TITLE: Unusual presentation of odynophagia, dysphagia, and microscopic hematuria- a case of ANCA vasculitis.

Authors: Zohayr Al Shaial, MD, David Samaha, Mihran Naljayan, MD

Abstract:

Rare diseases with unusual presentations are challenging in medicine and delays in diagnosis will have a significant impact on the prognosis of the patient. We report a case of a patient with ANCA-positive vasculitis who presented to our hospital with odynophagia and dysphagia for several months causing him to lose his job, and undergo multiple surgical treatments. It was not until Nephrology was consulted, and microscopic urine examination was performed showing dysmorphic red blood cells (RBC) and RBC casts in the urine leading to a kidney biopsy, that a diagnosis of C-ANCA vasculitis was made.

Index words:
Hematuria. Red blood cell cast, dysmorphic red blood cell. ANCA-vasculitis
Assessing the Role of Memory B Cells in *Pneumocystis murina*

Tyshena P. Charles, Ph.D., Derrick R. Samuelson, Ph.D, Nicholas M. de la Rua, M.S., David A. Welsh, M.D., and Judd E. Shellito, M.D.

**Rationale:** *Pneumocystis* pneumonia (PCP) is a significant problem in immunocompromised patients, especially those with HIV/AIDS. Previous studies have shown that CD4+ T cells and B cells are required for clearance of this opportunistic pathogen during the primary infection. It has also been shown that B cells have an antibody-independent role in the clearance of *Pneumocystis* during a primary infection. Currently little is known about B cells during a secondary immune response. Here we hypothesize that B cells have an antibody-independent role in clearing *P. murina* during a secondary immune response.

**Results:** Mice depleted of B cells prior to secondary challenge cleared *Pneumocystis* within 48 hours. This was also observed in the intact animals. There was also no difference observed in the quantity of *Pneumocystis* specific IgG between intact animals and animals depleted of B cells prior to a secondary challenge. Despite clearance of *P. murina*, mice infected with *P. murina* revealed a significant increase in the total number of memory B cells (CD80, CD73, and CD273) five days following secondary challenge compared to sham animals.

**Conclusion:** Depletion of B cells prior to a secondary challenge did not ablate, or delay, the clearance of *P. murina*. This result demonstrates that once an antibody response is established during a primary infection, it is sufficient to clear *P. murina* infection. Unfortunately, because *P. murina* was cleared prior to activation of the secondary response, we were unable to successfully observe an antibody-independent role of B cells. In the future we will further access this by adoptively transferring *P. murina* specific memory B cells into naïve mice.
Title: Diffuse Idiopathic Pulmonary Neuroendocrine Cell Hyperplasia (DIPNECH) and role of Somatostatin analogs.

Authors: Aman Chauhan, MD and Robert A. Ramirez, DO

Purpose/Objectives: DIPNECH is a rare pre-neoplastic condition that often presents with a variety of non-specific pulmonary symptoms and sometimes seen in conjunction with pulmonary carcinoid tumors. There is no published data on use of somatostatin analogs in patients with DIPNECH. We review the long term outcomes of somatostatin analog therapy with regard to symptom control in patients with DIPNECH.

Conclusions: From our single institution review of neuroendocrine pulmonary tumor cases we found only 5 cases of DIPNECH, which reaffirms rare nature of the pathology. It primarily affects females over 60 years with dry cough as the most common presenting symptom. Most of our patients responded to treatment with a somatostatin analog and had significant improvement in their presenting symptoms. Trending chromogranin A levels seemed to correlate with clinical improvement while the patients were on a somatostatin analog. Somatostatin analogs were well tolerated medication resulting in significant resolution of presenting symptoms in most of our patients. Further research is needed, however, a trial of somatostatin analogs should be considered in the treatment of patients with DIPNECH with responders being treated long term.
Transition of a Pancreatic Neuroendocrine Tumor from Ghrelinoma to Insulinoma. A case report.

Aman Chauhan, Robert A Ramirez, Melissa Stevens, Leigh A Burns, Eugene E Woltering

Background:
Pancreatic neuroendocrine tumors (PNETs) are rare with an incidence of 1 in 100,000 population\(^1\). PNETs can present either as a functional or non-functional tumors. In functional tumors the symptoms are a result of hormones such as insulin, gastrin, glucagon and vasoactive intestinal peptide (VIP) or others. Non-functioning tumors are often detected at late stages because they do not have a related hormone syndrome. Signs and symptoms of non-functional tumors are secondary to the tumor burden (mass effect vs metastatic disease).\(^2\) Ghrelin is a 28 amino acid peptide discovered in 1999 and is thought to be involved in various physiologic and pathologic processes\(^3\). Due to relatively recent discovery of this hormone, its functions in normal homeostasis and its association with various pathologic process are still being uncovered. Ghrelin as per the current literature, is involved in regulation of appetite, growth hormone regulation, gastric secretions and gut motility.\(^4\) Ghrelin is primarily produced in stomach by oxyntic cells in gastric mucosa but it has also been found in hypothalamus and other endocrine glands like pituitary, pancreas etc.\(^5\)

Here, we present a case of metastatic functional PNET that initially presented with marked elevation of ghrelin, suggestive of ghrelinoma, which later transformed into a clinically significant insulinoma.

Conclusion:
PNETs are a rare entity and the natural history of disease is not well known. We have presented a unique case of one such metastatic PNET which presented as a ghrelinoma and later transformed into a symptomatic insulinoma. This case gives us a glimpse into an unusual variant of metastatic PNET. It also tells us that change in functional tumor biology can sometime be more morbid than the metastatic disease itself. As in our case patient has sustained elevated levels of insulin which can lead to life threatening hypoglycemia.
Does the addition of adjuvant intraoperative post-dissection tumor bed chemotherapy during GI neuroendocrine tumor debulking benefit patients?


**Background:** Midgut neuroendocrine tumor (NET) patients are often diagnosed at an advanced stage with extensive mesenteric lymph node and liver metastasis. The only treatment for potential cure and durable results is resection with extensive debulking. However, even with the most elegant surgical dissection/resection, macro and microscopic residual disease at the tumor resection bed remains a distinctive possibility. We hypothesize that local application of 5-florouracil (5-FU) within tumor bed would eliminate the microscopic residual disease post operatively.

**Conclusion:** Intra-operative tumor resection bed chemotherapy is a safe adjuvant without any discernible toxicity. Furthermore, it might provide survival benefit to midgut NET patients with extensive mesenteric lymphadenopathy undergoing extensive cytoreductive surgery without additional procedure related complications. Further studies are needed to validate the long term efficacy of this novel adjuvant intra-operative chemotherapy.
Adjuvant Intraoperative Post-Dissection Tumor Bed Chemotherapy - A Novel Approach in Treating Midgut Neuroendocrine Tumors

Yi-Zarn Wang DDS, MD, Aman Chauhan, MD, Michael A. Hall, MD, MSc, J. Philip Boudreaux, MD, Eugene Woltering MD, and Lowell Anthony MD

Background: Midgut neuroendocrine tumor (NET) patients are often diagnosed at an advanced stage with extensive mesenteric lymph node and liver metastasis. Even with skillful surgical dissection, macro and microscopic residual disease at the dissection site remains a possibility. We hypothesized these potential tumor residuals in mesenteric lymph node dissection beds can be eliminated safely by a local application of 5-fluouracil (5-FU).

Methods: Retrospectively, charts of 62 consecutive midgut NET patients with boggy mesenteric lymphadenopathy who underwent cytoreductive debulking surgeries from 1/2007 to 12/2009 were reviewed. 32 patients received an intraoperative application of 5-FU saturated gelfoam strips secured into the mesenteric defect following the extensive lymphadenectomy. 30 untreated patients served as a control.

Results: 5-year survival after cytoreductive surgeries was 22/32 (68.8%) for the treated group, versus 20/30 (66.7%) for the control. 6 patients (6/32, 18.8%) among the study group required additional debulking surgeries, versus 16 patients (16/30, 53.3%) in the controlled group. Upon reoperation, locoregional recurrence was noted in 9 of the 16 patients (56.3%) in the control group, versus only 2/6 (33.3%) of treated patients. Post-op complication rates are similar in the two arms.

Conclusion: Intraoperative application of chemotherapy is a safe and effective adjuvant for eliminating any potential microscopic residual disease after extensive cytoreductive surgeries in advanced stage NET patients with mesenteric lymph node metastasis. It provides patients with sustained, slow releasing, high dose of 5-FU within the surgical bed with a negligible side effect profile, whereby reducing local recurrence rates and decreased the need of reoperation. Further study is required to evaluate its effect on long term survival.
In vitro chemotherapy profiling of well-differentiated midgut neuroendocrine tumors (NETs) based on individual patient tumor biomarkers analysis.

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**Background:** Midgut neuroendocrine tumors (NETs) are rare malignancies with indolent clinical courses. In general, they are well differentiated with most tumor cells in the G0 phase of the cell cycle, consistent with the poor response rate of NETs to chemotherapy in vivo. We hypothesize that insults, such as surgery, can drive NET cells from G0 into S phase and that biomarker analysis of individual patient tumors harvested and grown in the lab will provide useful practical guide for future intra and post operative adjuvant therapy.

**Results:** A total of 148 specimens from 97 patients were tested. In four of the 97 patients, no clinically beneficial chemotherapy agent could be identified. Among the remaining 93 patients, the top three agents that are most likely to be clinically beneficial were: Fluorouracil, Cisplatin and Carboplatin. These were reported to be clinically beneficial in 135/148 (91.2%), 103/148 (69.6%), and 103/148 (69.6%) patients respectively.

**Conclusions:** Midgut NETs are slow growing tumors which are chemotherapeutically inert owing to the fact that most of the tumor cells are in G0 cell cycle. Surgical insult drives NET cells into active synthetic phase where they begin to express biomarkers specific to their tumor cells. Analysis of these biomarkers may guide further potential beneficial therapy.
Pulmonary Mucoepidermoid Carcinoma can often be Mistaken for Much Sinister Adenocarcinoma; A Case Report

Aman Chauhan, Edgar D Castillo, Joseph Bodor, Robert A Ramirez.

Background: Salivary gland type lung cancers are uncommon. They can be often misdiagnosed as squamous or adenocarcinomas of lung. We present a case of pulmonary mucoepidermoid cancer (MEC) which was misdiagnosed as adenocarcinoma of lung based on a bronchoscopic biopsy.

Case: A 34 year old African American man with a past medical history of childhood asthma, bronchitis, and a remote six month history of cigarette smoking was evaluated in 2005 for a left main stem bronchus lesion found on computed tomography (CT). The patient was lost to follow-up. Seven years later, the same bronchial lesion was found on CT and a bronchoscopy with biopsy of the lesion was performed. Cells from the lesion were found to express cytokeratin 7 and lack the expression of cytokeratin 20 or TTF1, felt to be consistent with adenocarcinoma. Further evaluation and staging with PET/CT showed localized disease without regional spread or metastasis. He underwent a left-sided pneumonectomy with mediastinal lymph node dissection. The tumor measured 1.2 x 0.7 x 0.7 cm and was located just distal to the left bronchus bifurcation. Immunohistochemical stains demonstrated that the tumor cells were positive for CK7, p63, EMA, and cytokeratin 14, while negative for S100, TTF1, and Napsin-A. Contrary to the diagnosis of adenocarcinoma made after the bronchoscopy, results from the surgical pathology revealed an immunoprofile and tumor morphology more consistent with MEC. All mediastinal lymph node dissections were negative. The patient recovered well from surgery and surveillance chest CT at 4 months and 17 months showed no evidence of disease.

Discussion: MEC is predominantly a head and neck tumor, however, can be found in lungs, skin and breast among other body parts. Pulmonary MEC represents approximately 9% of all malignant pulmonary cancers in children and only 0.2% of all lung cancers in adults. Patients usually present with respiratory symptoms like cough, wheezing and hemoptysis. Sometimes it is challenging to differentiate MEC from squamous cell or adenocarcinoma especially if the tissue is derived from a small biopsy specimen. Nevertheless it is important to make a correct diagnosis since, MECs have a better overall survival.
Trousseau Syndrome unmasking an asymptomatic Gallbladder Adenocarcinoma.

Michael Hall MD, Aman Chauhan MD, Yi-Zarn Wang DDS, MD,

**Case:** A 61 year old African American female with a past medical history of Insulin Dependent Diabetes Mellitus and Hypertension presented with left 1st and 2nd toe bluish black discoloration. She was afebrile, but was hypertensive, tachycardic, and with a poor glycemic control. On examination, she was noted to have a dark reddish-brown discoloration of the plantar surface of the left 1st and 2nd distal phalanges. There was no tenderness to palpation, nor purulence, bloody discharge, or cellulites, but epidermal peeling was present. Although signs of distal ischemic changes were noted in the 1st and 2nd toes, appropriate capillary refill was noted in the remaining phalanges on that and contralateral side. The patient had 2+ Femoral, Popliteal, Dorsalis Pedis, and 1+ Posterior Tibial pulses on the affected side. Since the source of the toe ischemic changes did not seem to be stemmed from a regional arterial insufficiency or a venous stasis, a working diagnosis of embolic disease was entertained. CT angio of the abdomen, pelvis, and bilateral lower extremities unexpectedly revealed an exophytic lesion arising from a focally thickened and irregular medial wall of the gallbladder body that was diagnosed as moderately differentiated invasive papillary adenocarcinoma. Postoperatively, she received no adjuvant chemotherapy, given the extent of her resection and clinical stage. Eight years after the original diagnosis, and surgical intervention, the patient remains to be free of local or metastatic recurrence.

**Discussion:** Trousseau Syndrome first described by Armand Trousseau in 1865 is characterized by presence of subacute hypercoagulability (eg. migratory thrombophlebitis, microangiopathy, arterial emboli, and chronic disseminated intravascular coagulopathy) in association with an underline malignancy, oftentimes occult. There is strong data to suggest association of pancreatic and pulmonary malignancies (20 and 24% respectively) with Trousseau Syndrome but other malignancies such as prostate, stomach, colon, and hematological malignancies also have been reported.
A 51 year old woman with Graves' disease presented with abdominal pain with progressive distention, worsening dyspnea on exertion to shortness of breath at rest and palpitations for 4 weeks. The patient was noncompliant with atenolol and methimazole. On triage, she was in atrial fibrillation with a heart rate (HR) of 160 to 170 beats per minute. TSH was 0.1 (0.35-5.50) with free T4 >6.01 (0.62-1.43) ng/dL, total T3 5.94 (0.6-1.81) ng/mL and free T3 32.2 (2.4-4.2) pg/mL. Esmolol drip and methimazole were started. On day 2, her HR remained 140 to 150. After receiving iodine drops, the patient developed asystole. ACLS was initiated. After intubation, the patient spontaneously converted to sinus rhythm. Hydrocortisone was started and methimazole was increased. Atrial fibrillation, HR 160 to 170, returned on day 5 and was refractory to labetalol, digoxin, diltiazem, esmolol and procainamide. Otolaryngology was consulted, but the patient was too hemodynamically unstable for thyroidectomy. Given no improvement in HR on maximum medications, plasmapheresis was initiated. After day 1 of plasmapheresis, sinus rhythm returned and HR dropped to 30. Atropine was administered, esmolol was discontinued, and dopamine was started. On day 6, atrial fibrillation, HR 160 to 180, returned refractory to same medications. After 3 days of plasmapheresis, free T4 decreased from 3.98 to 1.58 ng/dL. Heart rate improved. Oral propranolol and sotalol were started but discontinued for bradycardia. Hydrocortisone wean was initiated. The patient discharged to home asymptomatic with free T4 of 1.6 ng/dL.

Thyroid storm typically presents with exaggeration of hyperthyroid symptoms. Tachycardia greater than 140 and congestive heart failure are common. Mortality rate of thyroid storm is 75 to 90% untreated and 10 to 30% treated. Conventional therapy reduces the release of thyroid hormone from the thyroid gland with iodine, blocks the formation of thyroid hormone with thioureas and reduces the effects of thyroid hormone with adrenergic blocking agents. Plasmapheresis can reduce thyroxine levels by 25% by the direct removal of free thyroid hormones. Plasmapheresis can be a life saving bridge to definitive therapy.
Thrombotic Microangiopathy induced Acute Kidney Injury associated with Brucella Infection

Thomas E. Craig, Avanelle V. Jack, MD, Jonathan Owen, MD, Stephen Morse, DO

Introduction: Thrombotic microangiopathies (HUS & TTP) have been associated with a host of infectious agents. Its association with Brucellosis is uncommon. We present a case of a patient who developed TMA as a result of Brucellosis.

