
CLINICAL CASE OF THE MONTH

Abstracts from the 2018 Annual Louisiana American College of Physicians (ACP) Associates Meeting

Each year medical students from the four medical schools and residents from the eight Internal Medicine training programs in Louisiana are invited to submit abstracts for the Annual Louisiana American College of Physicians (ACP) Associates Meeting. The content of these abstracts includes clinical case vignettes or research activities. The abstracts have all identifying features removed (i.e., names, institutional affiliations, etc.) before being sent to physician judges. Each judge scores each abstract independently and then the scores from all judges are averaged and ranked. This year we are excited to be able to publish the 15 most highly ranked abstracts presented at this year's competition that were oral presentations. Additionally 12 abstracts (out of 57 total) were selected by meeting attendees for publication. All abstracts (15 oral and 12 poster) were presented at the Associates Meeting held at University Medical Center in New Orleans on January 23, 2018. We would like to thank the *Journal of the Louisiana State Medical Society* and appreciate its efforts to publicize the hard work of these trainees.

Shane Sanne, DO

Chair, Louisiana Associates Liaison Committee

Lee S. Engel, MD, PhD, FACP

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A CASE OF MULTIPLE MYELOMA PRESENTING WITH AMYLOID ASSOCIATED MYOPATHY

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**Presented as a mystery case*

Introduction: Amyloidosis-associated myopathy is rare. Delay in diagnosis is common and there is a high rate of pathologic and clinical misdiagnosis.

Case: A 58-year-old woman presented to the hospital with acute onset, profound left lower extremity weakness and pain. She had no prominent constitutional symptoms except for generalized tiredness and weakness. On physical examination, she had mild temporal wasting, impressive left hip and knee extensor weakness, left pitting pedal edema, and good vascular perfusion. No other focal neurologic deficits were noted. She underwent extensive evaluation including comprehensive CT imaging of the lumbar spine, abdomen and pelvis that demonstrated diffuse enlargement of the musculature and a heterogeneous appearing left iliopsoas muscle with hypodense areas, concerning for inflammatory or infectious myositis. A diagnosis of inflammatory myositis was unlikely due to normal CPK and aldolase levels. She was initially treated with IV antibiotics for presumed pyomyositis without improvement. Furthermore, routine laboratory evaluation revealed mild

anemia, hypoalbuminemia, and significant proteinuria, but no hypercalcemia or renal insufficiency. Subsequent serum and urine protein electrophoresis showed prominent lambda chains in the urine with additional IgG lambda monoclonal protein in the serum and urine. Skeletal survey showed early lytic bone lesions. She underwent bone marrow biopsy that demonstrated increased plasma cells at 70% consistent with multiple myeloma. This did not completely explain her isolated left extremity weakness so amyloid infiltration was considered. Congo red stain was later performed on the same specimen, which confirmed amyloid deposition within the blood vessel walls. Treatment was initiated with dexamethasone, lenalidomide and bisphosphonates, resulting in improvement of her symptoms.

Discussion: This case illustrates the important clinical and laboratory findings associated with multiple myeloma, and describes an uncommon complication, amyloidosis, resulting in profound myopathy. Classic presentation typically includes CRAB features (hypercalcemia, renal insufficiency, anemia, and bone pain). However, variable initial clinical findings and the absence of typical lab markers can make recognition of the disorder difficult in many patients. Amyloid myopathy should be a consideration in adults with muscular weakness of uncertain cause. Late diagnosis remains a major obstacle to initiating effective therapy. Hence recognizing the presenting syndromes is necessary for improving survival.

STRONGYLOIDIASIS PRESENTING AS RECURRENT COLITIS

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Introduction: We describe a case of strongyloidiasis hyperinfection syndrome that exemplifies the pitfalls and risks in diagnosing and managing this potentially fatal illness.

Case: A 73-year-old woman who emigrated from Ecuador 30 years ago presented with diffuse, progressively worsening abdominal pain and nausea for one week. She presented with similar symptoms multiple times in the past 4 years. Prior workup included colonoscopies with biopsy demonstrating focal active colitis and proctitis, including an eosinophilic infiltrate. Prior stool ova & parasite exams were negative. Three months prior to presentation, she had been diagnosed with Drug Reaction with Eosinophilia and Systemic Symptoms syndrome (DRESS), and treated with high-dose steroids with prolonged taper, still ongoing at time of presentation. On presentation, her abdomen was diffusely tender with hypoactive bowel sounds. Lab results revealed hypoalbuminemia and Computerized Tomography scan of the abdomen revealed ascending colitis. She received stress-dose steroids, intravenous fluids, and empiric ciprofloxacin and metronidazole. Initial stool exam was negative for ova & parasites. Esophagogastroduodenoscopy was performed, revealing gastritis and duodenitis, with biopsy revealing intracryptal larval *Strongyloides stercoralis*. Repeat stool exam revealed rhabditiform *Strongyloides* larva. Oral ivermectin therapy was commenced. During the interval, she developed fever, lethargy, and became minimally responsive. Ivermectin was continued via nasogastric tube, albendazole was added, along with broad-spectrum antibiotics to cover gram-negative meningitis and sepsis. Shortly thereafter, the patient developed multi-system organ failure and expired.

Discussion: Strongyloidiasis affects 10-40 percent of population in tropical/subtropical countries. This parasite can survive in human body for decades through autoinfection. In settings of immunosuppression, such as with steroids as in our patient, hyperinfection with widespread migration of the parasite beyond the GI tract can occur with resultant sepsis derived from bowel bacterial flora. Eosinophilia is frequently absent and stool exam has poor sensitivity. A high index of suspicion is needed to diagnose chronic Strongyloidiasis in immigrants with chronic abdominal symptoms, especially when there is a lack of eosinophilia and falsely negative stool exam.

ABERRANT RIGHT SUBCLAVIAN ARTERY: A RARE CAUSE OF DYSPHAGIA

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Introduction: Aberrant right subclavian artery (also known as Arteria Lusoria) is the most common congenital anomaly of the aortic arch occurring in 0.5% to 1.8% of the population. The aberrant artery crosses midline behind the esophagus (80%), between the trachea and esophagus (15%), or anterior to the trachea (5%). The retroesophageal course of the right subclavian artery, although usually asymptomatic, may cause compression and a type of dysphagia known as dysphagia lursoria.

Case: A 50-year-old woman with a medical history of von Willebrand disease, hypertension, asthma, and peripheral neuropathy presented with several weeks of progressive dysphagia associated with heaviness in her chest and 60 lb. weight loss. Her dysphagia began with solid foods and progressed such that three days prior to presentation, she could no longer tolerate solids or liquids. CT neck angiography revealed a congenitally anomalous aortic arch with a retroesophageal aberrant right subclavian artery. Barium esophagram did not reveal any intrinsic mass, polyp, diverticulum, or stricture. There was mild extrinsic mass effect on the posterior aspect of the upper esophagus however this caused no limitation of contrast passage. An EGD was unremarkable and esophageal manometry was unremarkable with normal LES with normal relaxation.

Discussion: Most patients with aberrant right subclavian arteries remain symptom-free throughout their lifetimes. Various proposed mechanisms for dysphagia include age related increased esophageal rigidity, right subclavian aneurysm formation, and elongation of the aorta.

