NEW JERSEY CHAPTER

AMERICAN COLLEGE OF PHYSICIANS

REGIONAL SCIENTIFIC MEETING

ASSOCIATES ABSTRACT COMPETITION

MARCH 3, 2017

PARTICIPATING INSTITUTIONS

Thank you to all the programs who submitted abstracts for this year's abstract competition. Abstracts were received from the following programs:

- Atlanticare Regional Medical Center (Dominik Zampino, MD, FACP)
- Capital Health Regional Medical Center (Saba Hasan, MD, FACP)
- Cooper University Hospital (Brian Gable, MD, FACP)
- Englewood Hospital and Medical Center (Jonathon Shammash, MD)
- HUMC Mountainside (Bijal, Mehta, MD)
- Jersey City Medical Center (Amer Syed, MD)
- Jersey Shore Medical Center (Mayer Ezer, MD, FACP)
- Monmouth Medical Center (Margaret Eng, MD, FACP)
- Overlook Medical Center (Jeff Brensilver, MD, FACP)
- Raritan Bay Medical Center (Abdalla M Yousif, MD, FACP)
- Rutgers - New Brunswick (Ranita Sharma, MD, FACP)
- Rutgers - Newark (Neil Kothari, MD, FACP)
- Saint Barnabas Medical Center (Sunil Sapru, MD)
- Saint Francis Medical Center (Sara Wallach, MD, FACP)
- Saint Joseph's Medical Center (Chandra Chandran, MD)
- Saint Peter's University Hospital (Nayan Kothari, MD, MACP)
- Trinitas Medical Center (William Farrer, MD, FACP)

COMMITTEE MEMBERS

- Tamie Proscia-Lieto, MD, MBA, FACP-Chairperson
- William E. Farrer, MD, FACP
- Jill Butler, MD
- Adam Kaplan, MD
- Shuvendu Sen, MD
- Michael B. Steinberg, MD, MPH, FACP
- Vallur Thirumavalavan, MD

DISCLAIMER

It is assumed that all participants adhered to the rules as stated in the original abstract submission form. It is also assumed that the abstracts submitted were original works, represented by the true authors. The abstracts appear in no particular order. Judging was performed in an attempt to minimize bias. Judges were unaware of the authors unless they were directly involved with the associate. Although there were many excellent abstracts those selected to be presented as poster or oral presentation were chosen on the basis of content. This content was felt to be intriguing from a clinical education standpoint, thought provoking, or could stimulate debate regarding our current practice of medicine.

ORAL PRESENTATIONS

Routine Invasive versus Conservative Strategy for Elderly Patients Aged > 75 years with Non-ST Elevation Acute Coronary Syndrome

Aakash Garg, Amit Rout, Sahil Agrawal, Abhishek Sharma, John B. Kostis

Saint Peter's University (Nayan Kothari)

Background: Current guidelines recommend a routine invasive strategy for patients with non-ST elevation acute coronary syndrome (NSTE-ACS) [1]. However, elderly patients with NSTE-ACS are under-represented in randomized controlled trials (RCTs) and less likely receive invasive treatment [2]. Therefore, it remains unclear if elderly patients frequently admitted with NSTE-ACS benefit from an invasive strategy compared to a conservative strategy.

Objective: We conducted a meta-analysis to compare routine invasive and conservative strategies in elderly patients with NSTE-ACS.

Methods: A systematic review of RCTs in MEDLINE, EMBASE, CINAHL, and Cochrane databases comparing routine invasive with conservative strategy for elderly patients (age> 75 years) with NSTE-ACS was performed. The primary composite end-point was death or myocardial infarction (MI). Random effects meta-analysis was conducted to estimate odds ratio (OR) with 95% confidence intervals (CI) for individual end-points.

Results: A total of six studies with 1,887 patients were included in the final analysis. Compared to a conservative strategy, routine invasive strategy was associated with significantly decreased risk of the primary composite of death or MI [OR 0.65; 95% 0.51-0.83]. There were no significant differences between conservative and routine invasive strategies in terms of all-cause death [OR 0.85; 95% CI 0.63-1.20] or cardiovascular death [OR 0.84; 95% CI 0.61-1.15]. A routine invasive strategy led to significant reduction in risk of MI [OR 0.51; 95% CI 0.40-0.66] and need for revascularization [OR 0.31; 95% CI 0.11-0.91] compared to conservative strategy. Conclusion: In elderly patients > 75 years with NSTE-ACS, routine invasive strategy is superior to conservative strategy for the composite end-point (death or MI), primarily driven by reduced risk of MI.

Osteoporosis Screening at a Resident-Staffed Internal Medicine Clinic

Joy-Ann Tabanor, Namrata Sekhon, Sahai Donaldson, Jonathan Shammash

Englewood Hospital and Medical Center (Jon Shammash)

Introduction: Only 52% of eligible women get bone mineral density screening based on CMS data for DXA scan reimbursements. Rates as low as 31% have been previously reported. These low screening rates are concerning given the relatively high incidence of osteoporotic fractures, the associated morbidity, mortality and health-care costs. The aims of our study are to determine the osteoporosis screening rate at an internal medicine clinic at a Federally-qualified Health Center in northern New Jersey and to explore the potential barriers to screening.

Methods: Based on current screening guidelines we formed two risk group categories: women 65 years and older and patients with risk factors for secondary osteoporosis. We conducted surveys of residents, recent graduates and clinic preceptors. The percentage of respondents that reported screening 5 or more out of ten patients in each risk group category was determined. This threshold was chosen because it is closely related to the reported 52% national screening rate. The mean screening rates for respondents was also determined. Chart reviews were performed for patient visits from October to December, 2015.

Results: 13% of respondents were PGY1, 44% were PGY2, 30% were PGY3, 4% were recent graduates and 9% were attendings with 10 years or more of experience. 95% thought that it is important to screen for osteoporosis. 42% of respondents reported screening 5 or more out of 10 women 65 years and older for osteoporosis. The mean reported screening rate was 44%. The most commonly reported barriers to osteoporosis screening in this group were: not remembering to screen (65%), other screening tests taking priority (55%), no reminders in the EMR (50%) and not having the time (30%). 32% of respondents reported screening 5 or more out of 10 of patients with risk factors for secondary osteoporosis. The mean reported screening rate was 37%. The barriers reported in this group were not remembering to screen (75%), other screening tests taking priority (35%), no reminders in the EMR, not knowing to screen that population of patients (30%) and not having the time (25%). From the chart reviews, the overall screening rate was 31% (35% for the resident-staffed clinic and 21% for other providers). Only 46% of ordered DXA scans were done.

Conclusion: Low osteoporosis screening rates nationally and at our resident-staffed internal medicine clinic are concerning. Possible interventions include systems-based measures, provider and patient education.

The Impact of High Dose Folate and Thiamine in Acute Alcohol Withdrawal in a Community Hospital Setting

Margaret Omatsone, Kalyani Regeti, Nikunjkumar Patel, Romana Kanta

Raritan Bay Medical Center (Abdalla M. Yousif)

Background: An alcohol dependent patient is at risk of acute withdrawal syndrome (AWS) upon abrupt cessation of alcohol intake. Alcohol dependency predisposes an individual to several nutritional deficiencies, i.e. folate and thiamine deficiencies. Symptoms of AWS range from mild tremors to withdrawal seizures. In addition to relieving the immediate symptoms, supplementation with folate and thiamine replenishes deficient nutrients. The objective of this study is to determine whether administration of higher doses of folate and thiamine during an AWS episode affected patient length of stay.

Methods: We conducted a retrospective chart review comparing the clinical outcomes of 225 hospital admissions for AWS from January 2013-September 2015 at Raritan Bay Medical Center. The actual number of patients was 166, due to patients with multiple admissions. The population was divided into two groups: patients who received standard dose of folate (1mg) and thiamine (100mg) n=188 and patients who received high dose of folate (5mg) and thiamine (300mg) n=34. Exclusion criteria included patients who presented with/had seizures, background mental or behavioral disorders. All patients received scheduled and prn doses of chlordiazepoxide. Patients were monitored daily and discharge from hospital was based on patients being symptom free. Primary outcomes included time to symptom resolution and discharge from hospital, while secondary outcomes included variables affecting hospital stay.

Results: The mean age and standard deviation for patients on standard therapy was 50.5±10.4 years and on high dose therapy mean age was 50.2±8.2 years. Males constituted 74% of the population and females 26%. The data for length of stay was negatively skewed. The patients on standard therapy had a median length of stay of 3 days with an interquartile range of 3 (2-5days) and those on high dose therapy, the median length of stay was 2 days with interquartile range of 1 (2-3days). The distribution of length of stay was statistically significant between patients on standard therapy and those on high dose therapy with a P value =0.002. Some variables were found to play a role in determining the length of stay. Linear regression of correlates showed the strongest independent predictor of increased length of stay was age at admission, followed by MCV and blood glucose. High dose folate and thiamine therapy was a significant independent predictor of decreased length of hospital stay.

Conclusion: Our study demonstrated a possible correlation between administration of high dose of folate and thiamine in an acute alcohol withdrawal episode and the length of stay. Previous studies and case reports have reported the connection between micronutrient deficiencies and the severity of alcohol withdrawal. This study categorically highlights the importance and advantage of high doses of supplementation favorably impacting cost of inpatient stay and clinical outcomes.

Excessive Amphetamines in a Weight-Reducing Regimen Leading to Cardiac Arrest – Case Report

Izzah Vasim, John Oghene, Katherine Abella, Sara Dean, Sivashankar Sivaraman

Atlanticare Regional Medical Center (Dominik Zampino)

Introduction: Over the years, dietary supplements have been used as a popular method to aid weight loss. These weight loss supplements sometimes have ingredients such as amphetamines that can lead to cardiac dysrhythmias. Amphetamines are a class of sympathomimetic amines that are known to cause cardio-toxic effects including myocardial infarction, arrhythmias, cardiomyopathy and acute heart failure. There have been very few reported cases of fatal ventricular arrhythmias with the use of dietary supplements containing amphetamine related compounds.

