Rhode Island Chapter Abstracts

March 30, 2016
Abstract Title: Accelerated Idioventricular Rhythm as a Manifestation of Myocarditis

Abstract Text:

Introduction
Accelerated Idioventricular Rhythm (AIVR) is a benign ventricular arrhythmia, well known for its association with coronary artery reperfusion sates. We present an exceedingly rare case of myocarditis causing AIVR in a healthy young man with no evidence of coronary artery disease.

Case presentation
A 33-year-old gentleman with no cardiac history who presented with abdominal pain, nausea and vomiting. The patient had an uncomplicated appendectomy approximately six weeks ago. On examination, he was hemodynamically stable with mild abdominal tenderness. The rest of examination was unremarkable. Complete blood count, basic metabolic profile, liver function tests, and lipase were all within normal limits. Urine toxicology screen was only positive for marijuana. An abdominal computed tomography showed no acute intra-abdominal pathology. While awaiting pain medication and discharge, patient developed palpitation with dizziness and a wide complex rhythm was noted on cardiac monitor (rate of 90 bpm). A 12-lead electrocardiogram was performed and showed sinus rhythm with accelerated idioventricular rhythm at a rate of 91 bpm with a right bundle pattern. He had no chest pain or dyspnea and remained normotensive. In addition, he denied prior chest pain except an episode of pleuritic anterior chest pain four weeks ago with negative troponin and subtle ECG changes of pericarditis. Family history was negative for cardiac diseases or sudden cardiac death.

Troponin I was positive at 0.3 ng/ml (normal <0.03 ng/ml) and subsequently rose to 16 ng/ml. A bedside echocardiogram revealed global hypokinesia with depressed ejection fraction of 40% but no pericardial effusion. He was treated for presumed acute coronary syndrome with aspirin, statin and anticoagulation and underwent left sided cardiac catheterization; no evidence of coronary artery disease was found. The diagnosis of myopericarditis was made.

Discussion
AIVR is a commonly described reperfusion benign arrhythmia that can occur in the setting of thrombolytic use or percutaneous coronary intervention. It is often confused with ventricular tachycardia though its typically slower and hemodynamically well tolerated. In our case the development of AVIR added more to the diagnostic dilemma. Although the clinical picture was more suggestive of perimyocarditis, the presence of AVIR, a hallmark of reperfusion injury, was considered a sign of possible underlying coronary occlusion (with reperfusion) and a compelling reason to start anticoagulation despite the risk of developing hemopericardium in the setting of possible myopericarditis. Eventually, cardiac catheterization ruled out acute coronary event.

Conclusion
Although AIVR is known for its association with coronary artery reperfusion, our case proves that it is not exclusively seen with coronary artery related events especially in the setting of elevated troponins. A non-ischemia related insult to the myocardium with ensuing enhanced automaticity can give rise to AIVR. Such a consideration can save our patients the complications of unnecessary anticoagulation and invasive testing.
Adamo, Meredith

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**Abstract Title:** The Rhode Island Medical Navigator Partnership: Piloting a Patient-Student Navigator Model with Homeless Individuals

**Abstract Text:**
In 2014, first-year medical students from the Alpert Medical School of Brown University accompanied a psychiatrist and case manager for “street rounds.” These weekly walks in Providence consist of outreaching to homeless individuals. From this experience, the students hoped to further engage with the homeless community and help provide additional support. Together with the psychiatrist and case manager, students developed a longitudinal patient navigator model: the Rhode Island Medical Navigator Partnership. Through this program, students are paired with homeless individuals as healthcare navigators and advocates. Students follow patients through the continuum of care and aid in their receipt of appropriate services. This model builds upon features of existing patient navigator programs, but is unique in that it (1) focuses on the homeless community, (2) engages student volunteers as the navigators, and (3) was developed by the students themselves.

Eight students piloted the partnership during the spring of 2015. Students attended trainings led by formerly homeless advocates, the case manager, and the psychiatrist. Each patient and navigator were introduced during a joint meeting with the psychiatrist (as anchoring physician) and the case manager. After this meeting and consent process, navigators attended outpatient and emergency/inpatient experiences with their patient. The program has since expanded to assisting over fourteen patients who experience chronic homelessness. In addition to the anchoring physician, case manager, and medical students, teams now include nursing students from the University of Rhode Island and social work students from Rhode Island College.

The program has preliminarily achieved its stated goals of benefiting the patients and students involved, as well as the case manager, anchoring physician, and collaterals. The pilot program successfully demonstrated that improved access to and quality of care for homeless patients could be achieved with very limited funds and resources. These improvements include: creating individualized approaches to the unique challenges of each patient, increased consistency in follow-up, better communication among providers, and greater sense of agency for clients. From an educational perspective, students better understood the experiences of homeless individuals, their unique barriers to care, the need for trauma-informed services, and gaps in the current system. The program also served as a means of faculty development, as requested feedback was given to providers involved in care. Our formal research of the impact of our program through focused interviews with patients and navigators is ongoing.

We believe early exposure to the issues faced by underserved populations is key to our medical education and cultivates a greater sense of community service, advocacy, empathy, respect, and leadership. Our program serves as an example of the many benefits of street medicine work and the potential in harnessing student idealism to promote health and advocacy in our community.
Abstract Title: Management of Calcium Channel Blocker Overdose

Abstract Text:
Calcium channel blocker overdose can lead to severe toxicity and is often characterized by hypotension and decreased cardiac ionotropy and bradycardia. There are several therapies studied specifically targeted to calcium channel blocker overdose including calcium salts, high dose insulin therapy, and lipid emulsion.

Case: 61 year old man with depression with prior suicide attempts who presented after a suicide attempt by overdose with – amlodipine 10 mg, terazosin 2 mg, citalopram 20 mg and cyclobenzaprine 10 mg. On presentation, he was normothermic and hypotensive with blood pressure 58/20, ECG with QT interval 480, QRS duration 90. He was given 3 g calcium gluconate, started on high dose insulin euglycemic therapy, and norepinephrine. He was transferred to the medical intensive care unit (MICU) on norepinephrine 25 mcg/hr and insulin drip at 105 units/hr. Other labwork notable for alcohol level of 229 and lactate of 3.9. On arrival to the MICU, he was noted to have a blood sugar (BG) of 62, for which he was given 1 amp of 50% dextrose and started on a 10% dextrose infusion (D10) at 75 cc/hr. He was also given 5 mg IV glucagon. Repeat ECG showed QTc 489, QRS 90. BP had improved to 107/53. The insulin drip was discontinued only several hours after initiation as his sugars remained difficult to control and blood pressure and Qtc remained stable. Norepinephrine was able to be discontinued overnight on day 1 of admission. His BP remained stable after levophed was discontinued. His BG remained stable after discontinuation of the insulin drip. He remained afebrile and without muscle rigidity. He was subsequently transferred to the medical floors and underwent a psychiatric consult and was transferred to inpatient psychiatry for further management of his depression and suicide attempt.

Discussion: This case presented concerns for primarily calcium channel blocker overdose in the setting of suicide attempt. The patient could not definitively quantify how much of each medication he ingested and so we remained unable to assess the primary overdose. Given his severe hypotension and pressor requirements it was most likely that the primary overdose was with antihypertensive agents. Dihydropyridine (DHPR) poisoning typically causes arterial vasodilation and reflexive tachycardia, although in high enough doses the peripheral selectivity of DHPR blockers is reduced and overdose can affect the heart causing decreased ionotropy and bradycardia similar to verapamil/diltiazem overdose. Management of calcium channel blocker overdose has been extensively studied and there are various therapies recommended for treatment. Typical therapies include IV atropine, IV fluid resuscitation, IV calcium, IV glucagon, high dose insulin drip, vasopressors, and lipid emulsion therapy. Approach and selection of therapies is driven by symptom severity, as in our patient who received all therapies except for lipid emulsion infusion.
Abstract Title: The Challenges of Gout Management in an era of Bariatric Surgery.

Abstract Text:
Introduction: Gout is an intensely painful and debilitating inflammatory arthritis in which monosodium urate crystals deposit within joints and soft tissues. Due to the increasing prevalence of obesity in the U.S., the incidence of gout and the number of bariatric surgeries has been on the rise as well. This case demonstrates the importance of well-controlled gout prior to elective procedures and discusses some of the clinical challenges of treating the disease post-operatively.

Case: A 40 year-old Hispanic male with a BMI of 41 and an 8-year history of uncontrolled crystal-proven tophaceous polyarticular gout presented as a new patient to our rheumatology clinic. History revealed an erratic medication regimen and past flares involving knees, ankles, and left 5th MTP. Uric acid level obtained at that time was elevated at 11.7. In the office, the patient mentioned he was undergoing a workup for bariatric surgery. He was educated extensively on medication compliance and was subsequently able to adhere to a regimen of febuxostat, naproxen and colchicine provided for acute attacks. A few months later, the patient underwent Roux-en-Y gastric bypass surgery. Postoperative course was marred by a marked increase in gout flares. The patient made weekly visits to the rheumatology clinic on crutches, as he was unable to walk due to pain. After discussion with the bariatric surgeon, nonsteroidal anti-inflammatories (NSAIDs) and systemic corticosteroids were not used in order to augment post procedural healing and to prevent gastric injury. Instead, the patient was treated with arthrocentesis of the affected joints with local injection of glucocorticoids along with colchicine. The patient lost 80 pounds over the next 8 months, but continued to have regular gout flares. Discussion: One third of patients with a history of gout who have undergone bariatric surgery have documented acute gouty attacks postoperatively. The cause of acute gout flares after bariatric surgery is multifactorial: surgery, dehydration, dietary modification, and renal impairment all play a role. To minimize this complication, all patients with known gout should have a documented uric acid of less than 6.5 prior to undergoing this elective procedure; which our patient had yet to achieve. Our case highlights the importance of this approach, as management of flares post-operatively presents a challenge for clinicians for several reasons. First, common medications such as oral steroids and NSAIDs affect wound healing and can induce gastric injury, limiting their utility as therapeutic options. Additionally, changes in the absorptive capacity of the intestine after Roux-en-Y surgery may decrease the efficacy of medications such as colchicine and febuxostat. Furthermore, the recommended post gastric bypass high protein liquid diet may increase serum uric acid. In summary, strict control of uric acid pre-operatively may help reduce the severity and frequency of post-operative complications.
A 58 year old woman with past history of atrial fibrillation, end stage renal disease with a failed kidney transplant, now on dialysis, coronary artery disease, moderate aortic stenosis, and pacemaker for 3rd degree heart block came in with chest pain. On arrival her vital signs were stable, and examination was remarkable for a dialysis catheter and a scar at the site of kidney transplant. Her hemoglobin was 8.1 mg/dl which was her baseline, 1st troponin was negative. Electrocardiogram showed ventricle paced rhythm and chest Xray showed cardiomegaly which was stable compared to previous Xray. Her pain responded to nitroglycerine and she has admitted to rule out acute coronary syndrome. The next day around midnight she became confused and hypotensive, with a blood pressure of 60/40 mm Hg, which responded minimally to a normal saline and albumin. She was also noted to have a fever of 103 Fahrenheit at that time. Examination at that time did not reveal anything new. Workup at that time included blood culture drawn from periphery and her dialysis catheter. She was treated empirically for hospital acquired infection with vancomycin and piperacillin/tazobactum. Due to persistently low blood pressure she was started on phenylephrine drip. Within 24 hours she was of pressers and remained afebrile. The blood culture from her dialysis catheter and periphery grew Ochrobactrum anthropi sensitive to Meropenam. Subsequently Meropenam was started and previous antibiotics were discontinued. The dialysis catheter was also replaced, and its tip also grew the same organism. Repeat blood cultures were negative. A transesophageal echocardiogram was done considering she had a pacemaker. The echocardiogram showed 1 cm vegetation on Mitral Valve. She subsequently had her pacemaker removed. She was treated with antibiotics for 6 weeks.

Discussion: Ochrobactrum anthropi is a gram negative rod of low virulence that can cause infections in immunocompromised hosts. It is thought to be associated with central lines and other foreign objects. Even though it has been reported more frequently over the last 20 years or so, it still remains a very rare cause of endocarditis. Even in the reported cases of endocarditis, most individuals had prosthetic valve endocarditis or rheumatic valve disease while our case reports native valve endocarditis. To our knowledge, 1 case of native valve endocarditis has been reported. Ochrobactrum anthropi is resistant to beta lactams, and usually needs treatment with carbapenem, ciprofloxacin, or gentamycin. Even though it is considered to have low virulence, it can cause severe infections in immuno compromised hosts. Therefore it is important to consider this bacterium in immunocompromised hosts who deteriorate suddenly.
Asiamah, Rebecca

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Abstract Title: Efficacy Of Aspirin As Thromboprophylaxis Post Total Knee Arthroplasty

Abstract Text:
The American Academy of Orthopedic Surgeon and the American College of Chest Physicians have developed evidence based guidelines for venous thromboembolic (VTE) prevention in orthopedic surgery as it is a very lethal complication post operatively.

Case Presentation:
The patient is a 71 M with past medical history of hypertension, Heart Failure with Preserved Ejection Fraction, diabetes mellitus type II, hyperlipidemia and osteoarthritis who underwent left total left knee replacement which was uneventful. He was placed on aspirin 325mg twice daily and Lipitor 40mg at night. On post-operative day 1, the patient’s daughter noticed that his speech was slurred, and he seemed confused, however this was attributed to post-surgical fatigue and medications. During his physical therapy on post day 2, patient reported numbness and tingling in left leg and arm. He denied any Headache, vision changes, chest pain or shortness of breath. As such stroke code was called and neurology consulted. His NIHSS was 5 and due to his recent surgery, he was deemed not a candidate for intravenous thrombolytic treatment. He was afebrile but hypotensive with HR of 40. Cardiac and respiratory exams were benign, however on neurological exam, he had mild dysarthria. He had no sensation in his left arm and leg. His motor strength was 3/5 in left arm and on the left leg with surgical boots on 2/5. His left upper extremity was noted for pronator drift. On his laboratory data, he had microcytic anemia with hemoglobin of 8.6 and MVC of 64, and normoglycemic. CT head showed chronic changes within frontal lobe and low attenuation in deep white matter involving right frontoparietal region. Follow up MRI brain showed acute infarction of right temporoparietal lobe abutting the ventricle. 2D- Echocardiogram showed LVEF of 60% with mild tricuspid regurgitation and no intra-cardiac shunt. Electrocardiogram showed sinus bradycardia with left atrial abnormality. Patient was started on Plavix 75mg daily and atorvastatin 80mg daily. Patient remained stable and was eventually discharged to rehab. Discussion and conclusion: According to the 2012 ACCP guidelines, aspirin may be considered as a thromboprophylactic agent in patients undergoing total hip or knee arthroplasty or hip fracture surgery. Our patient was therefore treated appropriately for venous thromboembolism prevention. Our concern was that he was not optimized to prevent VTE especially considering his comorbidities.
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Abstract Title: Loopy For Too Long? A Case of Prolonged Altered Mental Status From Hypernatremia

Abstract Text:
Introduction: Altered mental status (AMS) is associated with a myriad of causes. Once the etiology of AMS is ascertained, mental status is expected to improve temporally with the reversal of the underlying etiology. However, certain conditions, such as hypernatremia, can leave a patient in a prolonged state of AMS even beyond the appropriate correction of sodium.

Case: A 65 year old female with a history of atrial fibrillation (not on anticoagulation), heart failure with preserved ejection fraction of 60% and hypertension presented with altered mental status of several hours duration from her nursing home. At baseline, she suffers from mild dementia but is able to perform some of her activities of daily living and is appropriate and conversant. She was found to be somnolent, lethargic, and responsive only to painful stimuli, while being hemodynamically stable with no focal neurological findings. Her labs were remarkable for sodium of 154 mEq/L and creatinine of 1.3 mg/dL (baseline 0.7 mg/dL), suggestive of hypernatremia and acute kidney injury. Imaging studies including chest x-ray and head CT scan were negative. Workup for infectious, toxic, and endocrine etiologies was also negative. With hypernatremia and a fluid deficit of 5L, her AMS was attributed to hypernatremia secondary to dehydration. Her sodium was appropriately corrected with D5W with a sodium correction rate of approximately 0.5 mEq/hr. However, the patient's mental status remained altered despite normalization of her serum sodium level. Six days after the amelioration of her hypernatremia, her mental status gradually began improving.

Discussion: Altered mental status is a common problem often associated with an extensive work-up. Although mental status often improves after addressing reversible causes, such as hypernatremia, it can persist long after the correction of the underlying etiology despite common expectations. The severity and duration of AMS varies widely based on the severity of sodium derangement, age, gender, underlying co-morbidities (particularly dementia and other neurological conditions), as well as polypharmacy. Usually, mental status improves once sodium is normalized; however, neurologic sequelae can be prolonged or permanent. Awareness of this prevents the physician from initiating unnecessary, aggressive and expensive additional work up of AMS.
Abstract Title: Efficacy of Surgeon-Performed Ultrasound (SPUS) in Detecting Thyroid Cancer Recurrence

Abstract Text:
Background: Patients with thyroid cancer require routine post-operative surveillance. Methods of detecting disease recurrence include physical exam, rising thyroglobulin, neck ultrasound and radioiodine uptake (RIU) scanning. This study examines the relative value of surgeon-performed ultrasound (SPUS) amongst these options.

Methods: All patients operated on by a single endocrine surgeon between 2006 and 2010 were followed annually with SPUS for at least 5 years. Sensitivity of SPUS for pre-operative detection of lymph node metastases was calculated. In patients who developed recurrent disease the relative value of each detection method was calculated.

Results: There were 105 patients, 79 women, and 26 men, with a mean age of 48.2 years. Mean primary tumor size was 2.7 cm. 22 patients had suspicion of lateral cervical lymph node metastases by SPUS prior to thyroidectomy, and ultrasound-guided fine needle aspiration biopsy performed in all of them. 10 biopsies were benign, 11 biopsies were positive for papillary cancer and 1 was non-diagnostic. At the initial operation, 23 patients had a central compartment lymph node dissection and 12 patients had a lateral compartment dissection. Sensitivity of SPUS was 56% for central compartment metastases, and 100% for lateral compartment disease. The negative predictive value of a normal surveillance SPUS was 98.7%. Pathology was papillary in 84, follicular in 20 and medullary in 2. 73 had Stage I, 8 Stage II, 22 Stage III, and 2 Stage IV disease. During the follow-up period, recurrent disease was detected in 11 patients, 1 in the central compartment and 10 in the lateral compartment. Mean time to recurrence was 20.7 months. The initial test suggesting disease recurrence was physical exam in 2, rising thyroglobulin in 1, SPUS in 6, outside US in 1, and RIU in 1. After confirmatory biopsy, recurrent disease was treated operatively in 10 and with radioiodine ablation in 1.

Conclusion: SPUS is highly sensitive for the pre-operative detection of thyroid cancer metastatic to the lateral neck, and was the most sensitive method for detecting recurrent disease. In the post-operative surveillance of thyroid cancer patients, annual ultrasound surveillance by an endocrine surgeon improves care.
Abstract Title: Recurrent Hemolytic Anemia due to a Mechanical Heart Valve: A Case Report

Abstract Text:
Introduction: It is known that after heart valve replacement a certain degree of hemolysis may be common, although it rarely can progress in severity to hemolytic anemia and require transfusion support. Hemolysis can occur in this setting due to increased turbulence and shear stress as a result of leakage of blood around the valve, or from collision of blood with part of the valvular apparatus. Our patient presented with symptomatic anemia and was diagnosed with hemolytic anemia secondary to a paravalvular leak of a mechanical mitral valve.

Case: An 83-year-old female with a past medical history of a porcine mitral valve in 1980 replaced with a St. Jude mechanical mitral valve replacement in 1993, chronic diastolic congestive heart failure, atrial fibrillation requiring Coumadin, and pacemaker placement presented to the emergency room due to weakness, shortness of breath, and a pale appearance. On physical examination, the patient appeared pale and had a grade 2/6 systolic ejection murmur heard best over the left lateral sternal border. A CBC was performed and she was found to be anemic with a hemoglobin of 7.2 with schistocytes seen on the blood smear. Subsequent laboratory testing performed for hemolysis revealed a total bilirubin of 2.6, direct bilirubin of 0.3, lactate dehydrogenase of 1967, and a haptoglobin of less than 5.8 suggesting the presence of a hemolytic anemia. Direct antibody tests were negative, platelets were stable around 196,000, and there were no recent changes in medications making autoimmune, DIC, TTP, and drug reaction to be unlikely causes of the anemia. A transthoracic echocardiogram was performed which showed a paravalvular leak of the mitral valve and mild mitral regurgitation. The patient was diagnosed with hemolytic anemia secondary to her mechanical heart valve and was transfused two units of packed red blood cells. Over the next two days, the patient’s hemoglobin increased to 10.2, she reported feeling much better and was discharged. Over the next month, the patient was admitted to the hospital two additional times for symptomatic anemia requiring transfusions. Following the last admission, she was transferred to Brigham and Women’s for surgical valve repair.

Discussion: While severe and recurrent hemolytic anemia following a mechanical heart valve replacement is uncommon, it is important to recognize. Valve dysfunction in patients with prosthetic heart valves can present with hemolysis, systemic thromboembolism, a new murmur, or symptoms of heart failure. Frequently these patients are poor surgical candidates and require extensive conservative treatment. For patients with intractable hemolysis who are at high risk for surgery, percutaneous repair is the treatment of choice with success rates ranging from 80-85%. Close observation and early treatment have proven to be important in the management of patients with symptomatic hemolytic anemia secondary to mechanical heart valves.
Abstract Title: The Role of Rectal Indomethacin in Pancreatitis after Endoscopic Retrograde Cholangiopancreatography in a Community Setting

Abstract Text:
Background:
A common major complication of endoscopic retrograde cholangiopancreatography (ERCP) is pancreatitis which has been seen as 3-5% in most trials. Large clinical trials have shown an incidence rate of 1.6 to 15% for post-endoscopic retrograde cholangiopancreatography pancreatitis (PEP). Many different pharmacological agents have been evaluated to prevent PEP, including non-steroidal anti-inflammatory drugs (NSAIDs). Studies have shown that rectal NSAIDs may play a role in decreasing incidence of PEP. The aim of this study is to evaluate the role of rectal indomethacin in the incidence of PEP in patients at two community hospitals.

Methods:
A retrospective analysis of patients undergoing ERCP at two hospitals during a one year period from September 2014 to September 2015 was undertaken. Patients were stratified based on whether or not they received 100 mg of rectal indomethacin immediately after ERCP, with or without stent placement. PEP was defined as the presence of abdominal pain in the setting of hyperamylasemia/hyperlipasemia (at least three times the upper limit) 2 hours after the procedure.

Results:
A total of 202 patients were included in the study; 82 patients had received indomethacin after ERCP and 120 did not receive anything post-ERCP. The incidence of PEP was 14.6% (12/82) in the group that received indomethacin and 2.5% (3/120) in the group that did not receive indomethacin post-ERCP. We further stratified the group who received indomethacin rectally post-ERCP into those who had at least one or more risk factor which included (age <50, female sex, pancreatic duct injection, or sphincterotomy) and those who did not. There were 72 patients with at least one risk factor and 10 patients with less than one risk factor in the group of patients who received indomethacin rectally post-ERCP. The incidence of PEP was 15.3% (11/72) in those who had at least one risk factor and the incidence of PEP was 10% (1/10) in those who had no risk factors. Based on these results, an absolute risk reduction of 5%, and a relative risk reduction of 50% was seen in those who had one or more risk factors for PEP in the setting of rectal indomethacin given post-ERCP.

Conclusion:
Rectal indomethacin may have the potential to reduce the incidence of PEP, however it should not be routinely administered. There may be a benefit in high risk patients. There are other factors such as stenting during ERCP, different cannulation techniques, and type of electrocautery that may affect PEP with or without indomethacin. This study consisted of patients in a community hospital setting where some patients may have had more comorbidities than others leading to a higher incidence of pancreatitis post-ERCP.
Biancuzzo, Rachael

**Abstract Title:** A Case Further Supporting Consistent Use of Lung Cancer Screening

**Abstract Text:**
Introduction: Lung cancer is the leading cause of death worldwide. It accounts for an estimated 158,040 deaths in the United States in 2015. Five-year mortality is approximately 17.4%, partially due to advanced stage at initial diagnosis. Early detection is key in reducing mortality. In 2011, the National Comprehensive Cancer Network developed screening guidelines which recommend annual low dose, non-contrast CT scans (LDCT) in high risk patient populations for detection of early stage lung cancer. In December 2013, the U.S. Preventative Services Task Force (USPSTF) issued a grade B recommendation endorsing annual lung cancer screening as the standard of care in high risk populations. The case presented exemplifies the efficacy of lung cancer screening in the early detection of small cell lung cancer in an asymptomatic patient.

Case: A 56 year old female with history of coronary artery disease s/p stent placement, Sjogren’s syndrome and a 40-pack year tobacco use presented to her Primary Care Physician for a well visit and was recommended to undergo lung cancer screening. LDCT scan was performed and revealed a large right upper lobe mass extending from the pleural surface to the mediastinum and hilum. She was asymptomatic at the time of presentation. The patient underwent a flexible bronchoscopy which revealed a tumor in the anterior segment of the right upper lobe partially obstructing the lumen. Pathology from the endobronchial specimens was consistent with small cell lung cancer. A PET scan demonstrated significant FDG uptake in a right hilar mass, second peripheral area of right mid-lung, para-tracheal, anterior mediastinal and right supraclavicular lymphadenopathy. Brain MRI was negative for metastasis, thus making the diagnosis of limited stage small cell lung cancer. Chemotherapy was initiated with cisplatin and etoposide.

Discussion: Lung cancer is the leading cause of cancer related deaths in the United States. Until recently, there was not an effective screening tool proven to reduce mortality. In 2011, the National Lung Screening Trial (NLST) demonstrated LDCT scans reduced mortality from lung cancer by 20% in high risk patients. International trials such as IELCAP and NELSON supported the NLST findings. Several risks are associated with screening including cost effectiveness, false positives and radiation exposure. Not all private insurance companies cover lung cancer screening despite the Affordable Care Act requirement. Additionally, false positive results increase cost by necessitating increased testing resulting in unnecessary procedures and risk of potential complications. Radiation exposure is also a concern. LDCT scans are similar to 6 months of natural background radiation, 75% less radiation than standard CT scans. Despite the potential harms, the medical community now has an objective tool beyond tobacco cessation that is proven to reduce lung cancer mortality in high risk patients.
Abstract Title: Splenic rupture secondary to Babesia in an otherwise healthy male

Abstract Text:
Babesiosis, caused by an intraerythrocytic parasite transmitted by tick exposure, is a cause of febrile illness in the northeastern United States. While typically causing mild systemic illness, Babesiosis is known to lead to severe manifestations including septic shock and renal failure, particularly within asplenic and immunocompromised patients. As an intraerythrocytic pathogen, it leads to increased extravascular hemolysis and resultant hypersplenism and rarely splenic rupture. In this case report, we describe a case of splenic rupture due to babesiosis in an otherwise healthy younger male.

A 36-year-old male was transferred to us from an outside hospital in late June. He had no significant past medical history and took no medications. He lived in rural Rhode Island and noted frequent tick exposures but did not recall any recent exposures. Four days prior to presentation, he experienced gradual onset of dull left flank pain and fatigue. Two days later, he noted fever to 102.7 Fahrenheit and dizziness. He presented for sudden worsening of his abdominal pain. He was transferred to our hospital after an outside CT of the abdomen showed evidence of splenic rupture.

On arrival, he was hemodynamically stable with normal vital signs. His exam was notable for a soft but diffusely tender abdomen and increased tenderness in the left upper quadrant. His initial labs were notable for hemoglobin of 12 g/dL and metabolic panel and liver enzymes were normal. Complete blood count showed platelets decreased to 91,000 but no leukocytosis. A blood smear demonstrated parasitemia consistent with babesiosis of 0.36% red cells infected. Based on splenic arteriogram, the patient had no signs of active bleeding and thus did not require splenic embolization with interventional radiology. The infectious diseases team was consulted and the patient, in deciding this constituted a severe manifestation of babesiosis, was started on clindamycin and quinine initially. His Lyme, Anaplasma, and Ehrlichia serologies were negative. An initial HIV ELISA was positive but confirmatory testing was negative. He was discharged to finish a course of azithromycin and atovaquone due to quick recovery.

There are numerous potential severe manifestations of this otherwise relatively mild parasitic infection. While uncommon overall, it is common enough in the northeastern United States such that it is a disease of significant regional interest during the warmer months. There are few described cases of splenic rupture in otherwise healthy hosts in the literature, though it is becoming better recognized and identified in recent years. It is important to recognize as a cause of splenic rupture and as a severe manifestation of note otherwise.
Abstract Title: A case of baclofen-induced encephalopathy in an end-stage renal disease patient

Abstract Text:
Altered mental status is a commonly encountered problem that requires additional considerations when seen in patients with end stage renal disease (ESRD). We report the workup and cause of altered mental status in a patient on dialysis. The patient is a 77-year-old Cambodian-speaking female with a history of ESRD on hemodialysis, type 2 diabetes mellitus, hypertension, stroke, hyperkalemia, and adrenal insufficiency. She was brought to the emergency department on Sunday evening after her family noticed that she had become increasingly lethargic since her most recent dialysis treatment two days prior to admission. By the morning of admission the patient was incoherent. They also reported she may have been recently prescribed new medications from her primary care physician. On presentation, the patient had normal vitals except for elevated systolic blood pressure ranging from 170-200 mmHg. On exam she was arousable but lethargic and unable to follow commands. She was admitted to the renal service for further workup. Workup including electrolytes, complete blood count, liver function tests, troponin, lactic acid, thyroid studies, urine drug screen was negative. Venous blood gas showed respiratory acidosis. Urinalysis showed 16 WBCs and few bacteria. Chest x-ray was normal and abdominal x-ray was significant only for mildly dilated loops of bowel. Computed tomography of the head was normal. Further discussion with the family the following day revealed that the patient might have been started on Tramadol and Baclofen for sleep. The patient was treated with aggressive dialysis for two days after which she improved to her baseline mental status. Though the patient’s serum baclofen levels were not measured, previously reported toxicities in similar patients, the pharmacokinetics of baclofen, and the patient’s improvement after hemodialysis suggest that baclofen was the cause of her encephalopathy.
Up to 85% of ingested baclofen is eliminated by normal kidneys. In patients with impaired renal function, the half-life of Baclofen is prolonged and may lead to accumulation and neurotoxicity. Furthermore, elderly patients even are more susceptible to toxicity [4]. Acute encephalopathy due to Baclofen has been reported before, notably in two case reports by Mousavi et al. [1]. Literature review showed that nine cases of Baclofen neurotoxicity in ESRD patients have been reported [2]. In previously reported cases, toxicities were seen with a cumulative dose of 15 milligrams of Baclofen. Bassilios et al. recommend a maximum dose of 5 milligrams of Baclofen per day dosing in dialysis patients [3]. In conclusion, special care must be taken in the work-up and treatment of acute encephalopathy in dialysis patients. This case highlights the need to maintain a high index of suspicion for drug induced encephalopathy in patients with renal dysfunction.
Abstract Title: Status Epilepticus in Eclampsia: Management and Risk Factors in a 14-Year-Old Patient

Abstract Text:
Introduction: Preeclampsia is characterized as new-onset hypertension and proteinuria or end-organ damage during the second half of pregnancy. Eclampsia, convulsions or coma in this setting, remains a cause of maternal and fetal morbidity and mortality. Its etiology is not well understood, though risk factors such as young age, low socioeconomic status, and nulliparity have been established. Management aims to stabilize the mother until delivery, the only definitive treatment. Seizures are typically self-limited, however we describe an eclamptic patient who presented in status epilepticus.