Barium swallow remains an effective tool for initial evaluation usually showing a characteristic diagonal impression in the esophagus at the level of 3rd-4th vertebra. EGD may reveal a pulsating mass around the same level. Esophageal manometry may reveal a high-pressure zone 25-30cm from the nose. CT angiography of the aortic arch, or endoscopic ultrasound are often used for definitive diagnosis. Initial treatment with a prokinetic or anti-reflux drug may be followed by surgery or endoscopic dilation if conservative therapy fails.

NOCARDIOSIS EXACERBATED BY IMMUNE RECONSTITUTION INFLAMMATORY SYNDROME

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Case: A 62-year-old woman with past medical history of HIV/AIDS with CD4 48/mm³ and noncompliance with combination antiretroviral therapy (cART) was admitted to an outside hospital two months prior and diagnosed with cavitary *Nocardia farcinica* pneumonia. She was treated with imipenem and amikacin, but developed a morbilliform drug eruption concerning for DRESS; dermatology determined that the rash was more likely secondary to imipenem. Her treatment was discontinued after only twelve days of imipenem and seven days of amikacin. Repeat CT chest showed a new cavitary lesion in the right upper lobe of the lung. She was discharged with oral trimethoprim/sulfamethoxazole (TMP-SMX). She followed up with her HIV provider and was started on cART, which she took consistently. She felt well until the following month when she suffered two tonic-clonic seizures and left sided weakness. She denied diplopia, headache, nausea or vomiting. CT brain scan demonstrated a right frontal lobe ring enhancing mass consistent with a brain abscess. She was started on amikacin, moxifloxacin and TMP-SMX with improvement of weakness. She was continued on cART with significant increase in CD4 T-cell count from 48 to 92/mm³ and decrease of viral load from 195,128 to 1,955 copies/mL. A MRI brain was later repeated with increased size of the brain abscess and vasogenic edema. She underwent evacuation of the abscess. Gram stain from the brain abscess grew filamentous, branching, beaded gram positive rods that were modified acid fast positive that speciated as *Nocardia farcinica*. She was treated with six weeks of induction with TMP-SMX and amikacin followed by oral treatment with TMP-SMX and minocycline for at least one year given her HIV/AIDS status. cART was held due to concern for immune reconstitution inflammatory syndrome (IRIS) with plans to resume based on continued radiologic improvement.

Discussion: Pulmonary Nocardiosis with neurological deficits should prompt evaluation for CNS involvement. Perhaps, early initiation of cART along with inadequate treatment of pulmonary *Nocardia* resulted in “unmasking” her brain abscess consistent with IRIS, a paradoxical inflammatory response that may result when a patient with HIV/AIDS has regained an immune response.

THIS HEADACHE IS NOT A BLAST

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Case: A 46-year-old man presented with one week of intermittent headaches. The pain started in his neck and radiated to the eyes. There was associated nausea and vomiting. On the day of admission, he experienced visual hallucinations prompting him to seek medical care. Further history revealed he was diagnosed with CML the previous year and had a blast crisis three months prior treated with induction chemotherapy, leukapheresis, and one round of intrathecal methotrexate due to concern of leukemic retinopathy. Cerebral spinal fluid (CSF) returned without blasts at that time. Bone marrow biopsy at 30 days after chemotherapy induction did not reveal any blasts and patient was continued on imatinib maintenance therapy. On exam, the patient was afebrile with normal vital signs. Kernig, Brudzinski, and jolt testing were negative. He was alert and oriented with normal cognition and an otherwise normal exam. No acute intracranial abnormality was noted on CT of the head. CBC returned with an elevated leukocyte count of 14,000/uL. The following day the patient developed diplopia and peripheral smear revealed 57% blasts. Cerebral spinal fluid (CSF) studies revealed leukocyte level of 1600/uL and 99% blasts confirming diagnosis of central nervous system (CNS) blast crisis.

Discussion: CNS blast crisis is a rare diagnosis but important to keep on the differential for any patient with CML who presents with a headache. Furthermore it is important to realize that imatinib has poor CSF penetration compared to second-generation tyrosine kinase inhibitor.

Confounding this case was the fact that imatinib carries high rates of adverse side effects that mimic the common symptoms associated with CNS blast crisis: up to 38% of patients on imatinib experience headaches, up to 73% have nausea, and up to 11% experience vision changes. Our patient was treated with re-induction chemotherapy with cytarabine, etoposide, mitoxantrone, intrathecal methotrexate, and dasatinib. Despite treatment, a CNS blast crisis carries a poor prognosis with 88% mortality at 1 year.

MUDBUG COLITIS

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Introduction: *Plesiomonas shigelloides* and *Vibrio mimicus* are rare bacterial infections causing diarrhea, severe abdominal pain, and vomiting. Both bacteria live in water environments, flourish in warmer climates, and typically affect patients who consume raw or undercooked shellfish or drink contaminated water. Clinical manifestations of infection with either vary in length and in character often mimicking other gastrointestinal diseases, making these infections a diagnostic dilemma.

Case: A previously healthy 24-year-old man presented with new onset generalized abdominal cramping, watery diarrhea and one-day of vomiting. Symptoms began intermittently six weeks ago and acutely worsened about one week prior to presentation after consuming boiled crawfish. Family history was significant for Crohn's disease in his mother. Exam revealed diffuse hyperactive bowel sounds and tenderness to palpation across suprapubic/epigastric regions of abdomen. Initial laboratory studies revealed a leukocytosis with a left shift and mild hypokalemia. There were few white blood cells seen in stool. FOBT was positive. HIV was negative. CT with contrast showed mild diffuse wall thickening of distal small bowel, cecum, and ascending colon with air-fluid levels in the small bowel. Esophagogastroduodenoscopy was negative. Colonoscopy revealed a 1 cm sigmoid polyp which was hot snared, otherwise normal. All biopsies taken during both diagnostic procedures were benign and without evidence of granulomas or lymphocytic changes. *Clostridium difficile*, stool-eosinophils, stool ova and parasites, *Giardia* antigen, and Rotavirus were all negative. Stool cultures later resulted with moderate growth of *Vibrio mimicus* and *Plesiomonas shigelloides*. The patient was prescribed ciprofloxacin (500mg PO BID) for five days of treatment.

Discussion: This case illustrates the nebulous presentation of *Plesiomonas shigelloides* and *Vibrio mimicus* coinfection in addition to the challenges of diagnosing inflammatory versus infectious colitis. The patient's prolonged gastrointestinal symptoms along with family history of Crohn's disease favored inflammatory bowel disease over infrequent causes of bacterial colitis. However, during this season when eating boiled crawfish is common, he may have had multiple exposures. Early recognition of patient risk factors and appreciation of atypical bacteria in certain regions of the country are important in reducing healthcare costs and unnecessary treatment for patients with ambiguous GI symptoms.

AN INTERESTING CASE OF CHEST PAIN

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Introduction: Coronary Artery disease (CAD) is the most common cardiac etiology for chest pain. Atherosclerosis accounts for almost 95% cases of CAD, while autoimmune vasculitis is very rare. We present here an interesting case of chest pain which lead us to the diagnosis of Polyarteritis Nodosa (PAN).