Case: 47-year-old female with no significant medical history presented after being found unresponsive, cyanotic and in agonal respirations. CPR was immediately initiated and EMS was activated. On EMS arrival, the patient was found to be in a shockable rhythm on the AED and she converted to sinus rhythm and achieved spontaneous circulation after one shock. Upon arrival to the emergency department, hypothermia protocol was immediately initiated and she was transferred to the intensive care unit. The patient had no prior medication use, smoking, alcohol or recreational drug use. On further questioning, the patient's husband revealed that she had recently started a rigorous workout regimen as well as ingesting several dietary supplements called "310 MetaBoost –Enhanced Wight Loss Formula" and "Hydroxycut". Her initial laboratory studies revealed an AST of 397U/L, ALT of 371U/L, Albumin of 3.3g/dl, Troponin level of 1.196ng/ml and 0.781ng/ml. Her drug screen was positive for amphetamines. Her initial EKG was not suspicious for any acute injury or ischemia. A CT angiogram revealed no evidence of pulmonary embolism except for mucous plugs in the right main stem. A 2-D echo did not reveal any significant finding. Her cardiac catheterization revealed no coronary artery disease. Given her presentation of sudden cardiac arrest due to Ventricular fibrillation, an AICD placement was deemed necessary for secondary prevention of sudden cardiac death. The patient tolerated the procedure without any complications and was later discharged.

Discussion: Hydroxycut has been known to contain amphetamine related compounds and another sympathomimetic amine EPIGALLOCATECHIN that potentially causes ventricular arrhythmias via inhibiting cardiac ion channels. Other serious cardiac side effects include hypertension from its alpha and beta-adrenergic stimulation, coronary vasospasm and increased thrombogenecity due to catecholamine induced platelet aggregation. Ultimately, over the counter dietary supplements must be scrutinized carefully for their adverse cardiovascular effects. Our case suggests a possible causal relationship between Hydroxycut /Meta Boost use and Ventricular Fibrillation.

POSTER PRESENTATIONS
RESIDENTS

Heparin Induced Thrombocytopenia Diagnosis and Management in a Community Teaching Hospital

Aasems Jacob, Sayee Alagusundaramoorthy, Doantrang Du, Jack Ansell

Monmouth Medical Center (Margaret Eng)

Heparin exposure can lead to the fatal complication of heparin-induced thrombocytopenia (HIT) in up to 5% of the exposed patients. Unfractionated heparin (UFH) and to a lesser extent, low molecular weight heparins (LMWH) can result in HIT. Autoantibody directed against platelet factor 4 (PF4)- heparin complex is attributed in the pathophysiology of the disease. This can result in platelet destruction and a paradoxical pro-thrombotic state in up to 50% patients resulting in venous and arterial thrombosis. This is a retrospective study assessing the appropriateness in ordering HIT antibody test based on the pretest probability in a community teaching hospital setting. Adults who were admitted in the medical and surgical units of the hospital over 2 years who had an HIT antibody test sent out were included in the study. Majority of the patients were not found to have the pretest probability calculated using 4T score, which could have avoided this expensive test. Of the 104 tests sent out during the study period, 43 were positive, but only eight were true positives as evident by Serotonin Release Assay test. This resulted in patients being treated with alternative anti-coagulation and increased the duration of hospital stay as well as the cost. Half of the patients with HIT antibody tested positive and were not followed up by Serotonin Release Assay thereby permanently labeling the patients as 'allergic' to heparin. Possible interventions to reduce the inappropriate diagnosis of HIT and ordering of HIT antibody assay would be education of the physicians and surgeons who mostly order these tests, requirement to document 4T score prior to ordering test, review of the lab order by technicians and checklist on the lab order screen in the electronic medical records.

Can Highly Reliable Rounding Reduce Inappropriate Telemetry?

Ankita Patel, Valerie Allusson, Sunya Ashraf, Ashley Jenkins

Mountainside (Bijal Mehta)

Telemetry services are over utilized and can be harmful to patients that do not meet American College of Cardiology (ACC) guidelines. Using ACC telemetry admission guidelines, Benjamin et al. (2013) observed that 35% of telemetry days were classified as inappropriate, and not clinically indicated. Moreover, Ivonye et al. (2010) concluded that with the inappropriate use of telemetry services, "there is also the potential for harm to patients if artificial telemetry findings in low-risk patients lead to the performance of inappropriate invasive procedures." The inappropriate use of telemetry is associated with excessive medical expenditures, unnecessary resource utilization and potential harm to patients.Highly Reliable Rounding (HRR) involves sharing real time information with all care providers. Unique to this approach, is the active involvement of the patient who is viewed in this model as a partner in the center. Activities performed by the HRR model include performing quality and safety checks, engaging the patient and the team in discharge planning and assuring a safe transition of care at discharge. The study conducted a retrospective chart review to determine whether the HRR paradigm impacted telemetry discontinuation rates prior to day of discharge.

The control group consisted of patients on telemetry between July 2014 and August 2014, time prior to the implementation of HRR at the hospital. Patients after the implementation of HRR were grouped into non HRR on telemetry or HRR on telemetry. The months of July 2015 and August 2015 were reviewed. A chi square analysis was done on the control group and the HRR on telemetry group to see if there was a statically significant difference between the two groups. In the control group 46 out of 517 patients (8.9%) were discontinued from telemetry prior to the day of discharge. In the non HRR on telemetry group 34 out of 319 patients (10.7%) were discontinued. In the HRR on telemetry group 42 out of 115 patients (36.5%) were discontinued. The differences between the groups was statistically significant ($p<.05$) using chi square analysis. Patients in the HRR on telemetry group, who had telemetry discontinued were reviewed for 30 day readmission. There were seven patients readmitted, of which 4 were not placed on telemetry. The three patients placed on telemetry were admitted for non-cardiac complaints. HRR can increase the number of patients discontinued from telemetry monitoring prior to the day of discharge, who no longer meet ACC guidelines for monitoring. The study found a statistically significant difference in telemetry discontinual rate between patients who had HRR versus patients who did not. Patients who were discontinued from telemetry on HRR did not have any cardiac adverse effects. Highly Reliable Rounding significantly improves quality patient care by decreasing unnecessary costs due to inappropriate telemetry monitoring.

Macrophage Activation Syndrome: A Nearly Fatal Case Presentation, and Review of Diagnosis and Treatment Guidelines

Luis Dominquez, Marian D Valentin

Jersey City Medical Center (Amer Syed)

A 33 year-old Hispanic male without significant medical history presented with an unremitting fever for 5 days, associated with myalgais, fatigue, night sweats, and a rash. Upon admission, he was tachycardic, hypotensive and febrile at 103F. Physical exam revealed soft palate red papules, a diffuse non-blanching, maculo-papular rash, sparing the face, palms and soles. Labs revealed pancytopenia, and elevated ferritin, alongside transaminitis, and low fibrinogen. Imaging showed hepatosplenomegaly. He was started on empiric antibiotics. Blood cultures were drawn and returned negative. Despite antibiotics, he continued to spike fevers. On the 4th day, he suffered hypoxemic respiratory failure, was found to be in ARDS and was intubated and transferred to the ICU. He continued to deteriorate. Serum titers for viral and atypical bacterial antibodies, along with a bone marrow biopsy and lumbar puncture were inconclusive. Given the clinical picture of his persistent fever, pancytopenia, hepatosplenomegaly with transaminitis, hypofibrinogenemia and hyperferritinemia, Macrophage Activation Syndrome was considered based on recent classification criteria. He was started on high-dose methylprednisolone. He rapidly recovered, was extubated within 24 hours and discharged later that week. Macrophage Activation Syndrome (MAS) is a rare but life-threatening systemic inflammatory disorder, most commonly arising as a complication from juvenile idiopathic arthritis, but also associated with other rheumatological conditions, malignancies, immunological deficiencies and infections – especially viral. MAS is characterized by an uncontrolled and dysfunctional immune response, involving the expansion of T-Cells, Macrophages and the hypersecretion of pro-inflammatory cytokines. This results in fever, cytopenia, hepato-splenic involvement and hyperferritinemia. Previous diagnostic criteria, focusing on hemophagocytic macrophages found on biopsy lacked sufficient sensitivity. More recent criteria, by Filipovich in 2009, and now an international expert panel just released new classification in 2016. The 2016 criteria offers greater sensitivity and specificity, especially laboratory guidelines.

Biopsy Proven Soft Tissue Metastasis as First Sign of Metastatic Lung Adenocarcinoma

Ethan Goldstein, Samantha Lee, Satyajeet Roy

Cooper University Hospital (Brian Gable)

Introduction: Gradual onset painless thoracic subcutaneous mass mostly represents a benign etiology but it can rarely be a manifestation a serious underlying disorder.

Case: A 60 year-old woman with asthma and rheumatoid arthritis presented with a gradual onset and slowly progressive lump on her back. She denied fever, local trauma, pain, drainage of pus or similar lumps anywhere else on her body. She had a history of more than 30-pack-year cigarette smoking. She also complained of intermittent cough with mild wheezing. Her vital signs were within normal range. She had a 10 mm size soft to firm mass on the dorsal aspect of her thorax about 2 cm right to the mid thorax. She had mild bilateral scattered rhonchi. Rest of her physical examination was normal. Her cough prompted a routine chest X-ray which showed large hilar mass. A chest CT confirmed a large hilar mass and soft tissue densities on her back. Bronchoscopy was unsuccessful for biopsy, but biopsy of back mass showed poorly differentiated adenocarcinoma. Originally her masses were not bothersome but grew over time and became painful. She was diagnosed with stage 4 poorly differentiated adenocarcinoma of lung with subcutaneous metastasis. With chemotherapeutic management she did not do well and was eventually transitioned to hospice within a few months of diagnosis.

Discussion: Metastasis of lung cancer to soft tissue as first finding has been reported in case studies, however most literature discussing soft tissue spread comes as a late finding with poor prognosis. The frequency of metastatic soft tissue tumors has been reported as 0.2-2.7%. The common location of the metastases are reported as abdominal wall (25%), back (25%), thigh (19%), chest wall (13%) and arm (6%). The most common source of primary malignancies vary in different case series studies. In one study (Torigoe, et al, 2011) lung cancer (38%), lymphoma (31%), stomach cancer (13%), esophageal, pancreatic and uterine cancer (6%) represent the likely primaries. To date, there is still no established treatment, as this typically is found with aggressive disease. According to one review (Damron, et al, 2000) combination treatment with radiation and chemotherapy is indicated for metastatic soft tissue tumors in 40% of cases, radiation alone in 24%, radiation and resection in 20%, radiation and resection and chemotherapy in 13%, and no treatment in 3%.

Conclusion: Patients who present with suspicious subcutaneous masses warrant full evaluation including thorough history to screen for cancer risk factors, physical examination for possible metastatic disease, and diagnostic tests as indicated as subcutaneous masses can be the only presentation of a serious systemic disorder, such as lung cancer in our patient.