Case: A 14-year-old G1P0 at 31 weeks and 5 days gestation with a past medical history of developmental delay presented to the emergency department of a community hospital with ongoing seizure activity of at least half an hour. The patient’s mother reported that she had an excruciating headache that morning, she advised her to take a nap, and found her hours later twitching and cyanotic. The patient found out she was pregnant one week prior to presentation, during an ED visit for abdominal pain. She had thus received no prenatal care until her first prenatal exam the day before. Upon arrival, the patient was having ongoing seizure activity and blood pressure elevated to 203/134. Additional preeclampsia workup showed proteinuria >500 mg/dL and low platelets of 115,000/mcL, though liver enzymes and clotting factors were normal. Her vitals were otherwise stable. A CT scan of the head was suggestive of chronic encephalomalacia, but did not show acute pathology. The patient was not in labor, and serial fetal heart tracings confirmed fetal stability. The patient’s blood pressure was treated with two doses of labetalol. Her seizures were controlled with a lorazepam and a magnesium bolus, followed by a continuous magnesium infusion. Betamethasone was administered to speed fetal lung development. The patient required intubation, and once stabilized, was transferred to the tertiary care center for prompt cesarean section. Her blood pressure resolved postpartum, and she was discharged home in stable condition.

Discussion: Status epilepticus is rare in eclampsia without another perpetuating cause. Our patient had multiple factors that decreased her seizure threshold: young age, developmental delay, and encephalomalacia, an epileptogenic anatomic abnormality. This, in combination with her preeclampsia risk factors, and delayed treatment, made her highly susceptible to persistent convulsions once becoming preeclamptic. Management of status epilepticus in this state combines neurologic and obstetric protocols. Persistent seizures are terminated with benzodiazepines. Magnesium sulfate is given to prevent seizure recurrence, provide fetal neuroprotection, and prolong pregnancy enough to administer antenatal steroids. Prenatal care in this case would have provided monitoring and education that could have prevented her presenting state. This case reminds clinicians to consider comorbidities in eclampsia risk assessment, and reinforces that high-risk populations must receive adequate care throughout pregnancy.
Abstract Title: An Unfortunate Case of Beta Lactam Induced Toxicity

Abstract Text:
Introduction: Paracelsus, the father of toxicology, penned, “All things are poison, and nothing is without poison: the Dosis alone makes a thing not poison.” For beta-lactam use in patients with renal insufficiency this statement holds true. Patients with poor renal function, who are given high doses of cefepime, can develop a neurotoxic syndrome presenting with confusion, aphasia, agitation, myoclonus, epileptic seizures, and coma. Cefepime neurotoxicity is common in patients with poor renal function as cefepime is predominately renally excreted. Accumulation in cerebrospinal fluid may decrease the GABA transport system leading to signs and symptoms of neurotoxicity. It is important physicians remember to correctly dose adjust cefepime for renal insufficiency to avoid the complications of cefepime induced neurotoxicity and to quickly recognize signs and symptoms of neurotoxicity developing in this patient population.

Case: A 54 year old female with past medical history significant for insulin dependent diabetes mellitus with stage IV chronic kidney disease (creatinine clearance, CrCl 15.9) with a chronic left foot ulcer presented to the emergency department for progressive worsening of left lower extremity redness and swelling for two days. The patient was initially treated with vancomycin and ciprofloxacin for cellulitis. Two days into her hospital stay, the patient’s infection continued to worsen. Antibiotics were escalated to daptomycin and cefepime 1 gram every 12 hours. By day seven of these new antibiotics, the patient’s CrCl had dropped to 9.6, and she was started on hemodialysis. At this time, the patient developed acute encephalopathy with myoclonus. Neurology was consulted and suggested beta-lactam toxicity to be of high likelihood. The cefepime dose was then renally adjusted to 500mg every 24 hours, to be given after hemodialysis on hemodialysis days. The patient’s encephalopathy with myoclonus resolved three days following this dose correction in conjunction with hemodialysis.

Discussion: In patients without renal insufficiency, cefepime dosing for moderate skin infection is 2 grams every 12 hours. In patients with renal impairment with a CrCl of 11 to 29 mL/min, a usual dosing of 2 grams every 12 hours is adjusted to a recommended dose of 1 gram every 24 hours. In this case, the patient had a CrCL of 15.9 and had been given cefepime 1 gram every 12 hours which lead beta-lactam neurotoxicity. On day 7, the patient was diagnosed with cefepime-induced encephalopathy, and her CrCl had declined to 9.6. Hemodialysis was initiated. Cefepime dosing for patients on hemodialysis is 1 gram on day 1 followed by 500mg every 24 hours to be given after hemodialysis on hemodialysis days. To avoid complications of cefepime induced neurotoxicity, cefepime doses need to be renally adjusted correctly, and patients need to be monitored for the development of signs and symptoms of beta-lactam toxicity.
Abstract Title: Vomiting and Acute Vision Loss: A Case of Vertebral Artery Dissection in a Healthy Young Adult

Abstract Text:
Introduction: Vertebral artery dissection (VAD) is an uncommon cause of potentially catastrophic stroke in young adults. VAD account for 2% of ischemic strokes in the general population but is responsible for roughly 20% of ischemic strokes in young adults. Presenting symptoms are variable, ranging from mild complaints of dizziness, headache and vertigo, to diplopia, ataxia and dysarthria. Our case of a healthy, young male presenting with acute painless vision loss, and no recent trauma, illustrates the importance of thoughtful history-taking and careful physical examination in diagnosing VAD. Case: A 23 year-old male with no significant medical history presented to the Emergency Department after sudden loss of vision following multiple episodes of vomiting. Earlier on the day of admission he awoke from sleep with diarrhea, intractable vomiting, and then developed a severe frontal, throbbing headache (HA). Episodes of vomiting continued throughout the morning, and were followed by prolonged dry heaves. Within an hour or two of resolution of upper GI symptoms, the patient developed acute onset of bilateral vision loss, which he described as “complete blurriness everywhere.” Recent history was remarkable for marijuana use and a subsequent large, greasy meal the day before symptom onset, but no new foods or sick contacts. Patient denied recent head or neck trauma. On arrival to the Emergency Department the patient’s BP was 149/94, but other vital signs were normal. Initial physical exam was significant for large, unreactive pupils with no other focal neurologic deficits. Labs showed a mild leukocytosis of 16.1, anion gap of 16, hypophosphatemia of 1.1 and lactic acidosis of 36.3. Non-contrasted CT of the head was unremarkable but a MRI of the brain revealed areas of restricted diffusion in bilateral cerebellum and left occipital lobe. MRA of the head and neck demonstrated left vertebral artery dissection with good collateral flow. The patient experienced significant recovery of his vision over the next 24 hours. Interestingly, he never experienced cerebellar signs or symptoms. He was started on antiplatelet therapy for 6 months. Discussion: Prognosis of extracranial VAD is dependent on location of dissection, degree of collateral circulation, and severity of the stroke, but is generally good. Reported precipitating events include chiropractic manipulation of the neck (reportedly 1 in 20,000), yoga, painting a ceiling, coughing, sneezing, and vomiting – as was the case in our patient. The recent CADISS trial comparing antiplatelet therapy to anticoagulation showed no clear advantage, therefore due to safety, antiplatelet therapy is favorable. Surgery and stenting are only indicated if there is recurrent ischemia after medical therapy. While the prognosis is generally promising, early diagnosis improves outcomes. Therefore, maintaining the appropriate level of suspicion for this VAD in young adults with new focal neurological findings is clearly warranted.
Chandra, Anjali

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Abstract Title: The Devil is in the Details: Dyspnea and diarrhea in an adult male

Abstract Text:
Introduction: The well-documented association of inflammatory bowel disease (IBD) and venous thromboembolism (VTE) has been attributed to a hypercoagulable state characterized by increased prothrombotic activity, decreased anticoagulation, and impaired fibrinolysis. In the setting of established IBD, VTE is observed most often in young patients with an ongoing IBD flare or recent history of prolonged immobilization. Case reports in which VTE is a presenting feature of unrecognized IBD are uncommon.

Case: A 35-year-old man with no documented medical history presented to the emergency room of an outside hospital with pleuritic chest pain and shortness of breath. He had taken a 10-hour long car ride two weeks prior to his presentation. CT scan established the diagnosis of bilateral pulmonary emboli. After transfer to the Rhode Island Hospital ICU for monitoring and treatment, he disclosed he had been experiencing “hemorrhoid pain” severe enough to confine him to bed during the week immediately preceding hospitalization. He denied personal or family history of blood clots. During a more detailed review of systems, he endorsed episodic watery diarrhea with occasional bloody stools over the prior year, which he attributed to hemorrhoids. He denied weight loss, new skin lesions, or joint pain. On physical examination, he was afebrile, normotensive, and mildly tachycardic, with an oxygen saturation of 96% on 2 liters of oxygen. Cardiopulmonary exam was unremarkable. Abdomen was non-tender without masses. Rectal exam revealed external hemorrhoids and a region of fluctuance and tenderness along the left-lateral aspect of the rectal wall. Stool studies were positive for fecal leukocytes and occult blood but negative for C. difficile. Surgical exploration subsequently demonstrated a large perianal abscess requiring incision and drainage. Colonoscopy revealed diffuse inflammatory changes with skip lesions throughout the colon. Biopsy confirmed the diagnosis of Crohn’s disease. He was started on ciprofloxacin and metronidazole, and placed on a daily regimen of anticoagulation therapy. He was discharged to outpatient Gastroenterology follow-up.

Discussion: The risk of thromboembolism in patients with IBD is known to be three times higher than that in the general population. Accordingly, clinicians are usually alert to manifestations of thromboembolism in patients whose gastrointestinal diagnosis is well established. The case reported here demonstrates that the possibility of unsuspected IBD should be raised for patients who present with a thromboembolic event and a history of non-specific gastrointestinal complaints of a chronic or subacute nature. The discovery of undocumented IBD in a young man presenting with bilateral pulmonary emboli underscores how a thorough physical exam and a comprehensive review of systems can provide the clues necessary to shed light on unusual and seemingly mysterious clinical presentations.
Improving Proton Pump Inhibitor Stewardship in the Hospital and Community Setting

Background and Aims:
The effectiveness of proton-pump inhibitors (PPIs) in treating upper gastrointestinal disorders has led to significant over-utilization in patient care practices. Improper inpatient use is often a result of inappropriate stress-ulcer prophylaxis (SUP) and the failure to discontinue the PPI prior to discharge. Recent retrospective studies have linked PPI use to Clostridium difficile-associated diarrhea, osteoporosis, and coronary artery disease (CAD). Our aim was to assess and improve PPI stewardship at our hospital in hopes to further minimize these potential adverse events and their associated health expenditures.

Methods:
We retrospectively evaluated 334 consecutive admissions (3 months) at our hospital using electronic medical records (EMR). Evaluations were based on ASHP guidelines for appropriate inpatient PPI prophylaxis that included major criteria such as mechanical ventilation over 48 hours and GI ulceration/bleeding within a year. Patients continued on PPI inappropriately were followed to determine continuation of PPI through their pharmacy. Additionally, we prospectively followed 110 consecutive admissions after educating the house staff through hospital approved handouts, lectures and EMR modifications.

Results:
130 patients (38.9%) were inappropriately initiated on PPI for SUP. 33% of these patients had a history of CAD. Additionally, 9.2% had a history of osteoporosis and 6.1% had a history of C.difficile colitis. Of these 130 patients, 47 patients (36.2%) were discharged on a 4-week prescription of a PPI. This contributed to a total PPI drug cost of $2,726 US dollars during the first 30 days post-discharge. 40 (85%) PPI discharged patients were continued on PPIs by their outpatient physicians. A primary gastrointestinal (GI) diagnosis (excluding ulcer or UGI bleed) (OR, 2.66; 95%CI, 1.37 – 5.15, p<0.001) and age above 50 (OR, 1.45; 95%CI, 1.21 – 1.69, p<0.001) were shown to be predictive risk factors for inappropriate initiation on PPI. There was a 32% and 46% reduction in inappropriate PPI initiation and PPI continuation at discharge, respectively, after implementing house staff education and EMR modifications.

Conclusion:
With the anticipated ASHP PPI guidelines update arriving in 2016 and the recent focus on comorbidities involved with long-term PPI use, it was an opportune time to readdress PPI stewardship. Our hospital’s inappropriate PPI use and continuation at discharge fell within the range of previous studies. In our multivariate analysis, we noted patients above the age of 50 and patients with a primary GI diagnosis were most likely to be inappropriately placed on PPIs in the hospital. This may be attributed to increased poly-pharmacy with advancing age and physician bias to prescribe PPIs in patients with a GI diagnosis. Our analysis suggests implementing improved evaluation of home and discharge medications by house staff may decrease inappropriate prescriptions for outpatient use of PPIs, thereby reducing patient comorbidities and unnecessary healthcare expenditures.
Abstract Title: In-Patient Mortality Increasing with Gastrointestinal Bleeding after Percutaneous Coronary Intervention.

Abstract Text:
Background:
One of the most lethal complications of percutaneous coronary intervention (PCI) is gastrointestinal bleeding (GIB). We analyzed inpatient temporal trends and independent risk factors associated with GIB incidence and mortality from 2007-2012 for patients who underwent PCI.

Methods:
Using the Healthcare Cost and Utilization Project, National Inpatient Sample (HCUP-NIS), we analyzed annual GIB incidence rates, mortality rates and independent GIB risk factors in patients who underwent PCI for acute coronary syndrome (ACS) or coronary artery (CAD) disease from 2007-2012.

Results:
There were 776,446 patients who underwent PCI for ACS or CAD and 9,332 patients (1.2%; 95% CI, 1.18%-1.23%) had a post-PCI GIB with annual rates ranging from 1.11% to 1.31%. The overall mortality in the GIB group was 1.69% (95% CI, 1.66-1.72). The annual mortality rate in the GIB group increased 35% during the study period. Overall in-hospital length of stay (LOS) and cost of care were higher in the GIB cohort (LOS: 9.42 days to 3.26 days, COC: $29,246.04 to $17,912.25). Multivariate logistic regression analysis revealed significant independent predictors of GIB incidence to include gastritis/duodenitis (OR, 9.41; 95% CI, 8.67-10.22; p<0.001), H. pylori (OR, 5.70; 95% CI, 4.11-7.89; p<0.001), diverticulosis (OR, 3.25; 95% CI, 2.91-3.62; p<0.001), rectal cancer (OR, 3.12; 95% CI, 2.21-4.40; p<0.001) and colon cancer (OR, 2.08; 95% CI, 1.76%-2.44; p<0.001). In our sub-analysis, predictive risk factors in the GIB cohort for in-hospital mortality included AMI (OR, 3.52; 95% CI, 2.78-4.46; p<0.001) and coagulopathy (OR, 2.34, 95% CI, 1.95-2.80, p<0.001). Additionally, each passing year was associated with an increased risk of mortality (p<0.01).

Discussion:
Our analysis had an overall GIB incidence of 1.2% with the annual incidence remaining stable throughout years. The significant predictive risk factors of GIB including gastritis/duodenitis, H. pylori, diverticulosis, rectal cancer and colon cancer found in our study are consistent with previous literature. Possible methods of decreasing GI bleeds and mortality in elective PCIs include pre-testing for fecal occult blood and H. pylori. Implementing these or other preventative measures for GIB may reduce the overwhelming hospital costs, resource utilization and patient mortality related to GI bleeds supported by our analysis.

The overall in-hospital mortality in the GIB cohort was 1.69%, however, the annual mortality rate increased 35% during the study period. This may correlate with the introduction and subsequent use of novel anticoagulants in 2010. Most of these medications lack FDA approved reversal agents. Other possible factors for increased mortality in this time period include increased PCs in higher risk patients; increased use of the radial artery for catheterization access and increased interventions requiring dual antiplatelet therapy. Further research is needed to explore methods of reducing the mortality associated with PCI, a valuable diagnostic and therapeutic tool for CAD and ACS.
Pancytopenia is a deficiency of all three cellular components of the blood. The differential diagnosis for the causes of pancytopenia is broad and ranges from hereditary conditions to hematologic malignancies to drug-induced syndromes. Here we present a case of pancytopenia following treatment of a gingival infection with clindamycin.

Case:
46-year-old male with a history of diabetes mellitus and recurrent sinus infections who presented to the emergency department after routine outpatient blood work revealed new pancytopenia. He endorsed general decline in his health over the past three months. During this time period, he completed two courses of Augmentin for recurrent sinus infections. He also completed a course of Flagyl for a gingival abscess. Despite antibiotic treatment, he had persistent gingival swelling, so an oral surgeon drained the abscess and prescribed a 10-day course of clindamycin. Following this treatment, the patient reported extreme fatigue, a diffuse body rash, and easy bruising. Four days after completing the course of clindamycin, routine outpatient bloodwork revealed new pancytopenia (white blood cell count of 2.5, hemoglobin of 7.0, and platelet count of 43), so he was referred to the hospital for further evaluation. Exam on admission was notable for palor and scattered bruises. Laboratory work-up including CMV and EBV antibodies, parvovirus (IgG, IgM, PCR), HIV antibodies, phagocytophilum (IgG and IgM), Blood parasite, B12, Folate, MMA, homocysteine, and Hepatitis C antibodies were unremarkable. He underwent bone marrow biopsy which revealed complete bone marrow suppression, without findings concerning for acute leukemia or myelodysplastic syndrome. He was transfused 1 unit packed red blood cells for treatment of his symptomatic anemia, with appropriate subsequent improvement in his hemoglobin. It was suspected that his recent clindamycin treatment was the cause of his acute pancytopenia. He was managed supportively and repeat blood work two weeks later revealed improved in all cell lines (white blood cell count of 6.0, hemoglobin of 13.0, and platelet count of 225).

Discussion:
Management of acute pancytopenia requires identification and treatment of the underlying etiology. As illustrated by our case, a thorough history must be obtained, along with a complete laboratory work-up and bone marrow biopsy. Drug-induced pancytopenia is one of exclusion. The diagnosis can only be made after congenital syndromes, hematologic malignancies, infectious etiologies, vitamin deficiencies and hypersplenism have been eliminated. In the case of drug-induced pancytopenia, treatment involves discontinuation of the offending agent and symptomatic management with red blood cell and platelet transfusion as needed. As illustrated with our case, bone marrow rapidly recovers within weeks of removing the offending agent.
Case Presentation:
A 59-year-old male with a bicuspid aortic valve presented to the hospital with a syncopal event. One week earlier, a transesophageal echocardiogram (TEE) done for preoperative assessment had confirmed a heavily calcified bicuspid aortic valve and severe aortic insufficiency. He also reported 2 months of night sweats without fevers, 25-pound weight loss, and marked fatigue. Extensive outpatient workup including EGD, Colonoscopy, CT, bone marrow biopsy, tick-borne diseases, viruses, and SPEP were negative. He denied travel history or animal exposure, and reported negative PPD after remote incarceration. On admission he was hypotensive with signs of heart failure and grade II/VI systolic and diastolic murmurs. Labs showed AKI and anemia. Overnight he spiked a fever to 104F and blood cultures were sent. Abdominal CT showed multiple splenic lesions. 4/4 blood cultures returned positive for GPC and GPR and Vancomycin was started. Transthoracic echocardiogram (TTE), initially read as unchanged, showed a 1.5cm echodensity on the aortic valve, consistent with subacute bacterial endocarditis. CT face showed caries, periapical lucencies, and cortical destruction of the mandible and maxilla. Abiotrophia defectiva was speciated from initial cultures. In consult with Infectious Disease, antibiotics were switched to Penicillin G and Gentamicin.

The patient underwent tooth extraction, bovine aortic valve replacement, annulus abscess debridement, and mitral valve repair. Postoperative TTE revealed a persistent aortic root abscess versus surgical pocket, with an aortic root fistula and severe paravalvular insufficiency. Clinically improved, he was discharged on HD 25. After discharge, A. defectiva sensitivities identified Penicillin resistance (MIC ≥ 0.5) so Gentamicin was continued. Antibiotics finished 6 weeks after infected valve tissue had been removed. Subsequent blood cultures were negative. A repeat TTE is planned to help determine whether the persistent aortic root pocket or fistula need intervention.

Discussion:
This case represents a classic presentation of subacute bacterial endocarditis. The false-negative TEE 7 days prior to admission delayed the diagnosis. TEE has a sensitivity of 92%, but can still miss small vegetations. Management was complicated by the rare (incidence 0.75 per 100,000 US population) and aggressive streptococcal variant organism A. defectiva which has high rates of embolism, valvular destruction, antibiotic failure, and mortality. It yields pleomorphic forms by Gram Stain, and culture growth requires extended incubation time and solid media supplementation with pyridoxal or cysteine. Treatment is based on Penicillin MIC data, which took 3.5 weeks to obtain in this case.

Conclusions:
1. If there is a high pre-test probability of infection, a negative TEE should be repeated in 3-5 days, or sooner with a change in clinical status.
2. Abiotrophia defectiva is a rare but prototypical organism that causes infective endocarditis.
Severe Pancolitis with Toxic Megacolon in a 24-year-old Female with Asperger’s Syndrome

Introduction:
Crohn’s disease, an inflammatory bowel disease, is differentiated from ulcerative colitis (UC) by characteristic skip lesions, transmural inflammation, granulomas, and fistulas. We present Crohn’s disease presenting as pancolitis and toxic megacolon (TM).

Case Presentation:
A 24-year-old female with Asperger’s Syndrome presented to the emergency department with 10-12 days of generalized abdominal pain, constipation, and one episode of hematochezia. She was afebrile, tachycardic at 170 bpm, normotensive, and pale with conjunctival pallor. She had hypoactive bowel sounds, diffuse abdominal tenderness, and rebound. Laboratory data showed WBC 26,100/mcL, hemoglobin 10.2 g/dL, lactate 46.5 mg/dL, ESR 123 mm/h and CRP 312 mg/L. Computed Tomography revealed severe pancolitis and possible toxic megacolon with cecal and transverse colon diameters measuring 8.7 cm and 6.6 cm, respectively. After surgical evaluation, medical management was pursued with aggressive IV fluids, antibiotics, and IV methylprednisolone for possible infectious and/or inflammatory disorders. Serial imaging revealed stable dilation. Her pain and tachycardia improved and infectious workup was negative. On hospital day 3 she passed blot clots followed by frank, bright red blood per rectum. Her pain worsened, she was tachycardic at 150 bpm and hypotensive. Stat x-ray showed pneumoperitoneum. Repeat hemoglobin fell from 8.2 to 4.7 g/dL with an INR of 4.5. She received IV vitamin K, fresh frozen plasma, packed red blood cell (pRBC) transfusions (7 units total), and underwent emergent subtotal colectomy and ileostomy. Pathology results noted fulminant active and chronic transmural colitis, multifocal ulceration, fissuring, multiple focal perforations, associated granulomatous and transmural chronic inflammation with acute and chronic serositis. The patient was diagnosed with Crohn’s disease, started on immunosuppressive therapy, improved, and was discharged to rehab on hospital day 16.

Discussion:
TM is a severe complication of colitis, most commonly UC, Crohn’s, and Pseudomembranous colitis. The incidence of TM in UC and Crohn’s is 1-5% with up to 20% of these reported at presentation. TM is a clinical diagnosis with supportive imaging showing 6 cm dilatation of the colon. Surgical management is indicated for visceral perforation, severe hemorrhage (6 to 8 units of pRBCs), or no improvement in 24-72 hours. Medical management includes intravenous fluids, electrolyte correction, broad-spectrum antibiotics, intravenous corticosteroids, and bowel rest.

Patients with autism spectrum disorders (ASDs), including Asperger’s, are at increased risk for seizures due to electrolyte abnormalities after ileostomy. ASD patients may find it more difficult adjusting to a modified dietary schedule and the demands of living with an ostomy.

Conclusion
Crohn’s can present as a life threatening emergency. As this case demonstrates, the decision to perform a subtotal colectomy and its timing can be made more complex when factoring in patient attributes. We will discuss this further along with the pathophysiology and clinical spectrum of Crohn’s.
Peripheral Cyanosis after administration of IV Esmolol

Atrial fibrillation is the most common sustained tachyarrhythmia. Hospitalization is a common result for individuals with Atrial Fibrillation (AF) with Rapid Ventricular Rate due to hemodynamic compromise from reduced cardiac output. Management is centered around rate control and anticoagulation. Beta-blockers and Calcium Channel Blockers are the mainstay of therapy due to their direct inhibition of the AV node. If pharmacologic therapy is ineffective or not tolerated, other options include pacemaker insertion and possible ablation of the AV node.

A 73 year old male with a PMH significant for newly diagnosed Atrial Fibrillation, CAD s/p quadruple bypass, HTN, and recent CVA presents to the Emergency department with complaints of cough and progressively worsening shortness of breath for the past week. His exam on admission was significant for an irregularly irregular pulse with a rate of the 120s to the 140s. His extremities were warm to the touch and appeared well-perfused. Pertinent home medications included Metoprolol, Lisinopril, and Coumadin. Labs were significant for a Troponin of 0.066 and an INR of 2.8. Upon admission, his home medications were held, a diltiazem drip was initiated, and a cardiology consult was obtained. Upon achieving rate control with the drip, he was slowly transitioned back onto Metoprolol with the dose titrated to effect. Later that same day, the patient was found to be minimally responsive with a SBP in the 70s, and bradycardic in the 40s. Cardizem was immediately stopped and atropine given. His decompensation was thought to be secondary to the effect of dual AV-nodal blockade. Upon discontinuation of both the diltiazem and the metoprolool, he slowly improved. The next day, he once again became tachycardic and was started on an esmolol drip. He began to require increasingly higher doses of the esmolol drip to maintain rate control. On high doses of esmolol, peripheral cyanosis was noticed, which improved with dose reduction.

Peripheral cyanosis is reported <1% of the time as an adverse event associated with Esmolol and occurs in the setting of toxicity. Due to Esmolol’s short half-life of approximately 9 minutes, it typically occurs at the beginning of infusion or upon new dose administration. Esmolol is metabolized by hydrolysis and therefore isn’t subject to accumulation. While the mechanism of peripheral cyanosis is unknown, it is suggested that beta-blockers uniquely counteract the cardiac sympathetic drive which initially evokes a proportional rise in vascular resistance. The risk of Esmolol toxicity is greater with the co-administration of other cardiovascular drugs and those with the highest risk are the elderly and those with established ischemic heart disease, all of which was seen in this patient. After developing toxicity to Esmolol, AV nodal ablation and pacemaker insertion were discussed.
Abstract Title: Superior Vena Cava Syndrome Secondary to Central Venous Catheter Thrombosis: A Case Report

Abstract Text:
Introduction: Arising from the confluence of the Right and Left Brachiocephalic Veins, the Superior Vena Cava (SVC) receives venous return from the head and upper extremities. SVC Syndrome results when either extrinsic pressure is placed against the wall of the vessel and/or an intravascular thrombosis is formed. Although malignant mediastinal tumors such as bronchogenic carcinoma are responsible for about 80% of SVC Syndrome cases, less frequent etiologies have been identified. Our patient presented with signs and symptoms consistent with SVC Syndrome which was subsequently found to be due to a central venous catheter (CVC) thrombosis.

Case: A 47 year-old female presented to the emergency department with bilateral facial swelling for two days and painful left arm swelling for twelve hours. Past medical history was significant for hereditary hemochromatosis, for which a CVC portacath was placed ten years ago for frequent therapeutic phlebotomies. On admission, her vital signs were as follows: blood pressure 136/91, heart rate 128, respiratory rate 22, temperature 36.3°C, and oxygen saturation 96% on room air. Physical exam was significant for left upper extremity edema extending down to the mid-forearm, as well as bilateral neck edema. EKG demonstrated sinus tachycardia without acute ST depression or elevation. A Complete Blood Count and Complete Metabolic Panel were within normal limits. Left upper extremity ultrasound showed no evidence of deep vein thrombosis. Left elbow radiograph was negative for fracture. Chest radiograph was significant for mediastinal widening. Computed Tomography Angiography (CTA) scan revealed the right chest wall port with catheter extending into the distal SVC with low attenuation surrounding the catheter and collateral formation along the chest wall, consistent with extensive thrombus formation. At this time, the diagnosis of a chronic SVC syndrome due to CVC thrombosis was made. The patient was immediately started on heparin and underwent a pulse spray mechanical thrombectomy using tPA which resulted in resolution of the thrombosis. She additionally had the port-a-cath surgically removed and a SVC filter was placed.

Discussion: Although it is estimated that approximately 80% of SVC Syndromes are due to mediastinal tumors, it is important for clinicians to recognize less common causes. With the increasing utilization of long-term indwelling catheters, there has been an increasing incidence of SVC syndrome due to thrombosis. The pathophysiology of thrombus formation is believed to be due to constant movement of catheters within the vein and associated inflammation that results in endothelial damage. Few recommendations have been made concerning the prevention of thrombus formation, and the systematic use of prophylactic anticoagulation has questionable efficacy. With an occlusion usually taking months to years to form, the development of collateral blood flow results in few cases of SVC syndrome becoming a medical emergency but can lead to significant patient morbidity.
Abstract Title: iDOVE: Characteristics of Adolescents eligible for a Text Message Based Depression Intervention

Abstract Text:
Introduction: Mood disorders are common among teens and strongly correlate with a history of physical peer violence. The emergency department (ED) provides an opportunity to initiate preventive interventions or to complement existing mental health treatment for high-risk teens who may lack access to formal care. Personalized text-messages may effectively prevent depression and violence in high-risk teens. The “Intervention for Depression and Violence in the ED” (iDOVE) is an on-going randomized controlled trial (RCT) to determine the feasibility and acceptability of a novel text-message based depression prevention intervention for high-risk teens presenting to the ED. The objective of this analysis is to describe iDOVE's screened population and to compare characteristics of the screened and eligible populations.

Methods: A consecutive sample of patients between 13 and 17 years old at Hasbro Children’s Hospital ED was approached on a convenience sample of shifts from February to December 2015. A screening survey, using validated scales to measure demographics, technology, mental health, violence, and drug use, was administered via tablet computer. Patients reporting current mild-to-moderate depressive symptoms and past-year physical peer violence were eligible for the larger trial.

Results: Of 1,190 potential subjects presenting during RA shifts, 1,031 were successfully screened (86.64%) and 143 (13.45%) met eligibility criteria (+ depressive symptoms and + past-year peer violence). Of those eligible for the RCT, 116 (81.12%) consented.

Demographics of the screened population were: 53% white, non-Hispanic, 51% female, 49% low income, 63% high performing students, and 90% heterosexual. In terms of technology use, 96% had access to a cell phone, 92% owned a cellphone, 89% owned a smartphone, and 83% had unlimited text-messaging. Teens predominantly used their cell phones for texting (89%), making phone calls (85%), and listening to music (81%).

Over one-quarter (28%) of teens reported mild-to-moderate depressive symptoms; 43% reported at least one episode of physical peer violence in the past year. In the past 12 months, 15% of teens reported at least one drink of alcohol, 2% reported using prescription drugs for non-medical purposes, and 10% reported using illegal drugs.