Case: 52 year-old Woman with HTN, Tobacco Use disorder and DJD was admitted with epigastric and RUQ abdominal pain, chills and generalized body aches. History was significant for intermittent bloody diarrhea approx 2 weeks prior to ED presentation. PE revealed significant epigastric and RUQ tenderness to palpation and patient was started on broad-spectrum, IV antibiotic therapy. US was significant for acute cholecystitis with CBD dilatation (approximately 7 mm). Emergent ERCP was aborted secondary to inability to visualize the major papilla. Shortly thereafter, clinical status deteriorated resulting in Acute Respiratory Failure requiring intubation and ventilation. CBC: WBC 27,000; hgb 7.3; hct 21.8; plt ct 80; AST 1,700; ALT 611; T Bili 2.3; Lactate 5.7; Na 141; K 3.9; Cl 110; CO2 17; BUN 28; Cr 1.5→4.3 (baseline: 0.7 Feb 2014); Peripheral Smear: + Schistocytes; LDH 509; Haptoglobin: < 10; UOP: 50 ml/hr (decreased to 10 ml/d) requiring Nephrology Consult to begin CRRT in setting of SIRS (3-pressor requirement). Cultures grew only Peptostreptococcus (ID & HemOnc consults were obtained). Patient had remarkable spontaneous clinical recovery & later had a positive IgM Brucella titer.

Conclusion: While uncommon, Brucella infection has been associated with the development of Thrombotic Microangiopathy-induced Acute Kidney Injury. In addition, clinical course is widely variable, ranging from spontaneous recovery to disease requiring long-term RRT.
Lymph Node Limbo

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INTRODUCTION: Diffuse Large B Cell Lymphoma (DLBCL) is a well-known AIDS-defining malignancy and is the most common type of Non-Hodgkin Lymphoma among the HIV patient population.

CASE: A 49 year old woman with a history of HIV (CD4 count 2778 cells/mm³, viral load 1142 copies) presented with complaints of waxing and waning abdominal pain which began six months prior to presentation. Associated symptoms included fatigue, anorexia, a 20 pound weight loss, abdominal fullness, and painless neck swelling. On presentation the patient was febrile and tachycardic. The examination was significant for diffuse bulky lymphadenopathy, tenderness to palpation in the left lower quadrant with a palpable spleen tip. Laboratory data revealed a WBC count elevated above baseline, a mild transaminitis, and hyperuricemia. The patient was empirically treated with vancomycin and piperacillin-tazobactam for sepsis and allopurinol for hyperuricemia, resulting in mild improvement. Previous work up for similar presentations included an axillary lymph node FNA with immunostains positive for parafollicular T cells, and atypical medium to large size B cell population concerning for malignancy. A subsequent axillary lymph node biopsy and bone marrow biopsy were inconclusive. The specimens had been sent to the NIH for a second opinion. Several days post-discharge, further pathological data from the NIH provided a final diagnosis of DLBCL. The patient began cycle one of R-EPOCH shortly thereafter and responded well to chemotherapy.

DISCUSSION: DLBCL is a well-known AIDS-defining malignancy and should be included in the differential for lymphadenopathy in the HIV population. Histology and immunohistochemistry from biopsy specimens, preferably from the lymph nodes, will demonstrate characteristic B cell markers. However, special stains may be required based on the degree of atypical histology.
ASSESSING THE IgG REPERTOIRE RESPONSE OF LONG LIVED BONE MARROW PLASMA CELLS TO PNEUMOCYSTIS PNEUMONIA

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Objectives: Exposure to Pneumocystis is ubiquitous in humans, but Pneumocystis pneumonia (PJP) is a major cause of morbidity and mortality only among immunocompromised patients especially in the context of HIV/AIDS. Seroologic data from humans and the murine and macaque models of PJP have revealed the importance of humoral immunity with respect to susceptibility to PJP in the context of immunosuppression. Long lived plasma cells of the bone marrow secrete class switched, antigen specific antibodies for the life of the host after immunization. We hypothesized that an intratracheal challenge with Pneumocystis would generate a long lived bone marrow plasma cell (BMPC) population, and that we could use Next Generation Sequencing (NGS) to identify Pneumocystis specific monoclonal antibodies.

Results: Mice challenged with Pneumocystis develop humoral memory and clear a secondary challenge within seven days. In addition, immunized mice have significantly more BMPCs relative to control animals. Although BMPCs are terminally differentiated and non-dividing, BMPCs can survive long term and secrete IgG in vitro when co-cultured with MSCs. A portion of the secreted IgG is Pneumocystis specific when tested by ELISA. RACE cDNA synthesis produces NGS adapted IgG variable light and heavy chains.

Conclusion: We have developed a model to isolate the cell population that confers long term humoral immunity to Pneumocystis. By developing an in vitro culture system, we have proven that our technique isolates BMPCs secreting Pneumocystis specific IgG. This in vitro culture system allows us to collect the IgG secreted by BMPCs and the isolate the cDNA associated with those antibodies. This system will be used to identify monoclonal antibodies secreted by BMPCs using next generation sequencing.
**Mycoplasma genitalium** Infection Elicits Chronic Cervical Inflammation And HIV Target Cell Recruitment Among A Cohort of HIV-Positive Louisiana Women

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*Mycoplasma genitalium* is an emerging sexually transmitted pathogen linked to chronic inflammatory conditions including cervicitis, pelvic inflammatory disease, and tubal factor infertility. Previous *in vitro* studies have shown *M. genitalium* infection to elicit pro-inflammatory cytokine profiles consistent with the recruitment of HIV target cells to the endocervix. It is hypothesized that cervical inflammation due to *M. genitalium* infection negatively impacts HIV disease progression and may increase HIV transmission through enrichment of infected cells in the cervical mucosa. To test this, we used a longitudinal cohort of 108 HIV(+) New Orleans women enrolled into the HIV Outpatient Program (HOP) who visited the clinic approximately once every three months from 2009-2014. The cohort consisted of older, primarily black women with an average CD4 count of 484. Over the study period, the cumulative prevalence of *M. genitalium* or *T. vaginalis* was 21% and 27%, respectively. Three of these women were chronically infected with *M. genitalium* (2.8%). Longitudinally, chronically infected women had lower CD4 counts compared to women without *M. genitalium* infection, which may potentiate HIV disease progression. Peripheral HIV viral loads, however, were similar in both groups. We next sought to characterize the co-infected cervical mucosa and identify whether HIV target cells are indeed recruited to the site of *M. genitalium* infection. The concentrations of several pro-inflammatory cytokines and chemokines measured from cervicovaginal lavages were significantly higher in subjects with *M. genitalium*, including IL-8, MCP2, IL-1b, GM-CSF, MDC, and IL-6. Direct quantification of cervical leukocytes from liquid cytology specimens showed co-infected individuals had significantly higher leukocyte infiltrates compared to those without *M. genitalium*. Importantly, treatment of chronic *M. genitalium* infection reduced cytokines/chemokines and cervical leukocytes to baseline levels. Together, these results indicate that *M. genitalium* is a cause of chronic cervicitis and may enhance HIV transmission in the lower reproductive tract.
Prevalence of Vitamin D deficiency in osteopenia/osteoporosis patients in an urban New Orleans clinic with insured patient population.

Betty Lo-Blais¹, Aman Chauhan², Melissa A Stevens³, Phuong Ding², Kieran Leong²

Introduction:
Vitamin D deficiency has been increasingly recognized in the last decade and it is suggested that it might be one of the commonest nutritional deficiencies. There is a direct pathophysiologic relation between serum vitamin D levels and bone mineral density. Our aim was to study the demographics of vitamin D deficiency in New Orleans. What is the association between serum vitamin D level and Bone density scan results (T-Scores). Whether correction in Vitamin D levels results in improvement of T score values? As per our literature search there is no published data on vitamin D deficiency status in New Orleanean population.

Conclusion: Following are some of the important inferences which we can draw from our study. 1: Overwhelming incidence of vitamin D deficiency in older post menopausal females who are mostly retired and probably had minimal sunlight exposure secondary to their indoor habits. 2: Statistically significant increase in post treatment vitamin D levels, meaning, diligent screening, counseling, pharmacological intervention and appropriate follow-up does work. 3: Correction in serum vitamin D level resulted in improvement of T scores, implying improved bone mineral density. Since falls in elderly are one of the commonest causes of morbidity in geriatrics population, improvement in bone health can lead to fewer fractures and subsequent morbidity. 4: Special emphasis should be made to screen older female for vitamin D deficiency especially from age group 70-75 since they had the highest incidence of vitamin D deficiency in our study population. 5: All our patients who are at risk for developing vitamin D deficiency (indoor workers; dark skinned people; poor nutritional status; renal disorders) should be counseled regarding screening of vitamin D and treated appropriately.
CASE: A 30 year old African American woman with no past medical history presented to the emergency department with a 3-week history of subjective fevers, night sweats, chest tightness, bilateral PIP pain and swelling, right knee arthralgia, and a mildly productive cough. Three weeks prior to admission, the patient completed a 5-day course of azithromycin for right acute otitis media. The ear pain completely resolved, but her other symptoms persisted. Her temperature was 101.3°F and her heart rate was 128 bpm. Physical exam revealed right third PIP edema with decreased flexion due to pain. Initial labs revealed a WBC count of 19,800/UL with neutrophilia and a normocytic anemia with a hemoglobin and hematocrit of 9.6 gm/dL and 28.4%, respectively. A urine toxicology screen revealed caffeine and tobacco metabolites. Although the patient fulfilled SIRS criteria, the patient looked remarkably well. Hence, the patient was not started on antibiotics. Blood and urine cultures were negative. On the second hospital day, examination of her bilateral medial thighs revealed a subtle salmon-colored urticarial rash although the patient denied pruritus, pain, or scratching the area. The patient continued to spike temperatures at least three times per day up to 103°F with a maximum WBC count of 30,300/UL, yet the patient appeared and felt well. CRP was 8.9 mg/dL and ESR was 115mm/hr. HIV, rheumatoid factor, ANA, hepatitis panel, TPO antibody, parvovirus IgM, Mycoplasma IgM, Monospot, C3 complement, and CMV DNA probe were negative. C4 was elevated most likely secondary to systemic inflammatory response. Her ferritin was 6127.3 ng/mL. The medial thigh rash had fully resolved the next day. Rheumatology consultant diagnosed the patient with adult-onset Still’s disease based on the constellation of symptoms and abnormal lab results. The patient was then started on prednisone 40mg po daily with resolution of her fever within 24 hours.

DISCUSSION: We present a case of a young patient with a septic clinical picture. When infectious causes were ruled out, rheumatologic etiologies were pursued. The patient met all major criteria and 3 minor criteria from the Yamaguchi scale for diagnosis of Still’s disease. This case highlights the importance of maintaining a wide differential when a patient’s clinical course is not improving with standard therapy.
Risk Factors for Cervical EBV Detection in Rural Appalachian Women

Fisher, Rebecca, Crosby, Richard, Nelson, Nia, Hagensee, Michael and Cameron, Jennifer

HPV is necessary, but not sufficient to cause cervical cancer due to the large number of lesions that spontaneously regress. Detection of EBV DNA in the cervix is emerging as a significant risk factor for development of dysplasia in women also infected with HPV. The goal of this study was to determine risk factors associated with EBV detection in the cervix.

Women were recruited (N= 400) from an eight county area in rural eastern Kentucky. After consenting to participate, the women were given instructions for collecting a cervical swab for HPV and EBV DNA analysis. After collection, the women completed a survey to collect basic demographic, social, and medical history data. The self collected samples were sent to LSUHSC to be processed for HPV and EBV DNA by Roche Linear Array and PCR for BamH1 W respectively. After swab analysis, women were given the results of the HPV test and offered the opportunity to receive a Pap test regardless of HPV results.

Chi Square analysis was used to determine associations between categorical data and EBV DNA status. Numerical values were assessed for significance by t-test. Non directional significance for all statistical tests was set at p= 0.05. HR HPV included the following types: 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, which were defined by the International Agency for Research on Cancer as having sufficient evidence for carcinogenicity.

There were several demographic and social factors that were associated with EBV detection in the cervix. Higher monthly income was associated with EBV detection (OR= 2.1) for those earning more than $2000 per month. The county of residence was also important with half the counties having a high rate (average 35%) and the other half having a low rate (average 18%) of EBV positivity (OR= 2.5). Also significantly correlated with EBV detection was reporting 4 or more male sex partners (OR= 1.6) and reporting a female sex partner (OR= 2.0). EBV detection was also associated with reporting bleeding as a result of sample collection (OR= 1.9). Testing positive for HR HPV was not associated with EBV detection, however, when genotypes were analyzed individually, co-detection of HPV51 was strongly associated with EBV detection (OR= 4.8).

Several risk factors for EBV detection in the cervix were identified. Unfortunately, we were not able to assess the relationship between these variables and disease because only about 15% of the study population went on to schedule and complete Pap testing. Comparing the risk factors for EBV detection to HPV risk factors in this population and the implications of dual-detection is ongoing.
MEMBRANOUS NEPHROPATHY: IDIOPATHIC OR HEPATITIS B.

Kimberly Fremin MD, Jonathan Owen MD, Mihran Naljayan MD, Stephen Morse DO.

Introduction: Membranous nephropathy (MN) is a common cause of nephrotic syndrome defined by glomerular basement membrane thickening without hypercellularity. It is most commonly idiopathic but can be associated with several disease processes including Hepatitis B. MN is diagnosed by kidney biopsy; and Phospholipase A2 Receptor (PLA2R) has been used to differentiate between idiopathic (iMN) vs secondary MN. PLA2R is a receptor on glomerular podocytes that has been identified in idiopathic MN. Staining for PLA2R on kidney biopsy is more sensitive than circulating serologic anti-PLA2R (57-82%). MN due to hepatitis B is due to e antigen and anti-e antigen antibody deposition in the glomeruli.

Case: A 37 year old African American man with recently diagnosed diabetes, pulmonary embolus, and hypertension presented to the ED with scrotal swelling, thirty pound weight gain, and lower extremity edema over a three week period. Our facility had no baseline labs for comparison although he was told that he needed to see a nephrologist recently. Labs were significant for potassium 4.3 mmol/L, BUN 23 mg/dL, creatinine 2.04 mg/dL, albumin 1.2 gm/dL, GFR 47 mL/min, AST 19 U/L, ALT 18 U/L, ALKP 85 U/L, Bilirubin 0.5 mg/dL, BNP 28 pg/mL, A1c 6%, and Spot Urine Protein/Creatinine 7916 mg/g. UA had RBC 51-99/HPF, WBC 11-25/HPF, budding yeast, sperm, hyaline casts, fine and coarse granular casts. Urine microscopy by Nephrology showed lipid droplets and maltese crosses on polarized light. Serologies were done showing normal ranges for C3, C4, ANA, anti-dsDNA, RF, RPR, ANCA, and anti-GBM. SPEP/UPEP were revealing for glomerular protein losses. Hepatitis panel reporting was delayed but was positive for Hep B sAg, core total Ab and sAb; negative core IgM; and HBV DNA PCR <20 IU/mL. Renal biopsy revealed interstitial nephritis and MN. Based on the low HBV DNA, it was presumed to be iMN. He was initiated on Viread suppression for HBV and then Ponticelli modified protocol with alternating Prednisone and Cyclophosphamide. The sample could not be stained for PLA2R but later obtained serum anti-PLA2R of 198 ng/mL (<200 is low risk). At that point in time, immnosuppression was held due to evidence that his MN was due to HBV and not idiopathic.

Discussion: Our case shows the difficulty in differentiating a specific cause of MN in a patient with confounding data. The etiology clearly defines the treatment plan for MN, and an incorrect etiology can lead to incorrect therapy. In the case of our patient, his low HBV viral load led us to believe his MN was due to idiopathic causes; this treatment includes immunosuppression therapy. However, his anti-PLA2R was suggestive of secondary MN; this treatment includes HBV therapy with avoidance of immunosuppression. Anti-PLA2R was used to guide therapy for MN in our patient.
Primary Care QI Project: Are newly graduated residents ready to take on the role as the new front line of Depression and Anxiety diagnosis and treatment.

Lori N Gautreaux, MD HOIII Medicine and Pediatrics

Objective: As the number of patients with Anxiety and Depression increase, Psychiatrists are not able to keep up with the demand for treatment leaving interpretation of signs and symptoms, diagnosis, treatment, and management to primary care physicians. The question to be answered is whether or not residency programs are tailoring programs to include more diverse education on psychiatric conditions.

