

ACP Michigan Chapter Scientific Meeting 2018

Medical Student Poster #1

Category: Research

School: Central Michigan University School of Medicine

Clerkship Director: Sethu Reddy, MD

Presenter: Rebecca Russell

Additional Authors: Juliette Perzhinsky, MD, MSc

Are Physicians Documenting Risk? Co-Prescribing of Opioids with Other High Risk Medications in Dementia Patients

Background: Opioid use, along with sedative medications, prescribed in the setting of dementia have been shown to have negative effects on cognitive function and are associated with poor health outcomes.

Objectives: To assess current use of prescription opioids, co-prescribing with other sedating medications, and documentation of risks in the dementia-affected elderly patients compared to elderly patients without a diagnosis of dementia.

Methods: This study is a retrospective chart review using electronic medical records of (n=500) elderly patients with outpatient clinic visits in a mid-Michigan region. This data compared two subgroups of patients over the age of 65: 1) patients with a diagnosis of dementia and 2) a control group of patients without a diagnosis of dementia. The two groups, experimental and control, were analyzed for types and prevalence of opioid, anti-cholinergic, anti-psychotic and benzodiazepine medications and their co-use. Both groups were assessed for physician documentation of medication risk.

Results: Documentation of risk for all medication categories was below 7% for both subgroups. Co-prescription of psychoactive drugs combined with opioids was higher than opioids prescribed alone for the dementia group ($p < 0.0001$). Notably, anti-cholinesterase agents with benzodiazepines was alarmingly high, $OR = 28$ ($p < 0.0001$). There was no significant difference in opioid prescriptions between either group ($p = 0.85$).

Conclusions: The results of this study show that documentation of these risks are limited in the outpatient setting. Opioid use with other psychoactive drugs is increased in dementia patients and reinforces the need for physicians to discuss these risks with patients and/or caregivers, along with ensuring adequate documentation.

ACP Michigan Chapter Scientific Meeting 2018

Medical Student Poster #2

Category: Research

School: Government Medical College Amritsar, India

Clerkship Director: S.B Nayyar

Presenter: Parminder Viridi

Additional Authors: Amar Krishna, Suganya Chandramohan , Nikhila Thammineni , Maninder kaur, Teena Chopra.

Ongoing Hepatitis An Outbreak in Michigan: Evaluation of Risk Factors in Hospitalized Patients at a Tertiary Care Hospital

Introduction: A multi-state outbreak of hepatitis A viral infection (HAVI) is currently ongoing in the United States with Michigan affected the most. From August 1, 2016 through June 6, 2018, 840 documented HAVI cases with 677 (81%) hospitalizations and 27(3%) deaths have been reported in Michigan.

Method and material: We analyzed all patients admitted to DMC with confirmed diagnosis of HAVI from August 2016 to January 2018 for the clinical features, risk factors and outcome. We also undertook proactive screening and large-scale vaccination in high risk populations presenting to our ED.

Results: Among 102 cases, median age was 46 years (range 15-87 year), men (67%) and African Americans (59.5%). Following risk factors were noted in our cohort: MSM (4,4%), inmate of correctional facility (9,9%), homeless/transient living (n=14,14%), IV (27,26.5%) and non-IV (43.6%) drug use, alcohol use (59,58%). Fulminant hepatitis was evident in 14 patients (14%), of which 7 (7%) patients were evaluated for liver transplantation. No common source of infection was identified in these patients.

Conclusion: Risk factors of homelessness, transient living facility and illicit drug use were comparable to those reported for the overall State of Michigan. Contrary to past outbreaks which were related to a common food source, the current outbreak had no such picture but primarily occurred in homeless, transient living facility and drug users. Large-scale vaccination is the key to controlling such outbreaks. However, this proved problematic as high-risk population is widely dispersed and difficult to reach.

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Medical Student Poster #3

Category: Clinical Vignette

School: KIST Medical College

Clerkship Director: Miles Sijapati, MD

Presenter: Paritosh Prasai

Additional Authors: Soney Basnyat, MD; Yub Raj Sedhai, MD

Anomalous Right Coronary Artery Presenting with Wellen's Syndrome

Introduction:

Coronary artery from anomalous origin is associated with acute coronary syndrome and sudden cardiac death. Here we present a case of Wellens' syndrome associated with anomalous origin of the right coronary artery (RCA) from the left coronary cusp.

Case Presentation:

A 41-year-old African-American male presented with sudden onset of retrosternal chest pain. He did not have any atherosclerotic risk-factor except hypertension. On evaluation, his heart rate was 78 beats per minute, regular, blood pressure 160/100 mmHg and respiratory rate of 18. Examination of cardiovascular, respiratory, abdomen and neurologic systems was essentially unremarkable. ECG revealed left ventricular hypertrophy by voltage. A repeat ECG obtained during pain-free interval revealed biphasic T-wave inversion in leads V2 and V3. Troponin T was elevated measuring 1.2 mg/dl. He was diagnosed with non-ST segment elevation myocardial infarction and treated with protocol-driven heparin infusion along with aspirin, beta-blocker, high-intensity statin, and ACE-inhibitor. A formal cardiac catheterization revealed anomalous RCA originating from left cusp. RCA was surgically repositioned to the right cusp of the aorta.

Discussion:

Wellens' syndrome is described as a biphasic or symmetrical T-wave inversion in precordial leads. It is associated with critical stenosis of mid and proximal left anterior descending coronary (LAD) artery. Since ECG changes in Wellen's syndrome is shuttle it can be easily overlooked as non-specific T-wave changes. Clinicians should be well aware of this ominous sign. Wellen's syndrome in our case probably represents ischemia of the LAD territory related to coronary steal from RCA originating from the same cusp.

ACP Michigan Chapter Scientific Meeting 2018

Medical Student Poster #4

Category: Research

School: Michigan State University - College of Human Medicine

Clerkship Director: Churlson Han, MD, ACP Member

Presenter: Diana Chen

Additional Authors: Alisha Ching, Kirtana Ghandikota, Meron Meshesha, et al

Relationship Between Attendance of Prenatal and Well Child Visits

Prenatal and Well Child visits play a significant role in the preventive healthcare services provided to vulnerable populations including pregnant women and infants. We explored the correlations between adherence to prenatal visits and well child visits. This study is a retrospective chart review using data from EPIC electronic medical records at Hurley Medical Center OB/GYN and Pediatric outpatient clinics. Patients, mother and baby, were followed from first prenatal visit to birth and pediatric well child visits up to 14 months. Results showed that only 10% of the population had an adequate number of prenatal visits, while 35% had an adequate number of well-child visits. Moderate positive correlation ($R=.319$) was present between the number of visits the mother made to the ED during the prenatal period and the number of the visits the child made to the ED. There was also a moderate positive correlation ($.336$) between a child's sick visits and ED visits. The primary outcome was a mildly positive correlation ($R=0.141$) between the number of prenatal visits and well-child visits. We also tried to identify relationships between health-seeking behavior in the prenatal and postnatal period. The moderate correlations found between mother and child ED usage show that the Flint population depends on emergency visits more than preventative prenatal and well-child visits. This study emphasizes the lack of preventative care and the lack of continuity of care present in maternal-child health in Flint's population.

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Medical Student Poster #5

Category: Clinical Vignette

School: Michigan State University - College of Human Medicine

Clerkship Director: Churlson Han, MD, ACP Member

Presenter: Abhay Dhaliwal

Additional Authors: Amy Haddad DO, Adam Forman MD

An Unreported Side Effect of Dasatinib Therapy for Chronic Myeloid Leukemia (CML): Multiple Sclerosis

Introduction: Dasatinib is one of four approved CML treatments, including imatinib, nilotinib, and bosutinib. Survival data is equivalent; treatment decisions are due to cost, availability, and side effects.

Case Description: A 43-year-old male was seen for leukocytosis. Following laboratory work-up, and bone marrow biopsy confirmation, a clinical diagnosis of CML was made. Since the patient was uninsured, treatment was started with Dasatinib because he was able to obtain a free 90-day supply. 1-month and 3-months post dasatinib treatment, there was hematologic and molecular response with no treatment related toxicities. 4-months post Dasatinib treatment, the patient presented with weight loss, blurry vision, and difficulty walking. Physical exam showed nystagmus, dysdiadochokinesia, and ataxic gait. He had no prior history of neurologic symptoms. MRI and LP was performed, confirming a new diagnosis of multiple sclerosis. Dasatinib treatment was stopped for concern of medication toxicity.

1-month off therapy, the patient's WBC and platelets increased; he was started on imatinib. 3-months post imatinib treatment, the patient had complete molecular response. He continues to have nystagmus, but no other neurologic symptoms.

Discussion: There are reports of rare instances where drug induced immune-mediated demyelinating neuropathies are associated with immunomodulatory, immunosuppressive, and antineoplastic agents. It is theorized that the immune system mistakenly attacks host nerve tissue due to drug interactions. This case illustrates the potential for Dasatinib, an immunomodulatory drug, to operate under these theorized mechanisms and induce MS. Recognition of treatment related side effects must be done early to help clinicians improve patient care and outcomes.