Hypermagnesemia - A Case Report

John Oghene, Siddharth Verma, Edward Hamaty

Atlanticare Regional Medical Center (Dominik Zampino)

Introduction: Magnesium is an essential mineral nutrient that acts an important signaling ion for various biochemical reactions. In adults, 300 mg of magnesium is ingested daily out of which 25-75% is absorbed through the intestines. The kidneys filter approximately 2.1 grams of Magnesium daily. Hypermagnesemia occurs due to the excessive oral administration of magnesium containing salts, laxatives and antacids particularly in the elderly as renal function declines with age. We present a case of iatrogenic hypermagnesemia with unusually high magnesium levels.

Case presentation: A 55-year-old woman was brought to the ER with altered mentation. This patient had a history of CVA with residual right hemiparesis, expressive aphasia, chronic dysphagia requiring a PEG tube for long-term nutrition and CKD Stage IIB/III with a baseline creatinine of 1.4. On presentation she was lethargic, hypotensive and bradycardic. She was unresponsive to verbal stimuli, minimally responsive to pain, her pupils were fixed and dilated, DTRs were absent and she had decreased muscle tone. GCS was 6. She was intubated and placed on mechanical ventilation. EKG showed sinus bradycardia of 58 b/min, first-degree atrioventricular block, QRS of 0.9 secs, QT of .48 secs and a PR of 0.23 secs. Laboratories revealed a potassium of 5.4, magnesium of 15.8 mg/dL, BUN of 65 mg/dL and creatinine of 1.68 mg/dL. CT head showed no acute intracranial changes. She was given IV normal saline, calcium gluconate 2 gm, IV naloxone 2 mg, kayexalate 30 gm and transferred to the ICU.In the ICU a repeat magnesium of 13 mg/dL confirmed the diagnosis of hypermagnesemia. Within 36 Hours after presentation, the patient became gradually more responsive and was successfully extubated. At that time, her serum magnesium level was 8.1 mg/dL. After further investigation, it was discovered that the patient was given 2 tablespoons of "Magnesium Oil" by mistake through the PEG tube, when her caretaker confused it with a bottle of aloe vera. The preparation contained 560 mg of elemental magnesium in each teaspoon as per the label. The patient's condition and serum magnesium levels improved after treatment with IV calcium, normal saline, and supportive therapy. At the time of her discharge, her cardiac, respiratory, and neurological function were back to her baseline.

Discussion: The patient presented with classical symptoms of respiratory depression, lethargy, hyporeflexia and EKG changes consistent with hypermagnesemia. She initially had to be intubated for respiratory arrest. Her underlying poor renal function further complicated her electrolyte disturbances. The patient was managed with IV fluids and supportive management and her magnesium level gradually dropped from 15.8 to 3.65 in 3 days.

Anal Neuroendocrine Tumor: An Aggressive Malignancy Masquerading As External Hemorrhoids

Muhammad Khan, Ahmed Dirweesh, Herbert Conaway, Robert Moser

St. Francis Medical Center (Sara Wallach)

Introduction: Neuroendocrine tumors (NETs) arise from neuroendocrine cells throughout the body. The reported incidence of NETs varies from 0.1% and 3.9% of all colorectal malignancies. The rectum is most commonly involved followed by the cecum and sigmoid colon. Anal NET is a devastating growth easily confused with benign hemorrhoids. Physician unfamiliarity with this rare rectal lesion can results in delays in diagnosis and therapy.

Case Presentation: A 60-year-old black male presented with a two week history of intermittent rectal bleeding and anal pain along with tenesmus and constipation. He denied abdominal pain, vomiting, anal or perianal discharge or sinuses, fever, chills, anorexia or weight loss. He had a past medical history of hypertension, coronary artery disease status-post coronary artery bypass surgery, and peripheral vascular disease. Examination was significant for a small perianal lesion located that mimicked a thrombosed external hemorrhoid. It was slightly painful, and partially covered with anal skin. The rest of the anorectal examination was normal and inguinal lymph nodes were not palpable. There were no significant laboratory abnormalities. Excisional biopsy of the anal lesion revealed an invasive poorly differentiated high grade neuroendocrine carcinoma of a large cell type. Immunohistochemical studies were positive for cytokeratin, chromogranin, and synaptophysin. There was a high Ki-67 proliferation index of >90%. A contrast-enhanced CT scan of the chest, abdomen and pelvis showed multiple large hepatic mass lesions, consistent with hepatic metastatic disease. The patient started a chemotherapy based regimen and currently getting his scheduled cycles with obvious clinical improvement.

Discussion: Anal involvement by this is heterogeneous group of tumors is very rare; involving 1 % of cases. NETs show immunoreactivity to Chromogranin and Synaptophysin; which are diagnostic for NET. Neuron-specific enolase (NSE) and CD56 are often positive in NETs, but are not specific. According to WHO classification, NETs are classified into typical carcinoids (low grade NET), atypical carcinoids (intermediate grade NET) and small cell and large cell carcinomas (high grade NET). Immunohistochemistry for Ki-67 (MIB-1) is mandatory to grade the tumor. High Ki-67 proliferative index points towards aggressiveness and probably the potential of metastatic dissemination. NET carry poor prognosis with one third of patients having distant metastasis at the time of presentation most commonly involving lymph nodes, liver and bones.2 Large tumor size, lymphovascular invasion, and high mitotic rate are poor prognostic markers. Although the standard therapy for patients with neuroendocrine carcinoma of the anal canal is still unclear, treatment approach should be directed by age, stage, nodal involvement, and tumor histopathology. Surgery with or without adjuvant treatment is the preferred therapy for localized disease, while chemotherapy regimen combining etoposide plus cisplatin or carboplatin is currently considered useful for poorly differentiated tumors and has shown reasonable results.

A False Positive HIV Antibody Test in a Patient with Mediastinal Hodgkin Lymphoma

Ahmed Dirweesh, Afolarin Amodu, Sumera Bukhari

St. Francis Medical Center (Sara Wallach)

Introduction: Fourth generation antigen-antibody assays and HIV antibody differentiation assays have high reported sensitivity and specificity. However, up to 0.5% of patients found to be seropositive for HIV are false positives. We report a case of Hodgkin lymphoma with a false positive HIV testing.

Case Presentation: A 38-year-old Hispanic male presented with 5 months history of cough with occasional bloody sputum. He also reported intermittent right sided chest pain, fever and night sweating for few weeks, and he has lost 15 lb. unintentionally in the last 3 months. He denied shortness of breath, contact with sick patients, travel or incarceration history. He works as a car-washer, and on monogamous relationship. He denied smoking, alcohol or drug use. On examination, vitals were normal, BMI was 19.1, and had no palpable lymphadenopathy. Dull percussion noted on right middle lung zones. The rest of exam was normal. He had WBCs of 7800/mm3, Hemoglobin of 11.3 g/dl, and normal platelets count.Chest radiograph showed a right mediastinal, hilar and infra-hilar masses, and computed tomography (CT) revealed the mass encasing the bronchi and major vessels, with mediastinal extension. Mass biopsy showed Hodgkin lymphoma (mixed cellularity type) with positive CD30 and CD15. Abdominal CT showed mesenteric and retroperitoneal lymphadenopathy with splenic lesions. A patient-confirmed HIV-1 and 2 Antibody with P24 antigen was first reactive, with an undetectable viral load. A repeat antigen-antibody test came back negative!

Discussion: Hodgkin Lymphoma has aggressive presentation with systemic B symptoms, widespread extra-nodal lesions and frequent bone-marrow involvement. Reed–Sternberg cells typically express CD15 and CD30, rarely express CD20, and lack CD45 expression. HIV testing is part of routine testing because of common anticipated association.As false positive HIV screening have been rarely linked to pregnancy, autoimmune disorders, some viral infections and hematologic malignancies, a confirmatory test should be done. There are several speculations about the mechanism of cross-reactivity that is believed to be responsible for the false HIV positivity. Antigenic mimicry between the individual's own epitopes and retroviral antigens is the likely mechanism for the reactivity with HIV P24 antigen. Muta et al reported false-positive HIV serology in angioimmunoblastic T-cell lymphoma patients and speculated that this may be due to coincidental cross-reaction of subtypes of polyclonal gamma globulin with the HIV P24 antigen. The exact mechanism for false positive antibody reaction in this case may also be related to the HIV P24 antigen cross-reactivity as speculated in other reported cases.

Conclusion: Although false-positive HIV testing appears to be described rarely in lymphoma patients, it is vital to appreciate that the cross-reaction with HIV can be a potential complication.

SGLT2 Inhibitor Induced Diabetic Ketoacidosis: Two Case Reports

Tam Matthew, Sarah Kwan

Saint Peter's University Hospital (Nayan Kothari)

Sodium-glucose cotransporter 2 (SGLT2) inhibitors are approved for use with diet and exercise by the Food and Drug Administration to lower blood sugar in adults with type 2 diabetes mellitus. SGLT2 inhibitors have been associated with increased risk of diabetic ketoacidosis (DKA). Ketoacidosis may not be recognized immediately due to blood glucose levels lower than expected for DKA which can result in the delay of recognition and treatment.

Case 1: A 29-year-old male presented to the emergency department with abdominal pain and vomiting. Medical history was significant for diabetes mellitus with a recent hospitalization for first episode of DKA and hypertriglyceridemia 18 months ago. Medications included dapagliflozin, metformin, lisinopril, and simvastatin, started over 4 weeks prior. Physical examination revealed elbow xanthomas. Relevant laboratory studies included serum glucose 304mg/dL, anion gap 29, venous pH 7.14, and HbA1c 15.7%. Ketones were positive in serum and urine. A lipid profile revealed cholesterol of 1037mg/dL and triglycerides greater than 3000mg/dL. Abdominal CT was normal with no evidence of pancreatitis. He was treated for DKA which resolved the symptoms. The patient was advised to discontinue the SGLT2 inhibitor and was discharged on an insulin regimen.

Case 2: A 47-year-old man presented to the emergency department with nausea, vomiting, and abdominal pain, associated with a two-day history of poor appetite. Past medical history was significant for type 2 diabetes mellitus and recent hospitalization 9 days prior for euglycemic DKA. Medications included canagliflozin started approximately 15 months ago, metformin, insulin glargine 29 units bid, and regular insulin sliding scale. On admission, serum glucose was 184mg/dL, anion gap 21, venous pH 7.32, and HbA1c 9.5%. Serum and urinary ketones were elevated. Abdominal ultrasound and CT did not show evidence of an acute process. He was diagnosed with and treated for recurrent euglycemic DKA, attributed to SGLT2 inhibitor use. Symptoms and laboratory findings resolved and he was discharged with canagliflozin cessation.