Results: 172 total patients over the course of a 4 month time period were seen for Anxiety, Depression, both or other. The distribution found: 57% with a diagnosis of depression, 21% with diagnosis of Anxiety, and 15% with a diagnosis of both Depression and Anxiety. 40% of all patients analyzed were under treatment with two or more medications. After simple questionnaire of Medicine Pediatric residents it was found that residents believed themselves to be proficient in the diagnosis and treatment of Depression as well as the diagnosis of Anxiety but not the treatment of Anxiety. 36% of studied patients were found to have a primary or component diagnosis of Anxiety.

Conclusion: With the significant number of patients in primary care settings with diagnoses of Depression and or Anxiety along with co morbid conditions, residency programs will need to incorporate education in these areas to establish well rounded physicians. In my own residency program, due to my findings I will encourage lectures on the subject to be given throughout the year as well as encourage clinic staff to discuss specifically Anxiety treatment with all residents.
Incidental Finding of Anomalous Coronary Artery from the Opposite Sinus of Valsava in a Patient with Aortic Stenosis

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Introduction
Anomalies of coronary arteries can be found in up to 1% of patients who undergo angiography. Specifically, anomalous coronary artery originating from the opposite sinus of Valsalva (ACAOS) increase one’s risk for sudden cardiac death. In a series of 8,522 consecutive patients who underwent CCTA, 0.84% had ACAOS. ACAOS is a major differential in a young adult with sudden cardiac death (SCD), accounting for 12-33% of sudden cardiac deaths in young adults and competitive athletes, which is second only to hypertrophic cardiomyopathy. There are certain features of ACAOS that increase one’s risk for sudden cardiac death, and these include interarterial course (coronary artery traversing between aorta and pulmonary artery), slit-like ostium, acute angle of takeoff, valve-like ridges, or intramural aortic course. A number of surgical approaches exist which are selected based on the exact nature of the anomalous coronary artery, and although there is perioperative risk associated with surgery, the risk of cardiac death from the ACAOS is generally obviated. We present a case of an older adult with incidental finding of anomalous coronary artery from the opposite sinus of Valsalva.

Conclusion
ACAOS can be found incidentally on routine diagnostic evaluation. Careful anatomical delineation of the course of the aberrant coronary artery is essential to determining the management for this condition.
A New Autoantibody for the Explanation of Persistent Myopathy Following Discontinuation of HMG-coA Reductase

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CASE: An 81-year-old African American woman with a past medical history of chronic kidney disease stage V and hyperlipidemia presented with two weeks of nausea and fatigue and one week of diffuse myalgia and weakness which progressed until she was bed bound. On exam, she was found to have diffuse decreased muscle tone and proximal muscle weakness with normal reflexes and sensation. Initial lab work showed Cr elevated above baseline, AST of 1848 units/l, ALT of 593 units/l, and a CK level that was unreportable by the lab with the maximum value being 40,000 units/l. Having suspected statin induced rhabdomyolysis at the time of admission, the patient's rosuvastatin was discontinued and her AKI was treated with fluids and hemodialysis. When the patient failed to improve as expected and given the rapid progression of her weakness, there was concern for an autoantibody mediated myopathy. Additional lab work showed an aldolase of 225 u/l, a myoglobin of greater than 5000 ng/ml, a CRP of 158, and an ESR of 75. Negative rheumatologic workup included anti-SSA, anti-SSB, anti-smith, anti-RNP, anti-histone, anti-jo-1, C3, C4, and ANA. In addition, a serum sample was sent for the anti-200/100 autoantibody and she was started on high dose prednisone. Within a day of initiating treatment, the patient’s weakness improved on exam, and her CK began to trend down. She was discharged soon after her AKI resolved and was noted to be markedly improved at her clinic follow-up appointment. She was found to be anti-200/100 negative.

DISCUSSION: The family of autoimmune myopathies is characterized by a lack of disease specific findings on muscle biopsy as well as the clinical features of proximal muscle weakness following exposure to statin therapy that does not resolve with removal of the statin. Additionally, patients may have autoantibodies against myositis-specific antibodies, for example, anti-signal recognition particle. Proper therapy requires differentiation of immune-mediated myopathies from other etiologies because only the former will likely respond to immunosuppression.
Dialysis catheter Use Rate Reduction as a Consequence of Implementation of an Interventional Nephrology Program
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Abstract:
Despite major advancements since the development of the first dialysis machine in 1943, hemodialysis mortality remains extremely high averaging annually 15-20%. After cardiovascular death, the second leading cause of death in patients with End Stage Renal Disease remains blood stream infections from central venous catheters (CVC). Hemodialysis requires a vascular access, which could be CVC, arteriovenous fistula (AVF), or arteriovenous graft (AVG). Maintaining a functioning AVF or AVG in a dialysis patient is therefore of utmost importance to minimize the use of CVCs, and is a primary goal of the Fistula First Initiative. If an AVF or AVG begins to malfunction, there is a short window for intervention before access failure. Traditionally, surgeons or interventional radiologists managed vascular access complications, limiting the nephrologist’s ability to take an active role in maintaining vascular access. Over the past 10 years a new sub-specialty, Interventional Nephrology, has emerged allowing the Nephrologist to manage the dialysis access for their patients. The field entails placement of dialysis catheters, PD catheters, renal biopsies, angiography and balloon angioplasty of AVF and AVGs, and thrombectomy of clotted accesses.

We analyzed patients at Memorial Dialysis, an inner city dialysis unit in New Orleans, LA, with a historically high CVC usage prevalence 25% of patients per month. The interventional nephrology program began performing angiography with balloon angioplasty, and stenting when indicated, in December 2012 in an effort to improve rates of CVC usage. The timely interventions performed by our interventional faculty resulted in mean 10% reduction in catheter use rate.
Rebirth of Peritoneal Dialysis: Urgent Start Peritoneal Dialysis
A. Jaikishen MD, J. Owen MD, A. Jack MD, M. Naljayan MD

Introduction:
Urgent Start Peritoneal dialysis (PD) refers to initiation of peritoneal dialysis in new start End Stage Renal Disease (ESRD) patients who present either emergently in the hospital or in clinic. It requires placement of a peritoneal catheter within 48 hours of presentation and initiation of dialysis within 48 hours of catheter placement. Urgent start PD is being embraced by nephrologists around the country as they are able to bypass the previous standard of waiting two weeks to initiate peritoneal dialysis after catheter placement. The urgent start PD protocol uses low volume dwells to minimize risk of peritoneal leak, with the patient in the recumbent position for 8 hours three times a week for the first two weeks. During this period the patient is not only dialyzing but also undergoing training.

Case:
A 54-year-old African-American male with history of hypertension and cocaine abuse presented to ILH for evaluation of weakness, fatigue, and decreased appetite. Chemistry revealed potassium 7.6, BUN 177, creatinine 27, hemoglobin 7.7, and hematocrit 22.1. He also revealed that he is a Jehovah’s Witness and that he adamantly refuses all blood transfusions. We treated his potassium medically and performed acute hemodialysis via a temporary catheter. Dialysis education was done, and patient was interested in PD. We felt PD was the best option for him as it would minimize blood loss and avoid vascular surgery for creation of an AVF. A peritoneal dialysis catheter was placed, and he was discharged. He began PD 48 hours later in the dialysis unit.

Discussion:
Over the last nine months LSU Nephrology has started 6 patients on PD using the Urgent start protocol. The patients are doing well and have not had to switch dialysis modality. Hemodialysis (HD) was more commonly used until the advent of urgent start PD. Most nephrologists prefer PD over HD. PD is anabolic, allows patients to maintain their lifestyle, and preserves residual renal function. PD patients also have a lower 90 day and two year mortality rate than HD. PD is less expensive than HD with an average savings of twenty thousand dollars per patient per year. There has been a 24% increase in PD patients from January 2010 to October 2012 with many new PD patients initiating via urgent start. LSU Nephrology has built a strong foundation for a viable urgent start program and will continue to increase utilization of PD.
Anemia in an HIV Infected Patient: Parvo the Course?

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Introduction: Anemia is a common complication in HIV infected patients, usually associated with medications, vitamin deficiencies, chronic disease, opportunistic infections, malignancies, or direct effects of HIV.

Case: A 29 year old trans-gendered patient with a history of HIV/AIDS (CD4 count 10 cells/mm$^3$, viral load 227,431 copies/mL, not on anti-retroviral therapy) presented with 1-2 weeks of progressive dyspnea on exertion and lightheadedness. No history of orthopnea, chest pain, or palpitations. She denied cough, wheezing, or blood per rectum, dark stools, changes in color of urine, or gingival bleeding. The patient’s heart rate was 106 beats/min, blood pressure was 80/56 and temperature was 100.9 °F. She had pale mucous membranes and conjunctiva and a 2/6 systolic ejection murmur over pulmonic valve. Rectal exam was unremarkable. Laboratory studies revealed hemoglobin of 3.0 gm/dl with peripheral smear showing reduced red blood cells and a mixture of microcytes, teardrop cells with slight hypochromia; there was no white cell blasts or dysplasia, platelets were normal. Reticulocyte percentage and index were very low at 0.5% and 0.04%, respectively. Iron studies were consistent with chronic disease with ferritin elevated at 831, iron 60, and total iron binding capacity low at 170. Bilirubin, haptoglobin, and lactate dehydrogenase levels were not consistent with hemolysis. Bone marrow (BM) biopsy showed numerous giant proerythroblasts, classic finding for parvovirus B19 infection. BM stains and peripheral blood PCR were also positive for parvovirus B19. The patient initially responded to transfusion of packed red blood cells, but at 1 month follow up had persistent anemia with hemoglobin of 6. Intravenous immunoglobulin infusions were started at that time, and her hemoglobin has since been stable.

Discussion: Pure red cell aplasia (PRCA) is defined as anemia with reticulocytopenia and absence of normal red cell precursors in the bone marrow. An acute PRCA from direct viral infection, called transient aplastic crisis (TAC), can occur with parvovirus B19 infection. Though rare, Parvovirus B19 infection should be suspected in an immunocompromised host with persistent anemia requiring frequent blood transfusions.
Race modifies the effect of fluid administration on mortality and long-term functional outcomes after Acute Respiratory Distress Syndrome

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**Background:** Acute respiratory distress syndrome (ARDS) is associated with high mortality and functional morbidity influenced, in part, by care in the intensive care unit (ICU). Conservative fluid management, in the NHLBI Fluid and Catheter Treatment Trial (FACTT), resulted in more ventilator-free days, but no difference in short-term mortality. Longer-term effects of ICU fluid strategies on mortality or differences in effects by race remain unstudied. Therefore, we sought to determine whether black race modifies the effect of liberal fluid administration on mortality and functional morbidity in patients with ARDS.

**Results:** Of the 1000 subjects enrolled in FACTT, 665 were eligible and consented to follow-up. Median duration of follow-up was 336 days. There were no differences in one year survival between treatment groups. However, blacks who received a liberal fluid strategy had greater short-term (HR 2.16, 95% CI 1.24-3.77, p=0.007) and long-term (HR 2.86, 95% CI 1.58-5.18, p=0.001) mortality regardless of catheter choice after adjustment for age, sex and severity of illness. There was a significant interaction between liberal fluid administration and black race (p=0.005). Mobility impairment at six months was greater for black subjects compared to white subjects of similar age, sex and severity of illness (OR 2.75, 95% CI 1.08-7.03, p-value 0.034).

**Conclusions:** In our long-term cohort of subjects enrolled in the FACTT, we found that black subjects had greater in-hospital and one-year mortality after ARDS and experienced greater long-term functional impairment. Black race modified the effect of liberal fluids on short and long-term mortality with increased hazard of death in black subjects treated with a liberal fluid strategy. These results suggest that liberal fluid administration may be detrimental to black patients with ARDS. Further study is needed to identify appropriate fluid management strategies for different racial/ethnic groups.
Purpose of Study:

Angiotensin converting enzyme inhibitor-induced angioedema is well described, but a rare adverse effect related to this class of drugs. The incidence is estimated between 0.3% and 0.68%. Typically, the angioedema is self-limited, and will improve after the offending agent is discontinued. However, in some cases, life threatening airway obstruction can progress rapidly and infrequently, may take days to weeks to resolve. Our goal was to determine if there are effective therapies available for ACE inhibitor induced angioedema when it does not prove to be self-limiting.

Summary of Results:

Clinicians should be aware that in some cases patient’s can develop rapidly progressive upper airway edema that can then persist for several days to even weeks, as in our patient. In severe forms of angioedema, i.e. those requiring intubation, and in which airway obstruction persists beyond 5 days, it is advisable, to investigate for alternative etiologies so that other therapies may be considered with the expectation that earlier successful extubation can be achieved. Additionally, there is some evidence, in case reports, that FFP and purified C-1 inhibitor concentrates, can be effective in treatment of ACEI-induced angioedema. There are currently ongoing trials evaluating a bradykinin receptor type 2 antagonist, and a recombinant protein inhibiting conversion of kininogen to bradykinin, for use in ACEI-induced angioedema. However, at this time there are currently no proven therapies available for treatment of this form of angioedema.

Conclusions:

ACEI-induced angioedema requiring prolonged intubation, while an albeit rare phenomenon, remains an important area for which proven therapeutic interventions are needed, given the risk of significant morbidity and potential mortality.
A Case of Evolving Pulmonary Hypertension WHO group classification

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INTRODUCTION: Pulmonary hypertension can be caused by a variety of different pathologies. The WHO classification of pulmonary hypertension can be useful for classifying the disease and treatment options though there are still diagnostic challenges within those groups. The case below can illuminate some of the difficulties when trying to find the etiology of pulmonary hypertension in the setting of interstitial lung disease.

CASE: A 35 year old Hispanic man originally from Honduras was first seen in 2011 when he presented to the emergency department with symptoms of progressive dyspnea, 25 pound weight gain, and chronic cough. At the time of diagnosis via right heart cath his mean PA pressures were 58mm Hg and wedge pressure was 15mm Hg. He was tentatively diagnosed with WHO group 1 pulmonary hypertension and was started on Bosentan, coumadin, lasix, and oxygen. Eventually the patient had worsening dyspnea and hypoxia and the patient had a port placed and IV treprostinil therapy was started. He continued to have worsening symptoms and repeat CT showed worsening of the patient's ground glass opacities. The patient was referred to CT surgery for an open lung biopsy which showed a UIP pattern. Repeat right cath showed PAP of 94/40 mm Hg (mean ~58) despite IV prostinoid therapy. Rheumatology work up revealed a high SSA antibody profile. Lip biopsy was done and negative. Despite this there was still concern that he had a connective tissue disease and the patient received a dose of rituximab. Given his significant lung disease it was now thought that this may be the etiology of his pulmonary hypertension and he was transferred to the regional lung transplant facility for evaluation for transplant.

DISCUSSION: Pulmonary Hypertension can be diagnostically difficult. The WHO group classification is useful for categorizing and treating pulmonary hypertension. In brief: Group 1 - idiopathic; Group 2 - left heart disease; Group 3 - lung disease and/or hypoxia; Group 4 - chronic thromboembolic pulmonary hypertension; Group 5 - unclear multifactorial mechanisms. The evaluation of patients can be complicated by overlapping and evolving disease process which can initially lead to the wrong classification of the disease.
Patient with diffuse large B cell lymphoma of germinal center origin

Lindsey, Emma and Jordan, Matthew

Case Presentation

A 41 year old HIV+ male with unknown CD4 count was referred by his PCP to the outpatient cardiology clinic for tachycardia. He was seen in the clinic one month later with continued tachycardia and reported bright red blood per rectum for two weeks. He was then sent to the emergency department where he further reported weakness and a two month history of back pain for which he had been taking naproxen. The patient reported being diagnosed with HIV eight years prior and receiving antiretroviral therapy for one year before stopping on his own. Hemoglobin and hematocrit were found to be 6.9 and 21.3 respectively, and he was admitted for symptomatic anemia. He was transfused with 2 units of packed red blood cells and was started on HIV prophylactic antibiotics. GI was consulted, and EGD with colonoscopy were performed. EGD revealed numerous atypical-appearing gastric ulcers with raised borders and yellow, waxy bases. Biopsies were taken for histopathology as well as CMV and HSV cultures. The patient’s blood counts improved after transfusion and remained stable at 8.7 and 26.5. Chest x-ray revealed degenerative changes at the thoracic spine but no other bony abnormalities, and a prior, recent CT had demonstrated disc herniation. He was counseled on cessation of NSAID use and discharged with appropriate outpatient follow up with GI. Two days later, the patient returned to the ED after undergoing CT at an outside hospital, where multiple lytic bone lesions of the spine and pelvis had been noted. He was readmitted for workup of metastatic malignancy versus disseminated opportunistic infection. His CD4 count was found to be 45 with an HIV viral load of 6.8 million. Workup for Histoplasma, Tuberculosis, and Pneumocystis was negative. CT imaging of the chest and abdomen revealed scattered lytic lesions in the thoracic spine and left posterior ribs, numerous liver lesions, left adrenal mass, and possible right testicular mass. Subsequent ultrasound of testes confirmed a solitary, highly vascular mass in the right testicle. AFP and hCG were found to be negative. Urine protein/ creatinine ratio was high, so serum protein electrophoresis was conducted, which revealed a polyclonal gammopathy. Serum calcium was also normal. FNA and core biopsy of the liver were conducted, and the patient opted for a right orchiectomy as well. Biopsies of gastric mucosa, liver, and testicle were all consistent with diffuse B cell lymphoma of germinal center origin. The patient was initiated on a chemotherapy regimen of dose-adjusted EPOCH plus Rituximab for treatment.