Participants reporting BOTH depressive symptoms AND past-year violence (e.g., eligible for the larger study) were more likely than non-eligible participants to be non-white Hispanic (p = 0.004), low income, lower performing academically, LGBTQ, and alcohol or drug users (r = 0.000). No relationship was found between eligibility and chief complaint or gender.

Conclusion: Adolescents presenting for care in this ED have almost universal access to technology. They experience high rates of depressive symptoms and past-year violence. Of teens with both, 80% consented for the RCT. A text-message-based depression prevention program is acceptable; it is more likely to be indicated for non-white Hispanic, LGBTQ, low-income teens presenting to the ED for any chief complaint.
Abstract Title: Under the Shadow of the Shield: Assessing the Allegations Against the Mirena IUD

Abstract Text:

Introduction:
Over the past several years, it has been difficult to miss the legal claims against Mirena, the most popular intrauterine device (IUD) marketed and sold in the United States. Law firm advertisements have saturated television programming and social media sites, alleging that Bayer Healthcare Pharmaceuticals failed to warn consumers about the risks associated with Mirena and willingly sold a defective product. These alarming claims are juxtaposed against a contraceptive landscape in which IUDs, and Mirena in particular, are gaining a significant role in preventing unwanted pregnancy. This project aims to describe the tenor of the Mirena lawsuits, review the published literature on IUD perforation rates, explore the adverse events data reported to the Food and Drug Administration (FDA), and examine Mirena’s labeling.

Methods:
The legal claims against Bayer were examined through close reading of court documents. A literature review was conducted to investigate the safety profile of Mirena, particularly regarding perforation rates of Mirena and other IUDs that are on the market. Additionally, the adverse events reported to the FDA were acquired and analyzed.

Results:
While the lawsuits include a broad list of allegations, ranging from defective design, fraudulent misrepresentation, and failure to warn, the cases center around uterine perforation and migration of the IUD. The complaint hinges on the allegation that Bayer failed to adequately warn patients about the risk of the device migrating outside of the uterus during a period of time after IUD insertion. Bayer’s labeling warns both patients and physicians of the possibility of perforation during insertion. The published literature on uterine perforation from IUDs indicates that the perforation rate is approximately 1 perforation per 1000 insertions. The adverse event data revealed that the FDA received 1,300 reports of uterine perforation between the years of 2000-2013. Finally, the Adverse Events include an extensive list of symptoms, including anxiety, breast cancer, hypertension, headaches, and fatigue. These symptoms are also listed in advertisements recruiting lawsuit plaintiffs, but do not appear in filed court documents.

Conclusions:
The lawsuits against Mirena appear to have little to do with a higher than expected rate of perforation, and rather embody a perceived discrepancy in Bayer’s labeling surrounding the timing of perforation. Mirena does not pose a significantly increased risk of perforation compared to other IUDs on the market. The number of adverse events involving perforation reported to the FDA is a smaller figure than expected, given that over 2 million women in the United States use Mirena. Additionally, plaintiff recruitment ads list many detrimental symptoms that are not addressed by the lawsuits, leading patients to perceive Mirena as unsafe. We advise physicians to carefully discuss the known benefits and risks of Mirena with patients while addressing their concerns about the lawsuits.
A Case of Total Anomalous Pulmonary Venous Connection

Introduction: Total anomalous pulmonary venous connection (TAPVC), also known as total anomalous pulmonary venous return (TAPVR), is a rare congenital vascular anomaly in which all four pulmonary veins fail to connect to the left atrium during embryogenesis. Incidence of this condition ranges from 0.6 to 1.2 per 10,000 live births, all of which require surgical correction. Unfortunately, one-year mortality remains poor, with a mortality rate of 80 percent within the first year of life. We describe a case of TAPVC in order to underscore the importance of early recognition and intervention, which holds the potential to decrease morbidity and mortality.

Case: A 39-week neonate was born via spontaneous vaginal delivery to a G1P0 20-year-old female with severe apnea, cyanosis and tachycardia. The mother received normal prenatal care and had an uncomplicated pregnancy. After delivery, the infant became apneic and profoundly cyanotic with APGAR (Appearance, Pulse, Grimace, Activity, Respiration) scores of two and four at one minute and five minutes, respectively. The NICU team was immediately called to the labor and delivery unit, where the neonate was given positive pressure ventilation (PPV). However, the infant remained tachycardic and oxygen saturation was unattainable at that time. The infant was transferred to the NICU, placed on a resuscitation warmer, and vital signs revealed a heart rate of 150 beats per minute and an oxygen saturation of seven percent. 100 percent oxygen was provided and the infant was intubated. Despite the intubation, oxygen saturation rose only to 50 percent, and physical exam revealed diminished bilateral breath sounds bilaterally. Portable chest x-rays demonstrated bilateral pneumothoraces and pneumomediastinum. The neonate was then given a normal saline bolus of 10ml/kg and prostaglandin E (PGE) 0.1mcg/kg/min. Needle aspiration was performed bilaterally, but oxygen saturations remained below 50 percent, at which time chest tubes were placed. The infant was then transferred to Women and Infants Hospital, where echocardiogram revealed TAPVC. The infant was later transferred to Boston Children’s Hospital for pediatric cardiothoracic treatment. Unfortunately, the infant died prior to surgery in Boston.

Discussion: Total anomalous pulmonary venous connection is a rare congenital anomaly causing extreme cyanosis and apnea in the newborn. During embryogenesis, the pulmonary vein fails to fuse with the left atrium, causing the oxygenated pulmonary venous return to mix with deoxygenated blood from the systemic venous circuit. This results in profound cyanosis within minutes of birth. A patent foramen ovale or atrial septal defect must be present to circulate oxygen and sustain life. While less common than other cardiac congenital causes of cyanosis in the newborn, knowledge of TAPVC is critical to timely diagnosis and treatment. Although mortality rates remain high, surgical correction is possible with appropriate identification and pediatric cardiothoracic intervention.
Clinical Manifestations and treatment Deep Venous Thrombosis secondary to May Thurner Syndrome

Introduction:
May-Thurner Syndrome (MTS) is a rarely diagnosed condition in which the right common iliac artery overlies and compresses the left common iliac vein against the lumbar spine. As a result of this anatomic variant and the resulting venous stasis, patients develop recurrent iliofemoral deep vein thromboses (DVTs).

Case:
43-year-old female with a history of MTS complicated by prior left lower extremity DVT in 2010 status post treatment with local tissue plasminogen activator infusion therapy, left iliac vein stent and inferior vena cava (IVC) filter placement and coumadin therapy for 1 year, who presented to the hospital with progressive left lower extremity swelling and pain for 4 days. On the day of presentation, patient started to have pain with ambulation which triggered her to seek medical attention. She denied any associated fevers, chills, chest pain, shortness of breath or any recent travel, long periods of immobilization or trauma to the left lower extremity. Her cancer screening was up to date and a complete hypercoagulability workup was negative in 2010. Venous duplex of the left lower extremity revealed acute occlusive DVT involving the proximal femoral, common femoral and distal external iliac veins, along with evidence of acute occlusive superficial thrombophlebitis involving the proximal great saphenous vein. CT scan showed a large thrombus involving the left common iliac vein stent extending to the left external iliac and left femoral system. She was evaluated by vascular surgery who felt that no surgical intervention was needed at that time. Left lower extremity venogram was performed, however she was not a candidate for therapeutic intervention due to evidence of a chronic occlusion with hard clot and extensive collateral network. She was started on enoxaparin injections for anticoagulation while in patient. The patient was discharged home on Xarelto with a plan for life long systemic anticoagulation, and with instructions to follow-up with vascular interventional radiology in 6 weeks.

Discussion:
Treatment with systemic anticoagulation alone is often insufficient to prevent recurrent DVTs in MTS. Instead, patients should be initially treated with a combination of catheter-directed thrombolysis combined with percutaneous mechanical thrombectomy and intravascular stent placement in the area of iliac vein compression. Additionally, patients should be placed on anticoagulation for a finite period of time. As with our case, if a second DVT develops after initial combination therapy, life-long anticoagulation is required. Interestingly, it is estimated that this anatomic variant is present in over 20% of the population. However, in patients with other more common risk factors for DVTs, MTS is rarely investigated as a contributing factor when a patient presents with an initial DVT. Based on its prevalence, and the need for more aggressive initial treatment, MTS should be considered in patients who present with DVTs.
Gandhi, Meeka

Last Name: Gandhi
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Category: Research
PG Year: or MS Year: MS-3
ACP #: 2970534

Residency Program or Medical School: Warren Alpert Medical School of Brown University

Hospital Affiliation:

Additional Authors: Fadya El Rayess, MD

Abstract Title: Kaleidoscopic and Kinesthetic Classroom Care: A Pilot Study

Abstract Text:
PURPOSE: The goals of this study were to evaluate participating children’s response to nutrition curriculum taught with an emphasis on appealing to different learning styles as well as to compare the efficacy of this pilot program to past curriculum.

METHODS: A twelve-lesson curriculum that included visual art, kinesthetic and tactile activities was designed and taught over the course of five weeks. Participating students were fourth and fifth graders enrolled in a summer enrichment program at Elizabeth Baldwin Elementary School in Pawtucket, RI (n=24). Pre and post course surveys were administered and analyzed in order to assess impact of the new curriculum in comparison to past curriculum.

RESULTS: A Chi-square analysis was used to assess data from the pre and post-course surveys. There was an increase in the proportion of students answering correctly in all questions. Statistically significant improvement of more than 50% was seen in questions pertaining to self-reported weekly exercise, soda intake, and fruit and vegetable intake (p<0.05). No substantial improvement was seen in the number of students correctly identifying fruits and vegetables, reporting less sedentary time, and recognizing correct portion sizes.

CONCLUSION: Students responded positively overall to curriculum that engages a variety of learning styles. The curriculum was most effective in impacting self-reported exercise, eating and beverage choices. This impact was not seen in previous studied curriculum. Additional data on the long term impact of this particular type of curriculum is still needed. Study results also need to be reproduced on a larger scale in order to further assess this curriculum's efficacy.
Abstract Title: Can We Cure Hepatitis C in RI and Save Money While Doing it? (A cost-benefit analysis)

Abstract Text: 
Background: Recently FDA-approved sofosbuvir (SOF)-based drug regimens have been shown to be highly effective in attaining sustained virological response (SVR) in HCV patients. Unfortunately, sofosbuvir—with an estimated wholesale price of $1000 per pill—may be overly economically burdensome to health care payers. Some have argued, however, that in treating patients, the cost-savings accrued from avoiding HCV-related complications outweigh the upfront costs of SOF-treatments. Using a cost-benefit analysis (CBA), we investigate the extent to which SOF-treatments may be cost-saving in Rhode Island.

Methods: We conducted a CBA measuring economic return on investment for treating the entire chronically HCV-infected Rhode Island population with SOF-based drug regimens. In our base-case, we estimated the costs and economic benefits from a health care payer perspective across a 20-year time horizon, with a 3% annual discount rate. Costs included the health care costs of delivering SOF-treatments, as well as re-treating patients which become re-infected through injection drug use (IDU). Benefits included the economic impact of lowered incidences in hepatocellular carcinoma and cirrhosis-related complications. We also conducted a threshold analysis to show the prices at which SOF-based drug regimens would be cost-neutral at 1, 5, 10, and 15 year time points. We conducted univariate and multivariate sensitivity analyses to test the robustness of our results.

Results: Under base-case assumptions, the costs for SOF-based treatments was $93,000 per patient, the value of benefits was $14,000 per patient, yielding a benefit-to-cost ratio of 0.15—meaning that for every dollar spent on SOF-treatments, only $0.15 would be recouped from avoiding HCV complications. Threshold analysis indicated that in order to break even within 10 years, SOF-drug prices would need to be $9,500. Univariate sensitivity analysis indicated that of all of the model’s parameters, that prices remain the only parameter which can alone achieve cost-savings. Additionally, when analyzing HCV-reinfection rates, of the nearly 11,000 SVRs estimated to be achieved in RI’s chronic HCV population, only 4-5 SVRs were expected to be lost to reinfection after 20 years.

Conclusions: This study found that SOF-treatments “would pay for themselves” only with substantial reduction in SOF drug prices from $84,000 to a value less than $14,000. At those lower prices, the treatment would pay for itself in 20 years from the reductions in HCV-related complications. This price reduction may still leave high profits for manufacturers, given that the production costs for the 12-week course of SOF have been estimated to be as low as $136. An additional finding of this study is that reinfection rates amongst IDUs in Rhode Island is small, if not negligible, in terms of reducing overall population-level treatment effectiveness.
**Abstract Title:** Fundoscopic Findings as Presentation of Hyperviscosity Syndrome in Waldenstrom's Macroglobulinemia

**Abstract Text:**
A 69 yo woman with paroxysmal atrial tachycardia and migraines was directed to the hospital after an abnormal ophthalmologic exam. One week earlier, she had seen her PCP for LLQ pain and was found to have uncomplicated diverticulitis, but also a hemoglobin of 6.7, splenomegaly, and an elevated total protein with normal albumin – a “protein gap.” She was referred to oncology, and additional testing identified a monoclonal IgM of >10g/dl and serum viscosity of 4.5(normal 1.2-1.8), suggestive of Waldenstrom’s macroglobulinemia. She was sent for an ophthalmologic exam which demonstrated retinal injury with flame hemorrhages and sausage vessels, prompting admission for hyperviscosity syndrome. On detailed questioning, she reported only blurry vision when reading small text, and intermittent numbness in her calves and toes. A dialysis catheter was placed and she underwent urgent plasmapheresis. After a second treatment the following day, her IgM decreased to 3.6g/dl and viscosity improved to 2.0. Her blurry vision resolved and she was discharged home. The results of a bone marrow biopsy confirmed the diagnosis of MYD88-mutated Waldenstrom’s macroglobulinemia, and she was started on chemotherapy with bortezomib, dexamethasone, and rituximab. As rituximab can transiently increase IgM, it was omitted until her IgM, which had increased after discharge, was <4g/dl. After three cycles of chemotherapy she had a rising IgM and no improvement in her organomegaly. She was switched to treatment with ibrutinib, to which she has had a partial response.

Waldenstrom’s is a rare B cell lymphoma that secretes an IgM paraprotein. The elevated circulating IgM raises serum viscosity, causing decreased flow in the microcirculation. Symptoms can involve multiple organs and include headache, ataxia, encephalopathy, visual changes, hearing loss, epistaxis, shortness of breath, and chest pain. In the eye, rupture of small veins and arterioles produce flame hemorrhages, while vascular dilation produces the characteristic sausage vessels seen in this patient. Viscosity increases exponentially with increasing IgM levels, and symptoms usually develop when viscosity is >4, usually corresponding to an IgM level >3g/dl. Urgent treatment with plasmapheresis is indicated, whereby the patient’s plasma is removed and replaced with albumin, resulting in a rapid decline in IgM and viscosity. Over 90% of patients with Waldenstrom’s macroglobulinemia have an activating mutation in MYD88, which increases cell survival through a BTK-mediated pathway. Ibrutinib, a small molecule inhibitor of Bruton’s tyrosine kinase, has been shown to be effective as monotherapy in patients with Waldenstrom’s macroglobulinemia who carry the MYD88 mutation.

Waldenstrom’s macroglobulinemia is a rare disorder that can result in impaired microcirculatory flow from hyperviscosity due to the secretion of an IgM paraprotein. When suspicion of WM exists, patients should undergo careful evaluation for end organ injury from hyperviscosity syndrome as urgent plasmapheresis to prevent further injury.
emitting seronegative symmetrical synovitis with pitting edema associated with acute interstitial lung disease

Introduction: Remitting seronegative symmetrical synovitis with pitting edema (RS3PE) is a rare syndrome that presents with acute onset bilateral hand and pedal pitting edema. Diagnostic workup is significant for negative serologic tests, including antinuclear antibodies (ANA) and rheumatoid factor (RF), and lack of radiographic evidence of joint destruction. RS3PE is typically a limited syndrome that responds rapidly to corticosteroid treatment. Here we present a rare case of RS3PE associated with acute interstitial lung disease. Case: A 63-year-old Caucasian male presented with acute onset bilateral hand and feet swelling. Serologic testing was negative for ANA, RF, and CCP. However, acute phase reactants were markedly elevated (ESR = 112mm/hr, CRP = 197mg/L, Ferritin = 1148 ng/ml). He was found to be newly anemic with hemoglobin of 8.5 g/dL, with iron studies consistent with anemia of chronic inflammation. Bone marrow biopsy revealed a slight increase in plasma cells without any evidence of dysplasia. SPEP and UPEP were unremarkable. Given suspicion for RS3PE, he was started on oral prednisone at 40mg/day. His symptoms rapidly improved and his red blood cell counts normalized, confirming the diagnosis. As RS3PE has been described as a paraneoplastic syndrome, CT scans of the chest, abdomen, and pelvis were performed. Imaging was negative for an occult malignancy. After near completion of a slow steroid taper, he developed fevers and shortness of breath. Outpatient chest x-ray revealed bilateral airspace disease concerning for atypical pneumonia. He was empirically treated with a course of oral azithromycin. However, repeat imaging following antibiotics revealed increased bilateral airspace disease. Due to development of hypoxic respiratory failure, he was admitted to the hospital and treated with levofloxacin, bactrim, and high dose prednisone. Transbronchial biopsies performed the day of admission showed nonspecific findings of interstitial inflammatory infiltration without any evidence of organisms. Bronchial lavage cultures were negative for fungal, viral, and bacterial growth. Blood cultures also had no bacterial growth. Antibiotics were discontinued, and the patient was continued solely on steroid treatment. By hospital day 5, he no longer required supplemental oxygen. A follow-up CT scan of the chest performed three months after hospitalization revealed complete resolution of the airspace disease. Discussion: RS3PE is a rare seronegative symmetrical polyarthritis which often occurs in men over the age of 50. As in this case, it is typically a limited syndrome that responds quickly to low dose corticosteroids. RS3PE was initially described as a variant of rheumatoid arthritis but has also been associated with gastrointestinal carcinomas, hematologic malignancies, amyloidosis, and polymyalgia rheumatic. Detailed investigations must be made to rule out and treat these potentially coexisting conditions because if identified, these variations of RS3PE typically respond poorly to steroid treatment alone.
Encephalopathy, thrombocytopenia, and acute renal failure in a healthy 63 year-old man: HLH due to acute anaplasmosis infection

Hemophagocytic lymphohistiocytosis (HLH) is a syndrome of excessive immune activation which may be familial or acquired, usually secondary to infection.

A 63 year old previously healthy male presented to the Emergency Department in late December with a chief complaint of confusion, hiccups, and inappropriate speech. He also noted five days of fatigue, headaches and unsteadiness on his feet. On evaluation, he was febrile to 38.5, tachycardic, hypotensive with a blood pressure of 80/50, and with normal oxygen saturation on room air. His examination was remarkable for hiccups, slurred speech, and asterixis with normal orientation and an otherwise nonfocal neurologic examination. Laboratory studies demonstrated platelets of 25, BUN of 101 and creatinine of 7.80, and mild transaminitis. He was admitted to the ICU with concern for septic shock and treated initially with broad-spectrum antibiotics, IV fluids, and intravenous norepinephrine.

His initial evaluation was notable for lack of evidence for disseminated intravascular coagulation or thrombotic thrombocytopenic purpura. Cultures of blood, urine, and cerebrospinal fluid were negative. The diagnosis of HLH was considered and a ferritin level returned markedly elevated at 16,500 ng/mL with fasting triglycerides of 534 mg/dL. A bone marrow biopsy demonstrated rare histiocytes with hemophagocytosis and neutrophils with intracytoplasmic small pale-purple granular structures concerning for Anaplasmosis infection. Similar neutrophils were present on the peripheral blood smear. PCR testing for DNA of Anaplasma phagocytophilum was positive. Testing for other viral infections including HIV and EBV were negative. Soluble CD25 (IL-2 receptor alpha) returned elevated at >20,000 pg/mL. Although natural killer cell activity was normal and he did not have splenomegaly, he otherwise fulfilled 6 of the 8 diagnostic criteria for HLH. He was treated with ten days of doxycycline and dexamethasone. His renal function and encephalopathy recovered without dialysis, and his thrombocytopenia normalized. On further questioning he denied any known tick exposures but had been working outdoors in the weeks prior to presentation.

This case illustrates an intersection of two rare diseases, which if unrecognized could result in delayed treatment and adverse outcomes. HLH can be difficult to differentiate from septic shock, as both syndromes involve immune activation and dysregulation. Although this patient improved with dexamethasone and treatment of anaplasmosis, the standard treatment protocol for HLH involves the addition of etoposide, cyclosporine, and intrathecal methotrexate. Ferritin, while an acute phase reactant, can be a critical test in suggesting the diagnosis in a patient with shock, cytopenias, and multiorgan dysfunction.
Goizueta, Alberto

Last Name: Goizueta  First Author: Resident/Fellow Member
First Name: Alberto  Category: Clinical Vignette
PG Year: PGY-1 or MS Year:  ACP #: 2615579
Residency Program or Medical School: Boston University
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Additional Authors: Dimitri Gitelmaker; Alan Epstein

Abstract Title: Not Just Another Crohn's Flare: A case of P. shigelloides ileocolitis.

Abstract Text:
INTRODUCTION:
Plesiomonas shigelloides (P. shigelloides), formerly known as Aeromonas shigelloides, is a gram-negative oxidase positive facultative anaerobic bacillus of the Enterbacteriaceae family. It is relatively uncommon in the United States, but there has been an increase in incidence due to travelers’ diarrhea after ingestion of contaminated water and food, such as fish and shellfish. P. shigelloides most commonly causes gastrointestinal infections, but has been linked to extra-intestinal infections in immunocompromised patients. The pathogenesis of this organism in the gut is thought to be due to its invasive ability and enterotoxin production, which causes gastroenteritis.

CASE PRESENTATION:
A 41-year-old female with history of questionable Crohn’s Disease, diagnosed 10 years prior, presented with 2 weeks of dull abdominal pain with colicky episodes and 2 days of acute onset nausea, vomiting, and diarrhea. The diarrhea was watery, green, and nonbloody. She denied any fever, chills, sick contacts or recent travel. Her last meal before the pain onset was a burrito containing fish, rice, and tomatoes that her husband also ate without any issues. At the time of diagnosis with Crohn’s, she was treated with 5-ASA. After no relief, she quit the medications and turned to alternative options, such as diet control, which kept her supposed disease under control. On examination, she was afebrile and hemodynamically stable. There was tenderness over the abdomen and no signs of oral or perianal lesions. The blood and urine workup was normal except for an elevated CRP (73.27) and ESR (36.0). CT abdomen/pelvis found prominent wall thickening of the ascending colon and distal terminal ileum. Colonoscopy revealed a normal rectum and colon, but the ileocecal valve was stenosed and the distal terminal ileum was circumferentially inflamed with a lesion uncharacteristic of Crohn’s disease. Biopsy results reported an ileocolic ulcer with chronic active inflammation without dysplasia or granuloma. Her stool specimen was positive for P. shigelloides only. She was discharged from endoscopy with supportive therapy, and the symptoms resolved without any additional intervention.

DISCUSSION:
This patient had a presumed history of Crohn’s disease with typical symptoms and imaging of a relapse. Colonoscopy determined this was less likely Crohn’s due to the appearance of the colon and the lesion at the ileocecal valve. Literature has described similar lesions in the bowel caused by P. shigelloides and cases confused for inflammatory bowel disease (IBD). Patients with IBD relapse have a 10% incidence of having an additional enteric infection supporting a workup for common causes of gastroenteritis in these patients. Ingestion of undercooked fish was the assumed vector causing this episode of infection. Case reports describe symptoms up to 90 days with P. shigelloides infections, but it is difficult to suggest this was the etiology of her first presentation 10 years prior.
Numb Feat, No Clot: A rare complication of frequent PCI

Background:
Arteriovenous fistulas (AVF) are abnormal connections between the arterial and venous system. Acquired AVFs most commonly develop in the lower extremities given the frequency of the groin as a site for percutaneous vascular procedures. Complications from long-standing AVFs include high-output heart failure and limb edema. In addition, in patients who have preexisting peripheral artery disease (PAD), AVFs can worsen limb ischemia leading to claudication and abnormal sensation, particularly on exertion.

Case Presentation:
We present the case of a 59 year old man with history of CAD and MI s/p multiple percutaneous interventions, bilateral carotid artery and iliac artery stenting, atrial fibrillation on Coumadin, lupus anticoagulant positivity and anti-phospholipid antibody syndrome who presented with melena and several months of worsening bilateral lower extremity numbness and swelling. His numbness was notably worse with exertion and lying down. An MRI C/T/L spine was negative for impingment and showed no significant pathology. The patient endorsed unintentional weight loss, warranting a CT chest/abdomen/pelvis. The CT scan showed opacification of the entire left iliac and femoral veins as well as distal right iliac and femoral veins concerning for extensive thrombus. In the setting of the patient’s GI bleed, an IVC filter was urgently placed. During placement of the IVC filter, contrast was noted to reflux into the left iliac veins previously noted to have extensive clot burden on CT scan. These findings questioned the presence of a large venous clot. Venous ultrasound of the bilateral lower extremities showed no evidence of DVT and CT of the chest confirmed no pulmonary embolus. Ultrasound of the right and left groin showed marked pulsatility of the bilateral common femoral veins with arterialized wave-forms bilaterally consistent with bilateral AV fistulas. After confirmed negative lower extremity ultrasound and CT PE studies, the patient's IVC filter was retrieved. EGD showed gastritis and he was restarted on anticoagulation.

Discussion:
The incidence of AVF following percutaneous groin access varies from 0.006 to 0.88 percent. Risk increases with low and multiple punctures and history of anticoagulation and hypertension. As there was no indication on MRI of spinal cord pathology, his symptoms suggest a venous steal leading to lower extremity claudication. The “thrombus” seen on CT scan was determined to be an artifact from contrast entering the venous system from his right groin AV fistula. Treatment is indicated for symptomatic patients, with surgery being the standard approach. In patients who have had multiple percutaneous interventions and present with lower extremity symptoms, it is important to perform a full vascular evaluation and consider the presence of an AV fistula.
Guo, Canting

**Last Name:** Guo                                      **First Author:** Resident/Fellow Member

**First Name:** Canting                                **Category:** Research

**PG Year:** PGY-2 or **MS Year:**                      **ACP #:** 3301447

**Residency Program or Medical School:** Rhode Island Hospital/Brown University Internal Medicine Residency

**Hospital Affiliation:** Rhode Island Hospital

**Additional Authors:** Russell Settipane, MD

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**Abstract Title:** Exploring clinical characteristics and state of the art therapies for hereditary and acquired angioedema in Rhode Island

**Abstract Text:**
Hereditary and acquired angioedema are potentially life-threatening diseases characterized by spontaneous episodes of subcutaneous and submucosal swelling of face, lips, oral cavity, larynx, and GI tract. Hereditary angioedema (HAE) usually presents within the first and second decades of life, whereas acquired angioedema presents in adults after 40 years of age. These clinical symptoms together with reduced C1 inhibitor levels and/or activity can usually confirm the diagnosis. In recent years, multiple novel therapies for treating hereditary angioedema have emerged including C1 inhibitor concentrates, ecallantide/kallikrein inhibitor, and icatibant/bradykinin receptor antagonist. This article reviews the clinical presentation, diagnosis, treatment, and prophylaxis. Because, in reality, acute care treatment can often be limited by each hospital’s formulary, included is a review of HAE treatments available at the nine major hospitals in Rhode Island.
Primary squamous cell carcinoma of the kidney is not a common entity. It is estimated that only 1% of all renal malignancies are of this specific subtype. With a propensity for being highly aggressive and carrying a poor prognosis, these cancers are typically preceded by chronic inflammation, as in recurrent infections or nephrolithiasis. We report a case of this very such diagnosis in a 55 year old gentleman who presented with vague abdominal pain, subsequently undergoing a radical nephrectomy.

A 55-year-old male patient presented with vague complaints of right upper quadrant discomfort. Examination of the abdomen was unremarkable. He was found to have a mild normochromic, normocytic anemia with a hemoglobin of 11.0g/dL, serum urea level of 19mg/dL, and serum creatinine level of 1.0mg/dL. Importantly, he had no history of hematuria, nephrolithiasis, or prior urologic surgery.

Upon admission, given the presence of his abdominal pain and newly identified anemia, a computerized tomography scan was performed of his abdomen and pelvis, demonstrating a large right-sided renal mass. He underwent comprehensive imaging studies which included magnetic resonance angiography of the abdomen identifying the large, right-sided renal mass which was invading into the inferior vena cava. There were also numerous, ill-defined hepatic lesions seen on computerized tomography, most compatible with metastatic disease, leading to the diagnosis of stage IV squamous cell carcinoma of the kidney.

Retrospectively, our patient denied any history of cigarette smoking, notable family history of malignancy, and no identifiable personal history of kidney stones or infections. A radical right nephrectomy was later performed as it remains the cornerstone of treatment for advanced renal cancer.

On further review of the pathology results, the tumor was determined to be a squamous cell carcinoma, moderately differentiated, arising from the renal pelvis, with direct lymphovascular invasion into the renal vein and inferior vena cava. Interestingly, with no evidence of renal stones, the kidney appeared to have significant chronic changes related to obstructive uropathy as suspected due to the overwhelming size of the primary tumor, at 8.0 x 6.5 x 2.0 cm, in aggregate.

Primary squamous cell carcinoma of the kidney is a rare entity which carries a poor prognosis. Characterized by being highly aggressive with vascular infiltration, arising from the renal pelvis, and with metastatic lesions at presentation, we presented a patient with this uncommon urologic malignancy. This case highlights the fact that spontaneous cases of rare cancers may arise in the absence of known risk factors.
INTRO: Dengue fever is a common cause of fever in returned travelers in general, and specifically in travelers to the Caribbean and Central and South America. Classic symptoms and signs include fever, frontal headache with retro-orbital pain, rash, leukopenia, and thrombocytopenia. Occasionally, atypical presentations of dengue fever have been reported and include neurologic, cardiac, pulmonary, and gastrointestinal manifestations. We report a case of dengue fever presenting with acute acalculous cholecystitis in a 52 year-old woman returning to New England after a 2-week trip to El Salvador.

CASE PRESENTATION: A 52 year-old woman from El Salvador moved to the US 13 years ago and had recently returned from a 2-week visit to El Salvador when she presented complaining of abdominal pain. Her illness began with fevers, shaking chills, headache, eye pain, and body aches. She subsequently developed abdominal pain and diarrhea, followed by nausea and vomiting. Her symptoms worsened over the following few days, with increasing weakness and fatigue. She did not know of any insect, animal, or sick human contact exposures.

On the day of presentation, the patient spiked a fever to 101.3F with other vital signs unremarkable. She was leukopenic and thrombocytopenic with elevated liver enzymes. Abdominal US and CT showed a thickened/edematous gallbladder wall without calculi, suggestive of acalculous cholecystitis, and she was started on empirical antibiotics for infectious diarrhea. She was evaluated for causes of fever in a returned traveler, and several days after discharge, IgM and IgG antibodies to dengue virus returned positive.

The patient was seen for outpatient surgery follow-up and did not require surgery as her condition had resolved with conservative medical management.