Discussion: In Case 1, the patient's previous DKA and poor glycemic control together likely contributed to the presentation. It was also unknown whether the patient had Type 1 or Type 2 diabetes mellitus. These factors would be considered contraindications for SGLT2 inhibitor use and thus a preventable event. Case 2 exemplifies recurrent euglycemic DKA in the setting of SGLT2 inhibitor use and contributes to existing literature supporting the causal role for these medications in the pathogenesis of DKA. These cases together demonstrate observations under which circumstances SGLT2 inhibitors should be avoided. Clinicians should be aware of this risk and closely monitor their patients on these medications.

The Effect of Severely Reduced Kidney Function on Symptomatic Diverticular Disease

Ahmed Dirweesh, Sara Wallach, Michael J. Smith, Ritika Zijo, Muhammad Khan, Mohamed Ijaz, Afolarin Amodu, Mohamed Ibrahim, Ambreen Bushra

St. Francis Medical Center (Sara Wallach)

Introduction: The prevalence of diverticulosis is increasing with 5-10 percent of patients developing diverticulitis and 5-15 percent developing symptomatic bleed. Diverticulitis can result in abscess, perforation, fistula, or obstruction. Bleeding has combined morbidity and mortality rates of 10-20 percent. The purpose of this study was to compare diverticulitis related complications and transfusion requirements for diverticular bleeding in patients with normal to moderately reduced kidney function (GFR ≥30 mL/min/1.73 m2) and patients with severe renal impairment (GFR <30 mL/min/1.73 m2), and identify factors associated with these outcomes.

Methods: We retrospectively reviewed records of all patients with diverticulitis or diverticular bleed treated at our hospital from January 1, 2011 to July 31, 2016. Patients were evaluated to determine baseline GFR, age, gender, race, medications, comorbidities, length of stay (LOS), presence of perforations or abscesses and the need for transfusion.

Results: Of the 291 patients included, males were 167(58%). Mean age and LOS for patients with non-complicated diverticulitis was 59±1.5 years and 2.9±1.9 days in the GFR ≥30 group, and 65±4.5 years, 5.8±2.7 days in the GFR <30 group. Perforations or abscesses complicating diverticulitis developed in 31/136(23%) of patients with GFR ≥30, and in 13/26(50%) of patients with GFR <30 (odds ratio, 3.4; 95% confidence interval, 1.423-8.06; p-value=0.0073). Mean age and LOS for patients with perforations/abscess was 55±3 years, 8.3±4 days in the GFR ≥30 group and 65±4 years, 8.5±4.4 days in GFR <30 group (p-values=0.24, 0.0001). Perforations or abscess occurred in 5/28 Blacks, 3/12 Hispanics and 23/94 Whites with GFR ≥30 (p-value=0.76) and in 3/6 Blacks, 2/3 Hispanics and 8/17 Whites with GFR <30 (p-value=0.72). Blood transfusion for diverticular bleed was required in 11/78(14%) of patients with GFR ≥30 and in 22/51(43%) of patients with GFR <30 (odds ratio, 4.6; 95% confidence interval, 1.99-10.76, p-value=0.0004). Mean age and LOS for patients who were not transfused was 71±2 years, 3.1±1.5 days in GFR ≥30 group, and 76±2.3 years, 4.5±3.6 days in GFR <30 group. Among patients who needed transfusion, mean age and LOS was 71±3.4 years, 8.5±2.5 days in GFR ≥30 group and 71±2.4 years, 9±5 days in those with GFR <30 (p-values=0.2, 0.04). Transfusion needed in 3/23 Blacks, 2/8 Hispanics and 6/47 Whites with GFR ≥30 (p-value=0.79) and in 6/14 Blacks, and 13/28 Whites with GFR <30 (p-value=0.09).

Conclusion: There was significant increase in complicated diverticulitis cases; transfusion rates for diverticular bleeding and LOS in patients with severely reduced kidney function compared to patients with normal-moderately reduced renal function. The study did not detect any differences in age, gender or race between the study groups.

Immunoblot Development for Diagnosis of Autoimmune Hepatitis

Naveen Lajpatrai, S. Nayak, A. Rastogi, I. Karagpur

Saint Peter's University Hospital (Nayan Kothari)

Background: Type 1 Autoimmune hepatitis constitutes more than 90 % cases of autoimmune hepatitis, is characterized by ANA and/or SMA positivity detected by operator dependent indirect immunofluorescence with lymphoplasmacytic infiltrate in liver biopsy. No single AIH-1 specific nuclear antigen has been identified , with ANA directed against chromatin, single or double stranded DNA, tRNA, SSA-Ro, snRNPs, ribososmal P protein, cyclic A or histones. No single pattern has been established in indirect immunofloroscence at present, characteristic of AIH.The aim of the current study was to exploit the database in Indian setting to determine nuclear antigens as targets for antinuclear antibodies in patients of autoimmune hepatitis type 1 to develop autoimmune hepatitis specific immunoblots. The study was done at Institute of Liver and Biliary Sciences, New Delhi, India, tertiary care center for liver disorders.

Methodology: 75 patients, >18 years who were antinuclear antibody positive with indirect immunofluorescence titre>=1:80, ALT >40 U/L, serum IgG(>16g/L), nonreactive viral hepatitis markers and within normal metabolic parameters confirmed with liver biopsy were evaluated with various types of immunoblots used for diagnosis of rheumatologic diseases and elisa coated with nRNP/Sm, Sm, SS-A(SSAnative and Ro-52), SS-B, Scl-70, PM-Scl, Jo-1, CENP B, PCNA, dsDNA, Nucleosome, Histones, ribosomal P protein, AMA-M2, Sp100, LKM1, gp210, LC1 and SLA antigens.

Results: Antibodies to Ro-52 were present in 35 of 75 ANA+ sera(17+ alone, 18with SS-A). Antibodies to histones positive in 8 of 75 ANA + sera(4 histones +alone, 4+with antibodies to nRNP, SS-A, Ro-52, nucleosome). Antibodies to nucleosome were present in 8 of 75 sera(4 alone, 4 with antibodies to nRNP, SS-A, Ro-52, histones) Antibodies to n RNP were detected with other antibodies in 4 of 75 sera. Antibodies to centromere (Cenp-b) were found alone in 3 of 75 sera. Antibodies to PCNA were detected with anti SS-A in 4 of 75 sera. Antibodies to ds-DNA, Sm, Scl-70, PM-Scl, Jo-1 AMA-M2, ribososomal P-protein, Sp100, LKM-1, gp-120, LC1, and SLA were not detected in any of the 75 AIH patients' sera. 13 sera were non reactive to immunoblot.

Conclusion: Immunoblots devopment with antigens Ro52, SSA, PCNA, nRNP, histones and nucleosome, can detect antibodies in 85% of patients ruling out detection by immunofloroscence microscopy, which is highly subjective , operator dependent technique or other nonspecific immunoblots , and also with no established criteria of ANA titres particularly in autoimmune hepatitis patients.

Pain: An Overlooked Presentation of Multiple Scleroris

Maryam Siddiqui, Bushra Saleem, Nagham L. Jafar, Daniel F. Goldsmith

Capital Health (Saba Hasan)

Introduction: Multiple sclerosis (MS) is a chronic immune-mediated disease of the central nervous system that causes long-term physical disability. Throughout the course of the disease, pain is common and it is associated with many symptoms and problems. Studies have reported that 23% of patients had pain at the onset of being diagnosed with MS and the prevalence of pain in MS ranged from 29% to 86%.

Case Presentation: A 30-year-old African American female presented to the ER 33 times over the course of 10 years for evaluation of different symptoms including multiple visits for lower back pain, neck pain, and extremity pain. The patient underwent multiple X-rays, CT of lumbar and cervical spine which were all inconclusive. She also underwent Electromyography for evaluation of possible carpel tunnel syndrome after presenting with intermittent wrist pain. The patient was discharged multiple times on various pain medications to treat her "chronic pain syndrome". She was also referred to a psychiatrist for evaluation and was started on antipsychotic medications which the patient refused to use. In 2016 patient came to the ER complaining of headache and ambulatory dysfunction from leg weakness leading to falls which required admission. Motor examination revealed a mild drift with decreased hand grip on the right arm and right lower extremity drift. Sensory exam revealed a sensory loss to touch, pinprick and temperature at various cervical and thoracic distributions more on the right arm and leg. An MRI of brain was done which showed multiple regions of white matter hyper intensity, both above and below the tentorium, with a distribution and appearance compatible with a clinical diagnosis of demyelinating disease. The patient subsequently underwent lumbar puncture which showed the presence of oligo clonal bands. The patient was started on high dose IV steroids and currently on Disease modifying therapy for MS with significant clinical improvement requiring no further hospital admissions or ER visits since diagnosis.

Discussion: MS is a devastating disease with a wide spectrum of presentations making it difficult to diagnose. It is the most common non-traumatic cause of disability in young adults, affecting 350,000 individuals in the USA and millions worldwide. Pain without sensory deficits is the predominant symptom in 10-15% of people diagnosed with MS and is classified into 4 major groups: continuous or intermittent central neuropathic pain, musculoskeletal pain, and mixed neuropathic and non-neuropathic pain, A high index of suspicion is required to evaluate young people visiting the ER/PCP multiple times for nonspecific pain symptoms and should prompt the clinicians to consider MS in the differential diagnosis.

Curious Case of Anemia Associated with Squamous Cell Carcinoma of Forearm

Muhammad Khakwani, Uzair Rehman, Kumar Rohit,
Francis Onwochei, Srinivas Gongireddy

Jersey City Medical Center (Amer Syed)

Introduction: Non Melanoma skin cancers such as Basal cell carcinoma (80%) and squamous cell carcinoma (20%) are the most common cause of cancers in U.S. and most common malignancy amongst the white population. Non melanoma skin cancers appear most commonly on sun exposed areas. If left untreated these tumors can be aggressive, metastasize and invade underlying tissue requiring extensive surgeries. We present a case of atypical location of Squamous cell carcinoma associated with severe anemia.