Discussion

DLBCL represents a heterogeneous classification with varying genetics, and diagnosis relies on morphology and immunophenotyping. Due to its characteristic diffuse growth pattern and high proliferation fraction, DLBCL can be highly invasive and involve almost any site, including the GI tract, bone, testis, breast, lung, liver, kidneys, and CNS. DLBCL is the most common mature B cell neoplasm and usually presents aggressively with extranodal involvement in the HIV+ population. The incidence of DLBCL increases with declining CD4 counts, and it is considered an AIDS-defining malignancy.
HACEK Organisms and Infective Endocarditis

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INTRODUCTION: There are 10,000 to 15,000 new cases of infective endocarditis each year in the US. A rare cause of infective endocarditis is a group of gram-negative organisms, the HACEK group: *Haemophilus* species, *Aggregatibacter* (previously *Actinobacillus*) species, *Cardiobacterium hominis*, *Eickenella corrodens*, and *Kingella* species.

CASE: A 54 year-old woman with diabetes and chronic kidney disease presented to the Emergency Department with fever for four days. Her fevers were associated with chills, wheezes, and intermittent diarrhea. Her vital signs were unremarkable but physical exam revealed a III/VI holo-systolic murmur and multiple dental caries. Her laboratory studies revealed a leukocyte count of 18,400 mm$^3$. Blood cultures were positive for *Aggregatibacter aphrophilus* for which she was treated with Ceftriaxone. Transthoracic echocardiography showed vegetation on the posterior mitral valve leaflet and normal ejection fraction, which was confirmed by transesophageal echocardiography. She underwent a dental extraction to remove a possible source of infection. She improved clinically and was discharged home to complete a course of Ceftriaxone. Follow-up echocardiography demonstrated no further evidence of vegetation.

DISCUSSION: Although HACEK organisms are documented to cause up to 3% of infective endocarditis cases, 60% of individuals with HACEK bacteremia were found to have endocarditis as well. Diagnosis of HACEK bacteremia can be easily overlooked because they are fastidious organisms and difficult to isolate. Because of the difficulty with susceptibility testing and increasing beta-lactam resistance, the suggested treatment includes high dose ceftriaxone and ampicillin-sulbactam for 4 weeks when native valves are involved. Fluoroquinolones have susceptibility in vitro and should be used with patients intolerable to beta-lactams. Regimens are extended to 6 weeks in patients with prosthetic valves. A likely source of infection our patient was her poor dentition. Prognosis is dependent on multiple factors including maintenance of high clinical suspicion. Although HACEK infective endocarditis can result in a high mortality rate, most patients with correctly diagnosed uncomplicated infective endocarditis have an excellent prognosis with therapy.
Characterization of a novel laboratory-developed test (LDT) for *Trichomonas vaginalis* using the User Defined Workflow software (UDF) on the cobas 4800 system

Sue Favaloro¹, Patricia M. Dehon², Carmen F. Kletecka¹-³, and Chris L. McGowin²-⁴

**Introduction:** *Trichomonas vaginalis* is the most common curable sexually transmitted infection (STI) worldwide and is most prevalent among women over 40 years of age. Infections in women are predominately asymptomatic, however *T. vaginalis* has been linked to lower and upper reproductive tract disease syndromes including vaginitis, cervicitis and pelvic inflammatory disease. Pregnancy-related complications include pre-term birth and infertility. Diagnosis of *T. vaginalis* can be accomplished by direct microscopy and culture, however modern NAATs can be automated, high-throughput, and are the most sensitive of the current diagnostic methods. The objective of this study was to develop a system for urogenital *T. vaginalis* detection for clinical diagnostic use.

**Results:** The *T. vaginalis* TaqMan assay was successfully adapted to and optimized for the UDF. Once-weekly freeze/thaw cycles for up to 4 weeks had no significant impact on template quantitation indicating the extended stability of frozen cobas 4800 eluates. DNA templates derived from serial dilutions of *T. vaginalis* organisms showed a linear range of detection from $1 \times 10^1$ to $1 \times 10^8$ organisms with % coefficient of variations ranging from 0.1 to 2.5. The reproducible limit of detection (LOD) was $1 \times 10^1$ organisms, which was detected 100% of the time. Concentrations of less than $1 \times 10^1$ organisms were detected intermittently among specimen types. Spiking *T. vaginalis* organisms into reproductive tract specimens showed similar inter-assay reproducibility of the extraction and detection system.

**Conclusions:** These results highlight the utility of the UDF system for qualitative and quantitative *T. vaginalis* detection from female urogenital specimens. In addition, residual cobas 4800 DNA eluates appear to be stable upon frozen storage and amendable for downstream PCR applications.
Comparative analysis of a laboratory-developed NAAT to the TIB Mol Biol LightMix test for *Trichomonas vaginalis* detection in liquid cytology specimens

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*Trichomonas vaginalis* infections have been linked to inflammatory urogenital syndromes including vaginitis, cervicitis and pelvic inflammatory disease. In addition, chronic infections are associated with reproductive tract complications including pre-term birth and infertility. Although *T. vaginalis* is the most common curable sexually transmitted infection worldwide, infections are predominately asymptomatic and can persist for many years. In fact, recent epidemiological studies have shown that *T. vaginalis* prevalence is highest in women over 40 years of age. *T. vaginalis* has historically been diagnosed by wet-mount microscopy, and although this relatively insensitive method is still most commonly used in clinics today, highly sensitive molecular assays are becoming available in the clinical laboratory setting. The objective of this study was to perform a comparative assessment of our lab-developed nucleic acid amplification test (LDT) to the commercially available TIB Mol Biol LightMix kit. We utilized our laboratory-developed, quantitative TaqMan PCR assay with the User Defined Workflow software (UDF) on the cobas 4800 system. DNA was extracted from liquid cytology specimens submitted for HPV testing from Louisiana women attending 5 LSU-affiliated hospitals/clinics between 2013-2014. Using the UDF system, *T. vaginalis* screening was performed and results were compared directly between the LDT and TIB Mol Biol test. The *T. vaginalis* LDT performed well on the UDF system and was cost-effective, user-friendly, and time-efficient in the clinical lab. Statistical comparison between the tests produced a Cohen’s kappa correlation coefficient of >0.6 indicating good correlation between the test results. With similar performance between the two tests, the results highlight the utility of the UDF system for both qualitative and quantitative *T. vaginalis* detection from liquid cytology specimens. Future studies will include a formal validation of the LDT for routine use in the ILH Molecular Pathology Lab.
Regional prevalence of *Mycoplasm genitalium* infections as determined using a novel diagnostic test developed for the User Defined Workflow software (UDF) on the cobas 4800 system

Rafael F. Velasquez1, Patricia M. Dehon1, Meredith K. Shaw1, Sue Ann G. Favaloro2, Carmen F. Kletecka2,3, and Chris L. McGowin1,4

*Mycoplasm genitalium* is emerging as a prevalent sexually transmitted infection that has been linked to acute and chronic urethritis in men, and several inflammatory syndromes in women including pelvic inflammatory disease and cervicitis. The prevalence in high- and low-risk populations is between that of *Chlamydia trachomatis* and *Neisseria gonorrheoeae*. The objective of this study was to utilize a novel lab-developed nucleic acid amplification test (LDT) to determine the prevalence of *M. genitalium* in Louisiana men and women. Using either manual extraction or residual cobas® x480 eluates, DNA was purified from urogenital specimens submitted for HPV or STI testing from 5 LSU-affiliated hospitals/clinics across Louisiana between 2013-2014. To detect *M. genitalium* infections, we utilized our laboratory-developed, quantitative TaqMan PCR assay with the User Defined Workflow software (UDF) on the cobas 4800 system. Using the optimized UDF system, the state-wide prevalence of *M. genitalium* was 3.1%. Sequence-based resistance testing indicated that more than 95% of *M. genitalium* were predicted to be susceptible to macrolide antibiotics, including azithromycin. The *M. genitalium* LDT performed well on the UDF system and was cost-effective, user-friendly, and time-efficient in the clinical lab. These results highlight the utility of the UDF system for both qualitative and quantitative *M. genitalium* detection from urogenital specimens specimens. Future studies will include a formal validation of the LDT for routine use in the ILH Molecular Pathology Lab.
“Look what the Cat(fish) Dragged In: A Case of Necrotizing Fasciitis After Catfish Barb Injury”

S.J. Melton MD, PhD, K Spinks MD, V. Tonthat, MD, D. Englert MD

**Background**  Necrotizing fasciitis following a puncture wound is a rare but serious medical emergency. Here we describe a case of necrotizing fasciitis in a 70 year old female caused by accidental impalement of a catfish barb into her left hand.

**Case Presentation**  The patient was a 70 year old female with a past medical history of End-Stage Renal Disease on hemodialysis who presented to the Emergency Department complaining of pain and edema to her left hand. The patient was cleaning a catfish that was caught from nearby Lake Ponchartrain when she accidentally impaled her left hand with a barb from the catfish. The patient stated that she tried soaking her hand in warm saltwater but that the pain became intense and the edema worsened. At her initial assessment in the Emergency Department, the pain and edema were localized to her hand but had progressed to mid-forearm approximately four hours later. Initial radiographic findings were negative for signs of foreign body or gas formation; however, a CT scan obtained revealed formation of gas in the soft tissues of the hand and forearm. The patient developed signs of septic shock and required pressor support. The patient was taken to surgery for debridement and washout twice over the next two days but eventually required amputation of the left forearm.

Cultures obtained during surgery initially grew *Plesiomonas shigelloides*, a Gram negative rod associated with freshwater environments. Other organisms that were cultured included non-*Enterococcus* alpha-hemolytic *Streptococcus* and an additional non-fermentative Gram negative rod. Throughout her ICU course, the patient required pressor support and continuous renal replacement therapy. She was treated with Vancomycin, piperacillin-tazobactam, ciprofloxacin, and clindamycin without improvement, and she died as a result of her infection.

**Conclusion**  A literature search revealed that *Plesiomonas shigelloides* has been associated with diarrheal syndromes, but this is a rare case of it being associated with necrotizing fasciitis. Additionally, this case helps to reinforce the aggressive nature of necrotizing fasciitis and the need for prompt surgical intervention.
Sarcoidosis is a systemic disease characterized by chronic granulomatous inflammation that can affect multiple organ systems. The classic presentation of this disease includes bilateral hilar lymphadenopathy in an African American female in her thirties who is experiencing unexplained shortness of breath. The following case demonstrates the importance of keeping a broad differential particularly when the patient lacks these common features of a somewhat rare disease.

A fifty-four year old African American female with a past medical history of hypothyroidism, metabolic syndrome, vitamin D deficiency, and obesity, presented to the ophthalmology clinic in April of 2014 with a 6-month history of painless progressive decrease in vision in the right eye with no associated symptoms. Physical exam revealed an afferent pupillary defect on the right side, completely extinguished visual field in the right eye, and a full rim defect in the left visual field. CT of the head was negative for intracranial abnormalities. In October 2014 her symptoms progressed to right-sided facial pain extending to the temporal and auricular regions. An MRI of the head/orbits revealed an active right optic nerve sheath mass with a small intracranial extension. The patient was then referred to neurosurgery for biopsy of the lesion for definitive diagnosis. Prior to the biopsy, the patient underwent routine preoperative testing which included an EKG that showed a high grade atrioventricular block and bifascicular block not previously seen on the patient's most recent normal EKG in May 2013. Cardiac MRI was performed and was suspicious for cardiac sarcoidosis; a re-read of the MRI of the head from October 2014 revealed involvement of both optic nerves and an enlarged right lacrimal gland. Rheumatology recommended starting prednisone 20 mg po daily even before histologic diagnosis based on the severity of her disease which had already caused blindness. The patient underwent ICD placement without complications in preparation for diagnostic lacrimal gland biopsy by neuro-ophthalmology. Biopsy results are currently pending.

Although our patient did not present with the classic symptoms of sarcoidosis, it was important that this chronic disease remained high on our differential diagnoses. Although it is not uncommon to see derangements in serum calcium levels or serum ACE levels, her lab values were always normal as were her chest xrays. While this constellation of presenting symptoms of sarcoidosis is not common, it has been previously described and should be accurately recognized by physicians.
A Sweet Case of Chorea
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INTRODUCTION: Chorea is an involuntary, irregular, poorly patterned movement that often times can take on a worm like appearance termed athetosis. This movement disorder is associated with a wide variety of illness ranging from primary hereditary disease such as Huntington’s, to secondary causes including cerebrovascular, para-neoplastic, metabolic, inflammatory and immunologic diseases. Of the metabolic causes, hyperglycemia is the most common.

CASE: A 71 year old African American woman with past history of diabetes mellitus type II presented to the emergency room with a chief complaint of uncontrollable spasm and odd movements in her left wrist of five days duration. Her blood sugar had been running high over the last several after a recent change in medication to liraglutide and glipizide. Physical exam showed spontaneous choreiform movement of the left wrist and left arm with no other significant findings, including no other focal findings on the rest of her neurologic examination. Labs at the time of admit were significant for blood glucose of 1013 mg/Dl with normal anion gap and without presence of ketones in the blood or urine. The patient was started on a basal insulin regimen. Her blood glucose decreased to 563 mg/Dl and the choreiform movements dissipated. MRI/MRA of the brain showed no acute findings. Hemoglobin A1c was 16.3%. The patient’s blood glucose continued to be managed with subcutaneous insulin and the patient was discharged the next day without further choreiform movements.

DISCUSSION: Choreiform movements can be a rare presenting symptom of non-ketotic hyperglycemia, perhaps more commonly in elderly women. Aside from metabolic etiologies such as diabetes’ associated hyperglycemia, the differential diagnosis for choreiform movements should include Huntington’s Disease and Wilson’s Disease. Monitoring for these diseases can be done via pedigree and DNA testing in the case of Huntington’s Disease and serum copper, urine copper, and serum ceruloplasmin in Wilson’s Disease. As demonstrated in this case, treatment of our patient’s hyperglycemia resulted in symptomatic cure.
A survey investigation of the attitudes and knowledge of emergency department personnel and patients concerning hepatitis C virus (HCV)

**Moreno-Walton, Lisa**, Julien, Ryan, Helaire, Karmynah, Lee, Benjamin, and Johnson, Grant

**Background:** HCV is the most common chronic blood-borne infection in the US, affecting 3.2 million Americans. According to CDC, 60-70% of newly infected persons are asymptomatic. Chronic HCV develops in 75%. 65% of chronically infected persons have active liver disease. Testing is not commonly performed for asymptomatic patients due to lack of awareness regarding the risks of disease. Evaluating awareness and attitudes towards HCV knowledge and testing is essential to improving transmission and treatment.

**Objectives:** To assess the level of knowledge regarding HCV and testing recommendations; to assess compliance with testing recommendations among 6 ED populations of interest: attendings, residents, medical students, nurses, ancillary staff, and patients.

**Conclusions:** While MD’s and students have the greatest knowledge and patients and ancillary staff had the least overall, correct responses to individual items vary widely, with nurses demonstrating less knowledge than patients regarding transmission and role of medication in decreasing viral load, they scored higher than attendings regarding the availability of vaccine. Large knowledge gaps indicate the need for intense education at all levels in the healthcare system if effective eradication of HCV is to be accomplished.
Patients as Partners in Medical Education: A qualitative analysis of the impact on the doctor-patient relationship

Moreno-Walton, Lisa, Slick, Julie, Lee, Benjamin, Bennett, Marsha, and Johnson, Grant

Background: Disparities in race, ethnicity and socioeconomic status have been documented to impact the doctor-patient relationship and may serve as impediments to the establishment of trust. The “us and them” phenomena perpetuates stereotypes and impedes good communication and a successful therapeutic alliance.