Case: A 36-year-old man presented with midsternal chest pain, dyspnea, epigastric pain, nausea and 50-pound weight loss. Vitals were stable except for blood pressure of 228/144 mm Hg and physical exam was unremarkable. Labs showed BUN 45 mg/dl, creatinine 4.28 mg/dl and normal troponin. ECG showed sinus tachycardia, frequent PVCs and incomplete left bundle branch block. Echocardiogram revealed 40% ejection fraction, moderate mitral and tricuspid regurgitation. Cardiac nuclear stress test revealed fixed medium defect in inferior region and small partially reversible defect in inferolateral region. Coronary angiography showed 100% stenosis of proximal right coronary artery (RCA), ectatic and aneurysmal changes in distal RCA, left mainstem coronary artery, proximal left anterior descending artery, proximal lateral circumflex artery, left subclavian artery and right femoral artery branches. Workup for all etiologies of vasculitis and hepatitis panel was negative. 4/10 ACR criteria for classification of PAN were met: weight loss >4kg, diastolic blood pressure >90 mm Hg, BUN >40 mg/dl or creatinine >1.5 mg/dl and arteriographic abnormalities. Medical management for CAD along with hemodialysis, pulse dose steroids followed by cyclophosphamide therapy was initiated. At 3-month clinic follow up, he remained chest pain free.

Discussion: PAN is a systemic necrotizing vasculitis which routinely involves small to medium-sized arteries. Coronary artery involvement is very rare. There are no clear-cut guidelines or common consensus regarding management of coronary vasculitis with severe luminal narrowing in patients with PAN. A few published cases illustrate the utility of coronary artery bypass grafting and percutaneous coronary intervention (PCI) after initial treatment with immunotherapy. Cardiac transplantation may also be considered in patients with poor response to immunosuppressive therapy. Alternatively, initial medical management with close follow-up and interventions as necessary is a reasonable approach.

DISSEMINATED HERPES ZOSTER MENINGOENCEPHALITIS ON TOFACITINIB

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Introduction: Tofacitinib is an oral Janus Kinase (JAK) inhibitor approved for rheumatoid arthritis in 2012. Meningoencephalitis is a rare but potentially life threatening complication of varicella herpes zoster for patients taking tofacitinib.

Case: A 66-year-old woman with a history of seropositive erosive rheumatoid arthritis and secondary sjogren syndrome previously treated with numerous conventional and biologic disease modifying anti-rheumatic drugs and corticosteroids experienced a reduction in rheumatoid arthritis disease activity on tofacitinib. After four months of therapy she presented with a five day history of altered mental status and hallucinations about one week after stopping tofacitinib for impending ankle surgery. Review of systems revealed right lateral hip pain associated with vesicular rash, subsequently found to be multi-dermatomal shingles. One year previous, she had an episode of altered mental status which was diagnosed as pachymeningitis that clinically responded to treatment with corticosteroids. On admission, the patient was found to be afebrile, heart rate of 78, respiratory rate of 18, blood pressure of 153/82mmHg and saturating 100% on room air. Physical examination was pertinent for disorientation, with delayed response to questions. Blood work was pertinent for erythrocyte sedimentation rate of 155 mm/Hr, mild hyponatremia of 131 mmol/L and hemoglobin of 11 g/dL. Computed tomography showed no acute intracranial abnormalities. Magnetic resonance imaging showed trace residual diffuse pachymeningeal enhancement significantly improved from prior. Lumbar puncture showed lymphocytic pleocytosis and elevated protein consistent with viral meningitis. Varicella zoster polymerase chain reaction of cerebral spinal fluid was positive. The patient was started on a three week course of intravenous acyclovir with gradual improvement in her mental status.

Discussion: Varicella zoster virus reactivates to cause herpes zoster and in patients with decreased cell mediated immunity, this process can be complicated by post herpetic neuralgia, vasculopathy or meningoencephalitis. In pooled analysis the crude incidence rate of herpes zoster with treatment of tofacitinib was 4.0 events per 100 patient years of tofacitinib. While the majority of reported cases were non serious, 25 cases of disseminated or multidermatomal herpes zoster, correlating to an incidence rate of 0.149 events per 100 patient- years were reported. This case of varicella meningoencephalitis demonstrates a rare complication of tofacitinib therapy.

ATYPICAL METASTASIS OF RENAL CELL CARCINOMA TO THE UVULA

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Case: A 55-year-old woman with a history of stage 3(T3aN0M0) renal cell carcinoma s/p nephrectomy 3 years prior, presented with persistent headaches, as well as vertical diplopia on upward gaze. MRI showed a well circumscribed mass, intensely enhancing mass 2.3cm in diameter in the left nasal cavity, bulging into the left maxillary sinus. The patient underwent stereotactic CT-guided endoscopic sinus surgery, which showed mass extended into the left maxillary sinus. Frozen sections confirmed RCC of the left ethmoids and nasal cavity. She then underwent intensity-modulated radiation therapy to the ethmoid sinus area via tomotherapy for a total dose of 3900 cGy, and started on Sutinib, which was stopped based on a predicted lack of response on CARIS testing results, and later Everolimus, which was stopped due to grade 3 fatigue and severe mucositis. Approximately 1 year after left ethmoid sinus metastectomy, our patient presented with symptoms of a foreign body sensation at the back of her throat and oropharyngeal examination revealed uvular erythematous mass with vascularity. Uvular biopsy and complete excision were performed, which revealed metastatic renal cell carcinoma. Palate biopsy was negative and revealed only squamous mucosa with mild chronic inflammation. The patient was restarted on a lower dose of Everolimus, which was continued until recent disease progression, with new lung metastases visualized on CT. Patient was then switched to Pazopanib.

Discussion: Renal cell carcinoma is a common malignancy with high metastatic potential, primarily due to its extensive vascularity. Common sites of metastasis include lungs, bone, lymph nodes, liver, and brain. However, there have been rare cases of metastasis to other sites including inguinal lymph nodes, peritoneum/mesentery, and orbit published in the literature. To our knowledge, there is only one other documented case of RCC metastasis to the uvula in the literature.

A CASE OF GANCICLOVIR-RESISTANT CMV IN A DONOR NEGATIVE/RECIPIENT NEGATIVE LIVER TRANSPLANT PATIENT

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Introduction: Cytomegalovirus (CMV) disease in liver transplant patients with donor-seronegative and recipient seronegative (D-/R-) status is a rarity. Ganciclovir-resistant CMV disease in this population is even much rarer and has never been reported.

Case: A 62-year-old man with a past medical history of cirrhosis secondary to hepatitis C with complications of slight ascites and grade 2 esophageal varices s/p banding underwent orthotopic liver transplant from a cadaveric donor. The patient had a donor-seronegative and recipient-seronegative (CMV D-/R-) status. He was on tacrolimus, mycophenolate, prednisone and valganciclovir therapy. The patient completed valganciclovir therapy 90 days after transplant. Patient presented 4 months after transplant with a history of acute diarrhea ongoing for a week. Physical exam revealed non-thrombosed external hemorrhoids. Labs showed a white cell count of 9.3, baseline hemoglobin of 11.1 g/dl, potassium 4.4 mmol/L, and significant rise in creatinine from 0.91 to 2.8 mg/dl, AST 311, ALT 521, Alkaline phosphatase 290, Total Bilirubin 0.4 mg/dl. The patient tested negative for *Clostridium difficile* infection. CMV DNA quantitative pattern returned positive at 14,900 IU/ml. Flexible sigmoidoscopy showed erythematous mucosa in the sigmoid colon, no ulcers seen. Biopsies obtained revealed increase in inflammatory cells within the lamina propria, minimal neutrophilic inflammation, apoptotic debris and occasional viral inclusions within endothelial and fibroblast cells within the lamina propria. Immunohistochemical stain for CMV returned positive. These findings correlated with a diagnosis of CMV colitis. Liver biopsy was negative for CMV hepatitis. Genotype studies showed mutations in CMV UL 97 and resistance to ganciclovir indicative of infection with ganciclovir-resistant (GanR) CMV. The patient was started on IV Foscarnet. Repeat follow-up after a month showed patient with CMV PCR negative status with normalization of liver enzymes.

