and treatment management of patients with suspected subcutaneous masses. In particular, healthcare providers should be cognizant when performing subcutaneous mass excisions and should also be aware of the possible findings when excising suspected soft tissue tumors.

Institution: Ross University School of Medicine

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Presenter: Baseer Syed

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Between a Hard and Stiff Place: A Suspected Case of Stiff-Person Syndrome

Introduction:

Stiff-person syndrome (SPS) is an autoimmune condition resulting in progressive muscle stiffness, rigidity, and spasms. It is seen with other autoimmune diseases such as type I diabetes, thyroiditis, and vitiligo. It is rare disorder and needs high degree of suspicion to diagnose and differentiate from tetanus.

Case:

A 44-year-old man presented with history of anxiety disorder to ER with severe diffuse spasms prominently in the upper extremities, head and trunk. He was afebrile without cogwheel rigidity or clonus. Labs showed lactic acidosis of 9.3, normal thyroid, CK and liver function and negative anti-GAD antibodies. A thorough evaluation by neurology and ID was completed with MRI of the brain, C-Spine and LP which all failed to reveal a cause of spasms. He was started on diazepam and baclofen and symptoms improved.

Discussion:

SPS results from impairment of the GABAergic pathways by autoantibodies and reduction of brain GABA. But the antibody titers do not always correlate with disease activity and about 30 percent of patients are found to be antibody titers negative. Diagnosis requires high level of suspicion and is based on clinical symptoms. The rapid response to benzodiazepines is a good marker to rule out other conditions such as tetanus, Parkinson disease, and axial dystonia.

Conclusion:

SPS is a diagnosis of exclusion which can mimic musculoskeletal and neurologic disorders that needed to be ruled out. SPS requires routine cancer screening for paraneoplastic syndrome along with monitoring for other autoimmune diseases.

Institution: St. George's University School of Medicine

Faculty Advisor: Raymond Hilu, MD, FACP

Presenter: Abdulla Nasser

Additional Authors: Jason Aboudi Mouabbi M.D., Tarek Hadid M.D.

A Rare Case of Leukemia: Plasma Cell Leukemia

Plasma cell leukemia (PCL) is a rare and aggressive form of multiple myeloma characterized by high levels of plasma cells in circulating blood. Two forms of PCL exist: one originates de novo (primary PCL) and a secondary leukemic transformation of multiple myeloma (secondary PCL). Here we present a case of secondary PCL.

Case report

A 72 year old woman with a known history of multiple myeloma was admitted after experiencing nausea, vomiting, severe abdominal pain and confusion. Patient has been on lenalidomide–dexamethasone induction therapy followed by lenalidomide maintenance therapy since 2011. Initial labs demonstrated a calcium level of 12 mg/dL, anemia with hemoglobin 7.2 mg/dL, an elevated leukocyte count of 17,000/ cu mm. and acute kidney injury. A review of her peripheral blood revealed the presence of numerous plasma cells in the blood. She was diagnosed with plasma cell leukemia and was started on a novel immune agent called Bortezomib. At five month follow up she responded to treatment with complete remission.

Discussion

PCL is one of the most aggressive human neoplasms. It is seen in 2% of multiple myeloma patients as the terminal phase of the disease. Secondary PCL patients have a median survival of less than 2 months. The poor prognosis is due to the fact that secondary PCL is usually refractory to treatment because it is treated with the same agents used for MM. New immune agents such as Bortezomib are showing great promise in controlling PCL and prolonging the disease free survival of PCL patients.

Medical Student Poster # 29

Category: Clinical Vignette

Institution: Trinity School of Medicine

Faculty Advisor: Paula Wilson, MD, McLaren Hospital System - Petoskey

Presenter: Aaron Salem

Additional Authors: Janel Bakou, Brielle Marks, Dr. Ibrahim

End-Stage Renal Disease and Early-Onset Calciphylaxis: A Case Report

We discuss the presentation of Mr. B, a 51-year-old African American male, diagnosed with end-stage renal disease (ESRD) initiated on hemodialysis 6 months prior to presentation. After starting dialysis, the patient developed a bulla measuring approximately 8cm x 10cm x 2cm, which rapidly progressed into necrotic ulcerations of the lower extremities. Work-up of the ulcerations were consistent with severe calciphylaxis. He developed these lesions just 6 months into his end-stage renal disease diagnosis. Unique to this case is the rapidity of onset, severity and extent of lesions and positive response to sodium thiosulfate. Calciphylaxis as an entity is not well understood, and there is limited evidence behind current treatments.