Objectives: To determine whether equal collegial relationships established during the production of an educational video would enhance trust, diminish perceived differences and improve understanding of personal traits between two disparate social, racial and economic groups.

Findings: Both groups believed that trust was the essential foundation for good doctor-patient relationships. Both came to view each other as "human beings...a lot like us". The community group voiced advantages to "knowing a doctor" or "being friends with a doctor"--specifically being able to make a phone call instead of coming to the ED, and not having to wait. The community group assigned negative attributes to doctors who they did not know, trust, or who were not their friends, and then said how very different the doctors are who they now know and consider as friends. Both groups voiced that the community group had learned of the sacrifices that residents make for their profession (working long hours, not seeing loved ones). Similarly, each group discussed how residents had learned how difficult it was for community members to comply with medication adherence (cost, obtaining refills) and with visit adherence (lack of public transportation, unsafe neighborhoods, long waits in clinic). One resident summarized the project as, "Just the way we saw them as not patients, they saw us as not doctors, and I think it was the same equal exchange for them as well. Cause along the same lines it's just feeling more comfortable, building that trust, making it stronger."

Conclusions. This project demonstrates the primacy of trust in doctor-patient relationships, and that trusting relationships can be fostered between doctors and their patients with joint, interactive educational interventions involving role-play and debriefing. Implications for practice include expansion of the project in cost effective ways to ensure all medical students receive this type of patient-centered, interactive education.
Clinical Features that Contribute to Revascularization in Patients with Unstable Angina

Sopan Mohnot, Lisa Moreno-Walton, Dr. Murtuza Ali, Grant Johnson,

Background: Many patients who present to the Emergency Department (ED) with chest pain (CP) undergo cardiac catheterization (CC). The benefit of early revascularization for significant stenosis is documented; however CC often reveals normal arteries. CC is an invasive and costly procedure. Finding reliable referral criteria would be beneficial.

Objective: Determine what percentage of patients who undergo CC go on to revascularization; determine whether there are variables which predict CC results with statistical significance.

Results: 89 (32.6%) underwent revascularization. Men were 2.429x as likely to require revascularization. A history of coronary artery disease (CAD) increased the odds by 2.318 and an elevated cholesterol level by 5.200. Patients who were taking aspirin or statin at the time of presentation had greater odds of revascularization.

Conclusions: A history of CAD is a known positive predictor for revascularization, and male sex and hypercholesterolemia are known to have positive predictive value (PPV) for CAD. Our study confirmed these findings. In our population, taking either aspirin or statin positively correlated with revascularization. It is likely that patients were taking the medications because of uncontrolled hyperlipidemia or previous diagnosis of CAD. Most of the risk factors traditionally associated with a PPV for revascularization, such as history of tobacco use, diabetes, hypertension and hyperlipidemia, were not significant as isolated variables in this study. Only 1/3 of patients referred for CC underwent revascularization.
Evaluation of BMI in Louisiana Nursing Home residents with and without Diabetes Mellitus

Nastasie, Rodica, Aguilar, Erwin, Barry, Sean, Cefalu, Charles, Reske, Thomas, Hudson, William, Abdo, Abir, Campbell, James, and Zeinaty, Ibrahim

Introduction: The incidence of diabetes mellitus (DM) has increased in United States and is a source of concern due to the negative consequences on ever-growing aging populations’ health. The rising rate of overweight/obesity in the elderly is imposing massive and rapidly changing burdens of ill health in Nursing Home (NH) setting. The purpose of this study is to evaluate the usefulness of BMI in the management of DM in NH residents.

Results: 727 NH residents met the inclusion criteria. 509 subjects were females (70%), of which 150 (30%) had DM and 359 (70%) did not. 218 residents (30%) were males and 76 (35%) had DM whereas 142 (65%) did not. Females from non-DM group were 80±13 year old and had a mean BMI of 20±6. Females residents with DM were slightly younger (age 78±12) and had a higher mean BMI 23±6). Males without DM were 70±15 year old, with a mean BMI of 24±6. The diabetic males were in average 68±11 year old, and had a higher BMI (27±6). Among men and women, the lowest reported average BMI was in non-diabetic female 20±6 kg/m² and the highest in diabetic male group 27±6 kg/m²

Conclusion: The negative health outcomes of overweight/obesity are well known. Our results suggest that regardless of the gender DM is associated with a higher BMI level.
ASYMPTOMATIC AORTIC RUPTURE: A CASE REPORT

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Introduction: Aortic dissection and rupture often present with high risk features allowing an expedient medical and surgical treatment. We present an atypical presentation of an aortic rupture to emphasize the importance of clinical suspicion despite a lack of high risk exam features.

Case: A 54 year old African American gentleman with a past medical history of Aortic Type B dissection, 4.2cm aortic arch aneurysm, hypertension, and current tobacco use presented to the hospital after his right leg gave out. The patient denied any loss of consciousness or trauma during his fall, and was without any chest pain, shortness of breath, leg pains, nausea or vomiting. At triage, his blood pressure was 160/124 with a heart rate of 54. Physical exam revealed bradycardia with normal S1 and S2, non-distended jugular venous pulsation, and equal distal pulses. Lab results revealed a stable chronic anemia, an acute kidney injury with a creatinine of 1.53 mg/dl and a negative troponin. EKG was negative for any ischemic changes but demonstrated LVH. Initial chest X-ray was significant for a moderately enlarged pericardial silhouette and prominence of the ascending arch of the aorta. A transthoracic echo demonstrated a circumferential pericardial effusion without tamponade physiology and a dilated ascending aorta up to 45mm. Cat scan showed interval development of an ascending aortic rupture with an associated mural thrombus. Emergent ascending and transverse arch replacement with aortic valve resuspension was successfully performed.

Discussion: Management of aortic aneurysms relies on early recognition, aggressive medical management and prophylactic surgery when indicated to avoid dissection and rupture. The classic presentation of aortic rupture includes severe chest pain radiating to the back with hemodynamic compromise. Painless dissections account for 6.4% (63 out of 977 total patients) of the population. High clinical suspicion in conjunction with a high risk past medical history allowed the expedient diagnosis and repair of asymptomatic aortic rupture in our patient who presented with likely unrelated leg weakness.
INTRODUCTION: Radio-contrast media has been implicated as an uncommon cause of anaphylaxis.

CASE: A 49 year old woman with a past medical history of peanut allergy described as shortness of breath, coronary artery disease, asthma, hypertension and cocaine abuse presented with one day of chest pain. Vital signs on admission: Temperature 99.6 °F (37.6 °C), heart rate 100 beats per minute, respiratory rate of 18, BP: 160/100 mmHG, SpO2 98 % on room air. Pertinent physical exam findings included an obese body habitus with distant heart sounds, difficult to assess JVP due to body habitus, expiratory wheezes throughout and, 2+ pitting edema in bilateral lower extremities. EKG showed sinus tachycardia with non-specific ST/T wave changes. Pertinent labs included troponin’s 0.03, 0.47, and 3.54 ng/ml. She was diagnosed as a NSTEMI and subsequently a diagnostic coronary angiography was performed. Moments later she became acutely short of breath and hypoxic. She was noted to have injected sclera at this time. She went into pulse-less electrical activity and despite resuscitation efforts; she died. Post mortem autopsy examination revealed laryngeal edema and tracheal narrowing secondary to laryngeal spasm. Tryptase was 166 ug/L. Due to the acuity of her presentation and elevated tryptase level her cause of death was deemed anaphylaxis due to IV radio-contrast media.

DISCUSSION: Severe systemic reactions occur in 1:1000 exposures with death in 1:10,000-40,000 exposures. The cause of the anaphylactoid reaction is not the iodine in the IV contrast but the hypertonicity. Newer contrast media with low osmolarity are much safer. In this case, Ultravist 370 was used which is considered a low osmolarity media. Though the rate of adverse events in low osmolarity media are reduced, they are not absent. There are no diagnostic tests to predict an adverse reaction to IV contrast. Patients with a previous reaction have a 17-35% chance of recurrence on re-exposure. Although our patient had a peanut allergy, no clear linkage exists between peanut allergies or underlying asthma as predisposing factors to anaphylaxis secondary to radio-contrast media. Furthermore, our patient reportedly had two coronary catheterizations in the past with no adverse reactions. The elevated tryptase level supports the diagnosis of anaphylaxis in this case.
False positive troponins due to heterophile antibodies

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INTRODUCTION: Cardiac troponin I is a marker of myocardial necrosis and is often utilized to determine the need for intervention. Elevated troponins, with an otherwise negative cardiac work-up, can create a dilemma for the physician.

CASE: A 59 year old African American man with a past medical history of hypertension and cocaine induced NSTEMI presented with chest pain after reportedly using cocaine. Vital signs were: temperature 98.8°F, blood pressure 168/78 mmHg, heart rate 82 beats per minute, respirations 14 per minute. EKG revealed normal sinus rhythm. Pertinent laboratory values include Troponin I (cTnI) 2.61 ng/ml, 2.58 ng/ml, 2.62 ng/ml, and 2.44 ng/ml. He had multiple admissions and emergency room visits with the same complaint and his cTnI averaged 6 ng/ml. A left heart catheterization in 2009 revealed normal coronaries. A stress echocardiogram from a month prior was negative for stress-induced ischemia and an echocardiogram from this admission showed normal ejection fraction and no wall motion abnormalities. His troponins were trended over time and it was noted that he had a several year period when his troponins were negative, though he presented with the same complaint of chest pain. A plausible explanation for this was that the troponin assay was creating false positive results due to antibody production. His troponin was sent to an outside facility to confirm that this was the case. The troponin from the outside facility was negative and we concluded that heterophile antibodies to the assay at our institution were responsible for the repeated troponin I elevations.

DISCUSSION: Cardiac troponin I (cTnI) is specific to cardiac tissue and is released into serum after myocardial necrosis. cTnI has become a marker of choice for detecting myocardial damage because of its specificity to cardiac tissue. Heterophilic antibodies can cause false-positive cTnI results. There are a number of causes of troponin assay interference which includes heterophile antibody, rheumatoid factor, albumin and plasmin, excess fibrin, high concentration for alkaline phosphatase and analyzer malfunction. Heterophile antibodies should be included in the differential when faced with repeatedly high troponins in the setting of normal coronaries.
**Case:** A 74 year old woman with history of ESRD secondary to pauci-immune crescentic glomerulonephritis and microscopic polyangiitis (MPA) presented with fatigue and shortness of breath and chest pain. She had described melena and hematemesis prior to her admission. She was found to be anemic with a hemoglobin of 5.1 mg/dl. Chest CT at that time showed patchy rounded ground glass opacities in both lungs. EGD and colonoscopy did not define a source of bleeding. The patient was transfused 2 units packed red blood cells and was discharged with follow up. Two days after discharge, she developed dyspnea on exertion, along with hemoptysis. She denied fevers/chills, weight loss, sick contacts, or history of travel. She was noted to have a temperature of 102.3°F, stable blood pressure and heart rate, oxygen saturation 95% on 2 liters/minute nasal cannula. On physical exam, she had crackles in the right lower lobe. Her hemoglobin was 6.2 mg/dl, hematocrit 18.7%. Her ESR and CRP were both markedly elevated and p-ANCA titer was 1:320. Chest x-ray demonstrated airspace disease within the right lung base, lateral portion of right upper lobe, and lateral portion of middle left lung. Bronchoalveolar lavage was consistent with hemorrhage. She was immediately started on high dose methylprednisolone for 3 days, with the plan to switch to Rituximab thereafter. On day 3, patient had a drop in hemoglobin from 8.3 to 7.4. Chest x-ray now showed worsening airspace. Her oxygen requirements rapidly increased. She was switched to oral prednisone, and underwent five days of plasmapheresis, resulting in mild radiographic improvement; however we were unable to wean the oxygen. She was then started on azathiothriprine and rituximab. After the administration of rituximab, the patient slowly improved and oxygen requirements were weaned. The patient’s final diagnosis was microscopic polyangiitis (MPA) with diffuse alveolar hemorrhage.

**Discussion:** MPA is an ANCA-associated vasculitis characterized by profound constitutional symptoms and majority of patients have glomerulonephritis. Diffuse alveolar hemorrhage is associated with 10-50% of cases. Treatment is guided by disease severity. The presence of alveolar hemorrhage is a hallmark of severe disease and should be treated with plasmapheresis, high dose steroids and rituximab or cyclophosphamide.
Resolution of Recalcitrant Skin Lesions Following Appropriate Identification of Livedo Vasculopathy and use of a Multimodal Treatment Plan

**Pearson M, Buford K, Hardy S, Murphy-Lavoie H, LeGros T, Harch P, Wyatt HA, Van Meter K, and D Yontz.**

**OBJECTIVE:** Livedo Vasculopathy (LV) is a rare, painful recurring disease of the distal extremity cutaneous microcirculation. The etiology is unknown, but is characterized by non-inflammatory changes and thrombus formation within the medium-sized arterioles with hyalinization. The diagnosis of LV is elusive, not often considered even by those with extensive wound healing experience. We present a convenience case series of four patients with LV treated with multimodality care including rheologic agents, anti-homocysteine agents and optimized wound care. We look to improve awareness of this condition to enhance the quality of life for these patients.

**RESULTS:** In all cases, rapid improvement in wound healing was documented, with complete healing in half and marked on-going improvement in the rest. Lapse in medical therapy has been associated with relapse.

**CONCLUSIONS:** This case series shows the benefits of disease specific treatment. Wound margin biopsies and bloodwork to evaluate for autoimmune disorders is critical. Prevention of thrombosis and vitamin B supplementation to break the homocysteine cycle build up is paramount for wound healing in LV. For those with recurrent, non-healing wounds, intensive investigative strategies must be employed. Consultation with a wound care specialist and a dermatologist is recommended for the successful resolution of these wounds.
Why does my head hurt?

Claude Pirtle, Lee S Engel, Rebecca Lillis,

INTRODUCTION: Pheochromocytomas are a rare catecholamine-secreting tumor that can be the root of a life threatening hypertension.

CASE: A 45 year old woman with a past medical history of headaches and hypertension presented to her primary care provider with a dull, aching, frontal headache. The frontal headache persisted for several days before she went to her primary doctor who prescribed her butalbital/acetaminophen/caffeine. Despite the medication, her headache worsened over the next few days and she developed nausea, vomiting, and photophobia. At time of admit from the emergency department, her blood pressure was 204/109 mmHg. Her blood pressure improved with an adjusted medication regimen and she was discharged feeling much better, headache free. Unfortunately, her headache quickly returned the day after discharge. She reported feeling very dizzy and almost fell, and she then returned to the ED. CT without contrast showed no acute intracranial abnormality, CSF studies were within normal limits with negative cultures, Renal U/S was done and was noted be within the normal limits. A 24 hour urine Metanephrine revealed an elevated value of 2327 mg, a 24 hour urine Normetanephrine showed a result of 9988 , and a urine 24hr catecholamine fraction of 555 ug/m^2. The patient was seen in clinic and initially prescribed an alpha blocker and later a beta blocker with referrals to Endocrinology and General Surgery. A CT of her Abdomen and Pelvis with contrast confirmed a 4.6 cm portocaval mass most consistent with an extra adrenal pheochromocytoma. General surgery was able to remove the mass without any complications. Surgical pathology demonstrated a benign pheochromocytoma, 5cm in greatest dimensions with negative surgical margins for tumor.

DISCUSSION: Patients with pheochromocytomas may have either persistently high blood pressure or episodic peaks in blood pressure related to catecholamine surges. Secondary causes of hypertension may be suggested by symptomology such as flushing/sweating (Pheochromocytoma), presence of a renal bruit (renal artery stenosis), or laboratory abnormalities such as hypokalemia (Aldosteronism). Furthermore, patients with resistant hypertension or early or late onset of hypertension should undergo screening for secondary etiologies.
Introduction: Acute pelvic inflammatory disease (PID) is a possible outcome of sexually transmitted diseases (STD). The rate of STDs in Louisiana is increasing, yet there are no state estimates of PID rates. We sought to characterize PID hospitalizations in Louisiana.

Methods: We performed a retrospective analysis of all hospital discharges for acute PID among women aged 14–49 for years 2000–2012. We calculated hospitalization rates and described demographic variables, length of stay, and direct costs. Mean cost per hospitalization increased 78%.

Results: Hospitalization rates decreased significantly from 2000–2012 for all ages and races. Rates decreased 60% from 162 cases to 64 cases per 100,000 persons in 2002 and 2012, respectively. Rates were highest among women aged 20–24 and for black women. The average length of stay decreased from a peak of 4.21 days to 3.61 days in 2012.