Case: 66 year old male with no significant past medical history, presented with progressive shortness of breath for the past three months. Shortness of breath was more pronounced with exertion, associated with dizziness and generalized weakness. Patient also mentioned a growth on his Left forearm which started about 5 years ago. Initially, patient visited a dermatologist who prescribed a topical ointment but growth progressively increased in size over time. Patient notes bleeding at the site of the growth when he takes a shower and occasional burning sensation. Patient was hemodynamically stable. On physical examination, a large mass 9.5cm x 8cm in size, foul smelling, and fungating in appearance was seen on the left forearm. Laboratory findings were significant for a hemoglobin level of 4.1. Patient was transfused 6 units PRBC. Patient underwent colonoscopy which was unremarkable for any source of bleeding. Shortness of breath improved markedly after transfusion. On MRI, the mass had spread to underlying muscles. Biopsy of the mass was sampled and reported as moderately differentiated invasive squamous cell carcinoma with a 2.2cm x 1.5cm lymph node in left axilla positive for metastasis. After, a multidisciplinary team discussion decision was made to amputate the left forearm.

Discussion: Squamous cell carcinoma has multiple risk factors, most common being UVB light exposure. UVB can inactivate or delete p53 genes leading to metaplasia. Most common sites of sunlight exposure are head and neck. Tumor starts from a precursor lesion known as actinic keratosis. These are scaly, pinkish or brown colored lesions and have cumulative lifetime progression risk of 6-10%. In squamous cell carcinoma, mass greater than 2cm if untreated can lead to invasive disease and thus requiring amputation.

Conclusion: There are over 600,000 new cases yearly from non-melanoma type cancer that cause significant disfigurement and morbidity. Squamous cell carcinoma has an increased risk of metastasis, that increases mortality if not diagnosed early. Most invasive Squamous cell carcinomas occur on the head and neck and 2nd most common site is the trunk. Lesions greater than 2cm recur and metastasize at a rate of 15% to 30% with a 5-year cure rate of 70%.

Statin-Induced Necrotizing Autoimmune Myopathy

Muhammad Azharuddin, Samrah Zaigham, Wael Ghali

Monmouth Medical Center (Margaret Eng)

A statin-induced necrotizing myositis (myopathy) is being increasingly recognized. More recently, a rare entity named statin-induced necrotizing autoimmune myopathy (SINAM) was characterized. Symptoms related to statin-use range widely, from common non-specific myalgias to necrotizing myositis, to rare rhabdomyolysis. Risk factors for statin-induced myotoxicity include older age, Asian descent, heavy exercise, excess alcohol consumption, vitamin-D deficiency, diabetes, and thyroid dysfunction. The higher the dose of statin, the more likely myotoxicity occurs.A 57 year old male with a history of diabetes and hyperlipidemia (recently starting on atorvastatin) was hospitalized with progressive weakness of lower extremities for four days, which became so severe he could not walk. On examination, he had symmetric muscle weakness on lower extremities bilaterally. Laboratory studies initially showed creatinine-phosphokinase (CK) of 7061 units/L, which increased to 132000. The patient underwent biopsy of the left quadriceps, which displayed scattered necrotic fibers. Computed tomography of chest, abdomen, and pelvis was unremarkable for malignancy, and magnetic resonance imaging of thoracic/lumbar spine was normal. Diagnosis of statin-associated necrotizing myopathy was made given his history of statin exposure, seropositive anti-HMG-CoA antibodies, and lack of evidence of connective tissue disease, active viral infection, or malignancy. Prednisone 60mg daily was administered with intravenous immunoglobulin 2gm/kg for 5 days. His CK level lowered to 621units/L, and his lower extremity strength returned to normal within a month.Statin-associated myotoxicity can be classified into toxic and autoimmune forms. Early diagnosis of drug-induced myopathy is crucial, since drug withdrawal can lead to full recovery. SINAM is usually categorized by a rapid onset of severe proximal weakness, and CK levels above 6000 IU/L with positive anti-HMG-CoA antibodies. Muscle biopsies can show muscle fiber necrosis, deterioration, and phagocytic penetration. In some cases, lipid filled vacuoles and ragged red fibers were observed. Statin-induced autoimmune myositis is classified in the criteria for adult dermatomyositis and polymyositis, which includes symmetrical muscle weakness, proximal muscle involvement, and elevated serum CK levels. Electromyography is typically normal in SINAM and diagnosis is through detecting anti-HMG-CoA antibodies. Suggested mechanisms include isoprenoid depletion, lower sarcolemmal membrane cholesterol, blockage of ubiquinone or coenzyme Q10 synthesis, or disturbed calcium metabolism. SINAM is treated by discontinuing the offending drug, and performing immunosuppressive therapy. Prednisone is the first-line treatment, and secondary agents include azathioprine, methotrexate, intravenous immunoglobulin, and rituximab. Other treatment options are non-statin lipid lowering agents and modifying lifestyle including stopping smoking, reducing weight, or modifying diet. SINAM is a rare and severe form of muscle toxicity is linked with statin usage. Once diagnosed, early immunosuppressive therapy should be initiated to improve patient outcome. In addition, further study should be done on effective immunosuppressive therapy.

Uremic Encephalopathy Masking Myxedema Coma

Arman Mushtaq, Hiyam Bakhit

Raritan Bay (Abdalla M. Yousif)

Introduction: Myxedema coma is a rare disastrous presentation that occurs in less than 0.1% of all cases of severe hypothyroidism. Patients present in obtunded state that mimics many serious etiologies leading to unnecessary investigations and interventions causing increased morbidity, length of stay, and cost.

Case: A 55-year-old female was brought to ER after she was found confused and deshelved on the floor. In ER she was hypothermic, obtunded and unable to answer any questions. As per medical records she had ESRD on dialysis, diabetes mellitus and hypothyroidism. Lab data revealed Hb. 8.8 g/dl, creatinine 14 mg/dl, BUN120 mg/dl, potassium 8.7mm/L. Chloride 102mm/L, CO2 < 8 mm/L, ABGs : pH of 7.10, pCO2 21, pO2 165, HCO3 6.5. CT of the head was unremarkable. Physical examination: BP 120/70, pulse 55/min, temp. 94.6 F, RR 16/min. Extremities: anasarca and non-pitting edema of lower limbs. Neurologically patient was obtunded. Reflexes were diminished and Babinski was negative. She was admitted to ICU and had two sessions of hemodialysis on consecutive days. Her BUN and creatinine came to base line and acidosis also resolved after first hemodialysis. However her mental status did not improve and she remained hypothermic and bradycardic. She received empiric treatment for herpes and bacterial meningoencephalitis. That was discontinued after negative CSF results. TSH level came back 60. She was started on IV levothyroxine. After receiving two doses of IV levothyroxine her temperature and heart rate normalized and she was completely oriented with normal neurological exam.

Discussion: Narrowing the diagnosis to myxedema coma can be challenging due to several chronic diseases presenting in the similar fashion. Conditions like viral or bacterial meningitis, hepatic encephalopathy, sepsis and accidental hypothermia can all present with same spectrum of signs and symptoms. Careful neurological exam in the light of history is pivotal. Brain stem infarct and CO2 narcosis have also been reported where the underlying culprit was myxedema coma induced by severe hypothyroidism. In our case uremic encephalopathy masked under lying myxedema coma. Compliance with thyroid replacement therapy is of utmost importance in patients with multiple co-morbidities and old age and requires stringent follow up at the level of subspecialty and primary care. Further history from our patient revealed that she stopped taking her thyroxine 1 month ago and then started feeling lethargic, depressed and eventually to the extent that she stopped all her daily activities and missed her dialysis sessions, the cascade of events that led to her disastrous presentation.

Conclusion: Our case highlights the importance of prompt recognition of underlying hypothyroidism in critically ill patients presenting in obtunded state and to initiate appropriate doses of levothyroxine preferably IV, to halt and reverse the sequela of severe hypothyroidism.

Clinical Picture of Posterior Reversible Encephalopathy Syndrome (PRES)

Sofia Chaudhry, Nagham LeAnne Jafar

Capital Health (Saba Hasan)

Background: Posterior Reversible Encephalopathy Syndrome (PRES) can present with severe headache, visual changes, and encephalopathy in patients with elevated blood pressures. When the systemic blood pressure is higher than the cerebral auto-regulation range in a chronic hypertensive patient, then there is a breakthrough of auto-regulation, leading to an increased cerebral blood flow and capillary leakage into the inerstitium, and thus edema. The most frequent focal deficit is cortical vision loss due to the involvement of the occipital lobes but any focal deficit can be seen. Nonconvulsive seizures can also occur in this hyper-perfusion state. On the MRI, it is seen as symmetrical vasogenic edema most often in the occipital area of the brain but can be seen in other areas as well. The key treatment is to lower the blood pressure with IV antihypertensives and provide supportive care.

Case Presentation: A 79 year old Caucasian female with a history of atrial fibrillation, hypertension, type 2 diabetes was last seen in her usual state of health two days prior to presentation. She lived alone and was found by her son to be unresponsive on the floor of her home and thus was intubated in the field.Vital signs were blood pressure 201/156 mmHg, and heart rate 202. Patient was given 10 mg IV lopressor and then subsequently diltiazem drip plus IV heparin.MRI showed: “Multiple patchy regions of FLAIR hyperintensity in bilateral cerebral hemispheres, left basal ganglia, right greater than left cerebellum, and brainstem. Small foci of susceptibility in the right cerebellum may reflect petechial hemorrhage. The findings are concerning for acute ischemic changes from ischemic/anoxic injury. Differential considerations include posterior PRES, which may be less likely given clinical history, infectious etiologies such as viral encephalitis, and inflammatory demyelinating diseases” During the hospital stay, on the first 2 days, the patient was only able to withdraw unilateral upper and lower extremities to pain. By the third day in ICU, she was beginning to follow commands, and able to move all extremities. She was extubated and did well thereafter, having returned completely to baseline neurological state. She was discharged on adequate antihypertensives and instructed on the importance of adhering to therapy.

Discussion: The preliminary MRI report read that PRES was unlikely given the clinical scenario and that it was more likely that the patient underwent anoxic brain injury. As a result, the patient was deemed to have a poor prognosis. This case demonstrates that PRES can mimic anoxic brain injury and detection of the characteristic MRI findings, along with appropriate blood pressure management and supportive care is crucial to identify and treat this reversible condition and lead to good outcome.