DISCUSSION: Increasing international travel and immigration emphasizes the importance of recognizing the symptoms and signs of illnesses endemic to foreign parts of the world. Our case of dengue fever presenting with acute acalculous cholecystitis in the northeastern United States is a unique example of an atypical symptom of a foreign disease. Acute acalculous cholecystitis has the potential for serious morbidity and mortality, and treatment often consists of surgical cholecystectomy.

Several cross sectional studies have shown a variable incidence of acalculous cholecystitis secondary to dengue fever, with an incidence of greater than 50% in some endemic areas, making it an extremely underreported complication. It has also been reported in the literature that when secondary to dengue fever, complete resolution of the disease can occur with supportive treatment of dengue alone. Recognizing this association is important for the diagnosis of dengue fever and also for the prevention of unnecessary surgical procedures in individuals who will recover with conservative management.
Hodarkar, Ameya

**Last Name:** Hodarkar

**First Name:** Ameya

**First Author:** Resident/Fellow Member

**Category:** Clinical Vignette

**PG Year:** PGY-3

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**Hospital Affiliation:** Memorial Hospital Of Rhode Island

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**Residency Program or Medical School:** Memorial Hospital Of Rhode Island

**Additional Authors:** Nicole Yang, MD, Mervat Saleh, MD, Ahmad Abdin, MD, Rachel Trippett, MD, Mazen Alqadi, MD

**Abstract Title:** Severe Hungry Bone Syndrome resulting in Cardiopulmonary Arrest

**Abstract Text:**
Transient mild hypocalcemia after parathyroidectomy is due to relative hypoparathyroidism from reductions in bone reabsorption leading to an increased influx of calcium into bone. It resolves within a week in most cases. In some cases hypocalcemia is severe and prolonged, despite normal or even elevated levels of parathyroid hormone (PTH). This phenomenon called the hungry bone syndrome (HBS) occurs in patients who have developed bone disease preoperatively due to a chronic increase in bone resorption induced by high levels of PTH. The underlying hyperparathyroidism can either be primary or secondary due to ESRD. Acute hypocalcemia has been known to cause myocardial dysfunction, decreased myocardial performance and even congestive heart failure either with or without hypotension. In this vignette we present a post parathyroidectomy patient who presented with hungry bone syndrome induced hypocalcemia and progressed to cardiopulmonary arrest.

Our patient was a 52 year old woman with a history of ESRD, calciphylaxis and symptomatic secondary hyperparathyroidism. She had a total parathyroidectomy with autotransplantation 4 years ago and parathyroidectomy of remnant tissue 2 weeks prior to presentation. She had been receiving oral calcium 1000 mg four times a day along with 800 units of 1,25-dihydroxyvitamin D at home after completing her postoperative recovery at the hospital. She presented with generalized weakness, repeated emesis and constipation. She was hypotensive and tachypneic and had sluggish bowel sounds. Chvostek sign was negative and peripheral pulses were well felt. EKG revealed sinus tachycardia and QTc prolongation. Initial lab work was significant for an elevated serum phosphorus of 11.8mg/dL, an unmeasurably low serum calcium and an ionized calcium of 1.9 mg/dL. The patient was dialyzed with a high calcium bath. We refrained from giving IV calcium initially due to the risk of precipitating calciphylaxis. Post dialysis the calcium was 5.0 mg/dL. The patient developed a supraventricular sinus tachycardia not responsive to adenosine and mottling of the skin due to low blood pressures. She received norepinephrine via a central line and IV replacement of calcium. Approximately 4 hours after the norepinephrine was started the patient developed asystole. CPR was performed with return of spontaneous circulation. The patient then developed ventricular tachycardia and cardiogenic shock. The family decided to change the code status to “Do not resuscitate”. Approximately 18 hours after the first code the patient had another asystole and passed away. In the course of the hospitalization the patient received 21 grams of intravenous calcium. Before her death her ionized calcium was found to be normal at 5.8 mg/dL. HBS is a serious complication that can develop after parathyroidectomy and perhaps more review is needed in forming guidelines as to how aggressively to replete calcium in an individual who presents with a delayed onset of hungry bone syndrome.
Hsiao, Vivian

**Last Name:** Hsiao  
**First Name:** Vivian  
**Category:** Clinical Vignette  
**Residency Program or Medical School:** Warren Alpert Medical School of Brown University

**Abstract Title:** Case Report: Streptococcus sanguinis endocarditis, complicated by osteomyelitis and cerebral aneurysms

**Abstract Text:**
In this case report, we present the case of a 51-year old man with a history of intravenous drug use and Hepatitis C, who presented with pyogenic vertebral osteomyelitis, splenic infarct, infective endocarditis of a ventricular septal defect patch, and streptococcus sanguinis bacteremia. He later developed neurological symptoms and was found to have several cerebral aneurysms.

Streptococcus sanguinis, a member of the Viridians Streptococcus group, comprises part of the normal mouth flora. It is associated with dental caries, bacteremia and endocarditis (of which it is the most common cause).

Pyogenic vertebral osteomyelitis is an uncommon complication of endocarditis. While the relationship between the two remains uncertain, patients with gram-positive pyogenic vertebral osteomyelitis, have a high incidence of infective endocarditis, particularly when caused by viridians streptococci. Mycotic aneurysms are another rare complication of bacteremia. One other possible explanation for the patient’s findings is a separate, underlying pathogenic mechanism behind the splenic infarct and cerebral aneurysms. Hepatitis-associated polyarteritis, for example, can also cause cerebral aneurysms and present as a splenic infarct.

In this report, we begin by presenting the history and physical exam findings of the case, followed by relevant laboratory data and findings on imaging. We will also follow the course of the treatment and management of this complicated patient.
Abstract Title: Risk Factors for readmission for chronic obstructive pulmonary disease (COPD) in RWMC; A retrospective chart-based analysis

Abstract Text:
Introduction:
COPD is associated with significant morbidity and mortality and a rising monetary cost for society. The course of the disease is heavily influenced by the frequency and the severity of its exacerbations. If risk factors associated with these flares could be identified then preventive measures targeting them might decrease their recurrence. We have attempted to elucidate the most common risk factors associated to both exacerbation and early re-hospitalization.

Study design:
Patients with a primary hospitalization diagnosis of “COPD exacerbation” between July 2012 and July 2015 were included in this retrospective data analysis. Re-hospitalization of the population was tracked and classified in 3 categories: first 30 days, six months and 12 months after discharge. Patients were also ascertained for similar risk factors as those mentioned in EFRAM study and included: Three or more COPD admissions in the previous year; under-prescription of long-term oxygen therapy (LTOT) and current smoking. We have also included post discharge follow-up, social status and medication compliance.

Results:
296 patients were considered for analysis. 120(44%) of them were readmitted: 25% were re-hospitalized within 30 days of discharge, 25% within 6 months and 50% within a year. The most important risk factors identified with readmission were current smoking status. Other important risk factors associated with exacerbations leading to re-hospitalization were compliance with care including but not limited to medication and follow up appointments, and disease understanding.

Conclusion:
As the individual and societal burden associated with COPD continues to rise, the need for useful ways of decreasing these costs becomes ever more urgent. Re-hospitalization of our sample was mostly associated with modifiable risk factors. Attempting to alter their prevalence should become a priority for physicians but a barrier might exist for practical interventions to be adopted for re-admission rates are still higher than desired. We believe this study lays a groundwork for certain interventions to be embraced in an attempt to slow down COPD progression, avoid re-hospitalization and hopefully improve our patient’s quality of life and decrease disease-associated cost.

References:
1. JUDITH GARCIA-AYMERICH, EDUARD MONSÓ, RAMON M. MARRADES, JOAN ESCARRABILL, MIQUEL A. FÉLEZ, JORDI SUNYER, JOSEP M. ANTÓ, and the EFRAM Investigators. Risk Factors for Hospitalization for a Chronic Obstructive Pulmonary Disease Exacerbation EFRAM STUDY
**Abstract**

**Abstract Title:** The Acute Treatment of Severe Dehydration in a Rural Ghanaian Pediatric Population

**Abstract Text:**

Background: In Ghana, severely acute dehydration from diarrhea poses a major threat to its pediatric population. In fact, along with malaria and pneumonia, diarrhea is one of the leading causes of death of children in Ghana, following only neonatal causes. Interestingly enough, clear discrepancies exist between the proven usefulness of dehydration treatment recommended by the WHO, such as ORS, and the actual use of the treatment by healthcare providers, particularly in sub-Saharan Africa. Furthermore, treatment approaches for the underlying causes of dehydration influence the effectiveness of dehydration treatment and overall patient outcome. In areas of Ghana with limited resources, such as Apam, the treatment of severe dehydration can be difficult, resulting in more adverse health outcomes.

Objective: Analysis must be done on the quality and efficacy of dehydration treatment in more specific regional contexts. The goal of this study is to assess the quality of moderate to severe acute dehydration management in a rural Ghanaian setting.

Method: This study was a retrospective chart review of pediatric patients admitted to St. Luke’s Catholic Hospital in Apam, Ghana with the symptom of diarrhea within a four-month time period. Patient data collected included age, diagnosis, treatment, and if ORS was administered or not.

Results: The research showed that within a period of four months, 24% of patients presenting with diarrhea were not given ORS. Of the patients not given ORS, there was no standardization of treatment given between patients even when the diagnosis was the same. For example, in one instance a patient that was diagnosed with both malaria and gastroenteritis was given antimalarials as well as antibacterials. However, in another instance a patient with the same diagnosis was given only antimalarials. The diagnosis of malaria itself seems to be a complicating factor in the treatment of dehydration. When the cause of diarrhea was attributed solely to a bacterial pathogen, IV antibiotics were given. Yet when malaria was added to the diagnosis, the use of antibacterials became inconsistent.

Conclusion: This research has identified three distinct factors that affect the treatment of dehydration in Apam, Ghana. First, a lack of resources makes it difficult to properly diagnose the underlying cause of dehydration and also affects access to ORS. Second, there are no standard protocols in use for the treatment of dehydration. Lastly, insufficient documentation of the severity of patient’s diarrhea limits the practicality of research on the subject. Access to bacterial cultures and better techniques for diagnosing malaria were the most important needs identified.
Abstract Title: Unusual Case of Idiopathic Angioedema

Abstract Text:
Idiopathic angioedema is a diagnosis of exclusion with no known etiology, and therefore a difficult condition to treat. Given unknown triggers, clinicians must be cautious in their management of patients with this condition.

Case:
A 50 year-old woman with dermatillomania and idiopathic angioedema on multiple controlling medications including prednisone, Benadryl, hydroxyzine, ranitidine, and dapsone, presented to the hospital with a right index finger wound. She had been picking her finger for the past 1.5 months. She was recently discharged from the hospital one month prior to admission on antibiotics for a right index finger ulcer. After completion of antibiotics, she started picking her finger again resulting in the recurrent wound. She reported pain extending from her finger to wrist, but no fevers. She had an extensive list of allergies to medications and was a former smoker without any illicit drug use. On presentation, she was afebrile but physical exam was notable for a two centimeter ulcer with surrounding erythema over the dorsal surface of her right index finger draining pus. She also had 1+ pitting edema in her legs bilaterally. Labs were notable for a white blood cell count of 6.2 x 10^9/L and an elevated erythrocyte sedimentation rate and C-reactive protein at 29 mm/h and 47 mg/L, respectively. She was started on broad spectrum antibiotics for her ulcer. On hospital day two, she developed acute marked swelling of her bilateral lower extremities in the setting of delayed medication doses. She was started on high dose steroids for an acute angioedema flare with gradual improvement of her swelling. She was subsequently discharged home.

Discussion:
Angioedema is a self-limited, localized swelling of cutaneous and mucosal tissue seen in 15% of the general population. Possible etiologies include hereditary, acquired, allergic, drug-induced, and idiopathic. Idiopathic angioedema is defined as at least three episodes of angioedema within 6-12 months without a clear etiology. Sites most commonly affected generally include the periorbital area, lips, tongue, hands, feet, and genitals. As the name suggests, triggers for idiopathic angioedema are unknown. Our patient, with a very extensive history of angioedema, developed an acute flare with marked swelling in her legs after getting delayed doses of her medications. Therefore, clinicians must be cautious in the management of these patients to avoid disastrous outcomes. Current treatment options include antihistamines and steroids. In severe and refractory cases, treatment with dapsone, bradykinin-B2-receptor antagonist, and rituximab has been successful.
Lactic acidosis secondary to small cell carcinoma of the lung

Introduction:
Lactic acidosis is a rare metabolic complication of solid tumors including lung cancer. We report a patient with small cell carcinoma of the lung with substantial lactic acidosis.

Case presentation:
A 73-year male, with no comorbidities, presented with symptoms of acute dyspnea with out hemodynamic instability. His physical examination revealed diminished breath sounds on the left chest. Chest computed tomography scan demonstrated a left hilar mass with mediastinal lymphadenopathy. Laboratory investigation revealed high anion gap metabolic acidosis with serum bicarbonate of 13mEq/l and lactic acid of 10.4 mg/dl. Liver function tests were normal beside Aspartate aminotransferase was elevated at 116 IU/L. Complete cell count did not reveal leukocytosis, electrolytes and coagulation studies were within normal limits. On routine bronchoscopy a left upper lobe endobronchial tumor was noted with histopathology confirming the diagnosis of small cell lung carcinoma. Abdominal imaging revealed metastatic hepatic lesions, however the bone scan and brain imaging were negative for metastases.

There was no evidence of septicemia, hypoxemia, hepatic failure or diabetes mellitus. Lactic acidosis was attributed secondary to SCLC. The patient remained hemodynamically stable except for mild tachypnea.

Intravenous bicarbonate was started with transient normalization of serum bicarbonate. Combination therapy with carboplatin and etoposide was initiated to correct his metabolic abnormality although lactic acid remained elevated throughout the hospital stay. Follow-up testing four weeks after discharge included a chest radiograph, which was significant for an increase in the size of the lung mass with persistently low serum bicarbonate levels.

Given poor performance status, the patient elected to pursue palliative care instead of further chemotherapy.

Discussion:
Lactic acidosis is a rare clinical complication of malignancy, with a lower incidence in solid tumors as compared to hematological malignancies. The pathogenesis of lactic acidosis is unclear, but possible mechanisms include anaerobic metabolism, direct lactate production by the neoplastic cells, and metastatic replacement of the hepatic parenchyma. Additionally, large tumors or tightly packed bone marrow may cause a hypoxic micro environment with resultant lactic acidosis. It should be noted that neoplasm associated lactic acidosis has been reported with and without liver metastasis. In our case, liver metastases were noted although the patient had normal synthetic liver functions with out hyperbilirubinemia or obstructive hepatobiliary process. Chemotherapy has been reported in some cases to reverse metabolic abnormalities but overall prognosis remains quite poor after development of lactic acidosis. The role of sodium bicarbonate administration remains controversial.

Conclusion:
Lactic acidosis is a rare but potentially fatal complication of lung cancer. Chemotherapy has shown short term benefits in some cases.
Kim, Seungjun

Last Name: Kim  
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First Name: Seungjun  
Category: Research

PG Year: MS  
ACP #: 2210617

Residency Program or Medical School: The Warren Alpert Medical School of Brown University

Hospital Affiliation: 

Additional Authors: Bethany Gentilesco, MD

Abstract Title: Glycemic Control and Structured Interdisciplinary Bedside Rounds on a Non-Teaching Medical Service

Abstract Text:

BACKGROUND: Glycemic control is an important aspect of inpatient medical care. Both hypoglycemia and hyperglycemia have been associated with increased mortality and length-of-stay. National studies of point-of-care blood glucose (POC-BG) data suggest that hyperglycemia is common among non-critically ill patients (Cook et al. 2009; Swanson et al. 2011). Structured interdisciplinary bedside rounds (SIBRs) have been shown to improve teamwork, and as part of a comprehensive redesign of inpatient care into “accountable care units” have decreased in-hospital mortality, length-of-stay, and adverse event rates (O’Leary et al. 2011; Kara et al. 2015; Stein et al. 2015). Our objectives were to compare our hospital’s POC-BG data to published national data, study whether SIBRs would affect mean blood glucose levels, hypoglycemia or hyperglycemia rates on a non-teaching medical service, and characterize trends in blood glucose levels throughout the day.

METHODS: We conducted a retrospective chart review of non-teaching medical patients on two general medical units, on which a pilot program of SIBRs began in December 2015. Only a minority of these patients received SIBRs, so the pilot patients were compared to their peers on these two units that did not receive SIBRs. Patients with more than one POC-BG reading during their admission were included in analysis, and repeat readings for critical values were not excluded. POC-BG levels were averaged by patient-day for SIBR and overall comparison with national data, and by order in the day for temporal analysis. For temporal trends, only patient-days with exactly four readings were included, assumed to be the standard pre-meal and bedtime checks.

RESULTS: Of 415 patients included in the study, 134 (32.3%) had more than one POC-BG reading. Forty were SIBR patients, and 94 were controls, totaling 494 patient-days. Almost two-thirds (66.4%) of the patients with multiple readings had any value greater than 180mg/dL during their stay, compared to 46.4% of non-ICU patients from 126 US hospitals (Cook et al. 2009). The patient-day-weighted mean POC-BG was 171.3mg/dL, compared to 166mg/dL. More than one third (36.6%) of patient-days had a mean POC-BG value greater than 180mg/dL, compared to 26.3%. Patient-days with any hypoglycemic values less than 70mg/dL were rare (4.5% compared to 3.5%). Comparing SIBR and control patients, there were no statistically significant differences in patient-day-weighted mean blood glucose (172.3mg/dL vs. 170.8mg/dL, P=0.80), hypoglycemia (3.2% vs. 5.2%, P=0.29), or mean hyperglycemia (37.2% vs. 36.3%, P=0.83). Finally, analyzing by time of day, the first reading was significantly lower than the second, third, or fourth readings (144.5mg/dL vs. 187.5, 182.5, and 187.8mg/dL, P<0.001).

CONCLUSIONS: Preliminary data suggest that our non-teaching medical service has worse glycemic control compared to the national average. SIBRs have not significantly impacted glycemic control, and morning blood glucose are significantly lower than later readings.
Abstract Title: Title: Landau-Kleffner Syndrome: Challenges in Diagnosis and Treatment

Abstract Text:
Introduction: Landau-Kleffner syndrome (LKS) is a rare childhood neurological disorder characterized by a sudden or gradual development of receptive/expressive aphasia and an abnormal electroencephalogram (EEG). The infrequency and variety of phenotype in which LKS presents make it a diagnostic and therapeutic challenge particularly in children under 5. Case: A 3-year-old male presented to the pediatrician’s office with concern for language delay, clumsiness and temper tantrums. He was born full term via spontaneous vaginal delivery without complications and had a normal neonatal course. Verbal milestones were delayed: first word occurred at 2 years of age, he had a dozen words by 3; as were motor milestones: rolled over at 8 months, pulled to a stand by 10 months, walked by 14 months. Immunizations were up-to-date and history was without suspicion for epileptic seizures. On physical exam, he displayed inattention and difficulty understanding verbal instruction. Audiogram was equivocal. Speech, physical and occupational therapy were initiated. Suspicion for LKS was not raised. At 3.2 years he was hospitalized for a sudden period of regression with complete speech loss. Video EEG revealed bilateral central temporal discharges in 80-85% of recording. MRI of the brain was performed and was normal; leading to the diagnosis of LKS. Treatment was initiated with Valproic acid (VPA) and Clobazam. Clinical and EEG improvement were observed with spike frequency decreased to 30-40%. He was discharged on Clobazam and VPA, with return to pre-regression status at 1-month post-discharge. Within 1-2 months, he began stringing together 5-6 words with a vocabulary of approximately 200 words. At 3.5 years however, mild speech regression, behavioral problems and temper tantrums were reported, for which VPA dosing was increased. At 4 years new onset seizure activity developed. He was noted to have 10-minute episodes of myoclonic jerking and several episodes of low tone. Treatment with Levetiracetam was added and VPA tapered off. He was well controlled on this regimen for about 1 year, until sudden development of daytime seizures at age 5. A Prednisone course was started with an initial taper, then steady dose. He has now continued on chronic steroid therapy with several admissions for seizure activity treated with high dose steroid pulses. Consideration is being given to multiple subpial transection for further management. Discussion: LKS is an acquired epileptic and aphasic disorder presenting in children age 2-8 years, with peak incidence between 5 and 7 years. It is commonly characterized by remissions and exacerbations, making treatment challenging. This case illustrates the potential for delayed diagnoses of LKS in children under 5 and the challenge in proper management. Increased sensitivity to presenting symptoms, such as cognitive impairment and behavioral regression, and knowledge of treatment options is critical for identification of LKS and appropriate therapy.
Krishna, Gopika

Last Name: Krishna                       First Author: Medical Student
First Name: Gopika                       Category: Clinical Vignette
PG Year: or MS Year: MS-3                ACP #: 2210629

Residency Program or Medical School: Warren Alpert Medical School of Brown University

Hospital Affiliation:

Additional Authors: Malorie Simons, MD; Jennifer O'Brien MD

Abstract Title: A Rare Complication of a Common Medication: ACE Inhibitor Angioedema of the Intestine in a post-partum female

Abstract Text:

Background:
It is estimated that angiotensin-converting enzyme (ACE) inhibitors comprise over a third of all anti-hypertensive prescriptions. Of the recipient patients, approximately 0.68% will develop ACE inhibitor induced angioedema. Classically, ACE inhibitor angioedema presents as swelling of the face, tongue and lips that can progress to airway compromise and anaphylaxis. Another rare complication of ACE inhibitors is visceral edema, also known as ACE inhibitor angioedema of the intestine (AIAI), which causes acute, severe abdominal pain or chronic, migratory abdominal discomfort. A recent systematic review noted only 27 cases of AIAI, largely amongst middle-aged females. More than half (57%) of patients in the study underwent invasive diagnostic procedures and surgery before their diagnosis was made. We present a case of AIAI and review the literature estimating its incidence, pathophysiology, and interventions to educate the medical community on what we suspect to be an underdiagnosed complication of a very common medication.

Case Presentation:
Patient is a 34-year-old female, one month post-partum, presenting with three days of abdominal pain. Her pregnancy had been complicated by gestational diabetes and postpartum pre-eclampsia, controlled with labetalol. The day before her pain began, she misplaced her labetalol and took 40mg of her mother’s lisinopril. Within 24 hours, she developed 8/10 twisting pain in her lower abdomen with non-bloody, non-bilious vomiting, without fevers or diarrhea. These symptoms worsened for three days until she came to the Miriam Hospital ED. Vitals on presentation were T 99, BP 122/81, HR 100, and pulse oximetry 100% on room air. Physical exam was notable for left sided abdominal tenderness without rebound or guarding. There were no signs of facial or tongue swelling. Labs were grossly unremarkable. CT Abdomen/Pelvis in the ED showed ascites with thickening of mid jejunal loops and haziness in the adjacent mesentery, suspicious for angioedema.

While the patient was given 1 dose of anti-histamines and steroids in the ED, she had no evidence of anaphylaxis. Lisinopril was discontinued, and she was restarted on labetalol for her post partum preeclampsia. She was treated supportively with fluids, anti-emetics and pain control. Her pain dramatically improved during her hospital stay and repeat CT scan showed resolution of bowel wall thickening and ascites.

Discussion: This case highlights major clinical and radiographic features of AIAI. With the growing usage of ACE inhibitors, it is important that we are mindful of its complications. Although AIAI may be a rare complication of this common medication, it can present with vague symptoms that can be overlooked, leading to invasive, unnecessary procedures.
Alisha Lakhani, MD, MPH & Bernard Zimmerman, MD, FACP; Alpert Medical School of Brown University and Roger Williams Medical Center, Providence, RI

A 55 year-old male presented to the ED with generalized body aches, morning stiffness and diffuse pain, for the last one month. The patient’s worsening pain was most severe in his bilateral hips, shoulders, hands, knees and feet, limiting his ability to get out of bed for the week prior to presentation. Aleve provided minimal relief for his pain symptoms. Review of systems was negative for constitutional, cardiovascular, pulmonary or gastrointestinal symptoms. Physical exam was remarkable for inflammatory polyarticular arthritis in his hands, notable bilateral knee effusions, and no appreciable skin or nail findings. Laboratory data revealed an erythrocyte sedimentation rate (ESR) of 107, an unremarkable chemistry, complete blood count, liver function tests, and negative Lyme ELISA. His past medical history was remarkable for a remote diagnosis of psoriasis. He had a rash on his fingers only, diagnosed as psoriasis at Brown University Dermatology Grand Rounds, treated with with PUVA therapy and Clobetasol steroid cream.

A clinical diagnosis of psoriatic arthritis (PsA) was made. He was initiated on oral steroids, with a ten-day course of 20 mg of prednisone. Chest Xray was negative. At outpatient follow-up one week after ED presentation, the patient was initiated on methotrexate therapy in escalating doses to a total of 20 mg/week with supplemental folic acid, while slowly tapering prednisone down to 5 mg with the goal of complete discontinuation. By this time, the patient’s physical exam showed resolution of inflammatory polyarticular arthritis and no evidence of knee or ankle joint effusions. His pain had greatly improved, he denied morning stiffness and planned to re-initiate daily exercise. Three weeks after initial presentation his ESR had fallen to 18 and C Reactive Protein was 49.

This case illustrates the heterogeneity of PsA at presentation and that skin and joint findings occur at variable points in time. The inflammatory arthritis symptoms of PsA in the absence of skin findings and their improvement with treatment, is highlighted here. Estimates indicate 26% of patients with psoriasis will have arthritis symptoms, however the relationship between active skin and joint disease is variable. Diagnosis is made easier with the presence of skin findings, however 15% of patients will have arthritis before any skin manifestations. Recognition of this clinical syndrome and its appropriate treatment, will greatly improve patients’ quality of life.
Abstract Title: Disseminated BCG infection in a patient with FUO and failure to thrive.

Abstract Text:
Disseminated infection is a known but uncommon complication of intravesical Bacillus Calmette-Guerin (BCG) instillation for treatment of bladder cancer. Symptoms typically occur days following treatment. There are few reports of later presentations. Patients may experience fever of unknown origin. Suspicion in the appropriate clinical situation and a thorough history allow clinicians to make this diagnosis.

An 84-year old man presented with fevers, weakness and a 40lb weight loss. History was significant for stage II transitional cell bladder cancer and had undergone resection and BCG instillation 18 months prior. CT of the chest and abdomen prior to admission were both negative. Exam was unremarkable; laboratory evaluation demonstrated leukopenia, thrombocytopenia and hematuria. Routine and fungal blood cultures, HIV, quantiferon, SPEP, UPEP and MRI of the brain were all negative. He experienced progressive worsening of his symptoms and hypotension requiring fluids and levophed. Because of the remote history of BCG exposure urine was sent for AFB stain and culture. Both these and later AFB blood cultures subsequently returned positive for Mycobacterium bovis. Sputum was negative. Because of the positive AFB stain treatment for disseminated BCG infection was initiated (ethambutol, isoniazid, and rifampin). Bone marrow biopsy revealed ill-defined non-necrotizing granulomas. AFB stain was negative. Four days later he had an aspiration event followed by a progressive overall decline. Per his wishes he was made CMO and he died the next day.

BCG is a live vaccine derived from Mycobacterium bovis (part of the Mycobacterium complex group) after passage in culture to attenuate its virulence. Genetically distinct from the wild-type organism, strains maintained by different manufacturers vary in both immunogenicity and toxicity. The primary use of BCG is in regions endemic for tuberculosis to prevent the most serious consequences of infection in small children, most notably meningitis. The observation that it has a therapeutic effect in bladder cancer was originally made in 1976. The anticancer effect is likely the result of local T-cell activation and other forms of immune stimulation. Multiple complications from intravesical instillation are possible ranging from isolated fever and uncomplicated cystitis to osteomyelitis and sepsis. Serious complications are estimated at less than 5 percent. M. bovis is intrinsically resistant to pyrazinamide and this susceptibility pattern may be a clue that an isolate is M. bovis. The mainstays of treatment are isoniazid, ethambutol and rifampin.

The cause of fever of unknown origin and failure to thrive is often obscure. Evidence of disseminated disease due to both BCG and Mycobacterium tuberculosis may be subtle. Prior exposure to BCG even if distant should prompt evaluation for disseminated disease in a patient with fever of unknown origin, failure to thrive or unexplained laboratory abnormalities.
Levin, Scott

Last Name: Levin  First Name: Scott  PG Year: or MS Year: MS-4  Residency Program or Medical School: The Warren Alpert Medical School of Brown University  Hospital Affiliation:  ACP #: 2479294

Category: Clinical Vignette

Abstract Title: Ulcerative Colitis Flare Presenting as Palmoplantar Rash

Abstract Text:
Introduction: Among the many extraintestinal manifestations of inflammatory bowel disease (IBD), palmoplantar neutrophilic dermatosis is a rare cutaneous complication.

Case Description: A previously healthy 58-year-old woman presented to her primary care provider with tender, pink-red papules and plaques over the palms and soles, right scleral redness, and right ankle edema. Skin and joint findings prompted investigation of Lyme disease, but serologic studies were negative. Her ophthalmologist considered allergic conjunctivitis and prescribed steroid eyedrops which improved the scleral erythema.

Three weeks later, she presented to the emergency room of a tertiary care facility with the same constellation of physical findings. On review of systems, she also had one year of intermittent loose stools, progressively bloody over the previous six months. Screening colonoscopy five years prior had shown internal hemorrhoids, but was otherwise normal.

On admission to the hospital, she was afebrile with a benign abdominal exam. Ankle x-ray showed soft tissue swelling, but no joint effusion or bone fracture. Laboratory findings revealed an elevated leukocyte count (13,300/µL), erythrocyte sedimentation rate (56 mm/h), and C-reactive protein (29.3 mg/L). Rapid plasma reagin, HIV serology, and antinuclear antibody tests were non-reactive.

Her history of bloody stools, extraintestinal symptoms, and increased inflammatory markers were suspicious for IBD. Inpatient colonoscopy identified ulcerations in the rectosigmoid and sigmoid colon and the biopsies revealed active colitis and crypt distortion, consistent with ulcerative colitis. A palmar punch biopsy to clarify the unusual palmoplantar-distributed rash demonstrated nodular and diffuse neutrophilic infiltrate in the mid-to-upper dermis. Periodic acid–Schiff, gram, and acid-fast stains were negative for microorganisms. The dermatopathology was consistent with neutrophilic dermatosis. The patient was discharged on oral corticosteroids and the rash and bloody stools resolved within one week.