Discussion: Decreasing rates are consistent with national estimates. Disparities in PID hospitalizations are likely related to disparities in STD acquisition and access to diagnosis and treatment.

Keywords: Pelvic inflammatory disease epidemiology, hospital trends, surveillance, retrospective studies
A 62 year-old man presented to the emergency room with severe right back and chest pain. His past medical history includes hepatitis C, diabetes mellitus, hypertension, atherosclerosis, heart failure, COPD, and tobacco abuse. Two months prior he was diagnosed with a large mass in the right 6th posterior rib. During staging imaging he was also found to have liver masses concerning for primary hepatocellular cancer. He unfortunately missed his follow up appointments.

In the ER he complained of sharp, severe, constant, nonradiating pain in right upper back that had progressive worsened. He reported fevers and a non-intentional 20 pounds weight loss. He also reported a chronic productive cough with usually clear sputum, but with occasionally brown coloration.

On examination his abdomen was soft, non-tender with no masses or organomegaly palpable. A large, firm, immobile, slightly tender mass was noted on the right upper back below the scapula. His albumin was 2.4, bilirubin 1.9, AST 244, alkaline phosphatase 174, ALT 110, INR 1.2, prothrombin time 12.4, carbon dioxide 20, and calcium 8.5. Blood AFP levels were found to be 234,228. CT imaging of the chest, abdomen and pelvis showed a 7.4x4.7x5.2 cm mass centered within the right 6th rib and multiple multifocal hepatic lesions.

The initial differential diagnosis of the rib mass was felt to be a secondary primary. A biopsy revealed staining positive for pan-cytokeratin and CD10, patchy expression by tumoral cells of Hep Par-1 and strong diffuse expression of Glypican-3, and no significant expression of cytokeratin 7 or cytokeratin 20. These findings are consistent with metastatic hepatocellular carcinoma.

Hepatocellular cancer is the third leading cause of cancer death worldwide and mortality is on the rise in the US. Common cause of death is diffuse liver infiltration with loco-regional destruction of normal liver tissue. Solitary bone metastasis are uncommon. This case illustrates a rare presentation of a common cancer. Consideration of unique presentations is critical for the timely diagnosis of hepatocellular carcinoma.
The Geriatric Subspecialty in Crisis – A review of missing fellowship recruits

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Introduction: There are 39.6 million persons older than 65 years living in the US. They represent 12.9% of the U.S. population. By 2030, the older population will grow to 72.1 million. The older population tends to have multiple comorbid conditions and healthcare needs. Management of this population needs special training. Geriatricians are well trained to manage these complex patients. Society needs Geriatricians. We reviewed the latest trends in postgraduate medical geriatric education.

Methods: Review of 2015 match results. Public data from the – The Match - The national resident matching program was utilized.

Results: During the 2015 Geriatric match 132 programs enrolled into the match and 6 programs withdrew. A total of 353 positions were offered. Only 43.9% of positions were filled. 78.6% of programs did not fill positions. 176 residents registered. 86 were residents with IMG training background.

Interpretation: Fewer residents are choosing Geriatrics as their subspecialty. This trend is contrary to actual market needs but has not transpired into actual higher compensation - a common factor for interest in subspecialty training. Overall, geriatricians’ compensation is significantly lower than that of most other medical and surgical specialists. Besides compensation factors that include the “unattractiveness” include feeling depressed about elderly and their comorbid conditions and the significant amount of time needed to assess and deal with patients. A lack of attractive education and experience in Geriatric rotations might also be a factor.

Conclusion: Geriatric fellowship training has a continued declining interest in postgraduate candidates even though society will need more Geriatricians. The reasons for the decline are multifactorial, with financial compensation being a key player. Further research and interventions are necessary to reverse this trend.
Predictors of Survival of Therapeutic Hypothermia Based on Analysis of a Consecutive American Inner City Population over 4 Years
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Background: Therapeutic hypothermia (TH) is the international standard of care for all comatose patients after cardiac arrest, but criticism focuses on poor outcomes. We sought to develop criteria to identify American urban patients more likely to benefit from TH.

Methods: Retrospective chart review of 107 consecutive adults undergoing TH in downtown New Orleans from 2010-2014 yielded records for 99 patients with all 44 survivors or families contacted up to four years.

Results: 69 males and 38 females with a mean age of 60.2: 63 deceased (58%) and 44 survivors (42%). Presenting cardiac rhythm was divided into shockable (Pulseless Ventricular Tachycardia, Ventricular Fibrillation) and non-shockable (Pulseless Electrical Activity, Asystole). Presenting in shockable rhythms with ROSC <20 minutes were 21 patients with 15 (71%) survivors (p=.001). Time >20 minutes until ROSC in shockable rhythms had 5 patients with 3 survivors (78%, p=0.001). Presenting in non-shockable rhythms with ROSC <20 minutes were 54 patients with 18 survivors (33%, p=.001). ROSC >20 minutes in non-shockable rhythms had 19 patients with 2 survivors (8%, p=.001). Survivors of shockable rhythms showed 19 (100%) living post TH. 15 survivors (79%, n=19, p=.001) had CPC score 1 or 2 with 4 survivors (21%, n=19) having a CPC score of 3. A total of 25 survived non-shockable rhythm. Acute survival of patients with non-shockable rhythm showed 18 expired <72 hours (72%, n=25) with long term survival of 4 patients (5%, n=74) and CPC scores of 1 or 2 (p=.001). Interestingly, patients with time to ROSC <20 minutes exhibiting more than one loss of sustained ROSC showed 100% mortality (p=.001). Patients presenting with shockable >20 minutes ROSC had overall survival of 70% (p=.001), but those undergoing >3 cardiac rhythm changes had 100% mortality (p=.001).

Conclusion: Patients presenting with shockable rhythms undergoing TH had overall acute survival of 70% followed by long term survival of 100% after 4 years. In contrast, patients presenting with non-shockable rhythm had long term survival of 5%. TH is not recommended for patients presenting with non-shockable rhythm and requiring greater than 20 minutes for restoration of ROSC.
Immunization with a novel *Pneumocystis* antigen to augment host defense against murine *Pneumocystis* pneumonia.

Sanbao Ruan, Yang Cai, David Welsh, Alistair Ramsay, and Judd Shellito

**Rationale:** *Pneumocystis* pneumonia (PCP) is a major cause of morbidity and mortality in immunocompromised patients. Although antibiotic treatments are available, these therapeutic approaches have potential toxicity. There is great interest in developing a vaccine to prevent PCP, but no vaccine is currently available. Recently, we have identified a novel surface protein derived from single suspended *P. murina* cysts as an antigentic target for vaccine development. Captured proteins were analyzed by LC-MS/MS to identify the exposed portions of fungal cell surface proteins. The N-terminal region of the protein, SPD1 (N-230), was expressed in an insect cell line and the recombinant protein was tested as an antigentic target for vaccine development. Here we test vaccine efficacy of the N-terminal fragment of SPD1 (N-230).

**Methods:** BALB/c mice were boosted 3 times of SPD1 vaccine plus adjuvant MF-59 by subcutaneous injection. Control mice received an equal volume of adjuvant alone. 3 weeks after the last immunization, CD4+ cells were depleted with anti-CD4 antibody GK1.5. The mice were then challenged with 2 x10^5 Pneumocystis (PC) organisms. CD4 depletion continued weekly. Mice were sacrificed at 6 weeks after PC Challenge. Spleen cells, lung cells and serum were harvested. The cells were stained with B cell and memory B cell markers, and assessed via flow cytometry. Specific Pneumocystis IgG antibody was measured by ELISA before and after challenge. Infection burden was measured as real-time PCR for *P. murina* rRNA, expressed as copy number per right lung.

**Results:** SPD1 immunization increased B cell and memory B cell absolute cell counts in CD4-depleted Balb/c mice post PC challenge in the spleen and lung compared with control mice. Immunization with SPD1 significantly increased specific PC IgG antibody production before and after challenge. Mice immunized with SPD1 showed significantly decreased PC copy number compared with control mice at 6 weeks after PC challenge (n = 6, p < 0.01).

**Conclusion:** Immunization with SPD1 provides protection against PC infection. SPD1 protection against Pneumocystis challenge was associated with enhanced memory B cell production and higher anti-Pneumocystis IgG antibody production. SPD1 is a potential vaccine candidate to prevent or treat pulmonary infection with Pneumocystis.
Oral vaccination for the prevention of *Pneumocystis* pneumonia.

Derrick R. Samuelson, Nicholas M. de la Rua, Tyshena P. Charles, Judd E. Shellito, and David A. Welsh

**Rationale:** *Pneumocystis* pneumonia (PCP) is a major cause of morbidity and mortality in immunocompromised patients; particularly those infected with human immunodeficiency virus. Currently, no effective vaccines exist for the prevention of *Pneumocystis* infection. We *hypothesized* that the delivery of live organisms to the gastrointestinal tract will elicit a mucosal immune response, which will provide protection at distal mucosal sites (*i.e.*, the lung) and protect against infection with *Pneumocystis*.

**Results:** Mice orally gavaged with *P. murina* were protected from a subsequent lung challenge with *P. murina* as compared to control animals. Specifically, mice that received gastric *P. murina* were able to clear lung infection 7 days post inoculation, while unvaccinated animals were still infected with high levels of *P. murina* 14 days post inoculation. Vaccinated animals also had increased CD4+ T cells (3.92 \( \times \) 10^4 cells/lung versus 7.84 \( \times \) 10^3 cells/lung, \( P < 0.0001 \)) and CD11b+ macrophages (4.42 \( \times \) 10^5 cells/lung versus 9.82 \( \times \) 10^4 cells/lung, \( P < 0.001 \)) in the lung following respiratory challenge. Furthermore, administration of serum from mice orally vaccinated with *P. murina* significantly reduced the *Pneumocystis* lung burden in infected animals compared to control serum (3.48 \( \times \) 10^5 cysts/lung versus 9.60 \( \times \) 10^5 cysts/lung, \( P = 0.0202 \)).

**Conclusion:** Oral vaccination of mice with live *P. murina* provides systemic immunity and protects against respiratory infection. The protective effect of oral vaccination is, in part, mediated by the humoral response and production of protective *P. murina*-specific antibodies.
The influence of postoperative BMI trends after TKA on function and pain measures in patients under 60 has not been extensively explored. A retrospective cohort study was designed to describe the interaction of BMI and patient reported clinical outcomes over time via multiple regression, logistic regression, and Pearson’s correlation analysis. OKS, SF-12, and KSS outcomes all significantly improved postoperatively and all showed a significant positive correlation with an increase in follow-up time. Preoperative and postoperative BMI were not significantly different at any length of follow-up as there was a significant correlation between pre-operative BMI and post-operative BMI over time (P< 0.0001, r = 0.73). These findings suggest that although TKA recipients report increased function and less pain in completing activities of daily life following TKA, they are not utilizing their enhanced ability to reduce BMI.

**KEYWORDS:** Total Knee Arthroplasty; Monoblock Tibial Component; BMI; Patient reported outcomes

**ABBREVIATIONS:** Total Knee Arthroplasty (TKA); Body Mass Index (BMI); Oxford Knee score (OKS); Short Form 12 (SF-12); Knee Society Score (KSS)
Benadryl Overdose masked as Positive TCA in an Altered Mental Status Case
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Case: A 20 Year old female presented to the Emergency Room, brought in by EMS after falling unconscious in a cab. The patient had no identification available. In the ED, the patient was very lethargic, only opening her eyes to sternal rub. The patient was given Narcan without improvement in mental status, and a 2 Liter normal saline bolus for patient’s Tachycardia with HR in 120’s- 130’s. CT scan obtained revealed no abnormalities. CBC and CMP laboratory data was all within normal limits. Patient with EKG’s obtained that demonstrated QT prolongation of 503, Sinus tachycardia. Patient had a Foley inserted and a urine drug screen was obtained that revealed a positive TCA level. Patient blood alcohol level was elevated as well. Benzodiazepines were ordered for patient on a prn basis and patient was sent to ICU for neuro checks. As the patient became more alert, though still altered, she was able to disclose a contact name. Using that contact name we were able to find out that early in the morning prior to presentation, she took an undetermined amount of Benadryl tablets after an argument with a significant other. Poison control was contacted, and we were able to discern that diphenhydramine can produce false positives on Urine drug screens. During this hospitalization the patient began to have multiple visual hallucinations, dry mouth, QT prolongation, and urinary retention. These symptoms resolved after nearly 48 hours of therapy with Benzodiazepines and IVF’s.

Discussion: According to the American Association of Poison Control there are over 600 compounds that have anticholinergic properties, including prescription and over the counter drugs, as well as plant products. The features of an overdose are usually anhidrosis, anhidrotic hyperthermia, hallucinations, nonreactive mydriasis, urinary retention, and cutaneous vasodilation. Benzodiazepines can be used to treat the agitation in these patients. Sodium bicarbonate should be used to treat prolonged QT syndrome. Sodium Bicarbonate was withheld, as this patient did not have persistent QT prolongation. In general Physostigmine, may be superior to benzodiazepines to treat the agitation; however, the patient and the patient’s significant other could not be certain that the patient did not take any other medications. Physostigmine given in a patient, who has taken another toxin, may produce cholinergic toxicity. Therefore, it is recommended to give this medication in conjunction with a toxicologist consult.
A “Probable” case of West Nile Virus Fatal Meningoencephalitis
Smith M, MD, Tadin D, MD, Lynch K, DO, Amoss. J, MD, Crowe J, MD

Case: A 66 year old male with a past medical history of coronary artery disease, chronic kidney disease, systolic heart failure with reduced ejection fraction, atrial fibrillation, type 2 diabetes mellitus, hypertension and COPD presented to the emergency department with fever for one day. The patient was confused and much of the history was obtained from his wife. She reported that the patient was in his usual state of health until the day prior to admission when he began complaining of a headache behind his eyes associated with double vision when lying flat and subjective fevers. On evaluation in the emergency department the patient had a temperature of 103 and was confused. The patient’s initial labs showed a white blood cell count of 13 with 86 percent neutrophils and 4 percent bands. The urinalysis, chest x-ray and non-contrasted head CT were unremarkable. With the patient’s altered mental status and fever, antibiotics for meningitis were begun along with intravenous acyclovir. A lumbar puncture was deferred twenty four hours as the patient had been taking Xeralto at the time of admission.

The patient’s altered mental status worsened over the next day and he had worsening respiratory distress requiring intubation. A lumbar puncture was performed which showed 452 red blood cells and 102 white blood cells with 35 percent lymphocytes, 13 percent neutrophils and 52 percent monocytes. The CSF protein was mildly elevated and the glucose was normal. CSF gram stain and culture were negative. PCR for herpes simplex was negative. A non-contrast MRI of the brain showed no acute disease. One week after hospital admission the serum IGM West Nile antibodies returned positive. CSF IGM antibodies were negative. After thirteen days of hospitalization, the patient remained in a deep coma and the patient expired after care was withdrawn.

Discussion:
The majority of West Nile Virus infections are asymptomatic. Symptoms such as fever, headache and malaise are seen in about 20-40 percent of infected individuals. Neuro-invasive disease presents with signs and symptoms of meningitis or encephalitis. The mortality rate for neuro-invasive West Nile Virus is 10 percent. Risk factors for mortality include diabetes, cardiovascular disease, muscle weakness and changes in the level of consciousness.

The CDC diagnostic criteria for West Nile Virus infection have one of the following:
1. Isolation of the virus from tissue, blood, CSF, or other body fluid.
2. A four-fold or greater change in virus specific quantitative antibody titers in paired sera
3. Virus specific IGM antibodies in the CSF and negative IGM antibodies for other paroviruses endemic to the region where the exposure occurred
4. Virus IGM antibodies in the serum with confirmatory virus specific neutralizing antibodies in the same or a later specimen

A Probable case of West Nile Virus is diagnosed if West Nile Virus specific IGM antibodies are present in the CSF or serum but no other testing is performed.