Discussion: To our knowledge, there has been no documentation of a case of GanR CMV in the CMV D-/R- population. Our case of Ganciclovir-resistant CMV in this population is the first documented. This presentation should alert gastroenterologists about the danger of the liberal use of CMV prophylaxis in the CMV D-/R- population

LEPTOSPIROSIS: A CAUSE OF SOUTH AMERICAN TROPICAL FEBRILE INFECTION

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Introduction: Worldwide incidence of leptospirosis stands at over 1 million cases per year, typically from tropical climates. Outbreaks occur after heavy rainfall or flooding. Additional risk factors include immersion or consumption of contaminated water. While usually asymptomatic, 90% of clinical infections present as a self-limiting febrile illness. Initial symptoms include severe headache, chills, myalgia, nausea, vomiting, diarrhea, abdominal pain, and cough. Conjunctival suffusion is characteristic, but not always present, while the skin rash seen in other tropical febrile infections is rare.

Case: A 36-year-old man from the United States presented with fevers, night sweats, chills, severe headache, paresthesias, diffuse symmetric arthralgias, myalgias and auditory hallucinations after a 4-day hike along the coast near Mendellin, Colombia. Activities included hostel stays, camping, freshwater swimming, mosquito bites, and ingestion of water from local sources purified by commercial tablets. He received yellow fever and typhoid vaccinations prior to departure, and took atovaquone/proguanil malaria prophylaxis. Conjunctival suffusion and skin rashes were absent. Initial lab work revealed hemoglobin 13.5, platelets 108, ALT 72. Ultrasound revealed mild hepatosplenomegaly. Serological studies for HIV, Dengue, Zika, and Chikungunya were non-reactive, and no Malaria parasites were seen on thick and thin smears. *Leptospira* IgM antibodies returned positive and a 7 day course of oral doxycycline was prescribed.

Discussion: Though occurring in only 10% of clinical illness, progression to the second or immune phase of Leptospirosis can include renal and liver failure, known as Weil Disease, with case-fatality ratio approaching 5-15%. A pulmonary hemorrhagic form exists with case-fatality ratio > 50%. Because leptospirosis often presents as a biphasic illness after a temporary improvement in fever and symptoms, early detection and treatment remains critical. Doxycycline is the drug of choice, but alternatives include ampicillin or amoxicillin. Severe cases require penicillin 1.5MU IV every 6 hours or IV ceftriaxone. Exposure avoidance remains the mainstay for prevention. Though not recommended, chemoprophylaxis with doxycycline 200mg weekly may prevent clinical disease in short-term exposures. Physicians should recognize leptospirosis as a cause of tropical febrile illness to prevent progression to more severe disease.

WHAT CAME FIRST: THE OVARY OR THE LYMPHOCYTE?

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Case: A 31-year-old woman with history of daily IVU and untreated Hepatitis C presented to the emergency department with three months of non-specific progressive ailments including left knee pain, shortness of breath with exertion and three-pillow orthopnea, twelve pound weight loss, abdominal "tightness" greatest in the left lower quadrant, early satiety, dysphagia to liquids and solids, left axillary node swelling and bilateral supraclavicular lymph node swelling. She denied fever, chills, night sweats, recent travel, sick contacts or family history of cancer. Chest CT showed a substantial left pleural effusion with lobulated pleural thickening and mediastinal and hilar lymphadenopathy consistent with sarcoma versus metastatic disease. Subsequent abdominal and pelvic CT showed enlarged retroperitoneal lymph nodes of the left pelvis and groin with a solid mass in the left deep pelvis concerning for ovarian malignancy, metastatic disease, lymphoma or sarcoma. Transvaginal ultrasound revealed a solid left adnexal mass measuring 5.6x3.4x5.2 cm. Workup was begun to ascertain the primary site of malignancy suspicious for lymphocyte versus ovarian source. A right supraclavicular lymph node biopsy was performed during which she was intubated for increasing left pleural effusion with compression of mediastinal structures. Thoracentesis was performed with removal of 1.5 L of blood-tinged pleural fluid and a chest tube was placed. Flow cytometry of the lymph node biopsy showed 95.6% T lymphoblasts positive for CD2, CD3, CD7, TdT and CD99 consistent with the diagnosis of Non-Hodgkin T-cell lymphoblastic lymphoma. CA125 was mildly elevated at 47, not suggestive of ovarian malignancy. Despite numerous attempts at discussing the importance of a bone marrow biopsy and cancer treatment options, the patient declined all medical intervention or palliative resources.

Discussion: Malignant lymphoma involvement of the female genitourinary tract, including the ovary, is not commonly seen. While ovarian involvement is relatively rare, non-Hodgkin Lymphomas such as T cell lymphoblastic lymphoma (T-LBL) represent a frequency of approximately 7 to 26% of those diagnoses and should be considered in the differential diagnoses of young females with ovarian masses.

HOMELESS HEALTH IN NEW ORLEANS: DO STUDENT CLINICS CONNECT PATIENTS TO LONG-TERM CARE?

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Background: Tulane University School of Medicine operates Student Run Free Clinics (SRFCs) serving underserved populations throughout greater New Orleans. Patients are regularly referred to Health Care for the Homeless (HCH), a Federally Qualified Health Center (FQHC). The factors associated with referral and establishment of sustained care at HCH are unknown. This study aims to characterize Tulane SRFCs' role in linking New Orleans underserved to HCH.

Method: Using a secure online database, students at SRFCs collect demographics, health risk factors, key objective findings, and treatment plans following each patient visit. This study included all individuals in the database from homeless shelter clinics between 10/2016 to 9/2017. In collaboration with HCH, patients referred to HCH were tracked for appointment attendance, both prior to referral and within 90 days of being referred. Study population was characterized; referral rates were assessed relative to a variety of disease and demographic variables.

Results: 146 patients met study criteria. The population was 93.9% homeless, 90.3% male, with an average age of 51.2 years (± 11.6). Patients were 60.0% African American and 37.9% Caucasian. Of the 30.8% (n=45) of patients referred to HCH, 22% (n=10) had been to HCH prior and 31.1% (n=14) followed up within 90 days. No patients who followed up within 90 days had been to HCH before. Successfully referred patients attended between 1 and 5 appointments within 90 days, an average of 1.76 appointments (± 1.01) with 57.1% attending multiple appointments. Using a significance threshold of 0.1 and controlling for all other disease and demographic factors, patient with younger age ($p=0.041$) and/or history of illicit drug use ($p=0.067$) were less likely to receive a referral. Patients given Acetaminophen ($p=0.065$) were more likely to receive a referral. Patients with a high-school diploma ($p=0.019$), psychiatric diagnosis ($p=0.010$) or prescribed Inhaled Bronchodilator/Corticosteroids (0.047) were more likely to attend follow-up appointments at HCH.