Genitourinary Tuberculosis and Pott's Disease

Han Vo, Tracey Li, Ahmad Shoubaki, Shih-Fen Chow, Mindy Houng, Su Wang

St. Barnabas Medical Center (Sunil Sapru)

Mycobacterium tuberculosis commonly affects the lungs, but can spread to extrapulmonary organs. Extrapulmonary tuberculosis (EPTB) can present with diverse symptoms that mimic those of other pathologies. Its diagnosis can be elusiveand requires a higher sense of suspicion in countries of low TB prevalence. A rare case of simultaneous male genitourinary and spinal tuberculosis (Pott's disease) is reported. A 41 year-old Chinese man initially presented with intermittent lower back pain confirmed by CT scan, which showed lumbar compression fracture, and treated with naproxen. He developed right testicular swelling a few months later. Patient was sexually active and in a monogamous relationship. He denied fever, dysuria, urinary frequency, and urethral discharge. Initial diagnosis was epididymitis, and an empiric antibiotic was started. Urinalysis, chlamydia and gonorrhea tests were negative. Ultrasound of testes confirmed epididymitis and a right hydrocele. Follow-up revealed enlarging, firm, and irregular right testis. Repeat ultrasound revealed heterogeneous testes that increased in size. His complete blood count, prostate specific antigen, and α-fetoprotein were within normal limits. The differential diagnoses were infection versus neoplasm. Urology was consulted; a fine needle aspiration was inconclusive. Upon further investigation, the patient revealed he had active tuberculosis twenty years ago and recalled a six month treatment with medications. Patient had a positive QuantiFERON®-TB Gold test and reported no symptoms. His chest x-ray showed a non-specific right upper lobe opacity/density. CT of the chest, abdomen and pelvis confirmed scarring of right upper lobe, cluster nodularity of bilateral apices, 4mm nodules of the right lower lobe, and a 2.7cm hepatic vascular lesion. Tests for HIV and sputum samples for acid-fast bacilli were negative. There was high suspicion for TB orchitis/epididymitis and Pott's disease of the spine. Previous CT of the spine showed T12-L1 compression fracture, and follow-up MRI confirmed multiple areas of abnormal marrow signal and a defect of the bone at L1 extending into soft tissues. Incision and drainage with exploration of the scrotal mass was performed, and the fluid was sent for cultures, acid-fast stain, histopathology and cytology. Urine AFB was positive. Scrotal pathology revealed granulomatous changes with giant cells, consistent with TB. Two years of directly-observed anti-tuberculosis therapy was initiated by the local health department.This case illustrates the challenge of diagnosing EPTB, particularly for physicians practicing in countries of low prevalence. EPTB does not only occur in immunocompromised patients as seen in this case. Barriers to diagnosis included insurance approvals and delays for imaging, communication amongst health care providers, and patient resistance to invasive procedures. Physicians should consider EPTB in patients who originate from areas with high prevalence of tuberculosis.

Paraneoplastic Polymyositis as an Unusual Presentation of Colon Carcinoma

Sudarsan Kollimuttahuillam, Lewis Musoke

Trinitas Regional Medical Center (William Farrer)

Colorectal cancer most often presents with a change in bowel habit, weight loss or with bleeding per rectum. Much less commonly, colorectal cancer may present as a paraneoplastic syndrome. Polymyositis is a complement-mediated idiopathic inflammatory myopathy manifested by proximal muscle weakness. Polymyositis may be part of a paraneoplastic syndrome associated with an underlying malignancy, but it has been suggested that tumors of the large bowel are rarely complicated by myositis. Here we present a case of colon carcinoma with muscle weakness being the presenting feature. A 51-year-old Puerto-Rican female with a past medical history of COPD presented with a 2-week history of pain of bilateral shoulders and thighs associated with weakness. Review of systems were positive for loss of appetite, constipation, fatigue and low grade fever 100.2 which resolved with Advil. She denied any loss of weight, melena, nausea or vomiting. She had a 17 pack year smoking history but quit 13 years ago, and denied alcohol or recreational drug use. Family history was significant for breast cancer in two maternal aunts and lung cancer in a son diagnosed at age 29. Physical examination was significant for obese habitus and significant proximal muscle tenderness associated with tenderness. Labs showed mild anemia with hemoglobin of 11.9 with MCV of 80.9 and normal chemistry. CPK, myoglobin, LDH and aldolase levels were elevated indicating myositis. TSH was within normal limits, however thyroid peroxidase antibody was positive. ANA, Anti-Jo antibody, SCl-70 antibody, anti-RNP antibodies, SS-A, SS-B were all negative. MRI of hip showed muscle edema of spinal, pelvic and thigh muscles.The patient was started on treatment with steroids with significant symptomatic improvement and lowering of enzymes. CT scan of chest to rule out malignancy showed severe bullous disease. CT abdomen/pelvis showed thickening of wall of descending colon associated with enlarged pericolonic lymph nodes. Enlarged para aortic lymph nodes and multiple hepatic hypodensities were concerning for primary colonic carcinoma with metastasis. MRI done later confirmed the malignant nature of liver masses which were 3 in number and were biopsied. Colonoscopy was performed which showed poorly differentiated carcinoma of colon with metastasis showing mutations in P53 and KRAS, confirmed also by liver biopsy. Muscle biopsy showed scattered fascicular infiltration with inflammatory cells confirming polymyositis. The patient was discharged home on tapering dose of steroid and was started on neoadjuvant therapy with Oxaliplatin/5-FU with leucovorin and Bevacizumab with plan for partial hepatectomy and colectomy after chemotherapy.This case shows the importance of considering neoplasm as a differential for patients presenting with symptoms of myopathy, as although rare, it can be the first symptom at presentation. Although no guidelines exist, numerous case reports suggest a diagnosis of polymyositis warrants a search for occult malignancy.

Shaky Hand and Serotonin: Acute Tremors in the Setting of a New Medication

Sheila Kalathil, Edward Liu

Jersey Shore (Mayer Ezer)

Case: A 73 year old woman with a past medical history of herpes encephalitis 29 years ago presented initially to an outside facility with confusion and headache. After a negative neurological workup, she was diagnosed with a transient ischemic attack and discharged home. A few days later, she was re-admitted after being found by her neighbor, confused and wandering in the neighborhood. Upon admission, she was found to be alert and oriented to her place and surroundings, but having no recollection of the preceding events. She could not remember any events in the past 4 or 5 days, or even of the morning itself. She was noted, however, to be full awake, alert, and on physical exam did not have any neurological deficits. A CT head only re-demonstrated left temporal lobe encephalomalacia, from her initial episode of encephalitis. She was diagnosed with amnesia, and transferred to our facility for prolonged EEG-monitoring to rule out seizures. Video EEG determined Right sided frequent sharp wave activity on VEEG, suggestive of possible seizure focus, and she was started on seizure medication. The patient continued to remain confused, and also began having fevers and headache. Lumbar puncture was obtained, and the patient was empirically started on IV acyclovir given high suspicion considering her past history of herpes encephalitis. Lumbar puncture results revealed 206 WBCs, 43% monocytes, and 43 mg/dL glucose. HSV 1 DNA PCR was detected in CSF, confirming the diagnosis. She received a 2-week course of IV acyclovir, continued to struggle with intermittent confusion as well as agitation, but was eventually discharged to rehab in stable condition.

Discussion: Herpes Encephalitis is the most common cause of sporadic encephalitis worldwide, and has a bi-modal distribution, with most occurrences either in those younger than 20 or those greater than 50. Nearly 10-20% of the 20,000 viral encephalitis cases are found to be HSV, and the majority of HSV 1. Clinical finding are usually seen in the form of focal neurologic signs, dysphasia, aphasia, or decreased consciousness. Less common syndromes which may be seen are hypomania, Kluver-Bucy syndrome, or amnesic states, as seen with this patient. Herpes encephalitis has high morbidity and mortality, and can result in lasting neurological deficits. Early treatment with IV acyclovir has been shown to reduce lasting neurological deficits. By recognizing uncommon presentations of herpes encephalitis, treatment can be initiated earlier to provide better outcomes.

Hypertriglyceridemia – A Neglected Cause for Acute Pancreatitis

Kartik Kalra, Greg Matthew Teo

St. Peter's University Hospital (Nayan Kothari)

Introduction: Hypertriglyceridemia (HTG) is the third most common cause of acute pancreatitis (AP) after alcohol and gallstones. It is reported to cause 1-4 % of all cases of AP and 56% of pancreatitis during pregnancy. A Triglyceride (TG) level of more than 1,000 mg/dL is needed to cause an episode of pancreatitis. Here we present 4 patients diagnosed with hypertriglyceridemic pancreatitis.

Cases: Case 1 – 33 year old Filipino male with history of diabetes and obesity, was admitted for AP. APACHE-II score did not improve despite adequate IV fluids. TG levels were found to be at 2556 mg/dL 48 hours after admission. He was started on regular insulin drip and gemfibrozil. He gradually improved and was discharged with TG level at 617 mg/dL. Case 2 – 49 year old Caucasian male with a history of neuroendocrine tumor was admitted for AP. Patient was undergoing chemotherapy with Everolimus. His TG levels were at 9550 mg/dL on admission. He was started on regular insulin drip, Everolimus was discontinued and gemfibrozil was started. Patient improved and was discharged after 9 days with TG level at 421 mg/dL. Case 3 – 41 year old Sri Lankan male with HTG who was non-compliant to gemfibrozil, was admitted for AP. TG level on admission was 2219 mg/dL. Gemfibrozil was resumed but patient was not started on Insulin drip. Patient had gradual improvement of pain and discharged on a subcutaneous insulin regimen. Case 4 – 31 year old Indian male with history of heavy alcohol use, was initially admitted for alcohol-induced pancreatitis. Patient did not improve in the next 48 hours after admission. TG levels were then found to be at 1870 mg/dL. Patient was then started on Insulin drip and fenofibrate. TG level on discharge was 401 mg/dL.

Discussion: The typical clinical profile of hyperlipidemic pancreatitis is a patient with a preexisting lipid abnormality along with the presence of a secondary factor (e.g., poorly controlled diabetes, excessive alcohol use, or a medication) that can induce HTG. The authors believe that a lipid profile should be part of standard work up when admitting patients with AP so that patients with HTG can be identified early and be started on the appropriate therapy. Regular insulin infusions are already appropriate in decreasing triglyceride levels as demonstrated in all 4 cases. Plasmapheresis is not necessary for all patients with HTG pancreatitis and should be reserved for patients who do not have clinical improvement with insulin drip or who already have severe presentation upon admission. Maintenance treatment to prevent recurrent HLP include high-dose fibrates or a combination of fibrate plus niacin. The mainstay of treatment still includes dietary restriction of fat in addition to managing the secondary or precipitating causes.