Discussion: Neutrophilic dermatoses are associated with IBD, but rarely present in a palmoplantar distribution. Recognizing the signs of IBD in patients with a tender palmoplantar rash may avoid extensive dermatologic workup and lead to earlier institution of immunosuppressive therapy.
A unique case of pulmonary hypertension in a patient with Hereditary Hemorrhagic Telangiectasia

Hereditary Hemorrhagic Telangiectasia (HHT) is an uncommon disorder affecting 1 in 5000-8000 individuals. In 1% of patients with HHT, pulmonary hypertension develops. In this case, we describe a patient with HHT who presented with pulmonary hypertension (PH) of unique etiology. A 26 y/o female presented with a six-day history of acutely worsening dyspnea on exertion and elevated resting HR with chest discomfort and epigastric pain. Her DOE had been worsening over the past two months. She has a history of asthma and HHT with associated epistaxis, pulmonary AVMs (s/p embolization in 2012) and hepatic AVMs. She endorsed OCP use and recent travel to Florida, and denied leg pain or swelling, fever, hemoptysis, or pleuritic pain. Vital signs were within normal limits. EKG demonstrated a NSR with right axis deviation, ST depressions in leads III, aVF, and diffuse T-wave inversions. CXR showed borderline cardiac size and clear lung fields. CT PE showed no evidence of pulmonary emboli, but revealed PA enlargement and an increase in cardiac size since February 2013. She was admitted for suspicion of pulmonary hypertension causing NYHA class II heart failure. TEE showed no regional wall motion abnormalities and an EF of 65-70%. The interventricular septum was flattened in both systole and diastole, consistent with increased RV pressure and volume overload. RV was moderately enlarged and global RV systolic function was moderately reduced. RA was mildly dilated. The PA was severely dilated. Right heart catheterization (RHC) showed significantly elevated mean PA pressure of 50mmHG and PVR of 550 dyn*s/cm5 (normal <240 dyn*s/cm5). Interestingly, oximetry demonstrated an oxygen saturation “step up” in the RA (74%) as compared to the SVC (56%), resulting from increased saturation at the IVC/hepatic vein junction (90%) likely due to a left-right shunt through her hepatic AVMs. Following catheterization, she tolerated a trial of tadalafil well and was discharged with a prescription of 40mg tadalafil PO daily. A repeat RHC performed several months later still showed elevated PVR of 606.5 dyn*s/cm5 and elevated CI of 4.16 L/min/m2. She has since added 10mg macitentan as combination therapy and reports improvements in function. The patient’s RHC results showing elements of both pre-capillary PH (indicated by elevated PVR) and post-capillary PH (indicated by elevated CI) is unique: typically, HHT Type I patients present with primary PAH and pulmonary AVMs, while HHT Type II patients present with liver AVMs and high cardiac output failure PH. Rarely do they present with manifestations of both types of PH as in this patient.
A 29 year old female with multiple food allergies presented to the ED with four days of cough, congestion, low-grade fevers, dysphonia and the development of stridor at rest. She denied rash, nausea, vomiting, or wheezing. In the ED, she was initially treated for anaphylaxis with intramuscular epinephrine, without clear improvement in her stridor. She remained stertorous at rest, and was admitted to the medical intensive care unit. The patient's neck x-ray showed the "steeple sign," characteristic of pediatric croup. She was evaluated by ENT and underwent fiberoptic laryngoscopy, which was notable for arytenoid and tracheal erythema and edema. The following day, viral studies returned positive for parainfluenza virus, which is the most common cause of croup in pediatric patients. The patient was treated with steroids and racemic epinephrine and gradually recovered. DISCUSSION: Croup is a common diagnosis in pediatric patients, however, adult croup syndrome is less well-known. It is characterized by acute upper airway obstruction secondary to subglottic inflammation. Infection of the subglottic laryngeal tissue produces hyperemia, and the resultant edema contributes to airway narrowing, resulting in turbulent airflow. As patients age, the airway becomes more rigid making it less susceptible to the negative pressure effects of inhalation. This makes croup less common in adult patients. There is a paucity of data available regarding adult croup in the literature. In general, pediatric croup patients are managed with corticosteroids and nebulized racemic epinephrine, and respiratory support as needed. Adult croup is managed similarly. There are important differences between adult and pediatric croup. In adult cases, more than half of patients received empiric antibiotics, without known bacterial source of infection. Antibiotics are not routinely prescribed in pediatric croup. Adult croup is associated with a higher degree of subglottic narrowing than in pediatric patients. For this reason, cases of adult croup more frequently require placement of an artificial airway until the inflammation resolves, with use of a small-bore endotracheal tube recommended. The average length of hospitalization for adult croup is longer than that of pediatric croup. In severe cases of adult croup, follow up assessment of the airway, demonstrating resolution of edema should be obtained, either via repeat laryngoscopy, or imaging. CONCLUSIONS: Croup, which is less commonly described in the adult population, should be considered in any patient who presents with a viral syndrome and stridor at rest. As in pediatric patients, management with corticosteroids and racemic epinephrine are the primary tenets of therapy. Antibiotics may not need to be started empirically. Adult cases of croup can present with devastating airway compromise, and securement of an advanced airway should be considered early in the patient’s presentation.
Lee, Raymond

Abstract Title: Chest Pain, Dyspnea and Diaphoresis in a patient with Antiphospholipid Antibody Syndrome

Abstract Text:
Introduction:
Antiphospholipid antibody syndrome (APS) is an autoimmune disorder in which the body makes antibodies that mistakenly attack phospholipids. When antibodies attack phospholipids, blood clots form in arteries and veins, predisposing patients to strokes, heart attacks, deep venous thromboses (DVTs) and pulmonary emboli. Treatment involves anticoagulation, prednisone and other immunosuppressants for flares.

Case:
39-year-old male with APS on rivaroxaban with a history of multiple DVTs, left-sided cerebrovascular accident with residual left sided weakness in 12/2013 and ventricular fibrillation arrest in the setting of a non-ST segment elevation myocardial infarction in August 2014 (no AICD placement at that time), who presented to the emergency department with substernal chest pain, shortness of breath and diaphoresis. Patient reported that around noon on the day of presentation, he was rushing upstairs when he developed crushing chest pain, shortness of breath and diaphoresis that prompted him to report to the hospital. He reports that his APS has been well controlled on rivaroxaban, with no events since August 2014. On arrival to the emergency department, EKG showed ST segment depressions in leads I, III and Avf and subtle ST segment elevations in lead V2. He was taken urgently to the cardiac catheterization lab which showed complete occlusion of his left anterior descending (LAD) artery. The LAD occlusion was thrombotic with a large intracoronary thrombus burden. While in the lab, patient had a thrombectomy and 2 drug eluting stents were placed to his proximal and mid-LAD. Following cardiac catheterization, patient was placed on an Integrilin drip, started on Plavix, Aspirin, Metoprolol and Lipitor. He was also started on high dose prednisone for APS flare. During patient’s hospitalization, he was transitioned from Plavix to Prasugrel and from Integrilin drip to Lovenox. When his blood pressure tolerated it, he was also started on Lisinopril. He was discharged home on the following medications: Lovenox, Prasugrel and Aspirin for anticoagulation, prednisone for APS flare and Metoprolol, Lisinopril and Atorvastatin for his coronary artery disease and recent myocardial infarction.

Discussion:
The case demonstrates just one of the many vascular complications that can occur in patients with APS. This unfortunate 39-year-old male has suffered from multiple cardiac complications as well as neurologic complications related to his APS. Treatment recommendations include anticoagulation in both the acute setting along with life-long anticoagulation. Often times, as seen in this patient, patients fail treatment with certain anticoagulant therapies, in which case other agents must be tried. The patient in this case had recurrent clot formation while on rivaroxaban, therefore needed to be changed to a different regimen. When flares occur, treatment involves immunosuppression with agents like prednisone. Several new treatments are being considered such as rituximab, however further studies need to be done to determine its efficacy.
Abstract Title: Infective Endocarditis with Severe Neurologic Manifestations

Abstract Text:
Infective Endocarditis with Severe Neurologic Manifestations: A Case Report
Medeiros Jr, E, D.O.
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Introduction: Infective Endocarditis (I.E.) is a devastating illness that carries an estimated in-hospital mortality rate of 18 – 23%, and a six-month mortality rate of approximately 25%. I.E. is associated with several debilitating localized and systemic complications, including heart failure due to valve dysfunction and neurologic phenomena secondary to septic emboli. Surgical candidates must be quickly recognized to prevent morbidity and mortality. This case report discusses the management of a 23-year-old male IV drug user presenting with altered mental status and neurologic deficits secondary to septic emboli from Group A Streptococcus infective endocarditis.

Case: A 23-year-old male with a history of IV drug use presented to Kent Hospital after being found down in his apartment unresponsive and surrounded by needles. In the emergency department, he was only responsive to painful stimuli and quite altered. After receiving Narcan his Glasgow Coma Score was 13/15. On admission the patient’s vital signs were: temperature 38.8°C, pulse 65, respiratory rate 21, blood pressure 126/90, and an oxygen saturation of 98% on room air. Physical exam was significant for diastolic murmur at left sternal border. Skin examination revealed small erythematous lesions on the palmar aspect of his right hand and dorsum of right medial fifth toe. Neurologic exam was limited as he was unable to follow commands. Blood cultures were drawn and CT Head was obtained, which revealed: multiple small areas of low-attenuation throughout the brain including bilateral thalami, left midbrain, left dentate nucleus and left cerebellum consistent with septic emboli. MRI and MRA confirmed these findings. The patient was started empirically on ceftriaxone and vancomycin and admitted to the ICU. Blood cultures soon resulted positive for Group A Streptococcus. On transesophageal echocardiogram the patient had a 1.7 x 0.5 cm echodensity on the aortic valve, consistent with valvular vegetation. Given embolic complications from I.E., he was transferred to a tertiary care center for cardiothoracic surgical evaluation. He underwent a St. Jude aortic valve replacement and started Coumadin for anticoagulation. Neurologically, he slowly improved post-operatively. At POD #28, he was able to ambulate with unsteady gait, and had persistent difficulty with phonation.

Discussion: Recognizing the complications of I.E., as well as how to prevent such complications are essential in improving patient outcomes. Surgical candidates include: valve regurgitation with signs and symptoms of heart failure, paravalvular extension of abscess and/or heart block, difficult to treat organisms, patients with recurrent septic emboli, and vegetation larger than 10mm. Our patient had significant neurologic deficits due to ongoing emboli, and large vegetation seen on echocardiogram. Valve replacement was indicated and hopefully prevented more significant long term neurologic damage.
Abstract Title: Transcranial Motor-Evoked Potentials for Prediction of Postoperative Neurologic Deficit Following Surgery for Scoliosis

Abstract Text:
Summary: Intraoperative transcranial motor-evoked potentials (TcMEPs) may be used to predict and prevent postoperative lower extremity weakness in patients receiving surgical correction of thoracolumbar scoliosis. Analysis of collective data from tibialis anterior, peroneus longus and adductor hallucis yielded the most accurate predictions when compared with other combinations of lower extremity muscles. Peroneus longus and tibialis anterior was the second most effective muscle combination.

Hypothesis: The monitoring of different lower extremity muscles will have different levels of success in predicting postoperative weakness.

Design: Retrospective review

Introduction: TcMEPs have become an effective tool for monitoring the descending motor pathway during scoliosis surgery. By comparing potentials measured before and after correction, data can be provided to the surgeon that may inform maneuvers to prevent postoperative functional loss in distal muscles. There is currently no consensus as to which muscles should be monitored for scoliosis surgeries. By comparing the efficiency of different muscle combinations, the least invasive monitoring protocol that will yield the best predictive insight may be determined.

Summary: Intraoperative transcranial motor-evoked potentials (TcMEPs) may be used to predict and prevent postoperative lower extremity weakness in patients receiving surgical correction of thoracolumbar scoliosis. Analysis of collective data from tibialis anterior, peroneus longus and adductor hallucis yielded the most accurate predictions when compared with other combinations of lower extremity muscles. Peroneus longus and tibialis anterior was the second most effective muscle combination.

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Methods:
A retrospective review of 118 patients who had TcMEP monitoring during surgical correction of thoracolumbar scoliosis at Hospital for Special Surgery between January 2008 and May 2015 was conducted. 20 of these patients had a postoperative neurologic consult due to new onset lower extremity weakness- representing the cohort who had both TcMEP monitoring and postoperative neurologic consult. The remaining 98 patients were a control group consisting of a consecutive cohort who did not receive a postoperative neurologic consult. TcMEPs were recorded from vastus lateralis (VL), tibialis anterior (TA), peroneus longus (PL), adductor hallucis (AH) and abductor pollicis brevis (APB) bilaterally. A TcMEP loss was defined as an intraoperative loss of a potential that did not resolve by the completion of surgery. The effectiveness of each muscle combination was evaluated independently and then compared to other combinations using Akaike Information Criterion (AIC)—with lower values suggestive of a better quality statistical model.

Results:
Monitoring of VL, TA, PL, AH and APB yielded a sensitivity of 85.00% and specificity of 90.82% (AIC = 63.98). Monitoring of VL, TA, PL and AH yielded a sensitivity of 85.00% and specificity of 90.82% (AIC = 63.98). Monitoring of VL, TA and PL yielded a sensitivity of 80.00% and specificity of 91.84% (AIC = 67.84). TA, PL and AH yielded a sensitivity of 85.00% and specificity of 92.86% (AIC = 59.55). Monitoring of TA and PL yielded a sensitivity of 80.00% and specificity of 94.90% (AIC = 60.39).

Conclusion:
Intraoperative monitoring of TcMEPs of the TA, PL, and AH provided the highest sensitivity and specificity and best predictive power for postoperative lower extremity weakness following thoracolumbar deformity surgery.
Abstract Title: Psychosis associated with bilateral basal ganglia multiple lacunar infarcts

Abstract Text:
Introduction: Although depression, anxiety, and emotional instability are some of the most common post-stroke psychiatric features, studies have shown that abnormalities in the thalamic circuits may play an integral role as well. Damage to the basal ganglia can result in frontal lobe syndrome characterized by disinhibition and impulsiveness due to the lack of cortical executive function.

Case: A 59-year-old male with a history of CHF, DM2, HTN, and psychogenic polydipsia presented to the emergency department with psychosis and hyponatremia. He had a psychiatric hospitalization ten months prior for similar symptoms and was diagnosed with schizoaffective disorder. He was discharged on divalproex sodium, lurasidone, perphenazine and chlorpromazine. On presentation to the emergency department, he was experiencing auditory and visual hallucinations with homicidal ideation. He was medically cleared by general medical service and transferred to the psychiatric service due to continued aggressive behavior and increased disorganized thinking. Review of previous head CT two years prior demonstrated bilateral multiple basal ganglia lacunar infarcts. His hyponatremia continued with serum sodium values ranging between 122-128 mmol/L. He was initiated on oral sodium chloride replacement and placed on fluid restrictions. Despite being on fluid restriction he would drink from the toilet due to symptoms of polydipsia and xerostomia. To manage his aggressive behavior and delusions he was given a one-time dose of chlorpromazine and lorazepam. Following multiple medication adjustments, he was stabilized on clonazepam, perphenazine and thiothixene and showed gradual improvement with this new regimen. After a three-week hospitalization he was calm and cooperative, his speech and thought process were linear and goal directed. He denied hallucinations and suicidal/homicidal ideation.

Discussion: Lacunar infarcts are responsible for about 20% of all strokes and are particularly common in patients with hypertension and diabetes. Although psychosis is a rare psychiatric post-stroke presentation, it is an important debilitating condition to consider. Psychosis often correlates with infarcts in the basal ganglia and thalamus. Post-stroke psychosis stems from attention and information processing deficits from thalamic dysfunction, similar to pathophysiologic processes seen in schizophrenia. In the presence of severe recurrent hyponatremia, psychotic symptoms are further exacerbated and can lead to coma and death. This patient's hyponatremia was the result of his psychogenic polydipsia, exacerbated by the anticholinergic effects of his previous antipsychotic medications of which chlorpromazine and perphenazine were the main culprits. Both drugs are phenothiazine derivatives with antimuscuninic properties and as such can cause symptoms of xerostomia. The additive effect of his medical comorbidities including his previous lacunar infarcts, hypertension, diabetes, psychogenic polydipsia and hyponatremia likely had an additive effect contributing to his psychosis. Currently there are no studies in the published literature linking hyponatremia and basal ganglia lacunar infarcts to schizoaffective disorder. Further research may need to be explored.
Abstract Title: The Paradox of TNF-alpha Inhibitors: Treatment and Induction of Psoriasis

Abstract Text:
Introduction:
Anti-tumor necrosis factor (TNF)-alpha agents offer effective treatment options for patients suffering from autoimmune diseases. Their success has led to increased use, allowing clinicians to observe some unusual side effects. Case Presentation: A 61-year-old male presented to rheumatology clinic for follow up of rheumatoid arthritis. Despite initial treatment failure with methotrexate, the patient’s articular symptoms had been well controlled on adalimumab, a TNF-alpha inhibitor, for several years. Three months prior the patient was found to have a new purpuric rash on his lower extremities, without scaling or pruritis. Follow up examination on this day revealed psoriasiform dermatitis with erythematous plaques, scaling, and associated pruritis. The patient denied any family or personal history of psoriasis. This raised the question of anti-TNF-alpha induced psoriasis. He was referred to dermatology for skin biopsy and is in the process of being transitioned to a new biologic agent for management of his rheumatoid arthritis, certolizumab. Discussion: The lack of complete knowledge surrounding the mechanism of action of TNF-alpha has led to some unusual side effects, such as the paradox of psoriasis. There is growing evidence over the past decade to suggest that TNF-alpha inhibitors have the ability to both induce and treat psoriasis. The exact etiology of this phenomenon is not well understood but it believed to involve plasmacytoid dendritic cells (PDC) and interferon-alpha (INF-a). Recent studies have shown that PDC maturation and INF-a production are suppressed by TNF-alpha. Thus, inhibition of TNF-alpha may lead to abnormal production or maturation of INF-a and PDCs, respectively. Clinical evidence to support these associations found increased levels of INF-a in psoriatic skin lesions, and aggravation of psoriatic lesions has been demonstrated after injection of INF-a. However, other factors are likely involved as the type of psoriasis induced by anti-TNF-alpha medications varies from ordinary psoriasis. One report identified palmoplantar pustulosis as the most common form induced by TNF-alpha inhibitors, without an explanation for the discrepancy. Management of anti-TNF-alpha induced psoriasis is also poorly understood. Some clinicians have found success with the introduction of topical creams and continued anti-TNF-alpha treatment, while others have opted to stop the offending agent and switch to a different TNF-alpha inhibitor. Conclusion: Despite their effectiveness in suppressing autoimmune diseases, anti-TNFalpha medications are associated with an unusual paradox of both treating and inducing psoriasis. Further studies are needed to identify individuals at risk, investigate the basis of varying sub-types, and assess appropriate treatment options.
Morales, Alexander

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Abstract Title: An unexpected cause of dysphagia and hoarseness

Abstract Text:
Introduction: Chondrosarcomas of the larynx are rare cancers, comprising only 0.07-0.2 percent of all cartilage cancers. These neoplasms are typically discovered incidentally, however can pose a significant threat to surrounding structures secondary to mass effect. Given the risk of airway compromise, vocal cord dysfunction, and neurovascular effect, Chondrosarcomas must remain a part of the differential for any thyroid mass. A 92 year old man with a remote surgical history of partial thyroidectomy in the 1970’s presented with acute dysphagia. This was accompanied by globus, and regurgitation following any attempt to swallow. On exam, the patient was noted to have rightward deviation of the trachea, with a firm, non-mobile mass, anterior to the left Sternocleidomastoid, as well as hoarse dysphonia. Urgent esophagogastroduodenoscopy was performed, revealing mild to moderate upper esophageal stenosis, without an intraluminal lesion explaining his severe dysphagia. CT of the neck revealed an 8.8 x 5.0cm left thyroid mass, cystic with calcifications, displacing the airway. A previous CT from two years prior to presentation was notable for a 5.3x3.2 cm mass. Endocrinology was consulted, as the rapid growth of this mass was suggestive of a malignant process. A simultaneous fine needle aspiration and core needle biopsy of the mass were performed. Surprisingly, cytological examination revealed atypical chondroid tissue. There were no cells consistent with thyroid tissue seen. A left thyroid lobectomy was pursued, and a large, 10 x 6 cm centrally calcified mass was noted to be arising from the left thyroid lobe, with firm adherence to the trachea and larynx, and was successfully excised. Pathologic evaluation revealed a Chondrosarcoma Myxoid type, stage 2 of 3, adjacent to the thyroid parenchyma, with positive margins. In the postsurgical period, the patient developed left vocal cord paralysis, as well as significant right vocal cord paresis. Tracheostomy and gastrostomy tubes were placed. Speech therapy and periodic follow up with neck imaging was planned.
Discussion: Chondrosarcomas of the larynx can pose a challenging diagnosis, with the majority discovered only incidentally given their rarity. Most frequently located at the level of the cricoid cartilage, these neoplasms are characterized by a relatively benign course, with slow growth and low tendency toward metastatic spread. As displayed in this case, these neoplasms tend to be adherent to neighboring tissues, causing symptoms secondary to compression of surrounding structures. Common symptoms include hoarseness, dyspnea, and dysphagia, making excision of larger masses a tenuous endeavor. Interestingly, coarse calcifications on MRI or CT imaging, as seen in this patient, are pathognomonic of chondromatous neoplasms. Gold standard for diagnosis, as with most neoplasms, is post-surgical histology. Surgical resection is the treatment of choice. Radiotherapy is still controversial, with no role for chemotherapy currently appreciated.
Introduction:
Ovarian hyperstimulation syndrome (OHSS) is an iatrogenic, potentially life threatening side effect of assisted reproductive technology (ART) resulting in loss of fluid into the third space from increased vascular permeability. The incidence of OHSS was 153.2/100,000 cycles of ART from 2000-2011, however incidence will only increase with advancing maternal age in the population. We present a patient with severe OHSS and ovarian cyst rupture leading to hypotension and shock requiring management in the intensive care unit.

Case: A 34 year old G1P1 female was undergoing egg retrieval for in vitro fertilization with controlled ovarian hyperstimulation the morning of admission. hCG was administered to induce ovulation, 19 eggs were successfully retrieved. At 8:00pm she presented to the Emergency Department with worsening upper abdominal and rib pain preventing deep inspiration. On evaluation she was found to be hypotensive with blood pressure of 90/40 and was in sinus tachycardia with heart rate to 110 beats per minute. Physical exam revealed an ill appearing female with diffuse abdominal pain. Due to her presentation of abdominal pain and SIRS criteria CT of the abdomen and pelvis was performed which revealed abundant ascites and bilateral pleural effusions as well as enlarged polycystic ovaries with a probable ruptured cyst. Subsequent laboratory studies revealed a white blood cell count of 16,900, hemoglobin of 10.5 and hematocrit of 32. The constellation of lab values and imaging was consistent with a diagnosis of a severe case of OHSS. The patient was transferred to the intensive care unit. Obstetrics was consulted who diagnosed the patient with OHSS. In the first 24 hours of her stay her hemoglobin dropped to 8.9 despite receiving two units of PRBCs she also received aggressive intravenous fluid hydration to maintain her blood pressure. Fortunately the patient responded well to fluid resuscitation and was discharged home after three days.

Discussion: The pathogenesis of OHSS is not fully understood, but increased beta hCG is a known initiating factor. hCG induces the corpus luteum to release vascular endothelial growth factor and angiotensin II leading significant vascular permeability. This results in third spacing of fluid leading to ascites, causing shock and end organ damage. Pleural effusions may also develop causing respiratory distress. Patients are hypercoaguable both from increased estrogen from their stimulated ovaries and from hemoconcentration. Clinicians should be aware of OHSS in patients undergoing IVF so they can intervene early to prevent mortality in severe cases.
A 78 year old woman with a past medical history of metastatic renal cell carcinoma presented to the emergency room after a fall at home. She recently began therapy with pazopanib, a tyrosine kinase inhibitor for progressive metastatic disease. She initiated dose reduced pazopanib 400 mg daily 16 days prior to her presentation to the ED. One week prior to admission, she was told to discontinue her omeprazole for concern of interaction with the pazopanib. Over the next week, her family noticed increased lethargy, intermittent confusion, and gait instability and ultimately, she sustained a fall prompting her presentation to the ED. The patient’s initial evaluation revealed an elevated blood pressure, 161/101, but otherwise normal vital signs and a non-focal neurological exam. Her lab work showed an elevated creatinine above her baseline of 4.2 (GFR 10.9), normal complete blood count, normal electrolytes, and a negative troponin. CT of the brain and spine and chest x-ray were all unremarkable.

On the night of admission, the patient had a ten minute episode of unresponsiveness with lip smacking and lack of spontaneous movement. Lab work revealed an anion gap metabolic acidosis and a repeat CT of her head showed no acute bleed. Over the course of the night, her blood pressures fluctuated wildly from 140s to 210s systolic and 70s to 120s diastolic. She had another episode of possible seizure activity that lasted 6 minutes. An electroencephalogram revealed no ongoing epileptiform activity. She underwent an MRI of the brain that showed patchy abnormal FLAIR hyperintensity, which confirmed the diagnosis of reversible posterior leukoencephalopathy syndrome (RPLS).

The patient was transferred to the intensive care unit and intensive blood pressure control was initiated. Over the course of seven days, her mental status improved and she returned back to her baseline.

Discussion
The patient’s fluctuating blood pressures and seizures were consistent with RPLS, which is a rare side effect of pazopanib and is described in case reports. As the use of tyrosine kinase inhibitors increase, it will be important to have a high suspicion for RPLS in patients presenting with seizures and hypertension. Our case raises the possibility of increased caution with pazopanib in patients with renal insufficiency. Though there is evidence that elevated blood pressures and renal insufficiency are involved in the pathogenesis of RPLS, there are currently no recommendations for dose adjustment of pazopanib to correct for renal function. Our case also highlights the possibility of RPLS even with dose reduced pazopanib.
Abstract Title: Varicella-Zoster Myelitis in an Immunocompromised Patient

Abstract Text:
Myelitis is a rare complication of disseminated varicella-zoster. We present an 81 year-old man with a history of periampullary carcinoma with metastases to lung, liver and T10 vertebra, treated by Whipple procedure, who completed chemotherapy 10 days prior to presentation. Three days before presentation, his oncologist prescribed oral valacyclovir for new-onset, painful, vesicular, coccygeal rash. The patient was hospitalized for rash progression, worsening pain, fevers and rigors. On presentation he endorsed new-onset urinary retention, mid-back numbness and bilateral lower extremity weakness. He was admitted to the oncology service for further evaluation. His vitals on admission were blood pressure 122/78, heart rate 106, temperature 98.4 F. On exam, the patient had bilateral hip flexor weakness, normal rectal tone and erythematous macules with crusting across several dermatomes. Labs showed mild hypocalcemia, stable anemia and mild thrombocytopenia without leukocytosis. Magnetic resonance imaging (MRI) of thoracic and lumbar spine showed a new T2 hyperintensity of the central cord from vertebrae T4-T11 and known osseous metastatic bony disease from vertebrae T7-T11. He was started on intravenous acyclovir for presumed disseminated zoster. The differential diagnosis for his lower extremity weakness and urinary retention included carcinomatous radiculomyelopathy, zoster myelitis and radiation-related cord damage. To differentiate between these possible etiologies, a lumbar puncture was performed. Cerebral spinal fluid analysis revealed elevated protein, normal glucose, 250 nucleated cells with 77% lymphocytes and 20% monocytes, positive varicella-zoster virus polymerase chain reaction, and negative varicella-zoster virus IgM. Despite negative titers, diagnosis of zoster myelitis was presumed. After four days of intravenous acyclovir, the patient’s urinary symptoms and lower extremity strength improved. However, at that time the patient expressed interest in discharge with palliative goals. He was enrolled in hospice and died shortly thereafter.

Myelitis is a rare complication of varicella-zoster infection. Clinical findings can be variable and include skin lesions, focal weakness, sensory loss and urinary symptoms. It can be diagnosed by detection of the virus using polymerase chain reaction or antibodies in the cerebral spinal fluid. MRI can show signal hyperintensity in the cord on T2 weighted imaging, as demonstrated in this case. There is no specific treatment for varicella-zoster myelitis, but there are published cases that report success with steroids and antiviral agents such as valacyclovir. The prognosis is also variable. One review demonstrated that despite good outcomes in immunocompetent hosts, more than three-quarters of immunosuppressed patients died from the disease. In conclusion, varicella-zoster myelitis is a serious—but potentially treatable—condition that should be considered in patients with disseminated zoster and neurologic deficits that localize to the spinal cord.
Abstract Title: Post-irradiation Carotid Blowout Syndrome Presenting as Atypical Facial Neuralgia in a Patient with Esophageal Cancer

Abstract Text:
Introduction: Carotid blowout syndrome (CBS) or rupture of the carotid artery, is a rare complication associated with head and neck cancer radiation therapy. Incidence is 2.6-4.6% and mortality rate is 60%. CBS may present as neck swelling, acute hemorrhage or cervical pain. Its atypical presentation leads to delayed diagnosis. Neck angiography or CT angiography with contrast confirms diagnosis. Treatment options are limited to endovascular surgery, permanent balloon occlusion or graft stenting and often are non viable at the time of diagnosis. We report a case of CBS presenting as facial pain mimicking trigeminal neuralgia in a patient who received radiation for esophageal cancer.

Case Report: A 46 year old male with invasive squamous cell esophageal cancer received neoadjuvant carboplatin and paclitaxel followed by radiation and esophageal resection. Three months post-resection, he was diagnosed with tumor recurrence and received more radiation and chemotherapy. Treatment was complicated by an anastomotic leak managed with surveillance. A month later, he reported new unilateral pain and tingling over the right ear, scalp, cheek, chin and forehead. Neurologic exam and brain MRI were unremarkable. His neuropathic pain persisted despite trials of lyrica, gabapentin, carbamazepine and narcotics. Pain was intense, sharp, worsening with jaw movement and light touch, radiating to the right occipital and orbital area and later evolving to photophobia and nasal congestion. Symptoms intensified requiring hospitalization. Repeat neurologic evaluations and brain MRI were unremarkable. He was diagnosed with atypical neuralgia and optimized on narcotics, benzodiazepines and carbamazepine. He became febrile and was started on broad-spectrum antibiotics. CT of the head and neck with contrast showed a right common carotid pseudoaneurysm at the cervical-thoracic junction and an esophageal perforation with abscess formation at the anastomotic site later confirmed on barium swallow. Vascular surgery was consulted for impending CBS but treatment options were limited because of history of re-irradiation and anastomotic leak. He died before further intervention.

Discussion: CBS is a concerning complication of radiation for head, neck and esophageal cancer with a high mortality. It is classified as impending, threatened or acute depending on severity. Diagnosis is often challenging. The long length of the carotid artery, its branches and the multiple structures in the head and neck contribute to the various clinical presentations. Risk factors are radical neck dissection and irradiation. CBS appears as a pseudoaneurysm with or without blood extravasation on CT or angiography resulting from direct radiation damage, inflammation or necrosis of the carotid wall. Radiation damage, tumor recurrence and localized infections complicate treatment. Stent placement or permanent balloon occlusion are preferred since endovascular surgical repair is difficult.

Post head and neck radiation therapy patients with atypical facial, neck or shoulder complaints should be investigated for possible CBS.
Occhiogrosso, Rachel

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**Category:** Research

**PG Year:** or **MS Year:** MS-2  
**ACP #:** pending

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**Abstract Title:** Prognostic Factors for Recurrence and Survival for Early Stage Ovarian Cancer Patients at Women and Infants’ Hospital

**Abstract Text:**

Introduction: Fewer than 30% of new diagnoses for ovarian cancer are "early stage"--stages I and II. Standard of care for early stage ovarian cancers (EOCs) is oophorectomy with complete surgical staging (bilateral lymphadenectomy, peritoneal/pelvic washings, and omental sampling), but recent research has revealed variable adherence to these standards, with <50% of women in one study receiving the indicated lymphadenectomy. Inadequate staging has significant treatment implications because Gynecology Oncology Group (GOG) studies have demonstrated a survival benefit with chemotherapy for high-risk EOCs (stage IC, stage II, and grade III cancers) but not for lower-risk EOCs.