Medical Student Poster # 30

Category: Clinical Vignette

Institution: Trinity School of Medicine

Faculty Advisor: Paula Wilson, MD, McLaren Hospital System - Petoskey

Presenter: Sarah Seyffert

Additional Authors: Wade Kvatum, Aaron Salem, Christopher Acab

Merkel Cell Carcinoma: A Case Report and Review of the Literature

Merkel cell carcinoma (MCC) is a rare malignant cutaneous neoplasm derived from neuroendocrine tactile cells in the basal layer of the epidermis. It is typically located on sun-exposed areas of the elderly Caucasian population and although rare, MCC had the greatest increase in incidence of all skin cancers in the past decade. We report an atypical presentation of MCC occurring in an immunocompetent 76-year old male, which originated as a firm lesion on his left gluteal fold. After initial misdiagnosis and unsuccessful treatment, his lesion was excised and pathological evaluation revealed MCC. A PET scan was performed revealing several subcutaneous masses involving the left buttock extending to the midline. Despite further surgical procedures and adjuvant chemotherapy, increased hyper metabolism was found on another PET scan in the left descending colon and left lateral aspect of the prostate gland. There have been reports of metastasis of primary MCC to the small bowel mesentery; therefore the origin of the new focal hyper metabolism could not be delineated as unrelated to MCC until biopsy and histochemical staining was performed. We then review the presentation, molecular pathogenesis, diagnosis, and current treatment for MCC. Future treatments involving immunotherapy and targeted therapies are also discussed.

Institution: University of Michigan Medical School

Faculty Advisor: Cyril Grum, MD, FACP – U of M

Presenter: Sarah Banks

Additional Authors: Wabl, R; Platt, K; Hartley, S

Leptomeningeal Carcinomatosis in Triple Negative Breast Cancer

Introduction: Headache is a common presenting complaint with a spectrum of etiologies from benign to life-threatening. This case illustrates the importance of choosing the correct imaging modality when evaluating a patient with new onset headache.

Case Presentation: 61-year-old woman with triple negative stage IV breast cancer with non-CNS metastases currently receiving palliative eribulin. She presented with a new severe frontal headache that radiated to her occipital region with two weeks of nausea, scotoma, and lightheadedness associated with bilateral lower extremity weakness. Her physical exam was normal except for orthostasis. Lab tests, including a head CT with contrast, were normal. She was initially managed with fluids without improvement. A subsequent MRI revealed leptomeningeal carcinomatosis (LC) as well as solitary parenchymal metastasis. A large volume LP was consistent with leptomeningeal disease with positive pathology.

Discussion: Breast cancer remains one of the highest risk malignancies for developing LC, which carries a very poor prognosis. The current NCCN guidelines recommend the use of MRI for stage IV breast cancer only in the setting of suspicious symptoms. The gold standard for diagnosis is lumbar puncture. Treatment is difficult because systemic chemotherapeutic agents generally do not cross the blood brain barrier and clinicians lack guidance for treatment due to the paucity of clinical trials.

Conclusion: LC is difficult to treat due to systemic therapies that do not reach the CNS. Clinicians should be aware that breast cancer patients presenting with symptoms concerning for brain metastasis should undergo MRI imaging as CT can miss this diagnosis.

Institution: University of Michigan Medical School

Faculty Advisor: Cyril Grum, MD, FACP – U of M

Presenter: Michael Sessine

Additional Authors: Christopher Sesi, B.S.; Anita Hart, MD

Bilateral Periorbital Cellulitis with Group A Streptococcus

A 70-year-old woman fell and lacerated her right frontal scalp. Two days after receiving stitches, there was progressive swelling and serous drainage from her right eye. Her PCP prescribed tobramycin eye drops, however, her swelling progressed to all four eyelids. On Day 5, she presented to the ED unable to open either eye. She was started on empiric antibiotics and was diagnosed with periorbital and facial cellulitis. On Day 7, a brain MRI showed a large forehead abscess. Three nights later, she became febrile with leukocytosis of 19.8 and new areas of induration. On Day 11, a repeat face CT showed frontal scalp, prenasal, and right periorbital abscesses, which were unresponsive to treatment. She underwent bilateral debridement of upper and lower necrotic eyelid tissue and drainage of her forehead abscess, and she was placed on IV vancomycin, piperacillin-tazobactam and clindamycin. The following day, facial cultures were positive for clindamycin-sensitive Group A Streptococcus (GAS). On Day 20, following negative facial cultures, she underwent reconstructive surgery on her eyelids and was discharged two days later on oral clindamycin with outpatient ophthalmology follow-up.