Given that our patient had a clinical picture consistent with neuro-invasive West Nile infection and that no alternative diagnosis was found, we are confident that this patient had West Nile Infection.
A 57-year-old female with a history of essential hypertension and primary hypothyroidism presents with an 8-month history of bilateral upper and lower extremity weakness and pain, requiring the use of a wheelchair. An attempt at symptom relief is made with cervical spinal fusion for disc compression. Postoperatively, the patient develops dyspnea. A CT scan obtained to evaluate her shortness of breath reveals both a pulmonary embolism and severely enlarged bilateral adrenal glands (5.3 x 3.4 cm on the right and 8.0 x 5.6 cm on the left), with initial concern for adrenal hemorrhage. Before further evaluation is done, the patient is readmitted after a mechanical fall. She meets criteria for systemic inflammatory response syndrome, with urosepsis initially presumed. However, her symptoms outlast her infection, and further laboratory evaluation is consistent with adrenal insufficiency (AI). She endorses multiple B symptoms, leading to further investigation of her adrenal masses for evidence of malignancy. The masses are found to be hormonally inactive, but marked LDH elevation is noted. Repeat CT imaging demonstrates a significant two-month interval size increase in the adrenal glands to 8.1 x 6.0 cm on the right and 12.1 x 9.3 cm on the left. Adrenal biopsy is performed, with flow cytometry positive for CD19, CD20, and kappa. Immunohistochemistry is positive for Bcl-2, CD20, and CD79a but negative for EBV. Histology reveals a diffuse B cell lymphoma of non-germinal cell origin.

The diagnosis of bilateral primary adrenal lymphoma (PAL) is rare. Though many cases are diagnosed post-adrenalectomy, in cases with a high index of suspicion pre-operative diagnosis is possible using fine needle aspiration biopsy. The absence of AI should not preclude diagnosis of PAL. This case differs from previous reports of PAL in that the patient is female, younger than most cases reported, and with EBV negative lymphoma. Data on PAL exists as case reports and literature reviews; there are no large-scale analyses to date. Multiple etiologies have been proposed, including polyomavirus infection (EBV, JC) and preceding autoimmune adrenalitis, but no conclusive evidence has been confirmed.
Coexisting Central and Peripheral adrenal insufficiency

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A 43yr-old male with AIDS (CD4 count 13, viral load > 1 million) presented with acute onset lower back and generalized body weakness. He had anorexia, shortness of breath, and difficulty standing after micturition, with post micturition syncope. He also had persistent hypotension. Physical exam showed bibasilar crepitations, and hyperesthesia of both feet. CT Brain showed no acute intracranial abnormalities. Lumbar puncture was positive for *C. Neoformans*. Labs showed Hgb 7.1, HCT 20.6, and Platelets 99. CMP showed Potassium of 5.9, Chloride 114, CO2 19, and BUN/ Creatinine of 37/ 3.29. A cortisol stimulation test demonstrated a subnormal response with baseline cortisol of 2 mcg/dl and 60 min post stimulation level of 10 mcg /dl. The patient was placed on maintenance steroid replacement (hydrocortisone 20 mg am and 10 mg at pm).The Hypothalamic-pituitary axis work up showed repeated low ACTH (<1.1) consistent with central adrenal insufficiency. On account of this a full adrenohypophyseal hormonal screening was done.

This revealed FSH (1.2IU/L) and LH (2.7 IU/L), which were inappropriately low in view of the very low testosterone level (<10ng/dl), consistent with central hypogonadism. The prolactin level was 8.7 Ng/ml, IGF-1 153ng/ml, and GH 0.6ng/ml, which were all within normal range. He had a low aldosterone (<1 ng/dl) and plasma renin activity (0.88ng/ml/hr) level consistent with coexisting primary adrenal insufficiency. Anti-adrenal AB screen was negative.

This patient’s biochemical picture was consistent with both central and primary adrenal insufficiency. This can due to direct HIV involvement of the pituitary. Hormonal abnormalities can be subtle (partial) or panhypopituitarism. HIV infection associated cytokine production can also cause these HPA abnormalities. Furthermore, opportunistic infections acquired in HIV/AIDS patients can also cause HPA functional disorders. The concurrent low Aldosterone and plasma renin activity indicate coexisting primary adrenal insufficiency which can again be either secondary to direct HIV involvement and/or opportunistic infections of the adrenal cortex. The case highlights the complexity and variety of possible endocrine consequences that can accompany AIDS.
A Man Without A Left Atrium: Regional Cardiac Tamponade
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**Case:** A 29 year old man underwent extensive surgery including an emergent thoracotomy for bilateral pneumothorax and cardiac tamponade followed by placement of pleural and pericardial drains, and a craniotomy for treatment of subarachnoid hemorrhage following a motor vehicle accident. Following and exceptional recovery, he became short of breath and tachycardic. A CT-Angiogram of the chest revealed a left lower lobe segmental embolism. He was started on intravenous heparin with bridging to warfarin. His symptoms initially improved; however one week later he had sinus tachycardia (heart rate of 110 bpm at rest and 150 bpm upon standing), dizziness, and a 12mmHg drop in systolic blood pressure. On exam, his jugular venous pressure was found to be 9mmHg, there was no variation in his systolic blood pressure with respiration, and no pericardial rub or distance of heart sounds. An elevated serum atria natriuretic peptide raised concerns for pericardial effusion. A repeat trans-thoracic echocardiogram was not diagnostic. Anti-coagulation was discontinued due to continued concern for pericardial effusion. Trans-esophageal echocardiogram revealed a large pericardial effusion with loculated fibrin strands posterior to the left heart resulting in diastolic left ventricular collapse and near complete left atria compression with obstruction of inflow to left ventricle. He subsequently received an emergent subxyphoid pericardial window for drainage of the effusion. The patients symptoms improved and a repeat trans-thoracic echo revealed complete resolution of the effusion.

**Discussion:** Diagnosis of cardiac tamponade is usually clinically made with specific finding such as the classic *Beck’s Triad* (distant heart sounds, distended neck veins, low blood pressure) in addition to findings such as *Pulsus Paradoxus*. Any loculated, eccentric effusion or localized hematoma can produce regional cardiac tamponade in which only selected chambers are compressed. Establishing the diagnosis can often become challenging as physical exam findings and echocardiography are not always typical of tamponade physiology. Regional tamponade is often seen after pericardiotomy (or myocardial infarction) and therefore the clinical suspicion should remain heightened.
Ulcerative colitis with small bowel involvement

Melissa Spera, MD, Elizabeth Bollinger, MD, Babiswarup Chandamuri, MD, and John Hutchings, MD

INTRODUCTION: Ulcerative colitis is a disease process involving mucosal ulceration of the colon. Backwash ileitis may occur in patients with inflammation of the cecum. (1) Here we describe a case of ulcerative colitis involving the small intestine which developed following colectomy.

CASE: The patient is a 21 year old man with past medical history of ulcerative colitis diagnosed at the age of 17 and recent Clostridium difficile colitis who presented with four days of diffuse abdominal pain following oral intake, anorexia, and hematochezia with eight bowel movements per day. The patient had recently discontinued both oral and rectal mesalamine and begun a steroid taper. On admission physical examination the patient was alert, oriented, and tender to palpation on abdominal examination. The CBC with manual differential showed a WBC of 17000 with segmented neutrophil count of 90%, lymphocyte count of 5%, monocyte count of 1%, and 1 % bands. On hospital day 2 the patient reported worsening abdominal pain with nausea and vomiting. On physical examination he was tachycardic with a heart rate between 120-140 beats per minute, lethargic and with altered mental status. The CBC with manual differential on hospital day 2 showed a WBC of 33,000 with segmented neutrophil count of 74%, lymphocyte count of 12%, monocyte count of 7% and 7% bands. Lactic acid was elevated at 3.4 mmol/L. Empiric antibiotic coverage for Clostridium difficile colitis was initiated. CT of the abdomen and pelvis with IV and oral contrast showed diffuse colitis with dilation of the pericolonic vessels. The patient was diagnosed with fulminant colitis secondary to Clostridium difficile colitis verses ulcerative colitis. The patient was taken emergently to the operating room and underwent total abdominal colectomy with end ileostomy. Pathology of the total abdominal colon revealed ulcerative colitis with pan colitis and backwash ileitis. The patient’s hospitalization was complicated by acute renal failure requiring hemodialysis, pneumonia, recurrent anemia requiring multiple transfusions of packed red blood cells and coagulopathy with elevated INR requiring vitamin K. Testing for C. Difficile Then on post op day 12 the patient was noted to have abdominal distension. Nasogastric tube was placed for decompression. On hospital day 13 the patient was noted to have blood in his ileostomy bag and bloody output from his nasogastric tube. EGD and evaluation through the patient’s ileostomy with a pediatric colonoscope was performed. Friable mucosa, ulcerations and oozing in the distal duodenum and proximal jejunum were noted. The duodenal ulcers were biopsied. Pathology findings were consistent with duodenal involvement by ulcerative colitis.

DISCUSSION: Extension of the ulcerative process to the small intestine is not typical of ulcerative colitis. When this finding is present the diagnosis of ulcerative colitis may be questioned in favor of a diagnosis of Crohn’s disease. (2) There are case reports in the literature similar to this case in which patient’s present with new onset enteritis within one month of colectomy performed as a treatment for ulcerative colitis. The pathology in these case reports, as in our case, were consistent with ulcerative colitis and not Crohn’s disease. It has been suggested that the etiology of small bowel enteritis in ulcerative colitis is due to T cell and cytokine mediated inflammatory response induced by severe ulcerative colitis. This inflammatory response, which was previously confined to the colon, then goes on to affect the small bowel once the colon is removed. Therefore early initiation of immunosuppression following colectomy may improve outcomes in this patient population. (3)
A case of colonic ganglioneuromas
Melissa Spera, MD, Elizabeth Bollinger, MD, Maneesh Gupta, MD, and John Hutchings, MD

INTRODUCTION: Ganglioneuromas found in the gastrointestinal tract are rare tumors. (1) These tumors are made up of nerve ganglion cells, nerve fibers and other supporting cells of the enteric nervous system (1, 2) These tumors may be associated with systemic disease processes such as von Recklinghausen’s disease, MEN IIb, neurofibromatosis, familial adenomatosis coli, Cowden’s disease, tuberous sclerosis, colonic adenocarcinoma and juvenile polyposis.

CASE REPORT: The patient is a 26 year old man with past medical history of angiolipoma diagnosed at the age of 21 with previous multiple cutaneous angiolipoma resections who presented with new masses in his neck, axilla, forehead, finger, forearm and flank. CT scan of the neck, chest, abdomen and pelvis were ordered to evaluate for possible sarcoma. CT neck showed large, complex multinodular goiter with compression and trachea deviation. CT abdomen and pelvis showed innumerable fat densities in the duodenum, jejunum and cecum with a prominent ileocecal valve and hypo dense lesions noted on the pancreas. The patient was taken to surgery by ENT for total thyroidectomy. The patient was then referred to GI for further evaluation of the fat densities present in the small intestine and colon. In GI clinic the patient reported nausea with abdominal discomfort that typically occurred in the morning and was not related to food intake. He denied weight loss, hematochezia, melena and night sweats. EGD was performed and showed numerous nodules and polypoid lesions throughout the esophagus, stomach, duodenum, and ileum. Pathology of the esophageal and gastric polyps showed esophagitis and gastritis, respectively. The biopsies of the duodenum and ileum showed architecturally normal small bowel mucosa. Colonoscopy was then performed and showed innumerable small 2-4 mm polyps throughout the ileum and colon. Biopsies were taken to give a representative sampling of each colon segment. All colonic polyps were consistent with a pathologic diagnosis of ganglioneuromas. Pathology performed immunostains S-100 and NSE to confirm the diagnosis of ganglioneuromas. The patient is currently scheduled for endoscopic ultrasound to further evaluate the pancreatic lesions noted on CT.

DISCUSSION: Ganglioneuromas (GN) located in the GI tract have been divided into three groups: polypoid GN’s, ganglioneuromatous polyposis and diffuse ganglioneuromatosis. (2) Ganglioneuromatous polyposis has a similar presentation as our patient and is characterized by greater than 20 sessile, pedunculated or submucosal lesions. Ganglioneuromatous polyposis patients also exhibit extraintestinal findings such as multiple cutaneous lipomas and skin tags. There is a case report in the literature that describes an autopsy discovered case of GI tract ganglioneuromatosis with associated cutaneous lipomas, adrenal myelolipomas, pancreatic telangiectasias and a multinodular goiter. This case is similar to our patient with his GI tract ganglioneuromas, cutaneous lipomas and multinodular goiter. It has been hypothesized that these findings may represent a MEN variant or an unrecognized syndrome. (2)
Risk of cardiovascular disease in older caregivers of demented patients: A review of literature and hospitalist perspective.
Jaclyn Spiegel and Thomas Reske

Introduction: Cardiovascular disease has a high impact on health and health care utilization, particularly as it relates to rates of hospital admission. It is estimated that approximately a third of the population age 65 and older suffers from heart disease. Well described traditional risk factors for heart disease include obesity, hypertension and diabetes. However, one factor that is rarely considered is caregiving stress, particularly in the older population. Over 15 million adults currently act as caregivers to relatives, most of whom are elderly and have multiple comorbid conditions. Caregiving is generally defined as assisting another person with activities of daily living (ADLs) for at least 14 hours per week. With the great deal of emphasis in healthcare on the prevention of disease we were interested to assess current scientific literature of older caregivers of demented patients and cardiovascular disease, as well as how this relates to hospital admissions rates.

Methods: We performed a PubMed literature search including the terms “caregiver burden”, “caregiver disease”, “demented patients”, “dementia”, “heart disease” and “health impact”. We reviewed 854 abstracts. Also reviewed was the Healthcare Cost and Utilization Project's statistical analysis of the most frequent conditions in US hospitals.

Results: We found 2 meta-analysis and 3 longitudinal studies that included impact on heart disease of caretakers in demented patients. Randomized controlled trials were not found. Caregiving is thereby acknowledged to pose psychological and physical stress. Adjusted risk of cardiovascular disease is cited to be increased by 35% in caregivers, independent of race, gender, or presence of depression. Caretakers also have increased adiposity, dyslipidemia, hypertension, hyperglycemia, and sleep difficulties. Studies showed that the Framingham risk scores indicate a significantly higher potential to develop overt cardiovascular disease over ten years in dementia caregivers (7.95 +/- 2.94) over non-caregiving controls (6.34 +/- 2.66).

Conclusion: Caregiving is associated with psychological and physical stress. Literature review revealed that older caregivers for individuals with dementia are at higher risk for cardiovascular disease compared to non-caretakers, and that cardiovascular disease is one of the leading causes of emergency room visits and hospital admissions. Given the increased role of older individuals as caretakers in our society we propose that further studies are needed to establish more knowledge on etiology of heart disease in this patient population and implement screening to impact their health and thus reduce hospitalizations.
Tap It: Don’t Assume It’s Cirrhosis!

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Introduction: Portal hypertension secondary to cirrhosis is the most common cause of ascites in chronic alcoholics. However, a diagnostic paracentesis is essential to exclude other causes of new-onset ascites, including heart failure, malignancy, and pancreatitis. Pancreatic ascites is characterized by a serum-ascites albumin gradient (SAAG) ≤ 1.1 g/dL, ascitic fluid total protein > 3 g/L, and an elevated ascitic fluid amylase level. Leakage from a pancreatic pseudocyst or the pancreatic duct is the most common etiology.

Case Presentation: A 49 year-old man with no past medical history presented to the emergency department with a gradual onset of abdominal swelling and distension over one month. He admitted to heavy alcohol use and reported abruptly stopping alcohol use three weeks prior to presentation due to his symptoms. Shortly before his symptoms began, he fell off his bicycle but was unable to characterize the mechanism or severity of the incident. Diagnostic paracentesis results revealed a SAAG of 0.9 g/dL, total protein of 3.8 g/L, and amylase of 38600 U/L. Conservative therapy with therapeutic paracentesis, bowel rest, and parenteral nutrition was initiated with some improvement in pain but no change in abdominal distension. Magnetic resonance cholangiopancreatography (MRCP) demonstrated a pancreatic pseudocyst. Sphincterotomy was performed, and endoscopic retrograde cholangiopancreatography (ERCP) was attempted but was unsuccessful. After a three week hospital stay, the patient was discharged home in stable condition with repeat ERCP scheduled for one month after discharge.

Conclusion: This case highlights the importance of sampling new-onset ascites to make an accurate diagnosis and choose an appropriate treatment plan. Historically, pancreatic ascites has been treated with conservative therapy including limiting oral intake, total parenteral nutrition, and ocreotide therapy; however, newer case series suggest early endoscopic therapy may be beneficial in reducing treatment failure and mortality rates.
Case Report: Role of PIVKA – II in Screening for Hepatocellular Carcinoma

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Introduction: Prothrombin Induced Vitamin K Absence II (PIVKA – II) or Des – Gamma – Carboxy – Prothrombin (DCP) has been described to be increased in patients with hepatocellular carcinoma.