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Medical Student Poster #6

Category: Quality Improvement

School: Michigan State University - College of Human Medicine

Clerkship Director: Churlson Han, MD, ACP Member

Presenter: Erin Dunneback

Additional Authors: Mark Spoolstra, MD

Quality Improvement: Assessing Wasteful and Unnecessary Medical Tests and Treatments Incorporating Choosing Wisely Guidelines

Background: This study examines the amount of medical waste regarding six services at Mercy Health Saint Mary's Hospital, with the goal of reducing waste by implementing guidelines from Choosing Wisely. The goal is to decrease unnecessary utilization of identified resources by 5%.

Methods: Study timeline is 7/2016-7/2018. MSU medical students on the Internal Medicine clerkship are instructed how to implement guidelines for reducing waste regarding 6 orders (repeat CBC, telemetry, RBC transfusion, IV fluids, supplemental oxygen, and antibiotics). The students remind the care team of the guidelines and they decide if any changes should be made. The students then record whether the orders were continued or discontinued. Data is tracked to determine if there is a decrease in the utilization of these orders. The Crimson Database will be utilized to determine total number of orders placed prior to initiation of this project, as well as quarterly throughout the project.

Preliminary Results: Data collected from medical students from 7/2016-12/2017: After discussing the waste-reducing guidelines with the care team the following percentage of orders were discontinued: CBC 6.7%, telemetry 4.4%, RBC transfusion 2.2%, IV fluids 27.4%, supplemental oxygen 8.1%, antibiotic therapy 6.7%. Crimson Database data is pending.

Conclusions: Preliminary data demonstrates that when the care team is reminded of the Choosing Wisely guidelines, orders are subsequently discontinued. Further data analysis is necessary, as well as analysis of Crimson Database data, to determine the effect of this project.

ACP Michigan Chapter Scientific Meeting 2018

Medical Student Poster #7

Category: Clinical Vignette

School: Michigan State University - College of Human Medicine

Clerkship Director: Churlson Han, MD, ACP Member

Presenter: Olivia Hudson

Additional Authors: Angelyn Thayer; Anne Drolet; Dr. Fadi Al Daoud MD, MPH; Dr. Leo Mercer, MD

A Pressing Matter: Hypoxic Respiratory Failure due to Achalasia

Background:

Achalasia, defined as constant contraction of the lower esophageal sphincter, typically presents with dysphagia to solids and liquids. There are few reports of patients presenting with severe respiratory distress secondary to achalasia. We present the uncommon case of an elderly woman presenting to the emergency department with rapid onset dyspnea, wheezing and hypoxic respiratory failure.

Presentation of Case:

A case of a 95-year-old woman with past medical history significant for cerebral vascular accident, gastrointestinal bleed, atrial fibrillation and peripheral vascular disease who presented to the ED with one hour of acute onset dyspnea. She was found to have wheezing, stridor, dyspnea and accessory muscle usage. Her respiratory rate was 26 and SpO₂ was 86%. CT scan with contrast followed x-ray imaging showed a widely dilated esophagus with mass effect compression of the trachea. Within hours, she was intubated after desaturating to the mid-80s. Work up for achalasia confirmed the diagnoses after she was admitted to the hospital.

Discussion:

There are few instances where achalasia doesn't follow the typical age and the predictable pattern of presentation and diagnosis. Acute respiratory distress and rapid tracheal compression may be more unlikely first presentations of this well-known disorder.

Conclusion:

Acute respiratory distress due to proximal airway compression requiring intubation is an uncommon presentation of achalasia. This case highlights the importance of securing the airway in acute situations, especially if the underlying etiology is unknown. Utilizing common imaging modalities can help confirm the diagnosis of achalasia.

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Medical Student Poster #8

Category: Clinical Vignette

School: Michigan State University - College of Human Medicine

Clerkship Director: Churlson Han, MD, ACP Member

Presenter: Adam Kadri

Additional Authors: Medina Kadri, Abed Dabaja, Jawad Thamer MD

Male Metastatic Breast Cancer

Breast cancer is most commonly associated with females, but the incidence of male breast cancer has been increasing. Male breast cancer represents approximately 0.5-1% of all cases of diagnosed breast cancer. The signs/symptoms and risk factors are the same for both male and female patients.

A 57 year old male with a past medical history of hypertension and left sided breast cancer s/p unilateral mastectomy (2016) presented to the clinic for routine follow up appointment. Patient has been in remission for breast cancer and regularly taking tamoxifen since November 2016. He has been doing well and has no medical complaints except for multiple abscesses on abdomen as a result of chronic hidradenitis. At a follow up appointment in November 2017 patient had mammogram performed of right breast which showed no evidence of malignancy. Routine comprehensive labs were ordered and showed elevated AST and elevated alkaline phosphatase which prompted further investigation with ultrasound of liver and gallbladder. Ultrasound in January 2018 showed multiple hepatic nodules. MRI abdomen with liver protocol was performed about a month later and showed extensive liver metastasis involving all segments of the liver with diffuse metastatic disease involving the spine. Patient underwent CT guided biopsy of the liver and pathology demonstrated metastatic breast adenocarcinoma which was ER positive, PR negative, HER-2/neu negative. Extensive workup revealed that patient had extensive metastasis to the bones, brain, lung, and liver. Patient was not a candidate for chemotherapy and was unable to tolerate radiation; treatment was palliative.

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Medical Student Poster #9

Category: Research

School: Michigan State University - College of Human Medicine

Clerkship Director: Churlson Han, MD, ACP Member

Presenter: Jared Patel

Additional Authors: Jared Patel OMS II, Dylan Bergeon OMS II, Raef Fadel OMS IV, Taylor Dickey OMS III

Biosand Filtration: Sustainable Purification of Amazon River Water

Our Water Filter Project is an initiative as part of MSUCOM's Peru Global Outreach that provides a sustainable and affordable filtration system that is easily reproducible, and can be delivered to our patients along the Amazon River Basin. Our goal is to prevent our patients' pathology prospectively by delivering a practical filter whilst providing education regarding the necessity of water sanitation.

In 2017, in conjunction with Engineers without Borders we implemented 22 redesigned filters to increase durability and longevity. Our modified Biosand filtration design works immediately to eliminate sediment, parasites, and hard metals from the turbid water, delivering clear water within minutes; eventually a 'biolayer' develops, removing disease causing bacteria and viruses. Data from our filters demonstrated removal of heavy metals and disease-causing micro-organisms specific to the Amazon River. Furthermore, we established a reliable method of data collection in conjunction with our local biologist, who is intimately connected to the community and has expertise with our filter design.

Our long-term goal is to develop a remote clinic with physicians from MSUCOM's outreach to treat patients, establish follow-up care, and collect patient-focused health outcomes to assess the efficacy of our filters on renal and gastrointestinal function. We believe our project provides an ongoing contribution to these communities and expands the short-term impacts of a 'medical mission' approach. Our filters truly improve the quality of life of our patients and we believe our filter design will have a global impact when extrapolated to communities with similar water sanitation issues.

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Medical Student Poster #10

Category: Clinical Vignette

School: Michigan State University - College of Human Medicine

Clerkship Director: Churlson Han, MD, ACP Member

Presenter: Genevieve Pourzan

Additional Authors: Heather Laird-Fick, M.D., M.P.H.

A Vexing Vulvitis: A Case Report on Plasma Cell Vulvitis

Background: Plasma cell vulvitis (PCV) is a rare idiopathic, benign, chronic inflammatory condition found in the genital mucosa of women. Symptoms typically include itching, burning, and dyspareunia. The average time from symptom onset to diagnosis is 55.4 months.

Case presentation: A 66 year-old woman with multiple chronic health conditions presented with severe redness, itching, and pain of her external genitalia with associated dysuria for two months. Biopsy confirmed PCV. She showed gradual improvement with clobetasol propionate 0.05% cream.

Discussion: The ambiguous presentation, lack of specific treatments, possibility of relapse, and the severity of symptoms make PCV a difficult disease for both patients and providers. PCV can be severe and refractory to treatment, which has led one woman to have a modified vulvectomy for final resolution of her symptoms. Data about treatment options is piece-meal, mostly hailing from case reports. The high rate of antibiotic use suggests PCV is often misdiagnosed, which prolongs symptom management and diagnosis lag time. Additionally, few reports have monitored relapse rates over time.

Conclusion: PCV is a chronic condition that can have a severe impact on a women's quality of life. Physicians should keep PCV as a differential and pursue biopsy for refractory vulvar lesions to minimize the delay in diagnosis. Finally, larger and more longitudinal studies are needed to determine the most effective treatment for PCV.