A Rare Case of Pancreatic Tuberculosis

Stephen Catalya

Raritan Bay Medical Center (Abdalla M Yousif)

Introduction: Tuberculosis remains a major public health concern, though it has reportedly shown a decline in prevalence both in the US and abroad. Unlike pulmonary tuberculosis, pancreatic tuberculosis remains exceedingly rare, accounting for less than 5% of all tuberculosis cases in the developing world (no US data is available for pancreatic tuberculosis).

Case: Here is an 86 year old gentleman who presented with nausea, vomiting, generalized malaise and weakness for 5 days. He had a past history significant for taking cyclosporine for an unspecified skin rash for multiple months and immigrated from the Philippines as a young child. A diagnosis of renal failure was established and was treated successfully. However, a CT scan of his abdomen and pelvis done during the course of his stay showed a 2.2cm x 3.8cm cystic mass in the tail of the pancreas. Initially this cystic mass was perceived to be malignant; however, a biopsy done as an outpatient showed no malignant cells. Ascitic fluid sampled from the site was negative for acid fast bacilli; however, polymerase chain reaction (a highly specific assay that has positive results even when AFB and cultures are negative) revealed the presence of tuberculosis protein. This led instead to a diagnosis of pancreatic tuberculosis. He was started on rifampin, isoniazid, pyrazinamide, and ethambutol and was reportedly compliant as per patient and family. A pleural effusion developed leading to readmission. He went into respiratory failure and was subsequently intubated. Due to worsening renal and subsequent liver failure, anti-TB medications were stopped. Care after 2 weeks in the hospital was withdrawn with the patient subsequently passing away.

Discussion: As a clinical entity pancreatic tuberculosis is very rare and the presentation here is atypical compared to the published data. Even in countries endemic with tuberculosis, isolated pancreatic tuberculosis accounts for less than 5% of total cases. A review of case reports shows a dearth of cases in the US, and one study reviewing pancreatic tuberculosis found that such cases are usually young adults who are recent immigrants from countries endemic with tuberculosis. Furthermore, published reports show that the pancreatic masses found to be tuberculous are located in the head, not in the tail of the pancreas.

Conclusion: This patient was born in a country endemic with tuberculosis but moved to the US at a young age and then developed symptoms only decades after his last known exposure. The lesion was also located in a location not documented in the literature, being found in the tail.This case does not fit the typical profile outlined in that study and other published case reports raising the absolute need to be aware of both from epidemiological and clinical standpoints.

Disseminated Herpes Zoster Masquerading as Burn Injury in an Immunocompetent Patient

Abhishek Bhurwal, Muhammad Masoodul Haq, Sunil Sapru

Saint Barnabas Medical Center (Sunil Sapru)

Introduction: Cutaneous dissemination of herpes zoster has been described frequently in immunocompromised individuals but rarely may also occur in immunocompetent patients. We present a case of disseminated herpes zoster mimicking burn injury in an immunocompetent host.

Case description: A 66-year-old woman with diabetes mellitus type 2 and hypothyroidism presented with complaints of progressively worsening erythematous vesicular lesions on the face, trunk and extremities for the last 6 days. The lesions were initially diagnosed as burn injury at an urgent care center after she accidentally splashed boiling water on her face and her right hand. She was prescribed topical Neosporin with no improvement over the next four days. Subsequently, she noticed her left eye was becoming increasingly droopy, red, and swollen culminating in it being permanently shut for about twenty-four hours prior to admission. On examination, a vesicular rash was prominent covering her left scalp, forehead, upper cheek. Similar lesions were also appreciated on the back, extensor aspect of both, left forearm and left thigh. The tip of the nose was erythematous and tender. Ophthalmologic exam was significant for left-sided conjunctival irritation with no exudates. The patient had swollen lids on the left side and positive direct and consensual pupillary reflexes. Extra-ocular movements were intact with no diplopia. Fluorescein staining yielded a 5mm branched dendritic corneal lesion. A diagnosis of disseminated herpes zoster infection was made and IV acyclovir started. Blood culture, anti-HIV antibody (ELISA), flow cytometry and chest x-ray, performed to investigate the cause of infection and immune suppression, were all negative. Varicella IgM levels were elevated. The skin lesions improved with treatment and resolved completely in ten days when she was discharged home.

Discussion: Diffuse Cutaneous Herpes Zoster is characterized by more than 20 skin lesions located beyond the primary or adjacent dermatomes. The virus can spread through interconnections between several ganglia or hematogenous spreading. It is usually seen in immunocompromised patients such as those with HIV infections, cancer, chemotherapy, and on corticosteroid therapy. It is an extremely rare occurrence in an immunocompetent host. The patients are often treated with intravenous antivirals to prevent cutaneous and visceral dissemination. The possibility of systemic complications in disseminated herpes zoster requires a high index of suspicion to make a diagnosis in immunocompetent individuals. Our patient was particularly challenging as the lesions appeared in the setting of a burn injury. A detailed history and physical examination are vital in making the diagnosis.

Aortoenteric Fistula as a Rare Complication after Endovascular Abdominal Aortic Aneurysm Repair

Vishal Patel, Anokhi Patel, Bishoy Hanna

Atlanticare Regional Medical Center (Dominik Zampino)

Secondary aortoenteric fistulas (AEF) are rare and life threatening complications after abdominal aortic aneurysm (AAA) reconstruction seen in 0.36 to 1.6% of cases. The incidence of AEF is much lower in endovascular repair (EVAR) compared to open repair. It is an abnormal communication between the aorta and the gastrointestinal tract via erosion of prosthetic graft or stent from AAA repair into adjacent viscera, most commonly the third and fourth portions of the duodenum. While the precise mechanism of formation of the fistula is unknown, several risk factors play a role including: AAA with surgical repair, malignancy, and aortic infection. AEFs are associated with significant mortality is high and nearly 40% even after surgical repair.We present a case of an 86 year old man with a history of colon cancer resected 5 years ago who underwent endovascular repair of an infrarenal aortic aneurysm three years later. The patient was without complaints for 18 months after the initial AAA repair until he presented to the emergency department with complaints of two bloody and melanotic stools over 24 hours. On presentation, the patient was hemodynamically stable with a 5g/dL drop in hemoglobin from baseline. The following day an upper esophagogastroduodenoscopy revealed non-bleeding diverticula in the second and third portions of the duodenum. The patient's hemoglobin continued to drop and patient became progressively unstable. A computed tomography of the abdomen revealed leakage of intravenous contrast surrounding the aortobiiliac stent graft and intra-aortic air suggestive of a duodenoaortic fistula. A large retroperitoneal hematoma communicating with the third portion of the duodenum was also noted. Emergent surgical evaluation deemed intervention futile. Patient continued to deteriorate despite aggressive resuscitation with 7 units of packed red blood cells and 6 liters of intravenous fluids as the patient continued to have hematemesis and large bloody bowel movements. Patient passed away within 9 hours of onset of hemorrhagic bleeding.AEF is an unusual complication seen after open surgical graft repair and rarely presents after endovascular repair. There are currently 14 reported cases of this lethal complication. The largest study consisting of 11 patients showed a 36% mortality rate. AEF are difficult to diagnose and treat. Esophagogastroduodenoscopy may confirm the diagnosis but do not exclude AEF if a fistula is not visualized. The sensitivity of CT scan is limited and varies between 33% and 80%. Treatment options include explantation of defective graft after extra-anatomical bypass or in situ grafting using prosthetic material. The true incidence of AEF after EVAR is unknown but believed to be lower than open repair. Given these points, it is crucial to consider AEF as a potential diagnosis in patients with gastrointestinal bleeding after aortic abdominal aneurysm repair.

Impact of Follow Up on Diabetes Control

Hanaa Benchekroun, Namrata Sekhon, Layal Esper, Johnthan Shammash, Karlen Williams

Englewood Hospital and Medical Center (Jon Shammash)

Background: Diabetes is a leading cause of disability and death in the United States, affecting an estimated 17 million people. Patients with HbA1c values >9% are at highest risk of morbidity and mortality. (For every 1% reduction in A1c, the risk of developing eye, kidney and nerve disease is reduced by 40% while the risk of heart attack is reduced by 14%.)

Purpose: Our aim statement was to increase the percentage of diabetics with a HbA1C < to 9% from 86% to 90% over a 6 month period (1/17/16 to 7/17/16) at a resident-staffed Internal Medicine clinic in Northern New Jersey.

Methods: From April 2015 to September 2015, we collected data on a cohort of patients (Group 1) with HbA1c >8%, and analyzed factors presenting impediments to diabetes control. Analysis showed that patient follow up was the most modifiable variable. We devised an EMR-based intervention which included identifying a diabetic coordinator and sending messages to her through an order-based action message. During the post intervention period, from January to July 2016 residents and other clinic providers sent an action telephone encounter to the diabetes coordinator for each patient with a Hba1c >9%. The diabetic coordinator called patients 1 week before their appointments, utilizing a script to encourage the patients to attend their appointment, bring necessary information, and reinforce the treatment plan.

Results: In Group 1, 18% of patients had follow up appointments scheduled, 53% had appropriate medication changes for poorly controlled DM2, 26% of these patients were establishing new care, and 26% were provided diabetic educator referrals. Follow up of Group 1 after intervention showed the following: 83% of these patients had scheduled appointments, 75% had medication changes performed, 72% were provided diabetic educator referrals. 69% of these patients had a significant improvement in HbA1C (with reduction or 1% or more), and another 39% experienced reduction in HbA1c below 9%. Analysis of diabetics with HbA1c >9% from January to July of 2016 (Group 2) revealed that 81% had appointments scheduled, 63% had medication changes performed, 48% were provided diabetic educator referrals, and 47% were new patients. The percentage of diabetics with HbA1c <9% was 86% in Group 1, and increased to 88% in Group 2.

Discussion: Application of the EMR-based action resulted in improved patient follow up appointments, diabetic referrals, and medication changes. Limitations of the study include a small sample size, different practice patterns for the non-resident providers who did not utilize the action order, and a significant number of new uncontrolled diabetics in each group.

Conclusion: Interventions which increase diabetics' follow up can improve glycemic control.

When is Imaging the Right Answer for Syncope?

Negham LeAnne, Bipinpreet Nagra, Sevil Aliyeva, Maryam Siddiqui, Sofia Chaudhry

Capital Health Regional Medical Center (Saba Hasan)

Background: Syncope is the cause of more than 1% of all emergency department visits in the United States. Out of these, 30% - 40% of such patients are subsequently admitted for further investigation at an annual cost of $2.4 billion according to the Medicare database. Usual assessment of syncope varies case by case, but imaging only rarely reveals the correct diagnosis.