Conclusion: Despite barriers to care, some (31.1%) referred patients do attend appointments at HCH within 90s days. Although this proportion could be improved, the majority (57.1%) who successfully follow up achieved some degree of longitudinal care. This suggests that SRFCs can act as a bridge connecting underserved patient populations with long-term medical care. Predictive factors provide the opportunity to understand and improve patient SRFC patient care.

MIMICKING LUNG CANCER: A MOLDY PROBLEM

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Case: A 74-year-old woman with a history of HTN, HLD, type 2 diabetes, tobacco use (50 year) and CKD IIIb presented complaining of cough with thick brown sputum and right posterior chest wall pain of greater than 6 weeks. She had been treated 10 days prior for community acquired pneumonia without significant improvement. She also complained of 10lb weight loss along with night sweats and fevers. She had SIRS criteria on admission along with a consolidation in the right upper lobe that had worsened compared to the CXR from 10 days prior. She was started on broad-spectrum antibiotics as she had failed outpatient treatment for CAP. She had minimal improvement over the next 48 hours and the majority of her microbiological workup was negative. Consequently, a CT chest showed significant consolidation in the right upper lobe, including ground-glass areas and a non-calcified nodular density. The patient underwent a bronchoscopy that showed cobblestoning and friable tissue throughout the trachea along with various areas of bleeding from the right bronchus. Biopsies and cultures were collected and there was high suspicion of an endotracheal tumor with a post-obstructive pneumonia. Subsequently, the patient's BAL returned with numerous septate hyphae showing 45° angle branching. The patient's respiratory culture resulted with *Aspergillus Fumigatus*, and she was started on Voriconazole 200mg BID. A CT scan 2 months later demonstrated improvement in consolidations in the right upper lobe with formation of multiple apical and upper lobe cavities.

Discussion: *Aspergillus* infections, which are frequently associated with immunocompromised states, are primarily found in the pulmonary system, but infection of the cutaneous, cardiac and gastrointestinal systems frequently occur. This patient's cancer workup was negative but she had poorly controlled diabetes. Tracheobronchial aspergillosis is commonly found in lung transplant patients with pulmonary aspergillosis being a late manifestation. Our patient had a clear CXR 4 months prior and developed an invasive infection in a relatively short period of time. This case highlights the importance of tight glycemic control as the hyperglycemic environment created by poorly controlled diabetes results in immune dysfunction.

RAT BITE FEVER IN A DUMPSTER DIVER

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Case: A 56-year-old African American man with a past medical history of pre-diabetes, HLD, HTN, and intellectual disability presented with right arm pain as well as 2-3 weeks of generalized weakness, subjective fevers, poor appetite and "loose stools." Review of systems was significant for recent left knee pain as well as a 9 pound weight loss. Upon obtaining further history, the patient reported that he had been dumpster diving and collecting aluminum cans in the recent months and sustained multiple cuts from various items of garbage. At the time of presentation he was febrile (101.5°F), ill-appearing, and underweight. He exhibited an erythematous macular rash of his palms and soles with no associated penile or perineal lesions. Joint exam did not reveal any effusions, warmth or erythema. His labs were significant for a leukocytosis of 19.3 with 17.9% neutrophils, negative RPR, HIV, urine gonorrhea and chlamydia. CXR and CT head provided no source for infection. Blood cultures were positive for a gram negative anaerobe, and he was started on piperacillin/tazobactam for a total of 11 days until final speciation resulted as *Streptobacillus moniliformis*. He was transitioned to Augmentin to complete 14 days total of antibiotic therapy.

Discussion: Rat bite fever can be caused by both *Streptobacillus moniliformis* or *Spirillum minus* (though *S. minus* is found predominantly in Asia). *Streptobacillus moniliformis* is filamentous, gram negative, non-motile, microaerophilic, highly pleomorphic bacillus which can cause two main clinical syndromes: rat bite fever and Haverhill fever. Transmission is usually via direct inoculation, handling rodents, or ingestion of contaminated food or water. Clinical symptoms occur 3-10 days after a bite or scratch by an infected rodent, but can occur up to 3 weeks later. Treatment includes bite wound care followed by systemic antibiotics with penicillin being the agent of choice. Long-term complications are rarely seen if patients are treated appropriately; however, if treatment is not initiated then long-term effects can include endocarditis, myocarditis, pericarditis, meningitis, pneumonia, abscesses in internal organs, and rarely, death.

ALL HURTING IN A PRISONER IS NOT MALINGERING

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Introduction: Pyogenic liver abscesses are uncommon, although recent studies have shown increasing incidence of 8 to 15 per 100,000 population in the United States. In nearly 40% of cases of pyogenic liver abscess, the source of infection is unknown.

Case: A 21-year-old man presented from prison with abdominal pain, multiple episodes of nausea, vomiting, and diarrhea for 5 days. He reported associated intermittent fevers. He was a previous smoker but quit two years ago. Physical examination was remarkable for tachycardia and fever with temperature recorded as 103.7F. He was weak and diaphoretic. He had right upper quadrant tenderness. Laboratory findings revealed leukocytosis of 15.6 K/UL with 83% neutrophils, ALT of 30, AST of 43, alkaline phosphatase of 240, and total bilirubin of 1.5 mg/dL. INR was 1.72. Initial blood cultures obtained in the emergency department returned positive for methicillin-susceptible staphylococcus aureus (MSSA). CT scan of the abdomen and pelvis with IV contrast showed a large multi-lobulated right hepatic mass, measuring 8.4 cm with soft tissue extension into the upper pole of the right kidney. The patient underwent a CT-guided percutaneous drainage of the suspicious liver abscess with initial return of 150 ml of serosanguinous fluid. Two drains were left in place but were subsequently removed after output became minimal. Cultures obtained from the aspirate subsequently grew MSSA. Broad spectrum antibiotic therapy was narrowed down to IV Nafcillin continued for 4 weeks postdate of negative blood cultures. Follow-up in clinic 1 month after discharge revealed stable clinical condition as the patient reported resolution of symptoms and return to baseline functional status.

Discussion: Infections of the biliary tract involving gram-negative bacteria, are the most common source of pyogenic liver abscess. On initial encounter of patients with pyogenic liver abscess, clinicians should consider broadening antibiotic coverage to include gram-positive organisms if the patient presents with severe illness and significant risk factors for gram positive infections such as recent incarceration. It is also important for the clinician to consider early percutaneous drainage in patients with presumed liver abscess for guidance in antibiotic therapy.

CONCURRENT PERSISTENT CRYPTOCOCCOMA AND MYCOBACTERIUM AVIUM COMPLEX INFECTIONS IN HUMAN IMMUNODEFICIENCY VIRUS-INFECTED PATIENT: FIGHTING TWO MONSTERS

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Introduction: Cryptococcosis is an important opportunistic infection among HIV patients with estimated mortality of more exceeding 600,000 death worldwide. The diagnosis of cryptococcosis is based on yeast isolation of from cerebrospinal fluid (CSF) or serum detection of cryptococcal antigen. Treatment of cryptococcosis has three main steps, first with antifungal treatment, management of increased intracranial pressure and restoration of immune system upon initiation of antiretroviral therapy. Cryptococcosis and mycobacterium avium complex (MAC) are considered to be in the low incidence among HIV patients with prevalence of 8% and 11.3%, respectively. Co-infection of cryptococcosis and MAC is extremely rare even in immunocompromised individuals.