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Medical Student Poster #11

Category: Clinical Vignette

School: Michigan State University - College of Human Medicine

Clerkship Director: Churlson Han, MD, ACP Member

Presenter: Samantha Williams

Additional Authors: Asaf Harris, MD, Andrea Hadley, MD

Mycotic Aneurysm: An Elusive Cause of Back Pain

Mycotic abdominal aortic aneurysm is a rare, life-threatening cause of back pain and is difficult to diagnose without a high index of suspicion. A 33-year-old with chronic kidney disease secondary to hypertension was evaluated for back pain and fatigue. Initially diagnosed with musculoskeletal injury, he re-presented with worsening back pain and fever. He was diagnosed with acute on chronic renal failure and sepsis. Blood cultures grew Methicillin-resistant *Staphylococcus aureus* (MRSA). Non-contrast CT and MRI demonstrated retroperitoneal lymphadenopathy without vertebral osteomyelitis or discitis. Transesophageal echocardiogram was unremarkable. He was given Vancomycin and Daptomycin but transferred to our tertiary referral center for persistent bacteremia with unclear source. Ceftaroline and Vancomycin were given, but blood cultures remained positive on day 8 and back pain worsened. Repeat non-contrast CT showed possible abdominal aortitis. Repeat non-contrast MRI was consistent with a 3 cm mycotic abdominal aortic aneurysm. Serial imaging showed rapid enlargement of the aneurysm to 7 cm. He underwent abdominal aortic transplant with cryopreserved human tissue graft. At one month follow-up, he is home with long-term IV antibiotic therapy. This case illustrates an uncommon cause of a common complaint. Back pain requires careful evaluation to distinguish benign from serious etiologies. Well-recognized causes of back pain with bacteremia include vertebral osteomyelitis and epidural abscess. Infectious aortitis and mycotic aneurysm may remain elusive, especially when renal failure limits contrast administration. *Staphylococcus*, *streptococcus*, and *salmonella* species are common pathogens. High risk of rupture necessitates urgent surgical evaluation, however operative mortality is very high.

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Medical Student Poster #12

Category: Clinical Vignette

School: Michigan State University - College of Osteopathic Medicine

Clerkship Director: Richard Thiede, MD, ACP Member

Presenter: Faiza Khondoker

Additional Authors: Shoaib Rasheed DO PGY-III, Rajika Munasinghe MD, Firas Yazigi MD

Atrial Fibrillation Inducing Coronary Ischemia in the Setting of Myocardial Bridging

Introduction: In myocardial bridging (MB), coronary arteries tunnel through myocardium instead of remaining on the heart's surface. Myocardial contraction during systole compresses these bridged vessels, and can potentially cause coronary ischemia. MB is frequently asymptomatic, but factors that decrease coronary reserve can make MB symptomatic. We describe a case in which new-onset atrial fibrillation (AF), in the setting of left ventricular hypertrophy (LVH) and diastolic heart failure, uncovered MB by mimicking an NSTEMI.

Case report: 81 year-old female with past medical history of hypertension and COPD presented with dyspnea on exertion. Upon presentation, patient was tachycardic. EKGs showed AF. Labs suggested an NSTEMI, with troponin of 3.98. Echocardiogram showed LVH with preserved ejection fraction. Surprisingly, cardiac catheterization showed no obstruction, but there was severe MB of the mid left anterior descending artery. We decided to treat her with metoprolol and diltiazem.

Discussion: This case demonstrates the pathophysiology of symptomatic MB. Patient developed new-onset AF, likely due to hypertension and COPD. Her coronary reserve was already low due to LVH and diastolic dysfunction. Tachycardia from AF caused increased MB compression resulting in coronary ischemia. Treatment with medical rate control corresponded appropriately to the pathophysiology: it treated her AF and reduced the time spent in systole, which MB constriction was causing coronary underperfusion. MB stenting or myotomy were premature, and would put her at risk of stent fracture, coronary artery perforation, and other complications. Documented cases of MB in the setting of tachycardia are few, hence this case is a welcome addition.

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Medical Student Poster #13

Category: Clinical Vignette

School: Oakland University William Beaumont School of Medicine

Clerkship Director: Lynda Misra, DO, FACP

Presenter: Miriam Ahmad

Additional Authors: Mihajlo Gjeorgjievski, MD – Gastroenterology and Hepatology Fellow, William Beaumont Hospital, Royal Oak, MI

Adenosquamous Carcinoma of the Cecum: An Uncommon Malignancy

Adenosquamous carcinoma is an uncommon malignancy that contains both glandular and squamous components and is often associated with a worse prognosis and mean survival rate than pure colorectal adenocarcinoma. Because these are infrequently encountered neoplasms, familiarity with its clinical and histological presentation is important for early identification and treatment.

A 65-year-old female was sent for a screening colonoscopy because she had been complaining of fatigue for 2 months and had a hemoglobin that dropped from 11.4 to 8.9 within the course of 1 year, despite iron supplementation. She did not have any overt rectal bleeding, dark stool, or weight loss on initial presentation. Upon colonoscopy, two fungating, infiltrative masses were found: a villous, frond-like mass in the cecum and another mass at the hepatic flexure. Upon biopsy the cecal mass was revealed to be an adenoma with findings suspicious for an adenocarcinoma with areas of stromal desmoplasia and ulceration. CT abdomen revealed a large mass in the lumen of the cecum involving the proximal appendix and the terminal ileum as well. Patient had a right colectomy and histology revealed an invasive adenocarcinoma that had mucinous and squamous differentiation. Staining was positive for CK5/6 in the squamous areas and CK20 and CDX2 in the adenocarcinomatous areas. This patient's tumor also had a mucinous component that was almost 25% of the malignancy. Treatment of adenosquamous carcinomas usually involves surgical resection with removal of mesenteric lymphatics if needed and adjuvant chemotherapy including agents such as 5-FU, Semustine, Carmustine.

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Medical Student Poster #14

Category: Clinical Vignette

School: Oakland University William Beaumont School of Medicine

Clerkship Director: Lynda Misra, DO, FACP

Presenter: Sara Dykowski

Additional Authors: John Khoury, Mithaq Vahedi

Central Retinal Vein Occlusion as the Initial Presentation of Antiphospholipid Antibody Syndrome

Antiphospholipid antibody syndrome (APS) is an autoimmune condition that creates a predilection for arterial and venous thromboses. Identifying APS can be difficult as it can affect patients of all ages and manifest in various ways. In this case report, a 31-year-old male with a history of migraines presented with acute painless left eye vision loss which was preceded by one week of occipital headaches. He did not have any risk factors, such as hypertension, hyperlipidemia, diabetes, obesity, recent immobility, or history of smoking. Initial studies showed an elevated activated partial thromboplastin time. He had a normal sinus rhythm on electrocardiogram, a normal two-dimensional echocardiogram, and a normal magnetic resonance imaging of the brain to rule out stroke. He was initially diagnosed with optic neuritis and discharged for outpatient follow up. Outpatient imaging with fluorescein angiography and optical coherence tomography revealed central retinal vein occlusion. He was subsequently started on warfarin with heparin bridge and antiphospholipid antibody studies resulted positive for lupus anticoagulant. Intravitreal tissue plasminogen activator was administered in an attempt to resolve ocular pain; this resulted in complete retinal reperfusion and pain resolution without recovery in visual acuity. Repeat testing performed per APS diagnostic guidelines once again detected the presence of lupus anticoagulant, confirming the diagnosis of APS. The patient plans to continue on lifelong anticoagulation.

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Medical Student Poster #15

Category: Clinical Vignette

School: Oakland University William Beaumont School of Medicine

Clerkship Director: Lynda Misra, DO, FACP

Presenter: Quoc Tuan Ngo

Additional Authors: Kathleen Dass, MD

A Case of Anaphylaxis to Human Insulin

Human insulin allergy is a rare and challenging condition for physicians to manage. Successful treatment with desensitization is possible but requires specialists from many fields. We present a case of anaphylaxis to human insulin in a patient with type 2 diabetes mellitus.

A 74-year-old female with type 2 diabetes mellitus presented with insulin anaphylaxis. In 2012, she began requiring subcutaneous insulin for blood sugar control. After her first dose, she immediately developed wheezing, throat swelling, drooling, pruritic urticaria, and diarrhea. As Humulin 70/30 was preferred, she reports undergoing a desensitization but continued to have respiratory and cutaneous symptoms. Her physicians treated this with daily cetirizine. She developed similar symptoms with detemir. After 5 years, the patient sought out a second opinion. Allergy skin testing was performed, and the patient was positive to detemir, glargine, glulisine, and lispro. ImmunoCAPs were ordered. The patient had a positive IgE to human insulin. After a multi-disciplinary conference between her internist, endocrinologist, and allergist, the patient underwent an office slow-desensitization to glargine until reaching a goal dose of 44 units. Upon follow up, the patient was asymptomatic, and her blood sugars were well controlled.

With human insulin introduction, documented cases of insulin allergy have decreased to <2%. While rare, those who are allergic to human recombinant insulins are at a crossroads between having poorly controlled diabetes or developing anaphylactic reactions from the very treatment of their disease. This case demonstrates that desensitization to human insulins is possible with a multi-disciplinary approach.

ACP Michigan Chapter Scientific Meeting 2018

Medical Student Poster #16

Category: Clinical Vignette

School: Oakland University William Beaumont School of Medicine

Clerkship Director: Lynda Misra, DO, FACP

Presenter: Anjali Tara

Additional Authors: Kathleen Dass

Red rash: A Case of Urticaria Secondary to Red Dye

Introduction:

Many are concerned about red dye allergy. There are zero PubMed cited articles, but more than 1.5 million Google references related to this topic. True red dye allergy rarely causes IgE-mediated reactions such as anaphylaxis or urticaria. We present a case of urticaria secondary to red dye 40.