Case: A 61 year old man with hypertension, type 2 diabetes, recent CVA, Hepatitis C, COPD and history of a persistent right upper cavitary lung lesion was brought to the emergency department after the patient’s sister found him on the floor. The patient was not eating properly nor taking all of his required medicines. The patient was found to have a urinary tract infection and improved with treatment. Review of a recent prior admission revealed a computed tomography of the chest that showed a subtle 2.0 cm slightly hypoechoic mass located in the anterior aspect dome of the right lobe of the liver. Right upper quadrant ultrasound at that time did not visualize the lesion. Labs ordered during this admission revealed that his Alpha-fetoprotein (AFP) was 3 ng/mL (reference range 0 – 9 ng/mL). Prothrombin induced by vitamin K absence (PIVKA-II) was 104.8 ng/mL (reference range 0 – 7.4 ng/mL). Gamma-glutamyltransferase was 451 from his previous admission. Biopsies of the liver lesion, preformed due to an elevated PIVKA II were diagnostic for hepatocellular carcinoma.

Discussion: This case report illustrates the possible effectiveness of early detection in screening for hepatocellular carcinoma with PIVKA II over current screening methods such as alpha-fetoprotein. Previously published data suggests better sensitivity with PIVKA II than AFP for detection of HCC. HCC proliferates silently with mild or no symptoms until advanced disease. Treatment for advanced stage HCC is limited. Early detection and better screening for high-risk populations may provide better treatment options, prognosis, and clinical outcomes.
Is Adenoid Size on Lateral Neck X-ray a Good Predictor of Intra-operative Size?

Vilija Vaitaitis, Suzie Smart, and Anita Jeyakumar

Introduction
Adenoidectomy is one of the most common operations worldwide. Data published from 2010 showed about 0.21-0.25 adenoidectomies per 1000 children\(^1\). Indications for adenoidectomy include obstruction and chronic infection or otitis media. Practical methods for diagnosing nasopharyngeal obstruction include bedside nasal endoscopy, radiographic imaging, and direct visualization or palpation intraoperatively. Nasal endoscopy is a well-accepted method for accurately determining adenoid hypertrophy; however, this exam can be poorly tolerated in pediatric patients.

Conclusion
Lateral neck x-ray is a benign diagnostic study. Lateral neck x-ray is a good predictor of adenoid size and is a valuable tool in the evaluation of adenoid hypertrophy. The A-N ratio continues to be a useful, tolerable, and confident diagnostic method in pediatric patients for adenoid hypertrophy.
The Use of Ultrasound in Rheumatoid Arthritis to Assess the Need of Further Therapy

Kenneth W Van Dyke, DO

Introduction: The use of musculoskeletal (MSK) ultrasound (US) is currently not included in the most recent classification of rheumatoid arthritis (RA). However, US can be useful in diagnosis, evaluating disease severity and response to therapy. I will describe here a patient who had a recent flare of RA and MSK US was used to assess response to a change in therapy.

Case Presentation: A 57-year-old African American female with a 9-year history of seropositive (rheumatoid factor, anti-cyclic citrullinated peptide positive) rheumatoid arthritis presented to the Rheumatology office 6 weeks after a flare of her disease. She was initially diagnosed in 2005 and has been treated with a combination of methotrexate and hydroxychloroquine. Her disease was in clinical remission until 6 weeks ago when the patient presented with synovitis and joint tenderness on clinical exam along with elevations in inflammatory markers. Her methotrexate was increased from 15 mg each week to 20 mg each week and she was continued on hydroxychloroquine. Six weeks later, she had no morning stiffness, swollen or tender joints. Exam was unremarkable and inflammatory markers had normalized. Musculoskeletal ultrasound examination at the wrist revealed a small area of cortical bone irregularity consistent with an erosion and synovial hypertrophy at the radiocarpal joint without power Doppler signal. MSK US of the metacarpophalangeal joint and proximal interphalangeal joint revealed synovial hypertrophy without power Doppler signal. Overall assessment is that the patient was in clinical remission with a disease activity score (DAS-28) of 2.51 with ultrasound examination confirming synovial hypertrophy without power Doppler signal.

Discussion: At this time, the use of US is not included in the most recent classification criteria of RA. However, the presence of synovial hypertrophy and power Doppler can improve the accuracy of the current criteria and predict the requirement for treatment. Power Doppler positivity within the synovium has been shown to be associated with risk of disease relapse and structural progression. This may help to explain why patients in clinical remission continue to have structural progression. MSK US has increased sensitivity in detecting cortical erosions when compared to radiography, which can help clinicians decide to aggressively treat their patients earlier. Recently, there have been consensus recommendations that include ultrasound in the diagnosis and response to treatment in RA. It is likely that ultrasound will be included in future classification criteria and incorporated in the armamentarium of rheumatologists.
**Point-of-care digital pupillometry by a multidisciplinary team is feasible and demonstrates good inter-rater reliability**

**Vermaelen, James L¹; Jolley, Sarah E¹; Johnson, Jessica L¹,²; Kantrow, Stephen¹, deBoisblanc, Bennett P¹**

**Background:** The improved accuracy and precision of digital pupillometry (DP) represents an advance over routine penlight exam. Use of DP is currently being explored for titration of analgesia and may be of use in assessing depth of sedation during critical illness. However, use of point-of-care DP in ICU patients is not well characterized.

**Objective:** Assess the feasibility and inter-rater reliability of point-of-care DP across multiple critical care providers.

**Design:** Point-in-time, cross-sectional study of patients in an academic medical ICU. DP using the NeurOptics NPi-100 device was performed on each eye by one attending, one fellow and one student in sequential order. Operators were blinded to each other’s measurements. All 3 assessments were completed within 20 minutes. Each assessment measured pupillary size, contraction velocity (rate of change in pupil size following a standardized light stimulus), and pupillary latency (time from light stimulus to pupillary constriction). Inter-rater reliability was assessed by calculation of an intraclass correlation coefficient (ICC) across measurements for each eye. An ICC greater than 0.8 was considered good inter-rater reliability.

**Results:** Measurements were obtained on 8 medical ICU patients chosen at random. The average time taken for each observer to obtain measurements was approximately 30 sec/eye. Measurement of pupil diameter demonstrated the greatest inter-rater reliability (Table 1). Average velocity of pupillary contraction was less reliable but maintained good inter-rater reliability for the right eye measurements (R eye ICC 0.94, L eye ICC 0.74). Pupillary latency had the lowest inter-rater reliability (R eye ICC 0.51, L eye 0.33) on sequential testing. There were no adverse events associated with DP.

**Conclusions:** Use of DP by multiple critical care providers is safe, feasible and can be performed rapidly in critically ill patients. Bilateral DP demonstrated good inter-rater reliability for pupillary size and average velocity of contraction; however, pupillary latency was less reliable with single observer measurements. These observations serve as a starting point for future study examining the utility of DP in the assessment of sedation in the ICU.
That’s snot what you think it is: A case of nasal myiasis.

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Introduction: Myiasis is the infestation of human tissue with dipterous (fly) larvae. The female fly is attracted to lay her eggs in blood or foul smelling tissue, therefore myiasis is often associated with trauma. Other risk factors for infection include immunocompromised state, sinusoidal disease, low socioeconomic status, and poor hygiene. Maggots release proteolytic enzymes which breakdown surrounding tissues for digestion. This mechanism has also been used therapeutically in the debridement of chronic wounds.

Case Description: 27 year old male with no past medical history was brought in by EMS after being found unconscious in the field, lying on a street corner with multiple gunshot wounds to his body. He was unstable on arrival and underwent emergent thoracotomy and laparotomy, where he was found to have massive pulmonary hemorrhage requiring right partial lobectomy. He subsequently developed coagulopathy, abdominal compartment syndrome, and renal failure. Vancomycin and piperacillin-tazobactam were started for treatment of sepsis. On hospital day three, a friend at bedside noticed movement in the patient’s nostril and his nurse was alerted. ENT and Infectious disease were consulted for evaluation. At this time, the patient was afebrile with sinus tachycardia to 130s and SBP 100s on vasopressors. He had a marked leukocytosis at 20K with 41% bandemia. On exam, he was intubated and sedated with GCS of 3T. A large amount of thick, green mucous was noted in his right nostril with multiple maggots embedded and crawling throughout. No obvious signs of blood or trauma to the nares was noted. ENT performed nasal endoscopy with irrigation and removal of the visible maggots. Mineral oil was applied topically to the nares. Broad-spectrum antibiotics were continued. Two days after nasal endoscopy, maggots were again seen in the patient’s oropharynx. That same day, the patient unfortunately succumbed to his major traumatic injuries.

Discussion: Nasal myiasis is a rare but serious infection that when untreated, can lead to extensive tissue necrosis and even death. Treatment is aggressive surgical debridement of the maggots and necrotic tissue by nasal endoscopy, when available. In the setting of chronic wounds or ulcers, maggots can actually be beneficial to the host as studies have shown improved healing with maggot debridement therapy.
INVASIVE PULMONARY ASPERGILLOSIS IN AIDS PATIENT

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Case: a 44 year old man with a history of AIDS (CD4 7 cells/mm$^3$, not on combined anti-retroviral therapy) presented with a chief complaint of generalized weakness, body aches, bifrontal headache and hemoptysis for several weeks. The patient had a large cavity on chest radiograph two years prior but was found to be AFB culture negative at that time. Six months prior to presentation, the patient was hospitalized for fevers, cough and hemoptysis. He was diagnosed with M. abscessus and treated with amikacin and linezolid. Unfortunately, he had multiple readmits to other facilities due to persistent symptoms as a result of medication non-compliance. On presentation the patient was afebrile. Physical exam was notable for several ulcerative lesions on genitals. Initial labs were notable for WBC 2.1 x10$^3$/ul, hemoglobin 5.3g/dl, hematocrit 16.2%, bicarb 19meq/l, creatine 1.48mg/dl, albumin 3.2g/dl, ALT 141units/l, Alk phos 379 units/l and, AST 64 unts/l. CT of his chest demonstrated pre-existing cavitary disease with what appeared to be mycetomas and potentially angioinvasive fungal disease. Bronchoscopy biopsy revealed hypae forms and tissue with fungal elements consistent with aspergillus. He was started on voriconazole. Lumbar puncture, performed to work up bifrontal headache, did not demonstrate bacterial meningitis, AFB or Cryptococci antigen. The patient was discharged on abacavir-lamivudine 600-300mg daily, raltegravir 400mg BID, atovaquone 1500mg daily, azithromycin 1200mg Q week and voriconazole 200mg BID.

Discussion: Invasive Pulmonary Aspergillosis (IPA) most commonly affects immunocompromised hosts. Presenting symptoms include cough productive of sputum, dyspnea, fever unresponsive to antibiotics, and hemoptysis. The gold standard for diagnosis is direct histological exam of tissue along with culture. High resolution CT is the preferred radiographic exam as it provides clues for earlier diagnosis and improved outcomes. Bronchoscopy allows for collection of samples for fungal stain and culture. First line treatment is voriconazole. Posaconazole and echinocandins can be used in patients with refractory IPA.
Pacemaker Lead Preventing Complete Decompensation in Cardiac Tamponade
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INTRODUCTION: Cardiac tamponade remains a feared complication of pericardial effusions. This phenomenon occurs when an effusion compresses the right ventricle during systole, preventing the ventricle from filling and progressing to obstructive shock. The hemodynamic effect of any effusion is related to the acuity of which it occurs as well as the volume of the effusion. Regardless of the scenario, recognizing this condition quickly and acting on it with the help of an experienced cardiologist may result in a remarkable outcome.

CASE: A 53 year old incarcerated man with Marfan’s syndrome status-post recent AVR and TVR with epicardial DDDR pacemaker placement (1 month prior) presented with a three day history of difficulty breathing. He was in moderate respiratory distress with heart rate of 110 bpm, respiratory rate of 20/min, blood pressure 85/57. Physical exam revealed an aortic click, a II/VI holosystolic murmur (atrial and tricuspid areas), JVP >12 mmHg, and bilateral lower extremity edema. Significant labs include: Cr 1.59 mg/dl, Hg 3.2 g/dl, Hct 9.6 %, INR 9.3, BNP 454 pg/ml, and Troponin 0.04 ng/ml. CTA did not demonstrate any acute aortic dissection. Trans thoracic echocardiogram revealed: a very large anterior pericardial effusion; mid-right ventricular free wall anchored to the chest due to epicardial pacemaker lead; and evidence of cardiac tamponade with right ventricular collapse in diastole (except the anchored part). The patient was admitted to the MICU and received FFP and pRBCs prior to undergoing pericardiocentesis; 1650mL of serosanguinous fluid was drained. He tolerated the procedure well and after a few days, was discharged in stable condition.

DISCUSSION: To date, there have been many cases revealing cardiac tamponade as a complication of pacemaker insertion but none that clearly describe a pacemaker as a tool that actually saves the patient from complete decompensation. This case of subacute tamponade was complicated by the fact that not only did this patient have Marfan’s syndrome with a history of aortic root and multiple cardiac valve replacements, he was also severely anemic with an increased risk of bleeding from his supratherapeutic INR. Fortunately, life-saving pericardiocentesis was able to be performed in a controlled setting and his outcome – due to his pacer wire preventing complete obstructive shock – was indeed remarkable.
MicroRNAs as Candidate Prognostic Biomarkers of Cervical Intraepithelial Neoplasia (CIN)

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Each year 3 million American women are diagnosed with abnormal cervical cytology by Papanicolaou (Pap) smear and 90% of these women will undergo follow-up colposcopy with cervical biopsy. Women with biopsy-confirmed high-grade CIN are referred for definitive treatment. Conservative management is recommended for women with low-grade CIN due to the high probability of natural resolution of the abnormality (60-90% of cases) and the potential for adverse outcomes associated with treatment intervention. Conservative management consists of repeat screening at frequent intervals until the CIN resolves or progresses to high-grade CIN. As a consequence women with low-grade CIN endure multiple clinic visits, procedures, medical expenses and anxiety that could be alleviated by the implementation of a prognostic triage test capable of determining the fate of low-grade CIN (resolution vs. progression). MicroRNAs (miRNAs) are attractive biomarkers for clinical screening tests because they are highly stable, readily detected in biological specimens, and reliably predict disease. Our hypothesis is that miRNAs can be used clinically to predict the fate of low-grade CIN. We screened 136 cases of low-grade CIN and selected 10 cases with definitive clinical outcomes (6 that naturally resolved, 4 that progressed to high-grade CIN) to be analyzed for differential miRNA expression. Total RNA was isolated from archival formalin-fixed, paraffin embedded cervical biopsy tissues. MicroRNA expression was analyzed by micro-array and realtime PCR. We established the feasibility of our approach by demonstrating detection of miR-146a and miR-205 in archival biopsy specimens. These miRNAs were also detected in residual cytology specimens, suggesting that cytology specimens could serve as a surrogate to biopsy for clinical miRNA testing. These studies represent the foundation for the development of next-generation, prognosis-centered screening tests for cervical cancer.
ABSTRACT BODY: Purpose of Study: To determine if Alzheimer’s or other forms of dementia risk is decreased following statin therapy and specifically what form of statins. In 2012, more than 1.4 million people over the age of 65 lived in nursing homes in the United States. If current rates continue, by 2030 this number will rise to about 3 million. Cognitive impairment and other comorbidities are thereby a common reason for nursing home admissions. Statins have the capacity to increase the concentration of HDL-C and are among the most widely used prescription medications. Studies have shown neuroprotective properties of statins.

Methods Used: A sub-group population study was taken from a previously retrospective chart review study which comprised 11 nursing homes in the Greater New Orleans Area for which IRB approval and HIPAA waivers were obtained from LSUHSC-NO IRB. Diagnoses of Non-Alzheimer’s dementia (N-AD) and Alzheimer’s (AD) were matched with the use of either hydrophilic or lipophilic statins.

Summary of Results: 702 nursing home residents. 42 patients (6%) diagnosed with AD and average age 85 year old. 251 patients (36%) diagnosed with N-AD, and average age of 80. 80 patients (11%) diagnosed with AD and N-AD with an average age of 82. 329 patients (47%) did not have either diagnose and had an average age 72. The design captured individuals who used lipophilic statins or hydrophilic statins. In the AD group: 8 patients (19%) were using lipophilic statins versus 7% were using hydrophilic statins. In the N-AD group: 72 (29%) were using lipophilic statins versus 12 (4.8%) using hydrophilic statins. Those with both diagnoses, 11 patients (13.5%) were on lipophilic statins, and 4 patients (5%) were on hydrophilic statins. Interestingly those with no AD and no N-AD: 74 (25%) were on lipophilic statins and 19 (6%) on hydrophilic statins.

Conclusions: We noticed a decreased in dementia rate in patients using lipophilic statins. Our data suggest that lipophilic statin therapy may lead to a reduced Alzheimer’s and other form of dementia risk over time.