Periorbital cellulitis, typically unilateral and limited to the anterior eyelid, usually does not result in serious complications or bacteremia¹. While bacteremia with GAS is also rare, it has been postulated that NSAIDs, age, and immunosuppression, among other factors, may increase its pathogenicity². Identification of susceptible populations and conservative measures, including timely blood cultures, will be important to decrease similar sequelae and misses in the future.

Medical Student Poster # 33

Category: Research

Institution: Wayne State University School of Medicine

Faculty Advisor: Diane Levine, MD, FACP – Wayne State University School of Medicine

Presenter: Keith Alangaden

Additional Authors: Benjamin Eilender, Michael VanAntwerp

The Novel Use of Medical Students for Rapid Human Immunodeficiency Virus Testing in an Urban Academic Emergency department

Introduction: The state health department worked with the Detroit Receiving Hospital ED to implement rapid HIV testing as an expanded testing site, offering the test at bedside. We describe the implementation of a Rapid HIV Testing Program using students from Wayne State University School of Medicine (WSU-SOM).

Methods: Beginning in the summer of 2016, the program recruited rising second year medical students. Fifteen students comprised the initial cohort, formally trained by the WSU/DRH public health manager in all aspects of the protocol. During assigned shifts, students screened charts to determine eligibility, based on age, chief complaint, medical history, and last known HIV test. They conducted pre-test patient interviews, performed and interpreted the test, and communicated results to the patient. In the case of a positive result, students completed the supplemental testing and referral to ensure linkage to care.

Results: The initial cohort conducted a total of 150 hours of screening over a 4-week period. This program allowed students to gain clinical exposure actively assisting in the early detection and enhancement of HIV care. Students learned and practiced interviewing skills, delivering positive results, and discussing sensitive topics such as at-risk behaviors and drug use.

Conclusion: Early patient interaction for medical students is key to success in the clinical years and beyond. This program demonstrates the feasibility of using medical students to assist with testing in the ED. Currently it is being evaluated to assess the effect of clinical and counseling exposure on students' performance in the objective structured clinical exams.

Medical Student Poster # 34

Category: Clinical Vignette

Institution: Wayne State University School of Medicine

Faculty Advisor: Diane Levine, MD, FACP – Wayne State University School of Medicine

Presenter: Ayman Aouthmany

Additional Authors: Prasanthi Kandula M.D., Mouhammad Aouthmany M.D., Simon Warren M.D., Stephen Wolverton M.D.

Intravascular Manifestation of Kaposi Sarcoma Associated with AIDS

The intravascular manifestation of Kaposi sarcoma is a rare histological presentation. We present the case of a patient who initially presented with two nodules, one on the left thigh and one on the left lower leg, and a history of HIV+. Histology from excisional biopsy showed dilated thin-walled vascular spaces with intraluminal papillary projections and adjacent nodules of lymphocytes, plasma cells, and fibrosis. Immunohistochemical staining with SMA confirmed the presence of vascular structures, and HHV-8 was positive in endothelial cell nuclei, thus, supporting the diagnosis of intravascular Kaposi sarcoma.

Institution: Wayne State University School of Medicine

Faculty Advisor: Diane Levine, MD, FACP – Wayne State University School of Medicine

Presenter: Gaurav Chenji

Additional Authors: Rahul Shetty M.D.

New Onset Seizures Secondary to Kratom (*Mitragynia Speciosa* Korth) Use

Kratom is an herbal substance traditionally used to alleviate pain, anxiety and elevate mood. The main active ingredient Mitragynine, has opiate-like properties. It is widely available online and there are growing concerns that this unregulated substance could be culprit for seizures. Due to limited literature available, it is important to bring awareness about the effects of Mitragynine.

A 36-year-old male with a history of anxiety on fluoxetine presented to the hospital after a witnessed tonic-clonic seizure in the ED. He recently increased his use of Kratom powder from 2 tablespoons to 4-5 daily. Lorazepam was initiated and he was discharged the next day with stable vitals.

He presented two days later after another seizure at home and reported using 4 tablespoons of Kratom the day prior to presentation. He suffered multiple brief seizure-like episodes in the ambulance and in the ED. His social history is significant for tobacco use, alcohol, Xanax and Kratom. Levetiracetam was initiated. EEG showed 1-3 Hz activity over the frontal region, suggestive of toxic metabolic encephalopathy. Patient was discharged to subacute rehabilitation.