Case:

A 35-year-old male powerlifter ingested 1 serving of branch chain amino acid (BCAAs) powder. The patient immediately developed flushing, pruritus, and large diffuse urticarial plaques resolving 1 hour after 20 mg cetirizine. This was his first urticarial episode, and there was no residual ecchymosis or hyperpigmentation. He takes no current medications, and he has not had any recent infections. A review of the ingredients included amino acids, watermelon, and red dye 40. Skin testing was positive to red dye. Due to false positive concerns, he consented to a graded dose challenge. He ingested 1 gram of the BCAAs, 1/10 of the dose. The patient immediately became flushed, developing diffuse pruritic urticaria. He was treated with 50 mg dye-free liquid diphenhydramine. Symptoms resolved after 45 minutes, and he was monitored for 3 hours. The patient was counseled to avoid products or food containing red dye 40.

Conclusion:

This case illustrates a rare IgE-mediated allergic reaction after red dye exposure. There is only a minor role for skin testing. Oral challenges with common additives, preferably preceded by a trial of an additive-free diet, are a definitive procedure for detecting the offending agent. Once the additive is identified, management is strict avoidance.

ACP Michigan Chapter Scientific Meeting 2018

Medical Student Poster #17

Category: Clinical Vignette

School: Ross University School of Medicine

Clerkship Director: Benjamin Diaczok, MD, FACP

Presenter: Ryan Anderson

Additional Authors: Katie Zechar, MD; Anusha Karra, MD

Lung Injury from Inhaling Butane Hash Oil Mimics Pneumonia

INTRODUCTION

"Dabbing" is a relatively new form of THC use which utilizes Butane Hash Oil (BHO), an extraction of dried cannabis that contains high levels of butane and terpene byproducts. The extraction process yields a waxy substance that is heated, vaporized and inhaled. We describe a lung injury as a result of BHO use.

CASE

A previously healthy 18-year-old female presented to the ED with shortness of breath for 3-4 days. Her initial oxygen saturation was 79% on room air. She was refractory to bronchodilators, steroids and supplemental O₂. She has a 1 pack year smoking history and daily BHO abuse. Her chest x-ray was positive for bilateral patchy infiltrates with mild hyperinflation. CT was negative for Pulmonary Embolus or other acute pathologic process. Sputum gram stain and blood cultures were negative. Arterial blood gases confirmed pO₂ of 73 mmHg. We concluded her severe pneumonitis was secondary to daily BHO inhalation.

DISCUSSION

Heating a dab of BHO to high temperatures, releases up to 75% of THC, compared to 5-20% THC in traditional smoked cannabis. At 978°F terpenes degrade into methacrolein and benzene, both known carcinogens. Methacrolein is structurally similar to acrolein, a pulmonary irritant, which causes acute lung injury and pulmonary edema in laboratory animals. We hypothesize a mechanism of lung injury and acute respiratory failure secondary to inhalation of high levels of methacrolein and benzene related to relatively novel phenomena of BHO use.

ACP Michigan Chapter Scientific Meeting 2018

Medical Student Poster #18

Category: Clinical Vignette

School: Ross University School of Medicine

Clerkship Director: Benjam Diaczok, MD, FACCP

Presenter: Jafar Dada

Additional Authors: Xuyen Truong MD, Rachel Dada MS4, Jacky Duong MD

Pleuritic Tuberculosis in a 22-Year-Old with No Known Risk Factors

Tuberculous pleural effusions can occur in association with both primary tuberculosis (TB) and reactivation disease. Extra-pulmonary TB comprises up to 30% of initial TB infections and is commonly seen in nations with a high prevalence of TB. The infrequency with which it is encountered in the United States in those with no risk factors makes it a formidable diagnostic challenge.

A 22-year-old female with no epidemiological risk factors for TB consulted her primary care physician for left-sided chest pain for 1 week and was diagnosed with costochondritis. Two weeks later, she presented to the ED with severe shortness of breath and worsening, pleuritic, left-sided chest pain, fevers, rigors and night sweats. CTA chest showed a loculated left-sided pleural effusion and an initial diagnosis of empyema was made, however, there was no response to antibiotics and pleural biopsy was warranted. Initial TB workup was negative. Biopsy revealed extensive granulomatous inflammation, staining positive for acid-fast bacilli. Pleural fluid evaluation revealed exudative fluid, negative for adenosine deaminase (ADA), pH 7.29 and protein 4.3. HIV testing was negative. Infectious disease was consulted and she was started on 4 drug RIPE therapy. TB Quantiferon gamma was positive. Testing detected M. tuberculosis complex DNA.

This case illustrates the potential for missing the diagnosis of pleural TB even if initial findings are non-suggestive. This patient's case was rare as she had no epidemiological risk factors or underlying immunocompromised state. Recognition of this is critical to institution of appropriate therapy and prevention of further disease spread.

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Medical Student Poster #19

Category: Clinical Vignette

School: Ross University School of Medicine

Clerkship Director: Benjam Diaczok, MD, FACCP

Presenter: Rachel Dada

Additional Authors: Yashwant Agrawal, M.D., Jafar Dada, MS4, Michelle Degregorio, M.D.

A Rare Trifecta: Thrombus Straddling a Patent Foramen Ovale, Pulmonary Embolism, and Paradoxical Embolism

A Patent Foramen Ovale (PFO) is a cardiac malformation affecting approximately 27% of the population. One feared sequela is a paradoxical embolism (PDE), where embolic material travels from venous to arterial circulation via an intracardiac shunt. A thrombus straddling the PFO (TSPFO) is exceedingly rare, particularly in conjunction with a pulmonary embolism and a PDE. Expedient diagnosis and treatment are imperative, as the mortality rate of impending PDE approaches 20%.

A 55-year-old male presented to the ER after awakening with left facial droop, left-sided weakness, and dysarthria. Brain MRI revealed diffusion restriction in the left temporal occipital lobe. Venous duplex demonstrated acute occlusive deep venous thrombosis of the right superficial femoral, popliteal, posterior tibial, and peroneal veins.

Transesophageal echocardiogram revealed an ejection fraction of 55-60%, diastolic dysfunction, and a Grade 4 PFO with bidirectional shunting. The following day, the patient was taken for PFO closure. An intracardiac echocardiographic catheter revealed a large, oscillating mass in the right atrium, right ventricle, and left atrium.

Cardiothoracic surgery was emergently consulted. Intracardiac surgery confirmed a biatrial TSPFO and discovered an extensive main pulmonary artery clot. Pathology revealed a 20.0x1.0 cm intracardiac thromboembolism and a 2.5x8.0x1.0 cm pulmonary artery thromboembolism.

Given the high prevalence of PFOs, patients presenting with stroke should undergo a workup including a transthoracic echocardiogram. Due to the rarity of TSPFO, optimal treatment has not been well established. Treatment modality, selected based upon thrombus severity, patient comorbidities, and risk for PDE, may be medical (i.e. heparin, thrombolysis) or surgical.

ACP Michigan Chapter Scientific Meeting 2018

Medical Student Poster #20

Category: Clinical Vignette

School: Ross University School of Medicine

Clerkship Director: Benjam Diaczok, MD, FACCP

Presenter: Aaras Dharia

Additional Authors: Rodriguez V, Maskoni B, Sharaf A, Duong J

Why Are We Admitting a "Psych" Patient to the Internal Medicine Service?

INTRODUCTION

SLE prevalence is approximately 130/100,000 in the USA. Neuropsychiatric systemic lupus erythematosus (NPSLE) refers to the neurological and psychiatric manifestations that can be observed secondary to SLE. The American College of Rheumatology has established 19 central and peripheral nervous system syndromes associated with NPSLE. These syndromes can be vascular, inflammatory, or autoantibody-mediated.

CASE

A 52-year-old lady with a past medical history of SLE presented with personality changes, headache, and cognitive dysfunction. She demonstrated delusional thinking and was only oriented to person. Brain MRI revealed showering emboli throughout the bilateral cerebral hemispheres, cerebellum, and brainstem. Cardiolipin antibodies, beta 2 glycoprotein I antibodies, and lupus anticoagulant were all negative. Transesophageal echocardiogram, carotid duplex, cerebral angiogram, and full body MRA were all negative for source of emboli. The patient received 1 gram of IV methylprednisolone for 5 days. Her psychiatric symptoms resolved and the patient was discharged home. At her 2 week follow-up, she remained at baseline functioning. She was oriented x 3, had insightful conversations with the medical team, and showed no evidence of delusions.

DISCUSSION

Lupus patients have an increased risk of stroke. Our patient had evidence for emboli on MRI and stroke was initially considered. No embolic source was identified and the patient did not respond to dual antiplatelet therapy. NPSLE can present with neurologic and personality changes mimicking stroke. Physicians need to include NPSLE in their differential for lupus patients presenting with personality changes suggestive of a stroke. Treatment with corticosteroids will resolve these personality changes.