Methods: This study sought to identify prognostic factors for survival and recurrence for EOCs. It included all early-stage ovarian cancer patients diagnosed and treated at Women and Infants’ from 1995-2009. 608 cases were identified and 369 cases were included. All available records were reviewed and coded for patient characteristics, surgical and staging information, and outcome and recurrence. Data was analyzed with STATA and an IRB was obtained for this project.

Results: Differences in stage, grade, histologic subtype, and adequacy of staging were significantly associated with recurrence-free survival (p=0.004, p=0.02, p=0.0007, p=0.03). Notably, chemotherapy administration did not approach significance, whereas more complete staging was significantly associated with longer recurrence-free survival (p=0.03). Age was significantly associated with adequacy of staging (p=0.02). The oldest group was least likely to have complete staging whereas the youngest cohort was both most likely to have complete staging and least likely to have no staging.

Stage, histologic subtype, adequacy of staging, and age of diagnosis are all significantly associated with overall survival (p=0.01, p=0.0004, p=0.04, p<0.0001). Those with partial staging had the lowest overall survival, with survival differences between partial and complete staging also significant (p=0.01). Neither administration of chemotherapy nor grade reached statistical significance for predicting survival. Patient age along with tumor stage, grade, and histologic subtype were each predictors of chemotherapy administration (p=0.004, p<0.0001, p<0.0001, p<0.0001). Those with tumors of higher stages and grades along with those with mucinous tumors were significantly more likely to receive chemotherapy.

Conclusions: This study identified prognostic factors significantly associated with recurrence-free and overall survival in early stage ovarian cancers. Additionally, this study found that younger patients were more likely to be completely surgically staged; this is relevant because adequacy of staging was found to be a prognostic factor for both recurrence-free and overall survival. Some tumor and patient characteristics were found to be predictive of treatment with chemotherapy, but this study did not find a significant association of chemotherapy with survival. This study suggested the importance of adequacy of surgical staging and revealed that older women were significantly less likely to receive complete surgical staging, the standard of care in early stage ovarian cancers.
Abstract Title: AIDS-defining malignancy in a patient with well-controlled HIV infection

Abstract Text:
Introduction

Patients with HIV have significantly increased risk of malignancy compared to the general population, even with appropriate anti-retroviral therapy (ART). While HIV-related cancer incidence is higher with low CD4+ counts and elevated HIV viral loads, improvements in these parameters do not eliminate this risk. Of the malignancies seen in this context, a certain few – Kaposi sarcoma, invasive cervical carcinoma, aggressive non-Hodgkin’s lymphoma – have been associated historically with more prolific HIV infection and are considered AIDS-defining, regardless of other disease markers.

Case Description

A 67-year-old man with longstanding HIV on ART and chronic kidney disease presented to the emergency room with worsening fatigue and lower back pain over the past 5 weeks. He described having intermittent fevers, chills, and drenching night sweats over this period, and had lost more than 20 pounds according to his spouse.

He was noted on exam to have a large, poorly demarcated mass overlying his right hip posteriorly, as well as evidence of oral candidiasis. No appreciable neurologic deficits or lymphadenopathy were present, nor were there other signs of infection. Labs showed elevated serum calcium to 12.4 mg/dL with renal function at baseline and a mild chronic anemia. CD4+ count was 745, stable from previous levels, and HIV viral load was undetectable.

The patient was started on oral fluconazole for thrush and received aggressive intravenous hydration for his hypercalcemia, which normalized after 48 hours and remained stable. Work-up for the underlying cause included a CT abdomen/pelvis with IV contrast, which showed a large peripherally-enhancing and centrally-necrotic gluteal soft tissue mass with surrounding lymphadenopathy. Image-guided biopsy was performed the following day, with final pathology consistent with diffuse large B-cell lymphoma.

No changes were made to his anti-retroviral regimen, upon admission or at time of discharge. Hematology was consulted early on and arranged for close interval follow-up. Further studies including outpatient PET/CT performed shortly after hospital discharge classified the patient’s lymphoma as stage IV, and he was electively re-admitted the following week to begin inpatient chemotherapy.

Discussion

We report a case of AIDS-defining non-Hodgkin’s lymphoma in a patient whose HIV treatment and serologic markers were otherwise reflective of well-controlled infection. It is important to note that although immune surveillance is much-improved in HIV-infected patients once started on ART, their risk for both malignancy and opportunistic infection remain substantially greater than that of the general population, as this case illustrates. With ongoing advances in anti-retroviral treatment and concurrent improvements in the life expectancy for patients with HIV, the incidence of HIV-related cancers will continue to rise. Maintaining an appropriate degree of suspicion for these conditions remains as important as ever.
Abstract Title: Salmonella Bacteremia

Abstract Text:
Introduction: Per the CDC, more than 350 million episodes of diarrhea occur annually in the United States and approximately 48 million are due to foodborne illnesses. The most common bacterial etiology is Salmonella, which is responsible for two to four million cases of gastroenteritis per year. However, it is estimated that only one percent of these enteric infections with nontyphoidal Salmonella result in bacteremia. Typically patients present with predisposing conditions that make them more susceptible to bacteremia after an episode of gastroenteritis, but we present a case of an immunocompetent patient.

Case: A 61-year-old female with recent travel to Hawaii presents to our emergency department with abdominal cramping, nausea, vomiting, and non-bloody diarrhea. During her stay in Hawaii, there was an outbreak of Dengue within a two mile radius. Due to her concerns of Dengue, she had blood work done two days prior and returned to the emergency room after one out of two blood cultures were found positive for gram negative rods. During this time she reported a fever for two days with a maximum temperature of 103.6°F with diarrhea every half hour. Her past medical history included hypertension and diverticulosis. Vital signs on admission were temperature 98.6°F, heart rate 86 and regular, respiratory rate 20, blood pressure 109/61 mmHg, and oxygen saturation 97% on room air. Physical exam revealed hyperactive bowel sounds and abdominal tenderness in the lower right and left quadrants. There was no guarding or rigidity noted. Laboratory studies were significant for neutrophilia 84.1%, elevated sedimentation rate 42 mm/hr, and procalcitonin 0.50 ng/mL. CT scan revealed diffuse circumferential colonic wall thickening with significant pericolonic inflammatory fat stranding. Our differential diagnosis included Dengue fever, ischemic colitis, pseudomembranous colitis, and bacterial gastroenteritis. Patient was admitted to the hospital due to her persistent diarrhea and while blood culture sensitives were pending, Zosyn and metronidazole therapy were initiated. The final identification of blood culture and stool culture resulted salmonella species, serotype Birkenhead, and the sensitivities demonstrated susceptibility to ciprofloxacin. Patient improved clinically by hospital day four, and was discharged on ciprofloxacin.

Discussion: Our patient presented with positive blood and stool culture for gram negative rods three days after recent travel to Hawaii. With only 1% of all gastroenteritis cases proceeding to bacteremia, it leads us to question which population group is susceptible and what risk factors leave patients prone to intravascular dissemination after an enteric infection. These factors include the salmonella serotype, geographic location, and more importantly host factors, such as age, or immunosuppressive conditions, or any alterations in the GI tract, such as recent antibiotic use. Though our patient did not have any of the typical predisposing risk factors, early identification and treatment is imperative to prevent further complications.
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Abstract Title: Endovascular repair of a 16.7cm abdominal aortic aneurysm

Abstract Text:
Abdominal aortic aneurysms (AAA) occur at an increased prevalence in white male smokers over the age of 60. Rupture is often devastating and associated with high mortality rates. Common symptoms that portend impending rupture include abdominal, back or flank pain, limb ischemia as a result of thromboembolism and a pulsating abdominal mass. Our patient presented, unaware of his condition, with a ruptured 16.7cm x 12.4cm AAA. Given that he was hemodynamically stable and the anatomy was favorable, an endovascular repair was chosen.

Case: A 56-year-old gentleman with an extensive smoking history who did not receive routine medical care presented to our hospital with one-week of worsening low back pain radiating down his left leg. He has had back pain for the last six months that is aggravated by walking and weight-bearing activity, but relieved with rest. In addition, he had associated abdominal bloating as well as discoloration and pallor of his toes. He denied chest pain, shortness of breath, bowel or bladder dysfunction, fever, chills, abdominal pain, vomiting or diarrhea. His vital signs on admission were temperature 37.4°C, heart rate 115 and regular, respiratory rate 18 breaths per minute, blood pressure 107/67mmHg and oxygen saturation 98% on room air. Physical exam findings included: positive straight leg raise at 15° and a severely distended pulsating abdomen. Of note, distal pulses were intact and extremities exhibited good capillary refill. A CT angiogram of the abdomen was performed and demonstrated: “Very large infrarenal AAA (16.7cm x 12.4 cm) with mural thrombus. Evidence for localized leakage/bleeding at the right superior margin of the aneurysm adjacent to the pancreatic head and gallbladder.” Surgery and interventional radiology were consulted and the patient was taken immediately to the operating room for an endovascular aneurysm repair (EVAR). An outpatient CT performed 6.5 weeks after graft placement showed a Type 1 endoleak, which was successfully repaired and the patient is doing well.

Discussion: The annual risk of rupture for an abdominal aortic aneurysm >8 cm approaches 50%; it is very rare for someone to present with a 16.7 cm aneurysm. The traditional approach to repair of an AAA involves open repair, which can incur a mortality rate of 4%. EVAR is an acceptable alternative as it is minimally invasive and is associated with reduced hospital mortality, shorter hospital stay and lower 30-day mortality. The most common complication of EVAR is a leak in the graft. EVAR was chosen in this case by clinical judgment due to favorable anatomy and the danger of imminent rupture if an open repair was attempted. This case is a rare presentation of an aneurysm reaching 16cm before rupturing; that also demonstrates that EVAR is now an accepted option for repair of a ruptured AAA.
Abstract Title: Quality Improvement for Amelioration of the Relevant Use of Cardiac Telemetry Monitoring in a Community-Based Teaching Hospital

Abstract Text:
Introduction: In recent years, overuse of cardiac telemetry monitoring has led to increased costs without significantly improving patient outcome. Few studies have shown that implementation of the appropriate use of non-ICU cardiac telemetry through the integration of American Heart Association (AHA) recommendations into the ordering system resulted in significant reduction in telemetry use without an adverse effect on patient safety or outcome. Not only was this calculated to have reduced cost of care, but was also found to reduce alarm fatigue and provider workflow interruption. AHA recommendations divided the indications into three classes: Class I: indicated in most, Class II: may be of benefit, or Class III: not indicated).

Methods: We conducted a Quality Improvement (QI) project over a period of two weeks at a community-based teaching hospital. Before the intervention, we collected the baseline data for one week including: number of patients placed on telemetry per day, number of alarm events on telemetry (excluding false alarms), documentation of these events, and intervention for these events. The timing for checking the monitors was set to be at noon time excluding patients who were admitted on the same day. We also investigated the awareness of appropriate use of telemetry monitoring among residents and nurses. Intervention to improve this included display of the AHA recommendations in posters, multiple teaching sessions held at noon conference, morning reports and daily reminders by electric pagers. During the intervention period, the same data set was collected over one week with the same inclusion and exclusion criteria. Patients were categorized according to the AHA guidelines in three categories. We then analyzed the data using unpaired T-test, Fisher's exact test, and descriptive analysis.

Results: 98 cases were reviewed prior to the intervention and 100 cases were reviewed during the intervention. The pre-intervention AHA classes I, II, III distribution were 24, 35, 39 cases respectively while during the intervention the distribution was 48, 33, 20 cases respectively. At the pre-intervention phase, only 33 cases had documented readings, from a total of 98 cases on telemetry. While during the intervention, 71 cases had a documented reading from a total of 100 cases who were on telemetry (p <0.0001). The number of patients with class III indication during intervention dropped to 20 (2.5±0.93 per day) from 39(4.87±2.99 per day) (p= 0.0011) pre-intervention. Average cost reduction per-day was calculated to be ($3,887 ±3,500).

Conclusion: This multi-modal QI project achieved an improvement in the quality of telemetry monitoring in non-ICU units with modest intervention. It reduced the misuse of cardiac telemetry by 22% with significant cost reduction. Patient safety improved through increased awareness of the house staff of the AHA recommendations and raised the level of documentations associated with cardiac telemetry.
Abstract Title: Post-ERCP Necrotic Pancreatitis in a 68 Year Old Man

Abstract Text:
A 68-year-old man with a past medical history of hypertension and hyperlipidemia presented to his PCP for acute abdominal pain. He later developed tea-colored urine, greasy dark stools, pruritus, and jaundice associated with an 8-lb weight loss. Laboratory studies showed a total bilirubin of 6 mg/dl and an elevated alkaline phosphatase. An outpatient ERCP was notable for esophageal and biliary strictures and an area suspicious for stricture adjacent to the porta hepatis. Sphincterotomy, stenting, and brushings were performed revealing no atypia or malignancy and benign ductal epithelial cells.

The patient presented to the hospital 4 days post-ERCP for increasing abdominal pain, dark urine, nausea, and decreased oral intake. Vital signs were stable aside from sinus tachycardia. Laboratory studies were notable for mild transaminitis, elevated lipase, leukocytosis, and anemia. CT scan showed acute pancreatitis. He developed melena secondary to prepyloric and duodenal ulcers, but was stabilized and discharged. Shortly thereafter, he was readmitted with melena and anemia. Repeat EGD showed a duodenal and gastric ulcers, and signs of portal hypertensive gastropathy.

His second hospital course was characterized by recurrent fevers and multiple courses of antibiotics. He had four additional ERCP procedures notable for a gastric ulcer that was clipped and biopsied, and removal of the biliary stent. Multiple CT scans showed progression of the pancreatitis to full necrosis and, finally, to infected necrosis. He developed a significantly distended abdomen, with persistent tachycardia, tachypnea, and tenuous respiratory status. The etiologic of the patient’s biliary strictures and numerous ulcers was unclear, but thought to be highly suspicious of cholangiocarcinoma leading to portal hypertension and portal hypertensive gastropathy. The patient became too ill for further workup and management of possible biliary carcinoma, and was transitioned to comfort care at inpatient hospice.

Discussion:
This case illustrates a rare, prolonged course of postendoscopic retrograde cholangiopancreatography pancreatitis (PEP), a complication of ERCP. Several risk factors have been associated with increased risk of PEP including balloon dilatation of biliary sphincter, history of PEP, normal bilirubin, and young age – none of which this patient demonstrated. The overall mortality rate after diagnostic ERCP is about 0.2%, though that rate is doubled (0.4%-0.5%) after therapeutic ERCP. The utility of antibiotics before and after ERCP to prevent pancreatitis has not been well studied. The current guidelines state that antibiotic prophylaxis should be administered before ERCP in patients who have had liver transplantation or who have known or suspected biliary obstruction, where there is a possibility of incomplete biliary drainage. Guidelines recommend against antibiotic prophylaxis before ERCP when obstructive biliary tract disease is not suspected or complete biliary drainage is anticipated. Further research is needed to guide the use of antibiotics before and after ERCP to prevent PEP in otherwise low-risk patients.
A 79 year old woman with past medical history of hypertension and hyperlipidemia presented with thigh swelling and two months of new vaginal spotting. Surgical pathology from a dilatation and curettage was non-malignant. Her vaginal spotting worsened, and she developed painful unilateral thigh swelling, and presented to the emergency department. Admission physical exam was notable for stable vital signs, stable right thigh hematoma, mild splenomegaly, and mild left axillary nontender lymphadenopathy. Labs were notable for hemoglobin of 7.2mg/dL from 10.6 mg/dL two months prior; Computed Tomography (CT) scan showed right thigh intramuscular hematoma. Hematology was consulted for bleeding diathesis evaluation in the setting of non-traumatic hematoma and progressive post-menopausal bleeding without evidence of uterine malignancy. On further review, she had three live births without bleeding complications, and no history of spontaneous mucosal bleeding or bleeding from dental procedures. Relevant results from her coagulation workup included: platelet count of 155,000; Blood Urea Nitrogen of 16mg/dL, prothrombin time of 11.5 seconds, International Normalized Ratio of 1.1, and activated Partial Thromboplastin time of 22 seconds. D-Dimer was 0.61mg/dL and fibrinogen was 186 mg/dL, both within normal limits. Assays for VonWillebrand’s disease (including a Factor VIII level) and platelet functional assays were all within normal limits. Laboratory workup was consistent with normal platelet levels and function, normal function of the extrinsic and intrinsic arms of the coagulation cascade, and no evidence of consumptive coagulopathy. Lactate dehydrogenase was elevated, though indirect bilirubin levels were within normal limits and peripheral blood smear showed no schistocytes, arguing against consumptive coagulopathy. Further coagulation workup identified no measurable Factor XIII activity. Factor XIII deficiency is rare, and the few studied cases of congenital factor XIII deficiency are marked by lifelong bleeding disorders. Our patient’s new onset diathesis raised suspicion for an acquired process. Mixing studies were sent showing no appreciable factor XIII activity after exposure to our patient’s blood, suggesting a new inhibitor of Factor XIII, an extremely rare process. During this time she was hemodynamically stable with a slow decline in hemoglobin, requiring intermittent red blood cell transfusion; she was also transfused with multiple units of cryoprecipitate to replenish her levels of Factor XIII. The constellation of lymphadenopathy, elevated lactate dehydrogenase, and a new autoantibody raised suspicion for malignancy, possibly lymphoma; abdominal CT- scan showed diffuse abdominal lymphadenopathy and “misty mesentery” appearance highly suspicious for lymphoma. She underwent lymph node biopsy and was started on empiric immunosuppression with steroids and Rituximab. Over the following days her bleeding resolved and hemoglobin stabilized requiring no further transfusion. Biopsy results were consistent with Mantle Cell Lymphoma, and she was scheduled to initiate chemotherapy with the oncology service for treatment of her Mantle Cell Lymphoma causing Acquired Factor XIII deficiency.
Abstract Title: Who should serve as an interpreter in end-of-life discussions between language-discordant patients and clinicians?

Abstract Text: Objectives: 1. To discuss the importance of trained interpreters during end-of-life conversations between language-discordant patients and clinicians. 2. To highlight the possible adverse effects (i.e. suboptimal patient care) when using ad-hoc interpreters in the palliative care setting. 3. To emphasize prolonged adverse outcomes (i.e. complicated bereavement) among family-members serving as interpreters at the end-of-life. 4. To discuss the potential for magnifying suboptimal care of the patient and prolonged adverse outcomes when using a minor as an interpreter.

Introduction: In the setting of increased diversity, interpreters are relied upon for communication at the end of life (EOL) among language-discordant patients and clinicians and among patients limited in English proficiency. Although most interpreters have experience with EOL discussions, only half state that these conversations go well. Quality of care is compromised when patient interpretation needs are unmet. When trained medical interpreter availability is limited, English-speaking family members may be asked to serve this role.

Case Presentation: A 51 year-old female with PMH of widely metastatic breast cancer presented for resection of hepatic metastasis. She had undergone multiple cycles of chemoradiation, and had an advanced directive confirming DNR/DNI status. Hospital course was complicated by sepsis and multi-system organ failure. Palliative care was consulted on post-operative day (POD) #5. However, goals of care (GOC) and supportive counseling were limited due to lack of a trained interpreter. As the only family-member fluent in English, the patient’s 17 year-old daughter was asked to serve as the interpreter for an extended, Spanish-speaking family. On POD #6, the family decided to pursue comfort measures only. GOC and EOL care plans were coordinated through interpretation by the patient’s adolescent daughter. The patient was transferred to inpatient hospice where she died soon after. The daughter suffered from complicated bereavement and anxiety following her mother’s death. She continues to experience regret over the management of EOL care, feeling that her role in medical communication and decision making at EOL was inappropriate.

Discussion: The use of a trained interpreter should be established for patient and family support during palliative care discussions and at the EOL. It is critical that family members not provide ad-hoc interpreter services, particularly when they may not have the linguistic capacity or skill set. Furthermore, the use of family members, particularly minors, may compromise quality of care for both patient and family, and lead to complicated bereavement and an additional emotional burden.
Abstract Title: A Giant Obstructive Bladder Stone in a 60-Year-Old Woman

Abstract Text:
Bladder stones account for 5% of urinary calculi, and are much more common in male patients, and are a rare cause of obstructive nephropathy. A 60-year-old female without healthcare for the last 30 years presented to the emergency department with one month of frequency, dysuria, urgency, flank pain, and suprapubic pain. In the 30 days prior to presentation she completed two courses of nitrofurantoin and phenazopyridine for presumed urinary infection without improvement. On presentation she was mildly tachycardic and afebrile with a completely benign physical exam, including no costovertebral angle tenderness or abdominal tenderness.

Her laboratory studies were remarkable for a BUN of 67 mg/dl and serum creatinine of 6.08 mg/dl with no prior studies for comparison. Her PTH level was markedly elevated at 230 pg/ml with a corrected calcium of 11.24 mg/dl, consistent with hyperparathyroidism (primary vs. tertiary). Thyroid-stimulating hormone (TSH) was elevated at 14.079 uIU/ML, consistent with hypothyroidism. Urinalysis revealed microscopic hematuria and urine culture grew 1+ Escherichia coli. Renal ultrasound and subsequent abdominal and pelvic CT scan revealed significant bilateral hydrouretonephrosis with severe cortical thinning bilaterally, with some preserved renal parenchyma on the left. A giant 9cm calculus was seen in the base of the bladder with mild bladder wall thickening.

Her renal failure was attributed in part to chronic intermittent urinary obstruction due to ball-valve effect of the large bladder stone. A decompressive percutaneous nephrostomy tube was placed on the left that resulted in good urine output and significant improvement in her creatinine to 2.08 over the next four months. Following two months of outpatient optimization of her newly diagnosed hypothyroidism, hyperparathyroidism, and anemia, she was taken for open right nephrectomy and cystolithotomy with removal of a tan-yellow bladder calculus, weighing 316 grams and measuring 9.2 x 6.7 x 5.4 cm. Five months after discharge she also had a left lower parathyroid adenoma removed.

Bladder stones of this size are very rare, particularly in women, but can be associated with chronic urinary infections, bladder outlet obstruction, foreign bodies, or neurogenic voiding dysfunction. Occult primary vs. tertiary hyperparathyroidism may have contributed to the development of this massive bladder stone, and approximately 30% of patients have recurrence of urinary stones after surgical correction of the hyperparathyroidism. This case highlights the importance of radiologic evaluation of new renal failure and consideration of hyperparathyroidism in the differential diagnosis of new urinary stones.
Abstract Title: Atypical Hemolytic Uremic Syndrome: Improved outcome after Eculizumab therapy

Abstract Text:
Introduction: This case demonstrates a patient with a rare, life-threatening disease: aHUS. We aim to show that emerging medical therapy is allowing patients to have at least partial or even full recovery of hematological and renal function in aHUS.

Case: A 83 year old female with minimal history presented to the emergency room with accelerated hypertension for the past 2 days as well as lower extremity edema that was persistent for approximately 1 month. She also had complaints of intermittent dizziness and blurry vision for the past few days. Significant initial labs on initial presentation included: Hb 7.1 g/dl, platelet 61,000, and a BUN/Creatinine of 70/5.1 mg/dl. A complete workup including autoimmune, infectious, and peripheral smear were initially ordered. Peripheral smear showed schistocytes and in combination with an elevated LDH, decreased haptoglobin, and 8.4% reticulocytes there was suspicion of a hemolytic process. Given the hemolytic anemia, renal failure, and thrombocytopenia, there was a suspicion for TTP/HUS. ADAMSTS13 activity was 50% and although mildly reduced, it was not consistent with the very low levels of activity normally seen in TTP. Diagnosis of aHUS was confirmed with renal biopsy, which showed thrombotic microangiopathy with extensive vascular involvement. Patient was started on dialysis due to worsening renal function. After receiving the appropriate immunizations and prophylactic antibiotics, she was promptly started on Eculizumab, an anti-C5 antibody. Patient had a rapid hematological recovery. Patient remains on scheduled intermittent hemodialysis three times a week. As of yet, there is no evidence of renal recovery.

Discussion: Atypical hemolytic uremic syndrome (aHUS) is a very rare, life-threatening, progressive disease, characterized by systemic thrombotic microangiopathy which can lead to stroke, heart attack, kidney failure, and death. The commonly described triad is hemolytic anemia, thrombocytopenia and acute kidney injury with kidney involvement being predominant. The typical hemolytic uremic syndrome (HUS) results from Shiga toxin-producing organisms such as E. coli or Shigella and is usually preceded by bloody diarrhea. In contrast, approximately 10% of HUS cases is not preceded by a clinically apparent infection and thus referred to as atypical HUS (aHUS). The outcome is generally poor and approximately 50% of aHUS patients progress to end-stage renal disease. The pathogenesis of aHUS includes dysregulation and excessive activation of the alternative complement pathway which eventually converge to the complement protein C5 leading to formation of molecules that are pro-inflammatory and cell lytic. Eculizumab’s action on C5 prevents terminal complement activation while preserving the function of proximal complement. In two prospective and one retrospective study of aHUS patients, it showed that hematological recovery was much quicker than renal recovery after initiating Eculizumab. Patients who did require dialysis showed benefit from early initiation of Eculizumab as the majority were able to eventually discontinue dialysis.
Abstract Title: Acute Infection of Cytomegalovirus Hepatitis Associated with Portal Vein Thrombosis in an Immunocompetent 35-Year-Old Male

Abstract Text:
Introduction: Cytomegalovirus (CMV), a member of the Herpesviridae family, is quite common worldwide with seroprevalence rates of 40-100%. In the immunocompromised host, acute CMV infection can be associated with high morbidity and mortality. In the immunocompetent host, CMV infection is generally asymptomatic or may present as a mononucleosis syndrome. Thrombosis associated with acute CMV infection is rare, with a meta-analysis published in 2011 finding only about 100 reports in the literature. Portal vein thrombosis (PVT) generally results from cirrhosis, a local cause such as malignancy or a prothrombotic state. We describe a case of an immunocompetent adult with acute CMV infection complicated by extensive portal vein thrombosis.

Case: A 35-year-old male with no significant past medical history and on no medication presented to our emergency department after three weeks of intermittent right upper quadrant abdominal pain that over the prior week had become more constant and severe. The patient also reported several days of fevers, chills, myalgias, headaches, diaphoresis and fatigue. In the emergency department he had a fever of 38°C and abdominal exam revealed tenderness in the right upper quadrant and negative rebound tenderness. Laboratory studies revealed an elevated AST and ALT of 250 and 301 respectively, however the remainder of his hepatic function tests were normal. A CT scan of the abdomen and pelvis without contrast revealed hyperdense material within the portal vein radicals to the right hepatic lobe, consistent with PVT. This was confirmed by sonographic examination of the right upper quadrant. Splenomegaly to a maximum dimension of 13.5cm was also noted. An evaluation for viral etiologies was performed, including a viral hepatitis panel. All viral studies were negative with the exception of a CMV IgM titer. Levels of CMV IgM antibody were measured and were markedly elevated at 2.91 and then 3.41 three days later. Broad spectrum antibiotics which had been initiated to treat a possible septic phlebitis were thus discontinued. The patient was placed on full anticoagulation with enoxaparin and bridged to warfarin with an aim to maintain anticoagulation for six months. Follow up with gastroenterology was also arranged as his transaminases, while improving, were not yet back to normal.

Discussion: Acute CMV infection is postulated to induce a hypercoagulable state through several different mechanisms. The current most popular theory; which has been confirmed in vivo, describes a transient CMV-induced production of anti-phospholipid antibodies. Our patient had no other common risk factors for thrombosis and his hypercoagulable panel has been negative to date. A recent case-control study identified the incidence of thrombosis following acute CMV infection being as high as 6.4%. This case highlights the need for medical professionals to be aware of the risk of thrombosis during an acute infection of CMV.
GD is a 54 year old woman with a history of fibromatosis tumor of the gallbladder status post cholecystectomy (CCY) twenty years prior who presented with weakness and hypoglycemia. Her physical exam was significant for a blood pressure of 85/63, a heart rate in the 100s, and a benign abdominal exam. Laboratory examination showed a leukocytosis of 20.6 with 3% bands and an elevated alkaline phosphatase of 354 IU/L with normal AST and ALT. CT of the abdomen showed multiple hepatic abscesses, the largest at 10cm. Subsequent MRCP and ERCP revealed a common bile duct stricture.

GD responded well to fluid resuscitation. She had two hepatic abscess drains placed, was started on ciprofloxacin and metronidazole, and had a biliary drain placed. Afterwards she developed abdominal pain, worse upon flushing the biliary drain, and elevation of her alkaline phosphatase, which had previously been decreasing. Biopsy of the stricture showed no malignancy, but did show vegetable matter. Due to her persistent symptoms, a multidisciplinary meeting of Gastroenterology, Surgery, and Interventional Radiology consultants met with the primary team and reviewed imaging and hospital course together. Imaging revealed that, at the time of her CCY, her surgeon had created an internal biliary drain that the patient did not know about. Intestinal contents had been refluxing through that conduit, resulting in abscess formation. When the biliary drain was placed, it entered the anastomosis and caused her to have biliary obstruction. Removal of the drain eased her abdominal pain. All drains were eventually removed and she completed ten weeks of antibiotic therapy with resolution of abscesses on follow up imaging.

Physicians today strive to practice personalized medicine, but this is challenging when the medical history of a patient is unclear. GD did not realize she had a choledochojunostomy, nor did her physicians. As a result, she suffered an iatrogenic biliary obstruction, increasing pain and prolonging hospitalization. The cause of her illness was unknown until all of the specialists met, thoroughly interviewed the patient, and reviewed all of her prior imaging together. It took a large multidisciplinary effort to successfully discover what had happened, appropriately treat the patient, and ensure that she had adequate follow up. This case exemplifies the benefits of good interpersonal relationships and communication with colleagues, as well as with patients.
Ictal Bradycardia, Connecting the Head and the Heart

Introduction: Ictal bradycardia is a rare syndrome characterized by bradycardia during complex partial seizures. As of 2001, only 63 cases had been described in the literature. Evaluation of bradycardia does not regularly include EEG monitoring, leading perhaps to underdiagnosis. The patient described below presented as vasovagal syncope until she had a tonic-clonic seizure with associated bradycardia, suggestive of ictal bradycardia syndrome.

Case Description: A 64 year-old woman with no significant PMH presented with back pain, nausea, vomiting and hyponatremia to 120 due to poor oral intake. During her hospitalization, she experienced recurrent, brief periods of malaise followed by intermittent losses of consciousness and confusion. These episodes were characterized by nausea, emesis, bradycardia to the 20-30s and transient hypotension to systolics of 80-90s. EKGs and telemetry showed normal sinus bradycardia. The patient grew progressively more fatigued and unwell with each occurrence. After 24 hours of hospitalization, she had sudden loss of consciousness with bradycardia to the 30s, rhythmic shaking of her bilateral upper extremities, tongue biting, and incontinence that lasted less than 1 minute. Blood pressure shortly after was 92/53 mmHG. Telemetry demonstrated bradycardia and EKG showed normal sinus rhythm. A post-ictal period of lethargy and confusion followed. She was given a loading dose of levetiracetam. Repeat labwork was within normal limits except for hyponatremia to 126. Neurology was consulted and recommended further imaging and cessation of levetiracetam. MRI brain showed chronic microvascular ischemic disease. EEG was notable for a single left mid temporal phase reversing sharp wave as well as a prominent beta rhythm.