This case report highlights the importance of a thorough history, with a focus on medications or herbal supplements. In addition, it also brings awareness to a novel substance with opiate-like properties that can cause new onset seizures or lower the seizure threshold. Being able to recognize that effects of Kratom in a clinical setting can help medical professionals safely care for and manage patients in the setting of increasing Kratom use.

Medical Student Poster # 36

Category: Clinical Vignette

Institution: Wayne State University School of Medicine

Faculty Advisor: Diane Levine, MD, FACP – Wayne State University School of Medicine

Presenter: Alexandra Haluska

Additional Authors: Michael Kern, MD; William Dillon, DO

Familial MEN1 Syndrome Presenting as Vertigo Secondary to a Fourth Ventricle Ependymoma

A 34 year old previously healthy male presented with worsening continuous vertigo, associated with nausea and vomiting of two weeks duration. He had previously seen his primary care physician and visited another ED for these symptoms without relief. He presented to our ED 14 days from onset, after a night of severe nausea, which included several episodes of emesis which awakened him from sleep. He reported sleeping propped upright because changing from a supine to sitting position aggravated the vertigo and nausea, and multiple episodes of emesis first thing in the morning. He also reported hiccups, one episode of blurred vision, and a mild retro-orbital headache which began after the onset of vertigo.

Physical exam revealed bidirectional horizontal nystagmus and vertical nystagmus. In addition to the bidirectional nystagmus, a HINTS evaluation showed a normal horizontal head impulse test, also consistent with a central etiology, and an absence of skew deviation. He did not have any neurologic deficits and cerebellar function was intact. The initial workup included a CT without contrast, which revealed a possible tumor of the fourth ventricle with a small amount of hemorrhage, without hydrocephalus. An MRI was consistent with an ependymoma, which was later confirmed with pathology after a debulking surgery.

The patient's maternal aunt has MEN1 confirmed with genetic testing, and his mother has neoplasias consistent with MEN1. This patient has not yet undergone genetic testing. This case demonstrates the importance of physical exam to distinguish central and peripheral causes of vertigo.

Institution: Wayne State University School of Medicine

Faculty Advisor: Diane Levine, MD, FACP – Wayne State University School of Medicine

Presenter: Sarah Keene

Additional Authors: Manbeer S. Sarao MD, Philip J. McDonald MD, Jennifer Veltman MD

Cutaneous Geotrichosis Due to *Geotrichum Candidum* in a Burn Patient

Geotrichum candidum is a ubiquitous, dimorphic, saprophytic fungus known to colonize the human skin, respiratory tract and gastrointestinal (GI) tract. It is considered to have low virulence but can cause local or disseminated disease referred to as geotrichosis. The main risk factor for geotrichosis is immunosuppression. Trauma, indwelling catheter use, prolonged broad-spectrum antibiotic treatment and chronic illness (e.g. diabetes, COPD) have also been implicated as risk factors. Here we report the first case, to our knowledge, of cutaneous *G. candidum* infection in a burn patient. Our 27-year-old female patient sustained 30% body surface area flame burns to the anterior torso, neck and arms while reaching over a stove. She underwent multiple excisional debridements and grafting procedures however several grafts failed and she worsened clinically despite appropriate treatment of *C. orthopsilosis* fungemia and ventilator associated pneumonia due to MRSA, *A. baumannii* and *E. coli*. Tissue culture from the right flank grew *G. candidum*, for which voriconazole was started. The patient was switched briefly to amphotericin B but, due to GI side effects, high amphotericin MIC and appropriate wound healing, completed a 6-week total antifungal course with voriconazole.

This case highlights the importance of source control, rapid identification of *G. candidum* infection and susceptibility testing to guide antifungal therapy, which typically consists of amphotericin B with or without flucytosine or voriconazole alone. *Geotrichum* spp. have shown in vitro resistance to echinocandins. Clinicians should be aware of geotrichosis as a clinical entity, particularly breakthrough disease given the increasing use of routine mold prophylaxis.

Institution: Wayne State University School of Medicine

Faculty Advisor: Diane Levine, MD, FACP – Wayne State University School of Medicine

Presenter: John Rotondo

Additional Authors: Warda Ibrar MD, Tariq Marroush MD

Large Atrial Myxoma Causing Congestive Heart Failure

Introduction: Congestive heart failure is a common syndrome that is likely related to ischemic heart disease. Other causes, however, include any other pathology that interferes with the filling cycle of the heart and increases the filling pressures.