Case: A 28-year-old man presented to emergency department with one month history of a band-like headache that started gradually and became worse over the course of the last month. The headache was associated with fever, diplopia, altered sensorium nausea, ten-pound weight loss, productive cough, occasional bloody sputum and significant night sweat. Brain magnetic resonance imaging (MRI) showed multifocal rim enhancing lesions with extensive associated vasogenic edema throughout the bilateral convexities. Chest computerized tomography (CT) scan showed cavitary appearing lesion within the right lower lobe peripherally, with relatively thin wall. Cerebrospinal fluid grew *Cryptococcus neoformans*. Treatment included amphotericin B liposome intravenous 300 mg daily with oral flucytosine 1500 mg four times daily. Sputum culture resulted positive for *Mycobacterium Avium-Intracellulare* complex, and azithromycin switched to daily dose and rifampin 300 mg, ethambutol 400 mg and pyrimethamine 25 mg daily were started.

Discussion: Central nervous system involvement of Cryptococcosis is most likely secondary to hematological spread. Treatment of *Cryptococcus* infection should be initiated prior start anti-retroviral medication. Neurological symptoms among immunocompromised individuals urge immediate medical attention and radiological investigation is crucial to monitor treatment response. Clinical improvement and regular radiological monitor are important steps to determine treatment from persistence infection or other underlying pathology.

HISTOPLASMOSIS PRESENTING AS COLONIC STRICTURE IN HIV PATIENT

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Introduction: *Histoplasmosis capsulatum* is one of the most common endemic fungi in Southern Louisiana. Histoplasmosis often manifests as flu-like or respiratory illness in the immunocompetent, but can disseminate and commonly affects the gastrointestinal system in immunocompromised patients.

Case: A 30-year-old woman who had been diagnosed with HIV four months prior presented with body aches and fever during early June. Her CD4 count had improved robustly since starting ART at time of diagnosis from 40 to 360, with a 200-fold decrease in her viral load. CT scan demonstrated ascending and transverse colitis. The patient experienced occasional nausea, vomiting and abdominal pain but did not have diarrhea. She improved on piperacillin/tazobactam and rapidly defervesced and was discharged on ampicillin/sulbactam. Her symptoms resolved until one month later when she returned with intractable nausea and emesis. Repeat CT scan showed an apple core lesion in the transverse colon. The patient developed watery diarrhea on hospital day two. Colonoscopy showed high-grade ulcerated stricture suggestive of Crohn's disease. Yellow mucosa on endoscopy was sent for clostridium difficile testing, which was positive. She had persistent mechanical obstruction requiring subtotal colectomy with ileal descending colon anastomosis on hospital day four. Pathology from biopsies taken during colonoscopy demonstrated the presence of fungus, and she was initiated on amphotericin B for presumed disseminated histoplasmosis. Her serum and urine histoplasmosis antigens were both positive. She completed a 14-day course of inpatient therapy and was discharged with consolidation itraconazole therapy and a 14 day course of oral vancomycin for *C. diff* colitis.

Discussion: Disseminated histoplasmosis can present with a variety of symptoms ranging from non-specific fever to intestinal obstruction. The patient's initial presentation of fever and body aches may have been a manifestation of a brisk immune response to ART or of her initial histoplasmosis infection. On subsequent presentation, the appearance of an apple core lesion and endoscopic findings were misleading for malignancy or inflammatory bowel disease. Early recognition of disseminated histoplasmosis and initiation of therapy decreases length of hospitalization as well as unnecessary therapies.

A RARE CASE OF PROSTHETIC VALVE ENDOCARDITIS DUE TO PROTEUS

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Introduction: Proteus endocarditis is extremely rare and there is there is a lack of an optimal antimicrobial regimen. To our knowledge, we are reporting the first case of double prosthetic valve proteus endocarditis in a 60-year-old female patient who failed antibiotic treatment, ultimately requiring double prosthetic valve replacement.

Case: A 60-year-old woman with history of mechanical mitral and aortic valve replacement, Marfan syndrome, aortic aneurysm repair, atrial fibrillation and recent urinary tract infection presented with 1 day history of generalized weakness, lethargy and confusion. Vitals and physical exam were unremarkable except for blood pressure 98/52 mmHg and audible clicks in mitral and aortic areas. Labs were significant for INR > 15.0 and urinalysis was normal. ECG revealed ventricular paced rhythm. Computerized tomography of head without contrast was normal. She was started on ceftriaxone along with fluid replacement. Coverage was broadened to meropenem and vancomycin when she began having fevers while on ceftriaxone. Vancomycin was discontinued after cultures were grew *Proteus penneri* and *Proteus hauseri*. Transesophageal echocardiogram (TEE) revealed mechanical mitral valve with calcifications and normal mechanical aortic valve. The patient completed 6 weeks of IV meropenem and was discharged home on oral cefdinir to take indefinitely. She returned 3 weeks later with recurrent fever with proteus sepsis and was restarted on IV meropenem. Repeat TEE showed mitral regurgitation with densities on the anterior aspect of valve and vegetations on aortic valve. She subsequently underwent double valve replacement.

Discussion: Only three (0.1%) of cases of infective endocarditis were reported to be caused by *Proteus* species in one large study involving 2761 cases. Furthermore, only three cases of prosthetic valve proteus endocarditis have been reported. The majority of cases reported involve native valves with few successful outcomes with ampicillin and gentamicin. There is little evidence regarding the management of proteus endocarditis. Current recommendations suggest using a combination of beta-lactams and aminoglycoside due to potential synergism. With recurrent bouts of sepsis despite antibiotic therapy, we chose valve replacement for our patient.

SWINGS IN SODIUM: THE PENDULUM THAT FOLLOWS PITUITARY GLAND RESECTION

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Case: A 24-year-old man underwent trans-sphenoidal hypophysectomy for Rathke's cleft cyst. In the immediate post-operative period, he developed diabetes insipidus (DI), as evidenced by hypernatremia and dilute polyuria. At discharge on post-operative day 4, his sodium was 145 mmol/L. He was prescribed intranasal desmopressin as needed, but did not use it after he noticed decreased urine output. On post-operative day 8, sodium was 125 mmol/L. In clinic the same day, he complained of headache and vomiting, prompting hospital admission for treatment of acute hyponatremia. He appeared euvolemic, and urine osmolality was 809 mOsm/kg. Cortisol and TSH were normal. He was treated for presumed syndrome of inappropriate anti-diuretic hormone (SIADH) with fluid restriction; his sodium improved to 132 mmol/L the following day. He was discharged with instructions for fluid restriction. Repeat sodium on post-operative day 15 was 143mmol/L.

Discussion: Aberrancies in sodium and water regulation can occur after pituitary surgery. ADH is synthesized in nuclei located in the hypothalamus, transported via axons through the pituitary stalk, and stored in the posterior pituitary. When intra-operative damage occurs to these neuro-hypophyseal axons an initial shock may occur, resulting in decreased ADH release and early DI. This complication usually occurs within the first 48 hours after surgery. Between post-operative days 5-8, degeneration of neuro-hypophyseal axons can occur. Preformed ADH is suddenly released, leading to SIADH. This early DI followed by SIADH is known as the "biphasic" response. Depending on the extent of damage to the neurons, the ADH axis may either return to normal or become persistently dysfunctional, resulting in permanent DI. When the biphasic response is followed by persistent DI, this is termed the "triphasic" response. It is important for internists and endocrinologists to recognize that there may be several phases to water and sodium dysregulation after pituitary surgery. Initiating appropriate management and monitoring for sudden changes is vital to patient safety.