Discussion: Given the findings on EEG suggestive of an underlying seizure nidus, we feel the recurrent “vasovagal” episodes were actually complex partial seizures that preceded a tonic-clonic seizure. The patient’s malaise and fatigue experienced prior to her tonic-clonic seizure can be attributed to additive post-ictal periods. Experiments suggest that bradycardia is induced by limbic structures located in the temporal lobes that modulate parasympathetic and sympathetic pathways during seizure activity. There is also evidence that left-sided strokes lead to bradycardia and hypotension while right-sided involvement creates tachycardia and hypertension. The patient had an EEG finding consistent with localization of ictal bradycardia to left temporal activity. Ictal bradycardia can lead to bradycardia, total heart block, and even asystole. Patients require treatment with antiepileptic medications and, in extreme cases, pacemakers. This patient was diagnosed as having a hyponatremia-induced seizure and vasovagal syncope. However, her bradycardia and ictal periods make long term neurologic follow-up warranted. It is possible that she has ictal bradycardia and will require antiepileptic treatment going forward. This case highlights the uniqueness and complexity of ictal bradycardia.
Abstract Title: Managing cryptogenic stroke in patients with congenital TTP

Abstract Text:
Thrombotic thrombocytopenic purpura (TTP) is frequently associated with neurologic abnormalities. Hereditary TTP makes up less than 5% of the diagnosed TTP. In fact, the TTP Registry notes only 150 families worldwide who carry the autosomal recessive gene. Affected patients normally present during childhood, with rare cases presenting during their first pregnancies. There have been few reports about cryptogenic stroke in patients with hereditary TTP. In particular, there is minimal literature that addressing the initiation of anticoagulation for stroke prevention in the setting of resistant TTP with a known PFO.

A 38 year old woman with congenital TTP managed with bimonthly FFP infusions, multiple strokes without residual neurological deficits, not on aspirin due to intermittent thrombocytopenia, presents with right sided weakness and dysarthria. She was recently discharged from another hospital after a CT head did not demonstrate any acute findings. Over the next 5 days, she noted worsening slurring of her speech, moodiness, and anhedonia. On exam, she had non-fluent expressive and receptive aphasia with occasional word finding difficulty and paraphasic errors/word substitutions with both naming and reading. She was unable to follow 2 step commands. 3/5 strength of the RUE with drift, 3/5 strength LLE with increased muscle tone. Brisk reflexes on the right. Labs showed hemoglobin 12.5, platelets 40, LDH 453, VWF protease activity <1, and VWF protease inhibitor 4 (negative). Repeat CT head showed acute left frontal ischemic CVA. Patient immediately underwent plasma exchange. Post-exchange labs showed hemoglobin 14.8, platelets 59, VWF protease activity >50, and VWF protease inhibitor 3 (negative). MRI showed new infarcts in the L medial frontal/cingulate gyrus and L frontal convexity, R parietal cortex and L cerebellum, and encephalomalacia in the bilateral temporal lobes and L frontal operculum. TTE showed PFO. LE dopplers were negative for DVT. Patient was given another FFP infusion for worsening thrombocytopenia. In conjunction with the neurology team, she was started on aspirin, and Coumadin would be held until her TTP was stable. With decreasing LDH and non-progressive neurologic symptoms, patient was discharged to a rehab facility.

This case illustrates the importance of immediate initiation of FFP infusion in a patient with congenital TTP with focal neurologic symptoms, despite negative CT findings. While FFP infusion is the standard of treatment, plasma exchange should be considered in acute conditions in order to achieve higher levels of ADAMTS13- especially if there is concern for acquisition of ADAMTS13 inhibitor/alloantibody and decreased effectiveness of outpatient infusions. Lastly, management of PFOs in this hypercoagulable population warrants further research as barriers to anticoagulation often coexist.
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Abstract Title: An overlooked manifestation of secondary syphilis

Abstract Text:
Introduction: Gastric involvement is a well-documented manifestation of syphilis since the pre antibiotic era, although most cases of gastric syphilis go unnoticed or misdiagnosed. It is important for the clinician to consider syphilis as part of the differential diagnosis of epigastric pain in patients at increased risk of sexually transmitted diseases who do not respond to antacid therapy. A 24 year-old previously healthy man presented with a 15 days history of burning epigastric pain, frequent vomiting, poor oral intake, and weight loss. He denied any history of NSAIDs use or alcohol ingestion. On exam he was dry, his heart rate was 110 beats per minute, and his blood pressure was 80/50 mmHg. He had epigastric tenderness without rebound. Patches of alopecia were noted on his head and eyebrows. His labs were remarkable for azotemia and hypokalemia. He received IV fluids and IV pantoprazole. His blood pressure improved. An upper endoscopy was performed due to persistent pain revealing acute hemorrhage and severe inflammation of the gastric lining at the level of the antrum with fibrin and thickened folds. Biopsies were taken. A rapid urease test for H. pylori was negative. The patient was discharged home with diagnosis of acute gastritis, on a regimen of esomeprazole. During his post-discharge follow up, he was still complaining of mild epigastric pain. He admitted having unprotected sex with more than one partner. Due to the presence of moth-eaten alopecia a VDRL was ordered. VDRL was reactive 1:16. A FTA-ABS test returned positive. He was also tested for HIV which was negative. His gastric biopsy showed necrotic tissue, complete absence of glandular structures, a lymphocytic infiltrate, scattered plasma cells and thickened blood vessel walls. Treatment with Penicillin G Benzathine was given. On subsequent follow up, the patient had complete resolution of his epigastric symptoms and alopecia. Three months after antibiotic treatment his VDRL was 1:4.

Discussion: This case highlights the relevance of considering syphilis in the differential diagnosis of patient who present with epigastric complaints. In this case the presence of moth-eaten alopecia was the clue leading to the diagnosis. However, some patients can present with gastritis as the only manifestation and in consequence a high level of clinical suspicion is necessary. Based on previous cases described in the literature, the key points that should rise concern may be the lack of contributory findings in the physical examination, the presence of unusual endoscopic lesions with involvement of the antrum, a gastric biopsy that reveals lymphocytic infiltrate and vasculitis, the absence of an alternative diagnosis, and a poor response to antacid therapy in patients with high risk sexual behavior.
Abstract Title: Retrospective Review of the Fall Rate on an Orthopaedic Ward

Abstract Text:
Introduction: In 2008, the Centers for Medicare and Medicaid Services classified inpatient falls as a “Never Event.” However, falls on orthopaedic wards are still reported to be in the range of 2-20 falls per 1000 patient days. The purpose of our study was to: 1) identify the risk factors associated with falls; 2) identify the circumstances associated with falls; 3) identify and calculate the cost of associated diagnostic studies; 4) and identify and calculate the associated cost of interventions.

Methods: Fall data on the orthopaedic trauma ward at Rhode Island Hospital recorded in the Medical Event Reporting System (MERS) and SciHealth from 1/1/2009 – 10/1/2014 was retrospectively reviewed to identify patients that fell over a five-year period. Subsequently, the electronic medical record was reviewed for patient-specific data. The cost of fall-related diagnostic studies was calculated.

Results: A total of 98 falls (49 males, 49 females) were reported from 1/1/2009-10/1/2014. The average age of the males was 57.7 years and the average age of the females was 61.4 years. Polypharmacy was associated with 58 out of the 98 patients (59%). 43 out of the 98 patients were seen by physical therapy prior to their fall (44%). The falls were categorized as follows: 35 patient action without assist (36%), 32 bathroom without assist (33%), 18 unwitnessed (18%), 6 bathroom with assist (6%), 4 bathroom with incomplete assist (4%), 2 with physical therapy (2%), and 1 patient action with assist (1%). There were a total of 3.5 falls per 1,000 patient days. 22 patients had minor treatment/intervention, 1 had moderate treatment/intervention, and 20 had increased monitoring. The costs per patient who underwent fall-associated diagnostic studies (42/98 patients; 43%) ranged from $19.06-$1,567.00 (average $342.26, median $262.00).

Conclusion: Despite no significant injuries being reported, there are significant costs associated with patient falls. Although toileting was reported to be the most problematic circumstance associated with falls, we found that any activity without assistance is risky: 69% of falls in this series occurred without assistance. We plan on implementing a systems-based fall prevention program that could help decrease the fall rate in our institution.
Coexisting Nephrogenic Diabetes Insipidus and New Onset Congestive Heart Failure: A Question of Water and Volume

Introduction: Nephrogenic Diabetes Insipidus (NDI) refers to a decrease in the kidney's ability to concentrate urine due to resistance to antidiuretic hormone (ADH). Patients with NDI consume large volumes of free water to keep up with urinary losses. It is typically difficult for these patients to become volume overloaded unless they are unable to produce urine. In contrast, congestive heart failure (CHF) refers to a clinical syndrome of volume overload resulting from structural or functional cardiac disease. NDI with concomitant CHF presents a unique challenge in fluid management.

Case: A 66-year-old man with a history of lithium-induced NDI presents with 2-3 weeks of worsening orthopnea, dyspnea with exertion, and associated abdominal distension. His physical exam was significant for lung field bibasilar crackles and a soft, distended, and non-tender abdomen. The initial evaluation was notable for sodium of 147, Cr of 1.96 (baseline 1.58), BNP 645, CXR with cardiomegaly and small bilateral pleural effusions. Symptomatically, his history fit a picture of decompensated heart failure, despite his NDI. An echocardiogram revealed an EF of 25% with severe LV dilation. In consultation with nephrology, the patient was started on a thiazide diuretic. In consultation with cardiology, the patient was started on spironolactone and hydralazine. His dyspnea and orthopnea improved, and the abdominal distension resolved. By the time of discharge, his urine output declined and his serum sodium decreased to 142.

Discussion: This patient’s poor cardiac output induced the kidneys to retain more sodium via the renin-angiotensin system creating a mild hypertonic, hypervolemic state, which produced his congestive symptoms. It is important to make the distinction that CHF is a disorder of sodium and NDI is a disorder of free water. To address his coexisting sodium and free water derangements, we used a thiazide diuretic. Thiazide diuretics are a well-characterized treatment for NDI. Thiazides induce sodium loss from the distal tubule, resulting in isotonic urine and a hypovolemic state, which alleviated our patient’s congestive symptoms and decreased his LVEDP. Hypovolemia leads to increased proximal sodium and water reabsorption and reduces the output of dilute urine, attenuating the underlying pathophysiologic derangement of NDI. In animal models of lithium-induced NDI, thiazide diuretics are shown to increase AQP2 channels and reduce GFR by inhibiting carbonic anhydrase in the proximal tubule, which aids retention of free water independent of sodium regulation. This case of coexisting NDI and CHF illustrates the importance of assessing volume status accurately, and the utility of distinguishing between disorders of sodium and free water.
Abstract Title: Clinical Manifestations, Diagnosis, and Treatment of Calciphylaxis

Abstract Text:
End-stage renal disease (ESRD) is associated with high morbidity and mortality. We present a case of calciphylaxis, a rare condition associated with ESRD. The patient is a 47 year-old woman with stage 4 chronic kidney disease attributed to hypertensive nephrosclerosis who presented to the hospital for lower extremity swelling in the setting of diuretic noncompliance. Aggressive diuresis was attempted, but the patient developed oliguric kidney failure. At that time, her labs revealed a serum sodium of 130 mEq/L, potassium of 5.4 mEq/L, chloride of 92 mEq/L, bicarbonate of 11 mEq/L, blood urea nitrogen of 192 mEq/L, creatinine of 19.12 mg/dL, calcium of 7.5 mEq/L, phosphorus of 16.8 mEq/L, parathyroid hormone of 4,991 pg/mL and venous pH of 7.06. Due to severe metabolic acidosis, symptomatic uremia and refractory pulmonary edema, she underwent noninvasive positive pressure ventilation and emergent hemodialysis. The patient continued to have pain in her lower extremities and developed dark, well-demarcated, irregularly-shaped macules with raised hypopigmented borders as well as tense bullae with a negative Nikolsky’s sign. Bedside ultrasound demonstrated subcutaneous linear calcifications and a punch biopsy was performed. The patient was treated with noncalcium-based phosphate binders, daily dialysis and sodium thiosulfate. However, she developed supraventricular tachycardia with administration of sodium thiosulfate so treatment was aborted after the second dose. Her phosphorus and parathyroid hormone levels down-trended and her skin lesions improved. After the patient was discharged, her skin biopsies were noted to be consistent with calciphylaxis. Also known as calcific uremic arteriopathy, calciphylaxis is an uncommon disease with an estimated prevalence of 4.1% among ESRD patients. It is thought to be the result of deposition of calcium in small and medium-sized blood vessels causing ischemia and necrosis, which can be significant enough to lead to sepsis, amputation, or death. In fact, the one-year mortality rate is about 50%. Clinical manifestations include painful skin lesions that can become ulcerated or necrotic. While there is no specific lab test for diagnosis, it is associated with elevated calcium-phosphorus product and elevated parathyroid hormone level. Although the gold-standard for diagnosis is skin biopsy, imaging modalities including plain films, mammography, ultrasound, and computed tomography can be helpful for non-invasive diagnosis, with a sensitivity quoted as high as 90%. Treatment of calciphylaxis entails aggressive lowering of calcium and phosphorus levels using bisphosphonates, noncalcium-based phosphate binders and daily dialysis. Although its efficacy has only been demonstrated in case reports, our patient also received sodium thiosulfate, which is proposed to chelate calcium deposits. In conclusion, calciphylaxis is a serious but treatable condition which should be considered in ESRD patients with painful skin lesions and elevated calcium-phosphorus product and parathyroid hormone levels.
Abstract Title: Ehrlichia Induced Pancytopenia: A Case Report

Abstract Text:
Introduction: Ehrlichia is an obligate intracellular bacterium transmitted by ticks known to cause disease in humans. In the United States, there are approximately 600 to 1000 cases of ehrlichiosis reported each year. The clinical presentation of ehrlichiosis ranges widely, from asymptomatic to life-threatening. Typical symptoms include fever, headache, malaise, and vomiting. 50 to 90 percent of patients with ehrlichiosis will demonstrate cytopenias. In the case presented, a severe acute pancytopenia was caused by Ehrlichia infection.

Case: A 67-year-old male with a history of insulin dependent diabetes mellitus presented to the hospital with a three-day history of nausea, vomiting, diarrhea, and pruritic rash. He recounted that a few weeks prior, he removed an engorged brown tick from his left upper arm while he was in North Carolina. On admission his vital signs were temperature of 36.7°C, blood pressure 133/48, pulse 65 and regular, respiratory rate 18, and an oxygen saturation 95% on room air. Physical exam was significant for a diffuse petechial rash, most evident on his bilateral lower extremities and with a less pronounced distribution over his torso and upper extremities. There was no hepatosplenomegaly and his stool tested negative for occult blood. The patient’s initial complete blood count was significant for pancytopenia with severe thrombocytopenia: leukocytes 2,500/uL, hemoglobin 5.4 g/dL, hematocrit 17.1%, and platelets 3,000/uL. His reticulocyte count was 5.3%. A review of his peripheral smear showed no shistocytes or circulating blasts. His initial basic metabolic panel was consistent with DKA and acute kidney injury: Serum glucose 1,134 mg/dL, sodium 121 mmol/L, potassium 6.2 mmol/L, chloride 91 mmol/L, bicarbonate 14 mmol/L, blood urea nitrogen 105 mg/dL, and creatinine 2.96 mg/dL. His lactic acid was elevated at 3.5 mmol/L. In addition to blood cultures, testing was performed for Rocky Mountain Spotted Fever, Lyme, Babesia, Ehrlichia, Anaplasma, CMV, EBV, parvovirus B19, HIV, and several studies to rule out autoimmune causes. Due to the acute nature of his presentation and his history he had given, doxycycline was empirically initiated for suspected tickborne disease. Although he was provided with transfusions, he responded well to empiric antibiotic therapy. By day 4 of his hospital stay, his platelets improved to 26,000/uL and his hemoglobin improved to 8.3 g/dL. His leukocytes remained unchanged at 2,300/uL. All of his diagnostic labs were returned negative with the exception of a positive Ehrlichia PCR.

Discussion: In healthy individuals, ehrlichiosis will often present as a sub-acute, limited illness. However, older and immunocompromised patients are at increased risk of developing potentially life-threatening consequences. Our patient was at increased risk due to his age and a relative immunocompromised state caused by diabetes. In patients such as these, it is imperative to start empiric treatment when tickborne disease is suspected.
Radiofrequency Ablation for Cushing’s Syndrome due to an ACTH-secreting Bronchial Carcinoid Tumor

Introduction: Approximately 10% of Cushing’s syndrome cases are caused by ectopic ACTH production. Most commonly, neuroendocrine tumors secrete ACTH, namely small cell lung carcinomas and bronchial carcinoids. After diagnosis, medical management of hypercortisolemia is imperative. Definitive treatment consists of surgical resection of the tumor. However, in patients who are poor surgical candidates or in those with inadequate response to medical therapy, we present a case that supports radiofrequency ablation as a viable alternative treatment.

Case: A 70 year-old male with former tobacco abuse and chronic diastolic congestive heart failure presented with gradual-onset anasarca and flushing. He was hypertensive on presentation with labs indicating hyperglycemia, metabolic alkalosis, and hypercortisolemia. An extensive work-up, including high-dose dexamethasone suppression test, was ultimately suggestive of Cushing’s syndrome from an ectopic source. The patient was started on ketoconazole 400 mg by mouth three times daily in attempt to decrease serum cortisol levels. Extensive imaging to investigate the source of ectopic ACTH production revealed multiple pulmonary lesions, with increased uptake noted on a subsequent octreotide scan. He underwent fine needle aspiration of one of the pulmonary lesions, with histology demonstrating bronchial carcinoid tumor with positive immunostaining for ACTH. Despite medical therapy (including high doses of ketoconazole), he continued to clinically worsen. The patient was deemed a high surgical risk due to his numerous comorbidities, including acute on chronic congestive heart failure, uncontrolled diabetes mellitus type 2, and interestingly, pulmonary nocardiosis (likely due to immunosuppression from Cushing’s syndrome). As an alternative to surgery, he underwent radiofrequency ablation of his intrapulmonary lesions. Within 24 hours post-procedure, he became hypotensive requiring intravenous steroids, which were gradually tapered. His symptoms of Cushing’s syndrome significantly improved after radiofrequency ablation. After a prolonged hospitalization, he was discharged home with outpatient follow-up.

Discussion: Hypercortisolemia is associated with severe morbidity and increased mortality, underlining the importance of medical management of Cushing’s syndrome. In our case, ketoconazole, metyrapone, mitotane, and octreotide were considerations. Surgical resection of a primary ACTH-producing tumor is associated with complete remission in approximately 83% of patients with a single primary lesion. However, there is no recommended treatment for cases where surgery is not feasible or when medical therapy is ineffective. Radiofrequency ablation is a minimally-invasive procedure approved by the U.S. FDA for the treatment of primary and metastatic tumors of the lung and liver; it serves as a viable alternative option for patients who are not surgical candidates.
Abstract Title: Light Chain Amyloidosis Unveiling a Diagnosis of Multiple Myeloma

Abstract Text:

Introduction: In patients with amyloidosis and multiple myeloma, the myeloma is often diagnosed first. Less commonly, a delayed progression type of amyloidosis exists in which myeloma develops six months after the diagnosis of amyloidosis. Our patient presented with a vague constellation of neuropathies as seen in AL amyloidosis. Further workup unveiled a case of multiple myeloma.

Case: A 64-year-old man with a history of GERD presented to our hospital from a rehab with a sodium of 112. Approximately 4 months prior, he underwent the first of four hospital admissions for left shoulder pain, nausea, and lightheadedness. Testing throughout these admissions revealed a left brachial plexus neuropathy and gastroparesis. He was discharged to rehab where he was found to be hyponatremic, prompting this admission. On review of systems he reported progressive bilateral lower extremity weakness, edema and a 30-lb unintentional weight loss. To search for a possible malignancy, a pan CT scan was performed which showed no obvious malignancy. His hospital stay was complicated by daily episodes of severe symptomatic orthostatic hypotension and tachycardia. Further neuropathy workup included a lumbar puncture, showing only a mildly elevated protein level of 56 mg/dL. With this picture of peripheral and autonomic neuropathy, amyloidosis was high on our differential. However, the search for a primary malignancy continued. Various tumor markers including a PSA and CEA were normal. An SPEP showed an M spike of 0.13 and presence of monoclonal light chains. Remaining Ig levels were low. A 24-hour UPEP demonstrated increased lambda light chains at 148. He had no evidence of anemia, renal failure, or hypercalcemia. A skeletal survey was negative for lytic lesions. A bone marrow biopsy was performed, and while awaiting pathology reports, the patient developed new onset of dysphagia. An EGD with gastric biopsies was Congo Red positive, confirming the diagnosis of amyloidosis. He was started on IVIG for the shoulder neuropathy secondary to amyloidosis. His bone marrow biopsy showed 80% plasma cells, confirming the diagnosis of multiple myeloma. He was started on chemotherapy with CyBorD, and over the following 2 months showed symptomatic improvement and a reduction in his lambda component.

Discussion: Amyloidosis is a systemic disease in which protein subunits are deposited in extracellular tissues. Clinical manifestations depend on tissue distribution and protein type. A patient presenting with mixed peripheral and autonomic neuropathies such as ours is exhibiting the neurologic effects of such deposits. Light chain (AL) amyloidosis is a type often seen in conjunction with multiple myeloma, which is typically diagnosed first. However when a diagnosis of amyloidosis is made first, a workup for multiple myeloma is warranted, even in a patient without typical features of myeloma such as hypercalcemia, anemia, lytic lesions, or renal insufficiency.
Abstract Title: A CASE OF SEVERE CLOZAPINE RELATED CONSTIPATION AND ILEUS: IS IT TIME FOR A BOWEL REGIMEN PROTOCOL FOR PATIENTS ON CLOZAPINE?

Abstract Text:
Case: A 70 year-old male with former tobacco abuse and chronic diastolic congestive heart failure presented with gradual-onset anasarca and flushing. He was hypertensive on presentation with labs indicating hyperglycemia, metabolic alkalosis, and hypercortisolemia. An extensive work-up, including high-dose dexamethasone suppression test, was ultimately suggestive of Cushing’s syndrome from an ectopic source. The patient was started on ketoconazole 400 mg by mouth three times daily in attempt to decrease serum cortisol levels. Extensive imaging to investigate the source of ectopic ACTH production revealed multiple pulmonary lesions, with increased uptake noted on a subsequent octreotide scan. He underwent fine needle aspiration of one of the pulmonary lesions, with histology demonstrating bronchial carcinoid tumor with positive immunostaining for ACTH. Despite medical therapy (including high doses of ketoconazole), he continued to clinically worsen. The patient was deemed a high surgical risk due to his numerous comorbidities, including acute on chronic congestive heart failure, uncontrolled diabetes mellitus type 2, and interestingly, pulmonary nocardiosis (likely due to immunosuppression from Cushing’s syndrome). As an alternative to surgery, he underwent radiofrequency ablation of his intrapulmonary lesions. Within 24 hours post-procedure, he became hypotensive requiring intravenous steroids, which were gradually tapered. His symptoms of Cushing’s syndrome significantly improved after radiofrequency ablation. After a prolonged hospitalization, he was discharged home with outpatient follow-up.
Abstract Title: A diagnostic and therapeutic dilemma: Post-streptococcal reactive arthritis versus acute rheumatic fever

Abstract Text:
Introduction: Erythema nodosum has a number of etiologies, including infectious, autoimmune, medication-related, and idiopathic, but is most commonly associated with prior streptococcal pharyngitis. However, patients with erythema nodosum in the setting of post-streptococcal reactive arthritis may be difficult to distinguish from patients with acute rheumatic fever. In this case, we report a patient who presented with erythema nodosum in the setting of recent streptococcal pharyngitis, but was also found to meet criteria for acute rheumatic fever.

Case Presentation: The patient is a 70yo F with PMH of hypothyroidism who presented with 3 weeks of persistent recurrent fevers to 102F, malaise, polyarthralgias, headaches, and bilateral shin rash. Of note, she had been diagnosed with streptococcal pharyngitis 1 month prior to presentation and treated with a course of azithromycin and amoxicillin as an outpatient. Vitals were T 98.4, HR 77, RR 20, BP 121/70, O2 sat 96% on R A. Physical exam was notable for multiple tender erythematous nodules on bilateral shins and bilateral conjunctival injection. Cardiac exam was unremarkable. Her pharynx was clear without tonsillar exudates. Laboratory data revealed ESR 91, CRP 152, and ASO titer 752. Urinalysis was benign without casts. EKG showed NSR with normal PR intervals. Echo demonstrated dilated L atrium but normal biventricular size and function without valvular disease. Tissue biopsy of a RLE subcutaneous nodule demonstrated prominent subcutaneous septal widening with mixed inflammatory cells and Miescher’s granulomas, consistent with erythema nodosum.

The patient was started on prednisone 0.5mg/kg for empiric therapy of suspected post-streptococcal reactive erythema nodosum with marked prompt improvement in her symptoms. She was also found to meet Jones criteria for rheumatic fever without cardiac manifestations given her arthritis, subcutaneous nodules, fever, and elevated ESR and CRP. Repeat throat culture was negative for group A strep. The patient was started on a short taper of prednisone as well as penicillin VK 250mg PO every 12 hours for long-term secondary prevention with plans to continue antibiotic therapy for 5 years.

Discussion: This case highlights a diagnostic and therapeutic dilemma in the setting of a patient with likely post-streptococcal reactive arthritis who also met criteria for acute rheumatic fever. Such patients can be difficult to distinguish due to nonspecific overlapping signs and symptoms, but the management differs for each. Post-streptococcal reactive arthritis is typically treated with a steroid taper, while acute rheumatic fever requires long-term penicillin prophylaxis. PRSA typically presents without cardiac manifestations; however, some reports have demonstrated that in a significant proportion of patients presenting with ARF, carditis is silent. While long-term antibiotic use carries risks of its own, current guidelines suggest a need for long-term antibiotic prophylaxis in any patient that fulfills criteria for acute rheumatic fever in order to prevent future valvular disease.
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Abstract Title: Functional decline in elderly colon cancer patients leading to skilled nursing facility placement

Abstract Text:
Background: While there has been increased focus on treatment efficacy and long term survival of colon cancer in the elderly, little is known regarding factors leading to nursing home placement preventing their functional decline. Identifying preoperative risk factors for nursing home placement should be a priority to further risk stratify this patient population, which may help guide treatment decisions and encourage further investigation into ways we can prevent nursing home discharges of colon cancer patients.
Aim: Identify risk factors for skilled nursing facility (SNF) placement upon hospital discharge to improve prognosis and quality of care of elderly colon cancer patients.
Method: Using the Healthcare Cost and Utilization Project, National Inpatient Sample (HCUP-NIS), we evaluated inpatient temporal trends, resource utilization and independent risk factors associated with hospital discharge to SNF in elderly (> 65) colon cancer patients who had cancer-directed surgery from 2003-2011.
Results: A total of 98,797 (57.76%) elderly patients and 72,236 (42.24%) patients under 65 years of age were hospitalized for colon cancer and received surgical intervention from 2003-2011. The proportion of elderly colon cancer patients discharged to a SNF increased by 16.67% from 2003 to 2011. Some of the most common independent risk factors associated with SNF placement include paralysis (OR, 3.60; 95% CI, 3.06-4.23), advanced age above 75 (OR, 4.07; 95% CI, 3.90, 4.25), length of stay greater than 10 days (OR, 3.00; 95% CI, 2.88-3.13), psychoses (OR, 2.91; 95% CI, 2.34-3.32), neurologic disorder (OR, 2.34; 95% CI, 2.17-2.52) and depression (OR, 1.70; 95% CI, 1.58-1.83). Surgical complications associated with increased SNF placement included postoperative delirium (OR, 1.83; 95% CI, 1.41-2.34), re-operation (OR, 1.37; 95% CI, 1.16-1.61) and postoperative respiratory complications (OR,1.21; 95% CI, 1.08-1.33). Malnutrition/failure to thrive was also associated with significant increase in hospitalization cost of care (+10,026.79). Psychoses (+6.40 days) and paralysis (+6.32 days) were associated with a longer hospital stay.
Conclusion: Neurologic, psychiatric, nutritional comorbidities and surgical complications have negative impacts on the likelihood of colon cancer patients’ discharge home. Identifying these risk factors before admission and intervention by using a multi-disciplinary approach to screening, intervention and linkage of care, may improve their quality of life and reduce the economic burden they place on our healthcare system.
Introduction:
Altered mentation is a common chief complaint and complication in healthcare. The differential includes many diagnoses within the broad categories of infection, trauma, central nervous system (CNS) event or injury, toxic/metabolic derangement, medication effect, and psychogenic syndromes. We present a case of encephalopathy, with a surprising final diagnosis and unfortunate outcome.

Case Presentation:
C.G. was an 89-year-old woman with a history of atrial fibrillation and sick sinus syndrome status post pacemaker implantation, who presented to the emergency department twice in one week with unsteady gait, fall with head injury, confusion, and mild nausea, with family reports of bizarre behavior. Medications included a benzodiazepine. On initial evaluation, her general physical, including full neurological examination, was non-focal. Work-up was relevant for leukocyte count of 7.5x10^9/L and serum sodium of 129mEq/L, with otherwise unremarkable chemistry, blood counts, urinalysis, chest radiography, and head CT without contrast. She was discharged home with weakness attributed to a “likely viral illness.” Four days later, she presented after a second fall, with increased confusion and agitation and was admitted for further management. She was afebrile without nuchal rigidity, and again displayed no focal findings on physical exam. Lab studies revealed a serum sodium of 122mEq/L, but repeated studies, including ammonia, vitamin B12, blood cultures, and head CT were otherwise unrevealing. Her pacemaker precluded MRI, and due to family goals and a perceived low benefit/risk ratio, a lumbar puncture (LP) was deferred. Her encephalopathy persisted despite correction of hyponatremia, and an electroencephalogram (EEG) showed an active right anterior quadrant epileptogenic focus consistent with trauma, infection, or ischemia. Eventually, serum HSV-1 IgG antibody index returned at 7.4 (normal <0.8). Acyclovir was initiated, and LP performed, revealing CSF glucose of 39mg/dL (normal 38-85), protein 183mg/dL (15-45), and 12 nucleated cells/µL (<5). CSF polymerase chain reaction (PCR) was positive for HSV-1, and she was diagnosed with herpes encephalitis. She did not improve after several days of treatment, and she was eventually transferred to hospice.

Discussion:
The pathophysiology of herpes encephalitis includes reactivation from the cranial nerves, reactivation directly in the CNS, or primary brain infection. Acute symptoms include headaches, myalgias, nausea, confusion, and irritability, classically severe and after a major stressor. Initially, MRI and EEG have early sensitivity but low specificity. CSF often shows an elevated protein level or lymphocytic pleocytosis, and the gold standard for diagnosis is PCR of the CSF. Prognosis and mortality are affected by age, duration of symptoms before treatment, and mental status. Ms. C.G. had no preceding stressor, fever, skin changes, or leukocytosis, and several possible etiologies on presentation, including hyponatremia and medication effect. MRI was contraindicated and an early LP was not pursued aggressively. Unfortunately, the prime window for treatment was missed in her care.
Abstract Title: A compilation of rare, but potentially fatal vascular manifestations of Behcet’s disease in a young woman

Abstract Text:
Background: Behcet’s disease is a multisystem disorder with pathognomonic manifestations including orogenital ulcers, ocular and cutaneous lesions and vascular disorders. Of the vascular complications, the arterial manifestations are rare, yet worrisome, as they can have fatal sequelae. We present a case of a young woman with Behcet’s disease, who had extensive vascular involvement: a right ventricular thrombus, multiple pulmonary emboli, pulmonary arteritis, and a pulmonary artery aneurysm. For this case, we reviewed the most recent, albeit limited, literature on the pathophysiology and treatment for these vascular complications, and advocated an expeditious, multidisciplinary approach.