Case Report: A 76-year-old woman presented with dyspnea beginning a couple hours prior. The patient had a history of asthma but her dyspnea did not improve with albuterol inhaler. Being recumbent worsened her symptoms. Her vital signs were significant for tachycardia at 111 and hypoxia as she required 3 liters of oxygen to reach normal oxygen saturation. Chest X-ray showed pulmonary edema and cardiomegaly, consistent with heart failure. Electrocardiogram showed sinus tachycardia with left atrial enlargement, premature ventricular contractions, and rightward axis. The patient was admitted and started on intravenous diuresis with partial relief. An echocardiogram showed a left atrial mass, measuring 41 x 56 mm which was confirmed by trans-esophageal echocardiogram. The patient underwent a successful removal of this mass with concomitant bypass surgery and was clinically stable thereafter.

Discussion: Atrial myxoma can serve as a critical mitral valve stenosis which increases the pressure in the left atrium and hence the wedge pressure causing pulmonary edema. Embolization is another manifestation of these tumors which may lead to neurological deficits among other symptoms.

Conclusion: Atrial myxoma is a rare disease that may mimic heart failure. The echocardiogram is essential for the diagnosis as the physical examination findings are non-specific. Surgical removal is the definitive treatment for these tumors.

Institution: Wayne State University School of Medicine

Faculty Advisor: Diane Levine, MD, FACP – Wayne State University School of Medicine

Presenter: Stephanie Saravolatz

Additional Authors: Susan Szpunar PhD, Leonard B. Johnson MD, FACP

Use of Antidepressants is Associated with Improved HIV Treatment Compliance

Background: Psychiatric illnesses are prevalent among HIV patients. Depression is linked to lower adherence with HIV therapy; however, the association of antidepressant use and treatment adherence is not yet known.

Methods: This was a retrospective chart review of HIV patients seen at the Infectious Disease clinic at St. John Hospital and Medical Center during 6/1/14-5/31/16. Patients with at least two encounters and on HIV therapy were included. Data were collected on demographics, medications, CD4 counts, and viral loads. Immunologic failure (IF) was defined as at least two consecutive visits with CD4<200. Virologic failure (VF) was defined as at least two consecutive visits with viral load>100. Poor compliance was defined as having both IF and VF. A p-value < 0.05 indicated statistical significance.

Results: We assessed 163 patients with a mean age at diagnosis of 36.5 ± 10.8 years; 73% male and 70.6% black. Overall, 19.6% of patients were taking an antidepressant. While 21.8% of patients without IF had used an antidepressant, none of the patients with IF had done so. Similarly, 21.6% of patients without VF had used an antidepressant compared to 8.7% of patients with VF (p=0.15). Only 8.3% of patients on an antidepressant stopped therapy compared to 20.5% not on an antidepressant (p=0.31). Patients on antidepressants were less likely to demonstrate poor compliance than those who had not used antidepressants (6.3% vs. 22.3% respectively, p=0.04).

Conclusion: In our HIV clinic population, antidepressant use was associated with higher compliance with HIV therapy.

Medical Student Poster # 40

Category: Clinical Vignette

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Posterior Reversible Encephalopathy Syndrome Induced by Acute Pancreatitis

Case Description: A 62-year-old female presented with abdominal pain, nausea, and vomiting. Initial lab results showed a lipase of 525 IU/L. Abdominal ultrasound revealed no evidence of gallstones and the patient denied recent alcohol use. The patient was admitted for symptomatic management of acute pancreatitis with unclear etiology. On the second hospital day, the patient was found having a generalized tonic-clonic seizure, which resolved with the administration of 1mg IV lorazepam. She denied any previous history of seizures. Brain imaging revealed bilateral symmetrical hyperintensities in the parietal-occipital lobes, consistent with posterior reversible encephalopathy syndrome (PRES). The patient was started on levetiracetam for seizure prophylaxis. One month following discharge, the patient reported no recurrent seizure-like episodes. Follow-up MRI of the brain showed radiographic resolution of PRES.

Discussion: PRES is commonly caused by severe hypertension, and generalized tonic-clonic seizures occur in 60-75% of patients. The pathophysiology of PRES is hypothesized to involve endothelial dysfunction. A sudden increase in blood pressure may exceed the upper limit of cerebral blood flow autoregulation, resulting in hyperperfusion and subsequent vasogenic edema. However, studies have noted that 15-20% of patients diagnosed with PRES were normo or hypotensive, such as in this case. Pancreatitis has been identified as a trigger for PRES in isolated case reports. It is hypothesized that the increase in circulating inflammatory cytokines and pancreatic enzymes affects cerebral blood vessels, producing vasogenic edema. Patients with PRES may benefit from maintaining lower blood pressures, and anticonvulsants should be used until the resolution of neuroimaging findings.