ACP Michigan Chapter Scientific Meeting 2018

Medical Student Poster #21

Category: Clinical Vignette

School: Ross University School of Medicine

Clerkship Director: Benjam Diaczok, MD, FACCP

Presenter: Joshua Gleason

Additional Authors: Bill R. Christian, MS-4, C. Kohler Champion, MD

Biotin-Induced Laboratory Indications of Autoimmune Hyperthyroidism

Introduction: Biotin is a water-soluble B vitamin commonly found in over-the-counter dietary supplements. Higher doses of biotin are frequently used as a supportive treatment in patients with progressive multiple sclerosis (PPMS). Ingestion of 5 to 10 mg of biotin may artifactually lower serum TSH levels in laboratory assays using biotin-streptavidin affinity systems in their design. We report a case of autoimmune hyperthyroidism caused by assay interference with high-dose biotin ingestion.

Case Report: An asymptomatic 63-year old female with PPMS presented to an outpatient clinic for an annual physical examination. Surprisingly, laboratory results were indicative of autoimmune hyperthyroidism during routine testing; revealing excessively elevated levels of free thyroxine (T4) and total triiodothyronine (T3), decreased levels of thyrotropin (TSH), and elevated levels of anti-thyrotropin receptor antibodies (TRAbs). Clinical presentation, and thyroid sonogram were unremarkable. Due to the discrepancy between clinical presentation, and thyroid function tests (TFTs), a medical history was repeated, in which the patient reported taking high-doses of biotin (400 mg/day) for PPMS. After discontinuation of biotin treatment, TSH and thyroid hormone levels returned to baseline within 48 hours, whereas levels of TRAbs took approximately 7 days to normalize.

Conclusion: High-dose biotin treatment may insidiously mislead laboratory results, leading to the misdiagnosis of autoimmune hyperthyroidism. While manufacturers are aware of this problem, we believe that it is essential to increase the awareness of this potential issue in the medical community to prevent unnecessary antithyroid treatment.

ACP Michigan Chapter Scientific Meeting 2018

Medical Student Poster #22

Category: Clinical Vignette

School: Ross University School of Medicine

Clerkship Director: Benjam Diaczok, MD, FACCP

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The Cost of Weight Loss: A Bariatric Surgery Complication

Introduction: As the obesity epidemic expands, the number of bariatric procedures has increased from 158,000 to 195,000 in United States in last five years. Unfortunately a host of very specific complications riddle patients for years post-operatively.

Case: A 42-year-old female presented with moderate abdominal pain, nausea, ten days of constipation, and two episodes of non-bilious vomiting. She had Roux-en-Y gastric bypass surgery six years ago with an antecolic gastrojejunostomy. She underwent multiple endoscopic procedures revealing marginal ulcers and gastritis; a laparoscopic cholecystectomy; and an insertion and removal of a gastric decompression of the excluded stomach and duodenum with a gastrostomy tube for multiple problems related to surgery. On examination, her vitals were stable. Her abdomen was distended and diffusely tender with absent bowel sounds. There was flatus expressed in a non-tender empty rectal vault on digital rectal examination. An oral and IV contrast CT scan first reported dilated ascending and transverse colon without obstructing mass lesion. Surgery denied intervention due to her complex surgical history. Upon repeat consultation with the radiology, a point of obstruction was noted. She was subsequently transitioned to a tertiary care facility and managed conservatively for her small bowel obstruction.

Conclusion: The immediate consequences of a commonly performed Roux-en-Y gastric bypass are well-documented but the long-term complications warrant significant attention before embarking on such an arduous procedure. Knowledge of the adverse events should guide therapy and postoperative management of such patient populations.

ACP Michigan Chapter Scientific Meeting 2018

Medical Student Poster #23

Category: Clinical Vignette

School: Saint Martinus University Faculty of Medicine

Clerkship Director: Nikhil Hemady, MD

Presenter: Aaron Rodas

Additional Authors: Robert Ferguson, MD

Never Too Young: Atypical Presentation of Lynch Syndrome

Lynch Syndrome is characterized by an increased risk of colorectal cancer, endometrial cancer and various other cancers. Prevalence of HNPCC is believed to be at 1 in 440 persons. Lifetime risk of developing colorectal cancer is estimated to be 75% to 80%. Current treatment recommendations involve total abdominal colectomy with ileorectal anastomosis that is supported with annual endoscopic surveillance. The clinical vignette describes the atypical presentation of Lynch Syndrome in a family with a 23 year old daughter complaining of RUQ pain and a “large right sided abdominal mass” for four months. The patient experienced worsening abdominal pain, progressive generalized weakness, along with changes in bowel habits for two weeks prior to presentation. CT scan of abdomen showed a large mass in the colon likely representing an annular carcinoma of the hepatic flexure. Colonoscopy showed an annular lesion in the proximal transverse colon. Subsequently, the patient underwent a right hemicolectomy with lymphadenectomy. As her family history was significant for the father developing colon cancer at the age of 42 and the younger sibling developed it at 19, genetic testing was performed which confirmed Lynch Syndrome. Subsequently the patient developed another adenocarcinomatous lesion, 35 cm from the anal verge at the age of 43. This case emphasizes the importance that proper follow up is essential and reviewing effective management to reduce the recurrence of developing future cancerous lesions. In addition, ensuring appropriate screening (e.g. urinalysis, EDG, pelvic examination with endometrial biopsy, skin examinations, etc.) for Lynch Syndrome associated cancers.

ACP Michigan Chapter Scientific Meeting 2018

Medical Student Poster #24

Category: Clinical Vignette

School: St. George's University School of Medicine

Clerkship Director: Raymond Hilu, MD, FACP

Presenter: Michael Baracy

Additional Authors: Rajaninder Sharma MD

An Atypical Presentation of Erythromelalgia

Introduction: Erythromelalgia is a rare clinical syndrome that presents with erythematous, inflamed, and painful extremities. It typically presents in lower extremities, however, presentations involving the upper extremities and face have been reported. Erythromelalgia has been associated with a variety of conditions, including myeloproliferative, autoimmune, and neurologic diseases. The median age of presentation is 61 years of age. It is exceedingly rare in the pediatric population with a mean time from presentation to diagnosis of 5.2 years.

Case Report: A 20-year-old Caucasian male with a 7-year history of type 1 diabetes presented with a 2-month history of pain, erythema, and edema of bilateral lower extremities. The patient described an internal burning sensation in the distribution of edema and reflexively soaked his feet in an ice water immersion bath. He was previously prescribed multiple neuropathic agents, however, he had yet to receive a definitive diagnosis or significant relief of his symptoms. Our primary team diagnosed the patient with erythromelalgia and prescribed topical compounded amitriptyline with ketamine in a lipoderm base. Dermatology confirmed the diagnosis and referred the patient to an erythromelalgia specialist. The patient was followed-up on discharge and is symptomatically improving.

Conclusion: Erythromelalgia is a rare disease, however, it should be on the differential diagnosis for patients who have a comorbid autoimmune condition and who present with bilateral edema, erythema, and neuropathy. A high level of suspicion should be maintained for erythromelalgia for patients who instinctively try to relieve symptoms by cooling affected areas with ice water immersions or fans.

ACP Michigan Chapter Scientific Meeting 2018

Medical Student Poster #25

Category: Clinical Vignette

School: University of Michigan Medical School

Clerkship Director: Cyril Grum, MD, FACP

Presenter: Nonie Arora

Additional Authors: Kathleen A. Linder, MD

Intestinal Spirochetosis in an Immunocompetent Veteran

Introduction: Intestinal spirochetosis (IS) is an uncommon condition caused by colonization of the luminal surface of intestinal epithelial cells with anaerobic spirochetes of the genus *Brachyspira*. IS is rare in the US and diagnosis can be delayed.

Case: A 34-year old veteran with a history of cholecystectomy presented for evaluation of chronic diarrhea, which started 7 years prior during his deployment in Afghanistan. Patient reported multiple liquid stools daily, associated with fecal urgency. He developed hematochezia and tenesmus over the prior 3 months. He did not report fevers, chills, rashes, arthralgias, or weight loss. No close contacts reported diarrhea. His physical examination revealed a soft, non-tender abdomen and external hemorrhoids with stigmata of recent bleeding.

A wide differential was considered, including infectious, inflammatory, neoplastic, functional, and bile acid-associated causes of diarrhea. Studies for *Giardia*, *Cryptosporidium*, *Clostridium difficile*, *Yersinia*, and HIV were negative. A colonoscopy with biopsies was performed, and spirochetes were identified on histopathology by Steiner stain. The patient presumably developed IS from exposure to areas of poor sanitation in Afghanistan. Treatment was initiated with metronidazole 500mg q6h for 14 days; the patient had a partial clinical response.

Discussion: Intestinal spirochetes can colonize the intestinal mucosa, and may not cause clinical symptoms. However, they can become pathogenic and invasive, most notably in HIV patients. Cases of IS have been reported in immunocompetent patients. This case illustrates the value of a complete travel history, including military travel. Appropriate recognition of risk factors can facilitate timely diagnosis and treatment.

ACP Michigan Chapter Scientific Meeting 2018

Medical Student Poster #26

Category: Clinical Vignette

School: University of Michigan Medical School

Clerkship Director: Cyril Grum, MD, FACP

Presenter: Sean Miller

Additional Authors: Laura Upton, Adam Kilian

A Unique Case of Simultaneous Large - and Small-Vessel Vasculitis: A Case Report

Giant cell arteritis (GCA) is a vasculitis that primarily affects large vessels while microscopic polyangiitis (MPA) is predominantly a small vessel vasculitis.