Case Presentation: A 21 year old Cape Verdean female with a history of Behcet’s Disease (diagnosed several years prior in Cape Verde and treated with azathioprine and chronic prednisone), multiple bilateral pulmonary emboli (maintained on enoxaparin 80mg bid), and non-infectious right ventricular mural thrombus, presented with a one month history of intermittent high fevers, nonproductive cough, and right-sided pleuritic chest pain. Vital signs on admission included temperature of 104.7 F, heart rate 117, respiratory rate 22, blood pressure 112/82, and pulse oximetry 100% on room air. Physical exam was notable for tachycardia, absence of murmur on cardiac auscultation, no synovitis or joint deformities, and no oral or genital ulcers. Initial labs revealed normocytic anemia (Hb 11.0 g/dL) and leukocytosis (WBC 23.4x10^9/L, with 2% bands on manual differential). CT chest with contrast was remarkable for intraluminal filling defects within the right lower lobe subsegmental pulmonary artery, marked thickening and enhancement of multiple right lower lobe subsegmental pulmonary arteries, and a 6mm region of nodular enhancement consistent with a right upper lobe pulmonary artery aneurysm. Transthoracic echocardiogram and cardiac MRI both showed no significant interval change in the size of the right ventricular thrombus (3.2x1.7cm). Given the high morbidity and mortality rates associated with pulmonary artery aneurysm rupture, both Rheumatologic and Surgical teams were consulted. Treatment was initiated with high-dose steroids followed by cyclophosphamide, and surgical intervention was delayed given the size of the aneurysm and absence of hemoptysis. We concurred that the risk of a massive pulmonary embolism out-weighed the risk of aneurysm rupture. Therefore, the patient was continued on anticoagulation, in addition to treatment with glucocorticoids and an immunosuppressant. The patient’s fevers and pleuritic chest pain resolved, and she was discharged with close outpatient Rheumatologic follow up and aneurysm surveillance.

Discussion: This case highlights a compilation of rare, yet serious, vascular complications of Behcet’s disease: pulmonary arteritis, pulmonary artery embolism and pulmonary artery aneurysm. We reviewed the current literature that aided our clinical judgment, and utilized a multidisciplinary team consisting of Internal Medicine, Rheumatology, and Surgery to determine an appropriate treatment regimen. We also provide high quality and unusual radiographic findings of our patient’s disease.
Abstract Title: Atypical Scleroderma Presenting With Scleroderma Renal Crisis

Abstract Text:
One of the major vascular manifestations of systemic sclerosis involves the renal system causing scleroderma renal crisis (SRC). In patients with SSc, it is estimated that about 10% of patients will develop SRC over the first 5 years of disease. A retrospective case series of 110 patients showed that SRC occurred at a median duration of 7.5 months from the first non-Raynaud’s clinical manifestation. SRC was the presenting feature of the disease in 23/110 of these patients (22%). We show an atypical case of antinuclear antibody negative systemic sclerosis in which the presenting symptom is scleroderma renal crisis.

Our case involves a 65-year-old white man who was referred to the hospital from his primary care physician with new onset renal failure. One week prior to admission the patient was given low dose steroids to help with newly diagnosed painful Raynaud’s symptoms. Upon arrival to the hospital, his blood pressure peaked at 197/92 and creatinine was 2.2 mg/dl at admission (baseline 1.1 mg/dl.) Physical exam was significant for sclerodactyly and Raynaud’s phenomenon. Further lab work up revealed: ANA negative, Scl-70 antibody negative, anti-centromere negative and a strongly anti-positive RNA polymerase III (anti-RNP III) As glomerular filtration rate continued to worsen a renal biopsy was performed with immunofluorescent microscopy staining of vessel wall for IgM, C3 and fibrinogen consistent with arterial thrombotic microangiopathy.

SRC occurs in 5 to 20% of patient with diffuse cutaneous SSc and is observed less frequently in limited cutaneous SSc. SRC is characterized by acute kidney injury, abrupt onset of severe hypertension associated with increased renin activity. A number of risk factors have been involved in scleroderma renal crisis including glucocorticoid use, diffuse skin involvement and the presence of anti-RNP III autoantibodies. Our patient used steroids and is also positive for anti-RNP III antibodies. Typical pathological findings on SRC renal biopsy are arterial thrombotic microangiopathy.

Ninety percent of systemic scleroderma patients are tested positive for an antinuclear antibody and most of these patients (60%-70%) are tested positive for one of the three common scleroderma-specific autoantibodies: anti-centromere, antitopoisoamerase I (ie; Scl-70), and anti-RNA polymerase III antibodies. In the above-mentioned case series, only 2.7% of the population was antinuclear antibody negative, as was found in our patient. It is therefore important to have a high index of suspicion when a patient presents with new onset renal failure, hypertension, and sclerodactyly, even if ANA is negative. This shows that anti-RNP III is an important diagnostic and prognostic test in this setting.
Abstract Title: How Tax Subsidies Affect Insurance Rates and Health Outcomes: Study of the Earned Income Tax Credit

Abstract Text:
Introduction: Tax subsidies for health insurance are a critical part of the Affordable Care Act (ACA). To estimate its potential effectiveness, I use an established tax subsidy program, the Earned Income Tax Credit (EITC), to measure changes in health insurance, health behavior, healthcare utilization, and clinical health outcomes.

Methods: 6517 individuals were interviewed through the federally-funded National Longitudinal Survey of Youth (NLSY) from 1989 to 2012. Using TAXISM 9 program, I calculated the estimated EITC for each individual and year, given their demographics and income. I used the EITC as an instrumental variable to predict changes in income, and then regressed the predicted income onto a myriad of health outcomes. Regressions compared those who received tax credits with those who did not. Regressions controlled for age, sex, race, education, geographic residency, US citizenship, and year. All regressions were done in STATA12.

Results: Individuals receiving the tax subsidies were more likely to have private health insurance by 8.60% (p<0.0001) and less likely to have Medicaid by 3.67% (p<0.0001). These individuals were also more likely to receive primary care, including annual physicals (2.56%, p<0.0001), cholesterol testing (4.8%, p<0.0001), diabetes testing (2.61%, p=0.088), mammograms (4.07%, p=0.0005), and dentist visits (2.66%, p=0.0065). They were more likely to consume alcohol in the past month by 5.04% (p<0.0001). Within 1 year of receiving the tax credits, individuals did not show a significant change in most clinical outcomes. Some diagnosis rates increased, such as cancer (6.38%, p=.0424), but this could be caused by under-detection prior to the EITC and health insurance coverage. Within 4 years of receiving the subsidies, individuals had lower diagnosis rates of arthritis (-6.16%, p=.0367), joint pain (-11.10%, p=.0125), feet/leg problems (-13.20%, p=.0004), stomach ulcers (4.58%, p=.0251), chest pain (-6.22%, p=.0019), frequent headaches (-8.21%, p=.0022), sleep problems (-7.88%, p=.0169), and constant pain (-22.4%, p=.0001).

Conclusion: Tax subsidies are a key public policy to supplement income to low-income individuals. It expands health insurance coverage, increases primary care utilization, and improves clinical outcomes within 4 years of receiving the tax subsidies. With the Supreme Court’s upholding of the ACA’s health insurance subsidies, we should expect short-term primary care utilization to significantly increase and certain long-term clinical outcomes to improve. Since the NLSY is an on-going longitudinal survey, we should review the data in future years; as the samples ages and prevalence of chronic illnesses increases, differences in clinical diagnoses rates may be more apparent.
Weiss, Zoe

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Abstract Title: A Rare Case of Posterior Reversible Encephalopathy in a Patient With AIDS and Immune Reconstitution Syndrome

Abstract Text:  
Posterior Reversible Encephalopathy Syndrome (PRES) is an uncommon, typically reversible, neurologic condition that can be seen in immunosuppressed patients, but rarely described in patients with HIV. PRES is characterized by subcortical posterior MRI changes and neurologic symptoms. We report a case of PRES in a patient with newly diagnosed AIDS and immune reconstitution syndrome (IRIS) who developed hypertension after initiating high dose steroids. A 39-year-old African American male with a history of bipolar disorder and achalasia presented with one year of anorexia, weight loss, confusion, and thrush, and was found to have HIV (CD4 9 cells/ul). An extensive workup for opportunistic infection was largely negative, including CSF PCR for HSV, CMV, EBV, and JC virus. CT C/A/P revealed diffuse lymphadenopathy, and an MRI brain was unremarkable. He was started on HAART, and two weeks later developed altered mental status, high fevers, abdominal pain, ascites, worsening lymphadenopathy, and acute renal failure (Cr 1.6). Axillary lymph node aspiration was positive for MAI, as were previously drawn blood and sputum cultures. He was diagnosed with IRIS and disseminated MAI, and started on high dose steroids (dexamethasone 4mg BID), ethambutol and clarithromycin. Over the next 2-3 days he developed hypertension to 180/90 (without a history of hypertension), worsening renal function (Cr to 2.8), visual changes including a left homonymous hemianopsia, severe headaches, and witnessed seizures. MRI brain showed multifocal T2/FLAIR hyperintensities favoring the parietal and occipital lobes with evidence of parieto-occipital hemorrhage, consistent with PRES. His blood pressure was medically controlled, and his seizures and neurologic symptoms resolved over a week, at which point steroids were slowly tapered. Repeat MRI after 8 days showed marked improvement with some residual defects. PRES is characterized by headaches, seizures, changes in mental status, cortical blindness, and classic MRI abnormalities including reversible bilateral subcortical vasogenic edema favoring the posterior parieto-occipital regions, as seen in this patient. Etiologies of PRES include severe hypertension, renal failure, immunosuppression, cytotoxic therapies, hypercalcemia, and eclampsia. The pathophysiology is unclear. One proposed mechanism is that sudden hypertension leads to abnormal cerebral auto-regulation. Cytotoxic microvascular damage in the setting of chemotherapy or hypercalcemia is an alternative theory. In a broad literature review there were fewer than ten cases describing PRES in the setting of HIV, and only one in PRES and IRIS (also with MAI). In our patient, it is unclear if PRES developed as a result of renal failure and steroid induced hypertension, or whether concurrent cytotoxic effects of massive T-cell activation and pro-inflammatory cytokine release due to IRIS played a role. The presence of neurologic abnormalities and posterior bilateral lesions on MRI in an immunosuppressed patient should raise the suspicion of PRES, as favorable outcomes are reported with management of underlying etiologies.
Wheelden, Megan  

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**Abstract Title:** An Unusual Cause of Abdominal Pain: Massive Retroperitoneal Lymphadenopathy 

**Abstract Text:**  
A 39 year-old Caucasian man with a past medical/surgical history of hypertension, panic attacks, and vasectomy presented to the hospital for abdominal pain. His abdominal pain started during intercourse that morning, originally as a cramping sensation in his left lower quadrant but later increased in severity and involved his entire abdomen. Review of systems was unrevealing – he denied fevers, malaise, nausea, vomiting, testicular pain, or dysuria. Patient’s abdominal examination revealed normoactive bowel sounds, distension, and diffuse tenderness to palpation but without rebound or guarding; a testicular exam was notable for a nontender right testicle with subtle firmness at superior pole. Initial laboratory studies were notable for creatinine 1.40 (baseline 0.8), WBC 13.9 with 82.6% neutrophils; LFTs were within normal limits. Imaging with a CT Abdomen and Pelvis revealed massive malignant retroperitoneal lymphadenopathy (measuring 18x12x20 cm) encasing the aorta, compressing the infrarenal IVC and left ureter leading to severe left hydronephrosis. The CT scan also demonstrated a partial small bowel obstruction. Further imaging with a testicular ultrasound showed an infiltrative right intratesticular mass, and CT chest did not show metastatic disease. Additional labs revealed AFP 20,115, bHCG 23.6, and LDH 432. Urology was consulted and performed a right radical orchiectomy. 

A nasogastric tube, as well as a left percutaneous nephrostomy tube, was placed post-op, and he was transferred to the Hematology-Oncology service. Based on patient’s tumor markers and frozen sections consistent with non-seminomatous testicular cancer, he was started on chemotherapy with bleomycin, etoposide, and cisplatin for his stage IIIc disease. He also received allopurinol given risk of tumor lysis syndrome due to high disease burden. Final pathology revealed a mixed germ cell tumor with 90% seminoma and 10% teratoma also with elements of fibrosis consistent with regressed germ cell tumor. He tolerated first cycle of chemotherapy well, and prior to discharge also had resolution of his small bowel obstruction. His chemotherapy regimen was continued as an outpatient. However, this was complicated by neutropenic fever with source ultimately discovered to be necrotic retroperitoneal lymph node with multiple loculations and gas locules – requiring drain placement and IV antibiotics. Patient has since transitioned his care to the Dana Farber Cancer Institute. This case demonstrates both the necessity of formulating a broad differential diagnosis while evaluating a patient for abdominal pain as well as the need for prompt treatment in a symptomatic patient with a complex oncologic diagnosis. American guidelines support initial chemotherapy for stage IIIc disease with further management decisions (surveillance, retroperitoneal lymph node dissections, or alternate chemotherapy regimens) based on clinical response with both size and tumor markers. However, current literature suggests that there is still some controversy regarding the extent and laterality of lymph node dissections post-chemotherapy.
White, Hilary

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Abstract Title: A Case of Concurrent Churg-Strauss Syndrome and Temporal Arteritis

Abstract Text:
The systemic vasculitides are generally classified by the primary vessel caliber involved. Temporal (giant cell) arteritis is a large-vessel vasculitis characterized by headache, visual disturbance, elevated inflammatory markers and typical biopsy findings in patients age 50 or older. Churg-Strauss syndrome (eosinophilic granulomatosis with polyangiitis) is a small-vessel vasculitis characterized by peripheral eosinophilia, asthma, sinusitis, neuropathy and migratory pulmonary nodules. Concurrent temporal arteritis and Churg-Strauss syndrome is exceedingly rare. Here we describe one such case.

A 76-year-old man presented to the hospital with several days of right eye vision loss. He also endorsed several months of fevers, fatigue and weight loss, and was currently being worked up by several specialists for recent diagnoses of asthma, gastroesophageal reflux and sinusitis. His initial physical exam was notable for mild right temporal and periorbital tenderness to palpation and decreased visual acuity in the right central visual field. His initial workup was notable for an elevated erythrocyte sedimentation rate (ESR) of 86, leukocytosis of 13,200 with 21.2% eosinophilia (2,900 absolute eosinophils), and chest radiograph with multiple ill-defined pulmonary nodules in differing locations compared to recent prior chest radiographs. Given concern for temporal arteritis, he was started empirically on prednisone and a temporal artery biopsy was done the following day. Temporal artery pathology ultimately returned consistent with a diagnosis of temporal arteritis with giant cell reaction, disruption of the internal elastic lamina and obliteration of the arterial lumen. There were several scattered eosinophils seen on pathology, but not the typical sheets of eosinophils that would be expected in an artery affected by Churg-Strauss syndrome. The diagnosis of temporal arteritis was made based on the patient’s clinical symptoms, lab findings and biopsy results. In addition, he met criteria for the diagnosis of Churg-Strauss syndrome based on his asthma, sinusitis, eosinophilia and migratory pulmonary nodules. His perinuclear anti-neutrophil cytoplasmic antibodies (p-ANCA) later returned positive. His hospital course was also complicated by new-onset atrial fibrillation with rapid ventricular response and a type 2 demand NSTEMI. He was started on apixaban given elevated CHADS2-VASC score and outpatient follow-up with cardiology was arranged. His vision improved readily after initiation of steroids.

This case demonstrates an unusual scenario of a patient with two distinct coexisting vasculitides. This type of vasculitis “overlap” has been previously described in several case reports and remains a diagnostic challenge. Further, this case demonstrates the importance of thinking broadly about a patient’s symptoms and signs in order to make a diagnosis, instead of focusing on each problem individually.
Abstract Title: The Skull as a Vacuum: Sinking Skin Flap Syndrome following Decompressive Hemicraniectomy

Abstract Text:
Introduction: Decompressive hemicraniectomy is an emergency procedure to alleviate uncontrollable intracranial hypertension, most often in the setting of middle cerebral artery infarct or intraparenchymal hemorrhage. Sinking skin flap syndrome (SSFS) or Syndrome of the trephined, is a rare complication that may occur months after craniectomy. SSFS presents with a sunken appearance of the skin over the skull defect that may be accompanied by severe orthostatic headache, focal neurological deficits, seizures, or altered mental status. Without timely diagnosis, SSFS can progress to brain herniation, coma, and death. We describe a case of a classic presentation of Sinking Skin Flap Syndrome following hemicraniectomy.

Case: A 69-year-old female developed headache, weakness, and confusion during inpatient rehabilitation. She has a past surgical history of decompressive hemicraniectomy for spontaneous, anti-coagulant-induced subdural and intraparenchymal hemorrhage with resultant subfalcine herniation and midline shift. Upon admission to rehabilitation, the patient was alert with mild expressive aphasia, impaired balance, decreased discriminatory touch, and dysphagia. She was progressing with recovery until post-operative day 19 when she developed an orthostatic headache, fatigued easily with therapy, and became confused. There were no new focal neurological deficits and complete blood count, electrolyte panel, liver function tests, and vitamin B12 studies were unremarkable. Computed tomography (CT) of the brain showed a left-sided skull defect, compression of the left lateral ventricle, and an increased midline shift compared to post-operative CT. She was treated for SSFS with three liters of intravenous 5% dextrose in normal saline to increase her intravascular volume. The following morning, her headache resolved, energy level improved, and mental status approached baseline. Follow-up with neurosurgery for bone flap replacement was scheduled in four weeks.

Discussion: In SSFS, the formation of a negative pressure gradient between the atmosphere and the cranial cavity leads to the appearance of a non-pulsatile, sunken brain and scalp. The bone defect allows atmospheric pressure to transmit onto the cortex and vasculature, decreasing cerebral perfusion and cerebrospinal fluid (CSF) flow. Brain atrophy, dehydration, and up-right positioning exacerbate intracranial hypovolemia. Clinically, the resulting vacuum manifests as delayed or worsening neurological recovery and if untreated, may lead to a paradoxical herniation to the side opposite of the skull defect. Increasing CSF volume through intravenous or intrathecal fluids and Trendelenberg or supine positioning temporarily normalizes CSF dynamics. Cranioplasty to replace the bone flap improves cerebral blood flow and often leads to complete recovery. While early cranioplasty can also prevent SSFS, it is often delayed for months due to a 34% risk of complication such as infection, hemorrhage, or cerebral edema. Thus, there is ongoing debate regarding the ideal time for bone flap replacement.

Awareness of delayed complications of craniectomy can prevent adverse outcomes such as SSFS and its clinical sequelae.
Abstract Title: Normal Submaximal Exercise Stress Tests Still Predict Favorable Outcomes in Chest Pain Unit Patients

Abstract Text:
Introduction: Cardiac stress tests are used in chest pain units to identify patients at risk for major adverse cardiac events (MACE). The accepted threshold for heart rate during exercise stress testing is 85% of the maximum predicted heart rate (MPHR). We hypothesize that normal stress tests in the chest pain unit predict good cardiac outcomes, regardless of percentage of MPHR.

Methods: A retrospective chart review was conducted and follow-up phone calls were made for patients presenting to the chest pain unit at Rhode Island Hospital from 2010-2015. Patients with normal stress tests were categorized as having submaximal heart rates (less than 85% MPHR) or target heart rates (greater than 85% MPHR). The two groups were compared with the primary endpoint of MACE at one year. Categorical variables were analyzed using Chi-squared analysis and continuous variables were analyzed using Student’s t-test.

Results: Of 3,419 patients admitted to the chest pain unit, 2,213 had normal exercise electrocardiographic, echocardiographic or nuclear imaging stress tests, and 961 could be reached for follow up. In this cohort, 264 (27.5%) patients had submaximal exercise stress tests, while 697 (72.5%) patients achieved target heart rates. Patients with submaximal stress tests were more likely to have known coronary artery disease (p-value 0.0001), hypertension (p-value 0.03), diabetes (p-value 0.006), hyperlipidemia (p-value 0.004) and tobacco use (p-value 0.0001). MACE at one year was not significantly different between the two groups (1.1% submaximal versus 1.6% target heart rate, p-value 0.61). When excluding patients with known coronary artery disease, MACE was also not significantly different between the two groups (1.1% submaximal versus 1.6% target heart rate, p-value 0.9). However, patients with submaximal tests were more likely to have repeat stress testing. All cause readmission rate at one year was higher in the group with target heart rates (p-value 0.001).

Conclusions: There was no significant difference in MACE at one year between patients who achieved target heart rate on exercise stress testing compared with those who did not, despite the fact that patients with submaximal stress tests had significantly greater risk factors for coronary artery disease.
Abstract Title: Inadequate Antiviral Use in Pregnant Women with Chronic Hepatitis B at High Risk for Vertical Transmission

Abstract Text:
Introduction: An estimated 240 million people world-wide are infected with chronic HBV with more than 780,000 deaths due to disease complications. Preventing vertical transmission is an obstacle to reducing burden of chronic HBV. Mothers who are HBeAg positive and have a high viral load have an estimated transmission risk of at least 10% despite appropriate prophylaxis. Use of antivirals in the third trimester have been shown to significantly reduce the rate of transmission, but compelling safety and efficacy data could be a barrier for some patients and/or providers to strongly recommend these medications. Our study aimed to describe the clinical presentation and management of a cohort of pregnant women with hepatitis B in a single center specializing in obstetrics care in Providence, Rhode Island.

Methods: This study was approved by the IRB of Women and Infants Hospital. 226 pregnant women with chronic HBV seen at the Center for Women’s Gastrointestinal Health at Women and Infants Hospital, Providence, Rhode Island were retrospectively identified from January 1, 2009 - December 31 2014. Medical records were reviewed for demographic and clinical information from initial presentation for positive hepatitis B surface antigen during pregnancy until 6 months postpartum. 150 met inclusion criteria. 57 were excluded for incomplete data in medical records, 10 were excluded for coinfection with hepatitis C, or HIV, and 3 were excluded for clearing hepatitis B before the study period. 6 patients who were already on treatment for hepatitis B prior to pregnancy were excluded. The primary outcome was whether an antiviral was initiated in pregnant women with HBV DNA greater than 1,000,000 IU/ml at 28-32 weeks gestation. The secondary outcome was reasons for non-initiation of antivirals in those who met this DNA threshold.

Results: 13% (19) women had HBV DNA levels > 1,000,000 IU/ml in the third trimester of pregnancy which qualified them for initiation of treatment for chronic hepatitis B to prevent vertical transmission. However 10 of the eligible 19 patients (53%) were not initiated on treatment during pregnancy to prevent vertical transmission. 7 of the 10 patients (64%) were never offered antiviral therapy during their third trimester to prevent vertical transmission. 3 of the 10 patients declined (27%) antiviral prophylaxis. 9 of the 19 women (47%) initiated antiviral therapy in third trimester to prevent vertical transmission: five were initiated on tenofovir, three on lamivudine, and one on telbivudine.

Conclusion: This study reveals a lack of consistency in physician antiviral use for highly viremic mothers in their third trimester. Our finding highlights the urgent need for clearly defined consensus guidelines from the liver societies on the threshold HBV DNA level for initiation of antivirals in pregnancy.
Abstract Title: Do Not Miss This Initial Presentation of SLE

Abstract Text:
Introduction:
Systemic lupus erythematosus (SLE) is a common autoimmune disease that can affect any organ system. According to the 2012 American College of Rheumatology SLE Classification, serositis remains to be an important clinical presentation in SLE patients. Although common, serositis presenting as the initial symptom of SLE is a rare phenomenon. It is critical for physicians to have a high clinical suspicion in order not to miss the diagnosis which can lead to irreversible end-organ damage.

Case Description:
A 24-year-old Chinese woman with no past medical history presented to the Emergency Room with four days of worsening exertional chest discomfort and dyspnea. Her dyspnea is associated with orthopnea, paroxysmal nocturnal dyspnea, and lower extremity edema. Review of symptoms is remarkable for tactile fever. Vital signs were notable for temperature of 103.8 degrees Fahrenheit, heart rate of 110, respiratory rate of 26, and saturating at 94% on ambient air. Physical exam showed a young woman sitting forward in bed, tachypneic but speaking full sentences. Cardiac exam was notable for absent JVD and distant heart sounds, lungs were clear to auscultation bilaterally. Laboratory results were significant for WBC of 11.8x10⁹/L with normal differentials. Rest of the CBC, complete metabolic panel, and troponins were unremarkable. EKG showed sinus tachycardia with low voltage but no acute ischemic changes and CXR demonstrated cardiomegaly. Echocardiogram showed large pericardial effusion with no tamponade physiology. Pericardiocentesis was performed and pericardial fluid showed inflammatory cells, negative Gram Stain, AFB stain, and cytology but positive for antinuclear antibody (ANA) 1:800 with speckled pattern. Further laboratory testing demonstrated positive anti-Smith antibody, and low C3 and C4 levels of 46mg/dL and 12mg/dL respectively. Rheumatology was consulted and patient was diagnosed with SLE. She was started on ibuprofen and prednisone with prompt resolution.

Discussion:
SLE is a multi-systemic autoimmune disease with marked variability in clinical presentation. After kidney involvement, cardiac involvement of SLE is the second most frequent manifestation, in nearly 50% of all SLE patients. Amongst cardiac presentations, pericardial effusion occurs in up to 50% of patients throughout the course of the disease. However, this manifestation is rarely observed as the initial lone presenting feature. In this case, the patient met 4 of the 11 criteria for a definite diagnosis of SLE, namely pericardial effusion, positive ANA and anti-Smith antibody titers, and hypocomplementemia. As physicians are trained to correlate SLE with typical features such as malar rash and inflammatory arthritis, it is easy to miss the diagnosis with only serositis without other classic symptoms. Physicians need to have a high index of suspicion when working up new onset pericardial effusion or other forms of serositis in order to start appropriate treatment and prevent further end-organ damage from SLE and other autoimmune diseases.
A 74 year old male with a history of diabetes, hypertension, and hemorrhoids, presented with three weeks of worsening lower back pain that progressed to lower extremity weakness, urinary retention, and stool incontinence. On admission, he was afebrile with tenderness to palpation in the lumbosacral spinal area. He had 4/5 strength in bilateral hip flexion and knee extension, 2/5 strength in bilateral ankle dorsiflexion, 5/5 strength in bilateral plantarflexion. Reflexes were diminished at patellar and Achilles tendons, no clonus noted. Sensation was intact. Normal rectal tone. Labs were significant for WBC 14.1 (16% bands), lactate 4.5, CRP 305, ESR 49. CT abdomen/pelvis revealed circumferential asymmetric thickening of the rectum. Spine MRI revealed abnormal signal intensity at L2-L3, consistent with acute discitis and osteomyelitis, along with anterior epidural fluid collections at L2-L3 and posterior fluid collection at T10-L1 concerning for epidural abscess, resulting in stenosis at L1-L2 and L2-L3. He was taken for an emergent laminectomy, decompression, and drainage of the epidural abscess.

Blood cultures and epidural abscess cultures grew beta-hemolytic group C streptococcus, sensitive to penicillin. Pelvic MRI revealed rectal mass extending to level of mesorectal fascia, no pathologic lymphadenopathy or evidence of distant metastases. Transthoracic and transesophageal echocardiograms were negative for endocarditis. A colonoscopy revealed a fungating 6cm x 10mm rectal mass 7cm from the anal verge, involving two-thirds of the rectal lumen. Biopsies revealed invasive adenocarcinoma, moderately differentiated. He was diagnosed with rectal adenocarcinoma stage IIa (T3, N0, M0). He was discharged on intravenous penicillin for a six week course, and follow up with colorectal surgery and oncology.

Group C streptococci (GCS) are normal commensal gastrointestinal flora, but are an uncommon cause of bacteremia in humans (estimated prevalence 5%). Case reports of GCS infection demonstrate a virulent pathogen that can cause rapid, disseminated severe disease with poor prognosis. Patients are usually healthy, elderly patients, and often report zoonotic exposure. Mortality estimates in case reports range from 25-31%, with 28% survivors reporting residual neurological impairments. Complications include endocarditis, purulent pericarditis, osteomyelitis, and septic arthritis. Few cases report spread to the CSF causing meningitis, and one case with cavernous sinus thrombosis. In this case, the bacteremia resulted in an epidural abscess. In discussion with infectious disease, it was thought that the infection could be bacterial translocation of normal gut flora from the rectal adenocarcinoma (more often associated with group D streptococcus), which then subsequently seeded to his spine. This is a case of GCS bacteremia as the initial clinical finding of an occult colorectal malignancy.
Abstract Title: Factors Influencing Medical Student Performance on the NBME Subject Examinations

Abstract Text:
Introduction: The National Board of Medical Examiners Subject Examinations (shelf exams) serve a critical role in the evaluation of medical students. Though official rates of usage in clerkships across the country are not available, a previous survey of internal medicine clerkship directors found that 83% of internal medicine clerkship directors use the medicine shelf exam for a mean of 24% of students’ grades (Torre et al. 2009). Recent studies examined the correlations of means of preparation, clerkship order (Reteguiz & Crosson 2002), and performance on specific exams (Kozar et al. 2007), but no study has taken a look at overall shelf performance since 1985 (Leonardson & Peterson), despite the significant weight of shelf exams in the current grading systems of American medical schools. We attempted to look broadly at factors from a student's preclinical performance and demographics that influence overall shelf exam performance.

Methods: The population studied included all students (n = 460) who graduated from the Warren Alpert Medical School of Brown University (AMS) between 2010 and 2014. We obtained demographics of gender, historically underrepresented group (HUG) status, and matriculation age, along with USMLE Step 1 exam (3-digit) scores, MCAT scores, and average exam scores for the first year and second year of medical school. The primary outcome measured was shelf score performance, represented as each student's overall average shelf grade, including exams in Internal Medicine, Obstetrics/Gynecology, Pediatrics, Psychiatry, and Surgery. We used Stata version 14.1 (StataCorp, College Station, Texas) for data analysis. We performed simple and multiple linear and logistic regression analyses to identify correlates for the outcome. We performed model generation for multiple linear regression with a forwards stepwise procedural generation (criteria for inclusion p < 0.05).

Results: The mean of the average shelf scores for each student was 77.6365 +/- 7.1811. On univariate analysis, all variables studied except for matriculation age correlated with shelf performance (p < 0.05), with positive correlation with female gender, non-URM status, and all exam scores. In our multiple linear regression model, we found Step 1 and the average exam scores for year 1 of medical school to be predictive, with both being positively correlated with the average shelf score (model R2 = 0.7248). The regression coefficients of Step 1 score and year 1 exam average were 0.2452 +/- 0.0200 and 0.3064 +/- 0.0659, respectively, with a constant value of 37.7699 +/- 5.1376.

Discussion: While this model is far from fully predictive, it does show interesting correlations of shelf exam performance with previous performance as a medical student. This data confirms trends of performance from the preclinical years to the clinical in terms of standardized exams, and can potentially assist in identifying students that will require targeted shelf exam preparation.