THE DIAGNOSIS OF HUNTINGTON'S DISEASE

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Case: A 37-year-old man with a history of anxiety disorder presented with progressive tics of bilateral upper and lower extremities for the last 9 years. They were associated with a staggering gait and intermittent slurred speech. He denied any recent trauma or injury. There was no known family history of neurodegenerative illnesses. He did not use drugs, rarely drank alcohol and had a 15 pack/year smoking history. He was treated with benzotropin, ziprasidone, and duloxetine for his anxiety. He reported that the tics began prior to receiving this therapy. Physical exam was notable for dyskinetic movements of upper and lower extremities bilaterally with 2+ reflexes throughout. A staggering gait was also present. No speech impairment was noted. Differential diagnoses included hereditary neurodegenerative diseases vs acquired (drug/toxin exposure and tardive dyskinesia). MRI was limited secondary to motion artifact. A diagnosis of Huntington's Disease was made by a positive test for 48 CAG repeats (consistent with full penetrance of disease). Our patient was started on tetrabenazene and underwent family counseling to discuss the ramifications of disease diagnosis and effect on future children.

Discussion: Huntington's disease is a neurodegenerative disorder due to CAG repeats on the huntingtin (HTT) gene on chromosome 4p. Often autosomal dominant in nature, it can rarely present as a new mutation. The worldwide prevalence for the disease is estimated to be 2.7 per every 100,000 people, with a greater prevalence in Europeans. Age of onset of the disease is most common within mid-life. This disease is characterized by choreiform movements (face and limbs), which initially may be mild and gradually progresses to widespread and involuntary movements. Hyperreflexia and dystonia are also seen. Anxiety, depression and irritability may occur prior to disease onset. As the disease progresses, dementia often occurs. MRI is often significant for caudate atrophy. Genetic testing is sensitive (98.8%) and specific (100%) of the time. There is currently no cure and no disease modifying therapies are available. Pharmacologic therapy (tetrabenazene, amantadine typical/atypical antipsychotics) can be used to control choreiform movements as well as psychiatric concerns.

RECURRENT GLOMERULONEPHRITIS

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Introduction: Recurrent Glomerulonephritis occurs infrequently. We present a case of recurrent proliferative glomerulonephritis occurring in a patient after a lapse of 10 years.

Case: A 74-year-old Caucasian man presented to the hospital with petechial rash, swelling of the legs, decreased urinary output, and shortness of breath. He had a recent history of pneumonia 2 weeks prior and an uneventful aortic valve replacement for aortic stenosis 4 weeks prior to presentation. He had a remote history of acute glomerulonephritis with biopsy suggestive of type 1 membranous proliferative glomerulonephritis about 10 years prior that required temporary hemodialysis. Work up at that time demonstrated hypocomplementemia and low immunoglobulins. Cryoglobulins were marginally positive but were not characterized. He was treated with azathioprine and steroids which achieved complete remission after 9 months.

Physical exam on this presentation showed petechial rash on pretibial area and buttocks, 2 + pitting edema of lower extremities, a prosthetic second heart sound with no murmurs. Labs revealed acute renal failure with a BUN/Cr of 60 and 2.01 respectively (baseline creatinine a month ago was normal). UA showed RBC casts, proteinuria and hematuria suggesting acute glomerulonephritis. Work up was negative for HIV, HCV, EBV, C-ANCA, P-ANCA. SPEP, UPEP, blood cultures were all negative. C3 was low normal, C4, total complements and immunoglobulins were low. Kidney biopsy revealed diffuse proliferative glomerulonephritis with IgG, IgM and C3 staining by immunofluorescence and differential included infectious vs cryoglobulinemic glomerulonephritis. Serum cryoglobulins were positive for type 2. Pulse steroids were started, but patient did not respond. Treatment with rituximab resulted in complete resolution of renal failure and proteinuria, and at 1 year after treatment he remained stable with normal creatinine and no proteinuria.

Discussion: We believe that this patient had cryoglobulinemic glomerulonephritis on both occasions, and it recurred after his recent infection despite prior treatment with steroids and azathioprine. Treatment with rituximab for his recurrent episode proved to be more effective in achieving remission quickly and without the need to hemodialysis. Our patient appears to be immunologically predisposed and will be at risk for developing cryoglobulinemia in response to immune activation.

STATIN-INDUCED RHABDOMYOLYSIS WITHOUT THE STATIN?

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Introduction: Polymyositis and Dermatomyositis are inflammatory myopathies with an incidence of 1-2 per 100,000 persons annually in the US and characterized by muscle inflammation and weakness in a proximal>distal distribution. Statin-induced myopathy is a well described side effect of statin therapy occurring in 2-11% of all statin users. Both of these conditions can present similarly with rhabdomyolysis.

Case: A 43-year-old man with history of multiple GSWs to the abdomen and face 3 months prior awoke with diffuse body aches, constipation and weakness for 8 days. He had no functional limitations at baseline. He denied strenuous activity, dehydration or trauma. The physical exam was remarkable for 3/5 strength in the bilateral upper and lower extremities, which was more pronounced in the lower extremities and in proximal muscle groups. Initial labs revealed an elevated CK to 32,740 u/L with normal creatinine and potassium. Aggressive intravenous fluid was begun for treatment of rhabdomyolysis, but after several days without improvement, a rheumatologic workup was initiated. MRI of the lower extremity revealed diffuse myositis in all muscle compartments with surrounding edema. Further studies included negative ANA, but positive Anti-Jo1 and Mi-2 which are highly specific for dermatomyositis. A muscle biopsy was performed and demonstrated degenerative muscle fibers without inflammation. He was diagnosed with statin-induced rhabdomyolysis and his statin therapy was discontinued. His weakness improved following initiation of methotrexate and steroids, but he stopped taking this following his GSW 3 months prior without return of symptoms. During his hospitalization, he was started on high dose methylprednisolone and methotrexate with rapid improvement of symptoms and CK levels.

Discussion: Statin-Induced Myopathy is a commonly made diagnosis when a patient presents with rhabdomyolysis in the setting of statin therapy. It is important to consider other etiologies of diffuse myopathy especially when discontinuation of the statin does not yield expected improvement.

GET YOUR FLU SHOT!

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Introduction: Post viral pneumonias are a common component of influenza-related hospitalization and the presence of a superimposed bacterial infection can greatly increase both morbidity and mortality of influenza. Analysis of both the 1918 and 1957 influenza pandemics showed that two-thirds or more of the fatal cases were associated with secondary bacterial infection. Additionally, mortality from both influenza and secondary bacterial pneumonia is increased in individuals with comorbidities such as asthma, chronic obstructive pulmonary disease, diabetes or cardiovascular disease and immunosuppression.