A 73-year-old woman with past medical history of traumatic enucleation of the right eye in childhood and myelodysplastic syndrome presented to a community hospital with vision loss of her left eye and severe headache for three days. For three months she had experienced weakness, fatigue, 30lbs weight loss, and periodic fevers. ESR > 120. Temporal artery biopsy showed focal transmural involvement by a chronic inflammatory infiltrate and resulting disruption of the internal elastic lamina, meeting ACR criteria for GCA. A prolonged course of high-dose steroids was initiated, but several weeks later she developed glomerulonephritis and was re-hospitalized. Fundoscopic exam showed normal disc, no obvious pallor or edema. Cr 4.7 from 1.6, ESR 109, and high-titer MPO-ANCA level. Kidney biopsy showed pauci-immune crescentic, necrotizing and sclerosing glomerulonephritis. Chest CT showed a solitary lung nodule. She was diagnosed with MPA and transferred to our hospital where she was treated with high dose steroids, plasmapheresis, and rituximab. Her vision, strength, and renal function improved slightly.

Simultaneous presentation of small and large vessel vasculitis with an unclear pathogenesis makes this case unusual. GCA is unlikely to cause RPGN, while most reports of large vessel involvement in MPA are of aortitis. The histopathology suggests simultaneous GCA and MPA, but MPA resulting in temporal arteritis cannot be ruled out. Prompt recognition and initiation of treatment was critical to preserve end-organ function.

ACP Michigan Chapter Scientific Meeting 2018

Medical Student Poster #27

Category: Clinical Vignette

School: University of Michigan Medical School

Clerkship Director: Cyril Grum, MD, FACP

Presenter: Alexander Zheutlin

Additional Authors: Elena Schiopu MD

Relapsing Polychondritis Following Treatment with Secukinumab for Ankylosing Spondylitis

Relapsing polychondritis (RP) is an autoimmune disorder which targets the cartilaginous framework in multiple organ systems, but demonstrates a predilection for the ears, nose, and larynx. RP often occurs concomitantly with other autoimmune diseases, though RP has been infrequently associated with ankylosing spondylitis (AS). There is a small, but growing, body of literature demonstrating case reports describing RP secondary to AS in patients treated with tumor necrosis alpha inhibitors (TNFi). We present the first case in which RP developed in AS while treated with an interleukin 17A inhibitor (IL-17Ai), Secukinumab. Our patient, M.J., is a 56-year-old male, who has had inflammatory back pain since his twenties, but was diagnosed with AS at 53 years old while hospitalized for small bowel obstruction. After a failed trial of adalimumab and etanercept, secukinumab was started with an initial loading dose of 150 mg subcutaneously weekly for five weeks, followed by monthly doses. Following the last loading dose, the patient developed swelling, erythema and throbbing pain of his ears bilaterally and tip of the nose, as well as uveitis (resolved with topical steroids). Based on the patient's history and clinical presentation of bilateral auricular chondritis, nasal chondritis, and recent ocular inflammation RP was diagnosed. After RP was diagnosed, the patient was started on oral prednisone, with subsequent improvement of symptoms. With this case report we hope to raise physician awareness of the possible autoimmune disorders that may arise subsequent to novel immunomodulation therapies, particularly that RP may develop subsequent to inhibition of IL-17A.

ACP Michigan Chapter Scientific Meeting 2018

Medical Student Poster #28

Category: Clinical Vignette

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Taylor Anderson

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The Perplexing Texting of Dystextia – Why the Message Indicates That Is A Problem

Introduction

First presentations of stroke are generally taught in some form of the FAST mnemonic: Face drooping, Arm weakness, slurred Speech, and Time to treatment. However, with the prevalence of mobile phones, we are noticing that an increasing number of patients are presenting with the inability to write intelligible text messages. Here, two cases from St. John Hospital will be discussed. These patients presented with symptoms of what is now known as “dystextia,” a term originally used by Cawood et al.¹

Case Descriptions

The first case is a 43-year-old woman initially noticing headache typical of her normal migraine and spelling errors on texts and Facebook posts. On exam she was found to have a left facial droop and visuospatial anomalies. Brain MRI showed multiple acute embolic infarcts in the right frontal and parietal lobes. The second case is a 66-year-old female with difficulty writing text messages and typed notes. She visited her primary care physician and was sent to an urgent care. She was found to have a left frontal subacute infarct on head CT.

Discussion

Unimpaired texting requires the patient to be able to recognize and interpret previous messages, develop a response, and compose that response using intact visuospatial awareness and fine motor functions of the hand. These areas are commonly affected by stroke, but it is possible for them to be directly targeted by infarction leading to the presenting symptom of dystextia. As our two patients demonstrate, dystextia can develop after lesions of either hemisphere.

ACP Michigan Chapter Scientific Meeting 2018

Medical Student Poster #29

Category: Research

School: Wayne State University School of Medicine

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Safety of the Cytobrush During Pregnancy for Trophoblast Retrieval and Isolation from the Cervix

Several methods of cervical cell recovery are used in the Papanicolaou (PAP) test including a spatula for the exocervix and cotton swab, broom, curette or cytobrush for the endocervix. The cytobrush is the most effective, indicated cervical screening method for pregnant patients. The discovery that during pregnancy trophoblast cells migrate into the reproductive tract and can be recovered and isolated from cervical specimens with a cytobrush has increased interest in developing prenatal tests based on this approach. Historically, concerns were raised that cytobrush usage during pregnancy could cause trauma to the cervix and put the pregnancy at risk. Despite research showing no evidence of increased risk, some practitioners refrain from this practice. The cytobrush manufacturer does advise sampling after ten weeks of gestation, although these claims are not supported by research. The objective of this study was to review cytobrush safety for cervical sampling during pregnancy in the context of prenatal testing. In our sample of 553 pregnant women, 533 (96.4%) had successful deliveries and 20 (3.6%) ended with miscarriage including one ectopic pregnancy. Further analysis of the miscarriage group revealed three losses that occurred within two weeks from the time of cervical collection and all three of those losses were during the first trimester when miscarriages are most common. Current literature reports a range of miscarriage rates from 2% to 13%. As such, our research supports that using a cytobrush for prenatal screening does not increase the risk of miscarriage nor other pregnancy-related complications.

ACP Michigan Chapter Scientific Meeting 2018

Medical Student Poster #30

Category: Clinical Vignette

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Nina Bihani

Additional Authors: Rebecca Klisz-Hulbert, Diane L. Levine

Misdiagnosis of Excited Catatonia in an Adolescent with Autism

A 13-year-old boy with established diagnoses of autism and intellectual disability presented with marked stereotypy, restlessness, impulsivity, frenzy, agitation, combativeness, and purposeless movements. He was given a small dose of lorazepam for sedation. He remained agitated and was labeled as having a "paradoxical reaction" to lorazepam. He was subsequently diagnosed with mania, and given quetiapine. Initially it appeared effective; he was discharged. Within one week, symptoms returned with marked aggression and agitation. He was re-admitted, titrated off quetiapine, and prescribed valproic acid. He calmed, but was withdrawn and subdued at discharge.

At age 15, he developed hyperammonemia secondary to valproic acid. After discontinuation, behavioral issues resolved.

Recently, he experienced another episode of behavioral symptoms at age 22, manifesting with motor and verbal tics, excessive adherence to rules and routines, and increased impulsiveness. Psychiatry diagnosed excited catatonia and prescribed lorazepam. Within two weeks, Busch Francis Catatonia Rating Scale (BFCS) decreased from 26 to 14. He did not have a mood disorder but rather episodes of excited catatonia due to his underlying diagnosis of autism.

This case exemplifies premature closure error (PCE). Rather than considering catatonia as a complication of autism, providers diagnosed a second psychiatric (mood) disorder, possibly due to knowledge gaps (McGee, 2015).

Catatonia occurs in 12-18% of patients with autism (Wing and Shah, 2000) and does not always involve stupor, mutism, and slowed motor activity—but can present with excitement. BFCS is useful for quantifying symptoms. Diagnosis is confirmed with lorazepam challenge (Dhossche et al, 2006).

ACP Michigan Chapter Scientific Meeting 2018

Medical Student Poster #31

Category: Quality Improvement

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Jerry Chen

Additional Authors: Kevin Ko, Brittany Simone, Nicole Simone

Assessing Barriers to Improved Cancer Screening Adherence in LGBTQ+ Communities

Objectives: LGBTQ+ patients typically face various obstacles to cancer care. With lower cancer screening participation, the NCI has designated the community at significant risk for healthcare disparities. However, a nuanced understanding of why barriers to cancer care exist within the community is not well-elucidated. The disconnect between providers and LGBTQ+ patients within recommended cancer screening guidelines has yet to be examined on a nationwide scale.

Methods: We performed an anonymous, nationwide survey of LGBTQ+ individuals and providers to determine where deficiencies in communication, education and comfort exist. Radiologists, primary care providers, and oncologists were surveyed due to their roles in disseminating cancer screening recommendations.