Case: An 83 year old female with history of hypertension and lymphedema, presented with an episode of lightheadedness and ataxia. She denied any prodromal symptoms prior to the episode, and no chest pain or dyspnea. Her EKG, echocardiogram and CT head were negative. She was diagnosed with TIA and shortly upon becoming asymptomatic she was discharged home.Two months after this episode, she presented again for evaluation of frequent episodes of witnessed syncope. During that admission, cardiac stress test was negative for ischemia and she was discharged home. Nonetheless, she continued to have syncopal episodes over the course of 8 months, and as a result, an extensive cardiac and neurological workup was undertaken. An MRI of the neck showed a carotid body tumor at the right carotid bifurcation. Surgical removal of the tumor led to complete resolution of the symptoms. Histology confirmed the diagnosis of carotid body tumor.

Discussion: Syncope is a frequently encountered complex medical condition and the work up is based on multiple factors including history, age and co-morbidities. The 2009-revised European society of cardiology guidelines on the management of syncope stated that there are no studies evaluated the use of brain imaging for syncope. CT or MRI in uncomplicated syncope should be avoided. Imaging may be needed based on a neurological evaluation. AHA/ACCF Scientific Statement on the Evaluation of Syncope published in circulation 2006, stated that when a neurological basis of syncope is suspected, imaging of the brain with either CT or MRI is indicated. If cerebrovascular disease is suspected, imaging of the extra-cranial and intracranial carotid arteries is appropriate. They also stressed on the importance of history taking and physical exam in deciding on how to proceed with the work up.

Teaching Point: Carotid body tumor rare neoplasms represent less than 0.5% of all head and neck tumors. They are usually benign. Symptoms are generally due to local involvement of the nerves and vessels. They rarely presents as syncope or TIA, In the absence of an explanation, Carotid body tumor needs to be ruled out as a cause of syncope. High index of suspicion, taking thorough history and physical exam are keys, that helps detect neurological causes of syncope and order the right diagnostic test. Prompt diagnosis can lead to curable treatments and thus prevent readmission and help relieve patient anxiety due to frequent syncope.

The Hurting Head and the "Sagging" Brain

Rikitha Menezes, Samar Hameed, Stuart Mendelson, Sunil Sapru

Saint Barnabas Medical Center (Sunil Sapru)

Introduction: Cerebrospinal fluid (CSF) provides a supportive cushion for the brain and alterations in the intracranial pressure (ICP) can result in a variety of neurological symptoms including headaches. Although headaches are well known in elevated ICP, rarely, they can also result from reduced ICP. We report an interesting case of a woman who presented with severe positional headaches and imaging studies consistent with spontaneous intracranial hypotension.

Case Report: A 23 year-old woman was at work when, while bending over her desk, she experienced what she later described as the worst headache of her life. Her headache was characterized as a stabbing bitemporal pain associated with photophobia and nausea that was relieved significantly by lying supine. She denied recent travel or trauma. Neurological examination did not reveal focal deficits or nuchal rigidity; however, the patient had extensor plantar responses bilaterally. MRI of the brain revealed diffuse meningeal enhancement and low-lying cerebellar tonsils (interpreted by the radiologist as a Type 1 Chiari malformation) not seen on MRI performed 10 years earlier for reasons unrelated to the current admission. The patient's presentation and imaging findings were consistent with spontaneous intracranial hypotension. She was treated with epidural blood patches, strict bedrest, and caffeine-containing analgesics with improvement of her headache. Upon reexamination, she had flexor plantar responses bilaterally, and resolution of the previous imaging findings on repeated MRI of the brain.

Discussion: Our patient presented with a relatively rare syndrome that affects approximately 5 in 100,000 persons annually, women being affected twice as frequently as men. Patients with spontaneous intracranial hypotension typically present with headache, neck pain, nausea, and vomiting. It is suspected that when CSF pressure decreases, the brain "sags" into the intracranial cavity causing traction on the supporting structures, sensory nerves, and bridging veins. When upright, this traction is enhanced by gravity causing the characteristic positional headache. Low CSF pressure results from CSF depletion due to leakage or hyper absorption. CSF leakage may occur due to a tear in the dural nerve sheath or rupture of a previously present spinal epidural or perineural cyst. CSF leaks occur almost exclusively in a spinal location with the majority taking place at the thoracic or cervicothoracic junction. The diagnosis is confirmed by evidence on imaging or a lumbar puncture (LP) demonstrating low CSF opening pressure. Brain MRI classically shows diffuse meningeal enhancement and "sagging" of the brain typically reported as a Type 1 Chiari malformation or cerebellar tonsil herniation as seen in our patient. The mainstay of treatment includes epidural blood patches, generous caffeine intake, and supportive care.Recognition of this syndrome is important in swiftly instituting appropriate therapy and preventing extraneous diagnostic workup and therapeutic measures.

POSTER PRESENTATIONS
STUDENTS

Clostridium Difficile Infections in the Setting of Chronic Opioid Use: Do Pain Medications Actually Worsen Infections

Blaine Huss, Elizabeth John, Navaneeth Narayanan, Mary Bridgeman, Sita Chokhavatia

Rutgers-New Brunswick (Ranita Sharma)

Introduction: Patients with a history of chronic opioid use may have worse clinical outcomes related to Clostridium difficile infection (CDI) from alterations in gastrointestinal (GI) function and motility. Understanding the extent of this relationship will allow providers to target at-risk patients and provide prophylaxis and/or alter antibiotic therapies to lower the risk of a serious infection. The intent of this study is to evaluate the relationship between chronic opioid use and CDI disease severity.

Methods: A retrospective review of patient medical records was conducted to determine the relationship between chronic opioid use and clinical outcomes related to CDI. All adult inpatients having diagnosis codes for diarrhea and positive C. difficile stool toxin or PCR and chronic opioid use admitted between 1/1/11 and 12/31/15 were evaluated. Patients younger than age 18 years, pregnant, or with inflammatory bowel disease, irritable bowel syndrome, or concurrent etiology of persistent diarrhea (e.g., chronic laxative use) were excluded.

Results: Of the 25 cases, the majority occurred in Caucasians (n=18) and males (n=12) with an average age of 52.12±13.29 years. Oxycodone was the most frequently reported chronic opioid used either alone or in combination with other narcotics (n=10), followed by methadone (n=6). The average length of stay (LOS) was 18.44±16.54 days, and an average LOS related to CDI of 14.24±13.24 days. Hospital-acquired (HA) CDI, occurring greater than 72 hours from admission, occurred in 11 (44%) cases. 12 cases (48%) had a readmission within 30 days of hospital discharge, with 10 cases (40%) reportedly using antibiotics prior to admission. 15 patients (60%) were also using acid suppressive medicines during hospitalization. 17 cases (68%) were regarded as mild/moderate CDI, 7 cases (28%) as severe, and 1 (4%) as complicated. Ileus was reported in 6 cases (24%) and toxic megacolon in 3 (12%).

Discussion: When compared with previous outcomes studies related to CDI severity, our results suggest that patients on chronic opioids have a younger age of CDI and longer LOS. By demonstrating a qualitative relationship between chronic opioid use and CDI severity, physicians should minimize the amount of narcotics administered to patients being treated for CDI. A follow-up retrospective cohort study is planned.

Oropharyngeal Dysphagia: Rare Presenting Symptom of Statin-Induced HMG CoA Reductase Necrotizing Autoimmune Myopathy

Vatsal Bhatt, Clifford Stermer, Vivien Hsu, Ranita Sharma

Rutgers - New Brunswick (Ranita Sharma)

Necrotizing Autoimmune Myopathy (NAM) associated with 3-hydroxy-3-methylglutaryl-coenzyme A Reductase (HMGCR) antibodies has been described in statin-induced and statin-naive patients. Proximal muscle weakness is the presenting symptom in HMGCR NAM. CK levels can exceed 10x normal values. Statin-induced cases involve two thirds of HMGCR NAM patients and are more likely to respond to immunosuppressive therapy. Muscle biopsy confirms the diagnosis. We report a case with progressive oropharyngeal dysphagia as the presenting complaint with poor response to treatment. To our knowledge, there has been only one previously reported case of statin-exposed HMGCR NAM with a similar presentation.

A 79 year old gentleman presented with four weeks of progressive dysphagia to solids and liquids, a 25lb weight loss and fatigue. He denied odynophagia, vomiting, dyspnea, fevers, skin changes, or arthralgias. No recent vaccinations were administered. Over time he also reported pain with weakness in bilateral lower extremity proximal muscle groups. Increased effort was needed to rise from the sitting position. Once upright he could ambulate. He denied tobacco or alcohol use. He has diabetes treated with metformin, hypertension controlled with medications and hyperlipidemia treated with daily atorvastatin for the past 2 years. Statin was discontinued 2 weeks prior to admission. Age appropriate cancer screening was completed. On exam HR was 96, BP was 137/65 and RR was 18 without hypoxia. He was thin with notable temporal wasting and gargled speech. No neck masses were detected. Cardiopulmonary and abdominal exam were normal. Rashes and edema were absent. Neurological exam revealed intact cranial nerves, no tremors, fasciculations or muscle wasting, no difficulty in raising arms above his head but visible difficulty rising from a chair with a subsequent normal gait, symmetric reflexes and normal cerebellar and sensory testing. Labs included a CPK of 8185, aldolase of 346 (normal < 8), AST/ALT of 176/395 (subsequently normalized), normal renal function, and a hemoglobin of 10. TSH and B12 levels were normal. HIV, T-SPOT, Hepatitis B/C were negative. Vitamin D levels were low. A barium swallow confirmed cricopharyngeal paralysis. MRI brain was normal. Myopathy workup was pursued. Myositis panel antibodies including Jo-1, MI-2, SRP, U2-snRNP, U1-RNP, NXP-2, and TIF1 were all negative. Anti-HMGCR antibodies were markedly elevated at > 200 (normal < 20). Biopsy revealed muscle fiber necrosis, phagocytosis, macrophages and regeneration with minimal inflammation. Despite steroids, IVIG and Rituximab, the patient's clinical condition deteriorated with inability to ambulate and continued need for PEG feeding.

We highlight two variations to the traditional description of statin-induced HMGCR NAM: oropharyngeal dysphagia replacing the classic presentation of proximal muscle weakness and progression of disease despite immunosuppression.