Case: A 53-year-old woman with a history of poorly controlled Type 2 Diabetes initially presented to Emergency department 1 week prior to admission complaining of myalgias, non-productive cough, fever and chills. At this time patient was diagnosed with influenza A and discharged home with supportive care. No Tamiflu was initiated, as symptoms began greater than 48 hours before diagnosis. The patient was admitted 1 week later with severe sepsis. CXR revealed multi-lobular PNA and severe sepsis protocol was initiated. The patient rapidly became severely hypotensive (80s/50s) with lactic acid exceeding >6 , despite being aggressively fluid resuscitated; she was started on pressors and intubated. Bedside echo revealed EF approx 20-25% with large anterior defect, with troponin at >30 . She became more acidotic, requiring additional pressors (dobutamine and vasopressin) along with high dose steroids to maintain adequate BP. The patient eventually went into PEA, where ROSC was achieved after 40 minutes. After coding, the patient still required pressor support to maintain BP and a decision to withdraw care was made. Final respiratory culture data was consistent with MRSA. PCR for influenza B returned positive.

Discussion: This case occurred in mid-September 2017 and was the first confirmed fatality of the 2017-2018 influenza season. As a direct result, the CDC updated its influenza recommendations to the state of Louisiana and to the nation as a whole. Updates included recommending that vaccination campaigns begin immediately, rather than waiting for October. Additionally, the advisement was made to treat all hospitalized and high-risk patient with suspected or confirmed influenza with antiviral medications regardless of onset of symptoms and without waiting for confirmatory testing.

CHOOSING TELEMETRY WISELY: ASSESSING AWARENESS AND UTILIZATION OF AHA TELEMETRY PRACTICE STANDARDS

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Background: The American Board of Internal Medicine Foundation's campaign, Choosing Wisely, includes five recommendations to reduce unnecessary healthcare spending. One of these is "Do not order continuous telemetry monitoring outside of the intensive care unit without using a protocol that governs continuation." The 2004 AHA Practice Standards for Electrocardiographic Monitoring reliably predict cardiac events and change patient management and thus, have the potential to act as such a protocol. However, a better understanding of current decision-making and usage of these guidelines is needed to assess whether they are practical.

Methods: A survey was distributed to Internal Medicine attendings, residents, and interns, at Tulane University Medical Center. The survey included 14 patient scenarios based on the 2004 AHA Practice Standards that required respondents to indicate whether they would "absolutely monitor", "consider monitoring", or "not monitor" each patient on telemetry. The survey also assessed awareness and use of the AHA Practice Standards, institutional guidelines, and the extent to which each physician relied on gestalt when deciding to use telemetry.

Results: There were 55 respondents-23 interns, 16 residents, and 16 attendings. Physicians decided to use telemetry in accordance with AHA guidelines 54% of the time. Proper utilization of telemetry was not statistically correlated with level of training ($p=0.569$) and awareness of the AHA guidelines was not predictive of compliance ($p = 0.414$).

The proportion of physicians aware of the AHA guidelines differs significantly based on level of training (Fischer's exact $p=.021$). There is no significant difference by level of training in those who agree that they utilize the AHA guidelines or their institution's guidelines (AHA $p=.104$, 19.6% overall; Institutional $p=.278$, 14.2% overall). Nearly all respondents rely on "previous clinical experience and physician gestalt" with no statistical significance when stratified by level of training ($p=1.0$).

Conclusion: Awareness of 2004 AHA Practice Standards for Electrocardiographic Monitoring increases with higher levels of training. However, utilization of the guidelines does not improve accordingly and clinical experience and gestalt dominate the decision to use telemetry. Ultimately, these decisions do not reliably align with the AHA guidelines, suggesting the guidelines may not be the optimal tool for implementing the Choosing Wisely campaign recommendations.

SUCCESSFUL REDUCTION IN CONGESTIVE HEART FAILURE READMISSION RATES: A QUALITY IMPROVEMENT PROJECT

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Introduction: Congestive heart failure (CHF) is a major healthcare issue all over the world with an increasing morbidity and economic burden. CHF has a high 30-day hospital readmission rate. However, detailed description of the causes and preventability of readmissions are lacking. We performed a quality improvement study to understand the high impact factors causing CHF readmissions and to formulate effective strategies to reduce readmissions.

Methods: A multidisciplinary team consisting of residents, attending physicians, case managers and nurses was formed, and the study was done in four phases. In the first phase retrospective chart review of patients admitted for CHF between July 2016 and November 2016 was done. Patients readmitted within 30 days were identified and the potential causes of readmissions were analyzed. During the second phase, interventions to address the high impact factors were formulated and the most feasible ones were selected with a common consensus. Third phase was the implementation phase in which the interventions were implemented from August 2017. Fourth phase was analyzing the project implementation and results. PDCA methodology was used as a quality improvement tool for each phase to help identify factors and processes in our institution that required change.

Results: Retrospective chart review in first phase revealed 1-month readmission rate of 22 % and 1-week readmission rate of 11%. The major patient related factors impacting readmissions were medication unaffordability (75.5%), medication noncompliance (28.5%), and transport (10%). While the major health care system related factors were lack of 1-week post discharge follow up (100%), medication reconciliation and patient education. Interventions selected for implementation were educating the multidisciplinary team about CHF guidelines and the interventions, establishing 1-week post discharge clinic follow up, \$40 financial assistance for patients at discharge and providing a new detailed educational material to the patients. 3 months after the interventions were made, 1-month readmission dropped down to 10.1% and 1-week readmission rate dropped down to 0%.

Conclusion: Every medical facility has its own unique patient population and hurdles in providing health care. An individualized approach to identify and address those hurdles can lead to successful strategies to reduce CHF readmissions.

CLINICAL PREDICTION TOOLS VS CLINICAL GESTALT: A DIAGNOSTIC DILEMMA

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Case: A 53 year-old-man presented with one day of dyspnea, syncope, and chest pain that was partially relieved with nitroglycerin; however, a pleuritic component that was not. The patient's past medical history included severe CAD, hypertension, and COPD. At admission, supplemental O₂ was required to keep saturation 95-99%. Bilateral, diffuse, rattling breath sounds were appreciated, while the remainder of exam was benign. EKGs and cardiac enzymes remained normal. Chest radiography was furthermore unremarkable. Ultimately, CT imaging revealed pulmonary emboli (PE) in right lower, left lower, and left upper lobes.

Discussion: Diagnosing PE remains a challenging proposition for the general internist. Utilizing Wells' Criteria to estimate pretest probability of PE is common and often stratifies the risk of diagnosis based upon initial clinical suspicion using six objective and one subjective criteria. A previously reported retrospective analysis on suspected PE patients comparing the utility of gestalt assessment, Wells', and the revised Geneva score revealed that gestalt assessment was overall superior (AUC 0.81) in selecting patients both with low and high probability of PE diagnosis compared to clinical decision rules (Wells' AUC 0.71; revised Geneva AUC 0.66). In patients where clinical gestalt predicted high likelihood, PE prevalence was found to be $\geq 55\%$. Results from this study suggested that overruling clinical tools based upon physician intuition might actually improve the rules' performance. The characteristic symptomatology of a PE were not evident in our patient. In our patient, the clinical likelihood of a PE centered around the subjective criterion of the Wells' score: "was PE the most or equally likely diagnosis?". worth 3 points on the scale. Without fulfilling any objective criteria, the patient's initial score (0) would stratify to unlikely PE and low risk. When including a positive answer to the subjective criterion, a Wells' score of 3 results in an unlikely, but moderate risk group, highlighting the value of clinical gestalt.