Results: Among 336 providers, 24% and 5% practiced in oncology and surgical specialties, 26% in primary care and 45% in breast radiology. 57% indicated that they saw 1-5 LGBTQ+ patients a month. Only 46% reported that they were confident regarding healthcare concerns within the LGBTQ+ community. Yet, while only 28% had formal LGBTQ+ training, 52% indicated that understanding these concerns was of vital importance to cancer screening.

Among 301 LGBTQ+ individuals, 66% were unsure of what cancer screening to self-perform and 71% uncertain of at what age. Furthermore, 80% indicated that within the LGBTQ+ community, each sub-population had idiosyncratic health concerns. Notably, when visiting a provider, 82% reported feeling nervous, 64% overwhelmed, 53% excessively worried, and 40% depressed or hopeless.

Conclusion: A clear, present need exists within LGBTQ+ communities and among providers for standardized guidelines, cultural training and educational outreach to improve cancer screening adherence.

ACP Michigan Chapter Scientific Meeting 2018

Medical Student Poster #32

Category: Quality Improvement

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Mohamed Fakih

Additional Authors: Mohamed Macki, MD, MPH, Jaafar Elmenini B.S., Sharath Anand B.S., Victor Chang, MD

A Direct Comparison of Prophylactic Low-Molecular-Weight Heparin Versus Unfractionated Heparin in Neurosurgery: A Meta-Analysis

Introduction: The first meta-analysis of publications that directly compare prophylactic LMWH to UFH for the prevention of VTE in neurosurgery.

Methods: Relevant studies that directly compared LMWH to UFH for prophylaxis of VTE in neurosurgery and/or spine surgery were identified by MEDLINE and EMBASE searches plus a scrutiny of references from the original articles and reviews. Three randomized trials were included in the meta-analysis. Efficacy and safety were ascertained per three primary outcomes measures: VTE, minor complications (decline in hemoglobin/ hematocrit), major complications. Forest plot analysis provided odds ratios (OR), 95% confidence intervals (CI), and p-values.

Results: Of the 429 patients in the pooled analysis, the postoperative VTE rate of 5.6% (12/213) after LMWH chemoprophylaxis was equivalent to 3.7% (8/216) after UFH chemoprophylaxis (OR=1.42, 95% CI 0.62–3.75, p=0.308). Minor complications of 4.7% versus 4.6%, respectively, were nearly equal (OR=1.01, 95% CI 0.41–2.50, p=0.929). All four major complications included intracranial hemorrhages: three after LMWH (1.4%) and one after UFH (0.5%) (OR=2.32, 95% CI 0.34–16.01, p=0.831). Tests for heterogeneity were non-significant in all three outcome measures.

Conclusion: The rates of VTE, minor complications, and major complications were equivalent between prophylactic LMWH and UFH in neurosurgery. Further randomized clinical trials comparing the two heparin products are required to elucidate superior safety and efficacy in neurosurgical patients.

ACP Michigan Chapter Scientific Meeting 2018

Medical Student Poster #33

Category: Clinical Vignette

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Albert Gjeluci

Additional Authors: Taylor Anderson, Dr. Shyam Moudgil

Pseudo-Weber's Syndrome: Classical Clinical Picture with a Novel Mechanism

Introduction:

Weber's Syndrome is characterized by ipsilateral third cranial nerve palsy and contralateral hemiparesis. It is typically seen in midbrain infarcts involving the paramedian branches of the basilar artery or posterior cerebral artery. Here we report a case of Pseudo-Weber's syndrome, involving right oculomotor nerve palsy and left hemiparesis without midbrain involvement.

Case:

A 58-year-old patient presented to the emergency room with thunderclap headache. Initial CT of the head showed diffuse subarachnoid hemorrhage. CT angiography revealed a ruptured right posterior communicating artery (PCOM) aneurysm. The patient was taken to the OR for endovascular embolization. Post-operatively right third cranial nerve palsy was noted. Two days later she also developed left sided hemiparesis. Subsequent CT scans revealed a newly developed ischemic infarct of the right posterior limb of the internal capsule, which corresponds to the clinical observation of hemiparesis.

Discussion:

The third nerve palsy, seen in our case, was a consequence of the ruptured PCOM aneurysm. The aneurysm's mass effect directly compresses the nerve. We hypothesize the internal capsule infarct emerged from either thromboemboli or vasospasm of the anterior choroidal artery (AChA). The AChA is anatomically adjacent to the PCOM and supplies the posterior limb of the internal capsule. Our patient's symptoms represent the clinical findings of Weber's syndrome in the absence of the classical midbrain lesion. To our knowledge, this is the first case report of ipsilateral oculomotor nerve palsy and contralateral hemiparesis caused by aneurysm rupture in the Circle of Willis.

ACP Michigan Chapter Scientific Meeting 2018

Medical Student Poster #34

Category: Clinical Vignette

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Gong He

Additional Authors: Tushar Mishra MD, Ahmed Subahi MD, Kalyan Sreeram MD, Khalid Benkhadra MD, Renato Roxas Jr, MD

The Salt That Broke the Camel's Back

Background: Magnesium sulfate has numerous medical uses intravenously such as tocolysis, seizure prophylaxis at eclampsia, magnesium replenishment, antiarrhythmia at torsades de pointes. However, it can also be used as a saline laxative when taken orally. Unfortunately, most formularies do not carry magnesium sulfate except in IV form.

Learning objectives: Acute on chronic constipation can be very expensive and adding oral magnesium sulfate to hospital formulary may cut costs.

Case Report: Our patient is a 62 y/o male with a history of follicular lymphoma complicated by spinal metastases causing foot drop on chronic narcotic use for pain relief. In order for him to attend rehabilitation for his foot drop, he needed to have a bowel movement. Our patient received every laxative available in formulary from senna and docusate to miralax to multiple enemas and even methylnaltrexone with no success for 10 days. On Day 11, he received a bag of magnesium sulfate (Epsom salt) from outside the hospital. Despite having tried multiple servings of magnesium citrate and milk of magnesia, our patient had several bowel movements after 3 servings of magnesium sulfate.

Discussion: Magnesium sulfate (Epsom salt) is a traditional remedy with many uses. Although it shares similar laxative properties with magnesium citrate and milk of magnesia, it is still worthwhile to explore this cheap alternative before considering more expensive options like methylnaltrexone.

Conclusion: For patients suffering from chronic constipation refractory to treatment, it may be reasonable to revisit laxatives that are not available in formulary such as magnesium sulfate.

ACP Michigan Chapter Scientific Meeting 2018

Medical Student Poster #35

Category: Clinical Vignette

School: Wayne State University School of Medicine

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Presenter: Nousha Hefzi

Additional Authors: Pranav Shah, Matthew Miller, Kasey McCollum, Omnia Awad, Diane Levine, Pierre Tannous

Legionnaires: Delayed Diagnosis and Complications During a Known Outbreak

Legionella is a rare diagnosis in young individuals, and is associated with a 40% mortality when coupled with rhabdomyolysis. This case depicts a worker in a location with a reported outbreak of Legionella - highlighting the importance of obtaining appropriate exposure history.

A previously healthy 32-year-old man developed productive cough and shortness of breath. He was prescribed Augmentin. Several days later, he presented to the ED with progressively worsening shortness of breath and malaise, with x-ray revealing pneumonia. Serum creatinine was 7.7 mg/dL, BUN 95 mg/dL, CPK 3191 U/L, hemoglobin 9 g/dL, and total bilirubin 3.2 mg/dL. Urine was positive for myoglobin but negative for casts. Patient was admitted to the ICU and started on vancomycin and cefepime. Legionella urinary antigen was later found positive. Antibiotics were switched to azithromycin and acute renal failure (ARF) was treated aggressively. He was discharged with residual renal dysfunction.

In this case, earlier diagnosis of Legionella may have prevented ARF and an ICU admission. Appropriate use of treatment guidelines for pneumonia, including DRIPS (Drug Resistance in Pneumonia Clinical Prediction Score) would have ensured this patient received appropriate initial antibiotic coverage instead of vancomycin and cefepime. Although ARF is associated with rhabdomyolysis, this degree of renal injury is unlikely to be solely due to creatinine kinase, indicating an additional mechanism for renal injury caused by Legionella itself. It is thus crucial to further assess young immunocompetent patients with Legionella for kidney injury in order to begin appropriate management.

ACP Michigan Chapter Scientific Meeting 2018

Medical Student Poster #36

Category: Quality Improvement

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Inara Ismailova

Additional Authors: Emily Yagihashi, Dawn Misra, PhD

Pregnant Women and the ER: Assessing Variables Predicting ER Use

We see high rates of ER use in urban settings, pregnant women are no exception. The physiological and biological changes experienced during pregnancy may worry a woman for her own health, as well the fetus'. In our retrospective study, we analyzed data from 1411 African American (AA) women in a Detroit suburban hospital. We see that, although 99.5% (n=1404) have insurance coverage, 70.5% (n=995) had ≥ 1 visit to the ER during pregnancy. We examined multiple variables to explore what could account for the large number of ER visits, but found few significant markers that could assist in predicting future ER visits amongst pregnant women. For example, history of chronic conditions prior to pregnancy, such as asthma (Odds Ratio (OR), 0.89, confidence interval (CI): 0.64-1.25), hypertension (OR, 0.90, CI: 0.55-14.63), or diabetes (OR, 3.38, CI: 0.77-14.78), was not a significant predictor. Receiving adequate (or more) prenatal care (OR, 0.84, CI: 0.66-1.05) was also not a significant predictor. Self-reported substance use (OR, 1.98, CI: 1.03-3.79) during pregnancy was a significant predictor. Prenatal counseling was not effective in decreasing non-urgent ER visits. For example, of those women who were counseled on what to do if they experience labor pains/contractions too early 71.4% (n=1065) of them went to the ER, vs. 68.7% (n=332) of those who were not counseled. Our results suggest that prenatal counseling for AA women need to be re-evaluated for their effectiveness, and potential new counseling and educational interventions need to be implemented, especially during ER visits.

ACP Michigan Chapter Scientific Meeting 2018

Medical Student Poster #37

Category: Research

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Dana Siegel

Additional Authors: Samantha Schneider, MD; Marsha Chaffins, MD; and Pranita V. Rambhatla, MD

A Retrospective Review of 93 Cases of Cellular Dermatofibromas

Background: Cellular dermatofibromas (CDF) are an uncommon variant of benign fibrous histiocytomas with a propensity to recur and rarely metastasize as well as demonstrating histologic similarities to more dangerous lesions.

Objective: The aim of this present study was to further describe the presentation and outcome of the cellular variant of benign fibrous histiocytomas so that it can be diagnosed and treated appropriately.

Methods: A retrospective chart review was performed on all patients seen in a single hospital system in Detroit, MI from 2007 to 2017. CDF was confirmed by pathology. Baseline demographics, specialty service of diagnosis and treatment, treatment modality, and outcome were collected.

Results: Of the 93 qualifying patients, the average age at diagnosis was 42.65 years. The most common specialty service that diagnosed and treated patients was Dermatology (38.71%), but other specialties included Plastic Surgery (19.35%), General Surgery (13.98%), Family Medicine (7.53%), Orthopedics (2.15%), Podiatry (2.15%), Internal Medicine (1.08%), and Hematology & Oncology (1.08%). 33.33% of patients had recurrences of their CDF (9/27). Two patients had 3 or more recurrences. One patient's death was attributed to the CDF.

Limitations: This was a retrospective study with some patients lost to follow-up.

Conclusion: CDF have a high local recurrence rate and similarities to more aggressive lesions. Patients with cellular dermatofibromas present to many sub-specialty services for diagnosis and should be treated aggressively.

ACP Michigan Chapter Scientific Meeting 2018

Medical Student Poster #38

Category: Research

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Bhavana Tetali

Additional Authors: Vinay Shah, M.D.

Routine Cancer Screening After Unprovoked DVT

Background: Patients with unprovoked deep vein thrombosis (DVT) or pulmonary embolism (PE) have a 1 in 25 risk of undiagnosed cancer. Age-appropriate cancer screening is important in these patients.

Objective: Our objective was to determine if patients were more likely to meet American Cancer Society (ACS) guidelines for cervical, breast and colon cancer screening after diagnosis of unprovoked DVT.

Methods: This retrospective case-controlled study included patients with unprovoked DVT at Henry Ford Health System from 2015-2016. Demographics, DVT location (arm, proximal, or distal), and cancer screening completion dates were collected. We compared the percentage of patients who met ACS screening guidelines before unprovoked DVT diagnosis versus within 3 months after diagnosis, and looked at factors that contributed to differences between these groups. Data were analyzed using independent 2-sample t-tests, chi-square and Fisher's exact tests.

Results: Of the 201 patients included, 45 were eligible for cervical, 81 for breast, and 122 for colon cancer screening. The percentage of eligible patients who met ACS guidelines before unprovoked DVT diagnosis was 77% for cervical, 61% for breast, and 61% for colon cancer screening. The percentage that met guidelines after diagnosis increased to 84%, 66% and 67% respectively. These values were significant at $p < 0.05$. Additionally, proximal DVT was a significant variable in cervical and colon cancer screening, and distal DVT was significant in colon cancer screening. Age, race and gender were not significant.

Conclusion: The percentage of patients meeting ACS guidelines increased 5-7% after unprovoked DVT. Proximal and distal DVTs contributed to this increase.

ACP Michigan Chapter Scientific Meeting 2018

Medical Student Poster #39

Category: Clinical Vignette

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Benjamin Ueberroth

Additional Authors: Lea Monday, MD; Pierre Tannous, MD

Idiopathic Mediastinal Fibrosis Causing Hemoptysis in a Healthy 20yo Male: A Zebra Among Horses

A previously healthy 20-year-old male presented to a local emergency department with massive, life-threatening hemoptysis preceded by two months of cough, exercise intolerance and increasing sputum production. Computed tomography imaging upon admission demonstrated a large soft tissue mass arising in the middle mediastinum, encasing the distal trachea, carina, main bronchi and esophagus, as well as the right main pulmonary artery and lobar branches. Suspicion was high for hematologic malignancy, and fine needle biopsy was performed with negative immunohistochemical staining. The patient was lost to follow-up for roughly one year. He then had two subsequent admissions for similar symptoms, undergoing multiple biopsies of the mediastinal mass, ultimately culminating in a surgical resection of the mass both for relief of symptoms and diagnosis. Surgical biopsy indicated a lymphocytic and plasma cell infiltrate with a significant fibrosing component consistent with fibrosing mediastinitis. The patient has had inconsistent follow-up since his diagnosis and is currently undergoing evaluation for a definitive post-surgical treatment plan.

This case features a diagnosis of idiopathic mediastinal fibrosis. A mediastinal mass in a 20-year-old male is classically taught as a malignancy until proven otherwise. In our patient multiple biopsies with negative immunohistochemical staining ruled out a malignant process and pathology is consistent with mediastinal fibrosis. Fibrosing mediastinitis is a rare disorder often tied to a prior histoplasmosis, sarcoidosis, or less commonly, tuberculosis infection. Given the lack of granulomatous inflammation on multiple biopsies, these diagnoses become less likely. We are left with the diagnosis of idiopathic mediastinal fibrosis.

ACP Michigan Chapter Scientific Meeting 2018

Medical Student Poster #40

Category: Clinical Vignette

School: Wayne State University School of Medicine

Clerkship Director: Diane Levine, MD, FACP

Presenter: Kurt Wilhelm

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Ibuprofen Induced Proximal Renal Tubular Acidosis: An Unusual Presentation

Background:

NSAIDs are widely used for an array of medical conditions to manage pain. They are known to affect the kidney through multiple mechanisms. Renal tubular acidosis (RTA) is an underreported and uncommon result of excessive ingestion of ibuprofen that can result in hypokalemic paralysis. The majority of reported cases are distal in nature and due to reduced acid secretion. Rarely, ibuprofen induced injury leads to reduced bicarbonate reabsorption and proximal RTA. We believe this patient is a rare case of one of the many negative consequences of ibuprofen misuse.

Case Report:

50 year old male with COPD and hypertension was referred to the hospital from his PCP for evaluation of muscle weakness and hypokalemia of 1.9 mmol/L. He has been experiencing right upper back pain for the past 3 months and has been using ibuprofen, 2400-6000 mg daily, to manage his pain. He denied diarrhea. On CXR, the patient was found to have perihilar and right upper lobe lung masses as well as a paraspinal soft tissue mass. Upon admission, he had hyperchloremic non-anion gap metabolic acidosis with a urinary anion gap (UAG) of -15.3. He was also found to have borderline hypophosphatemia and hypouricemia. These values suggest that the kidney is able to acidify the urine, and given the absence of extra-renal etiologies for bicarbonate loss, they support a diagnosis of proximal RTA. Upon discontinuation of ibuprofen and potassium supplementation, the patients muscle weakness improved and his potassium level increased to 3.2 on discharge.

ACP Michigan Chapter Scientific Meeting 2018

Medical Student Poster #41

Category: Clinical Vignette

School: Western Michigan University School of Medicine

Clerkship Director: Melissa Olken, MD, ACP Member

Presenter: J. Erik Winterholler

Additional Authors: Anya N Ring, DO, Muhammad Danish Saleem, MD, Joanne K Baker, DO, Melissa H Olken, MD, PhD

Adult-Onset IgA Vasculitis

IgA Vasculitis, formerly known as Henoch-Shönlein Purpura, is a systemic vasculitis most often seen in children. Adults with the disease are at much greater risk for developing severe complications, especially end-stage renal disease.

A 28-year-old obese man presented to his primary care physician with complaints of fever, chills, nausea, vomiting, and sore throat for twelve hours. He was diagnosed with viral gastroenteritis and sent home with instructions for supportive care. His symptoms resolved spontaneously within two days. Two weeks later, he came to the hospital after four days of worsening purpuric rash on his upper and lower extremities that had developed painful, open sores. Dermatology was consulted, and the patient was sent home on a prednisone taper. A skin biopsy showed evidence of IgA vasculitis. Patient returned to the hospital two days later with worsening myalgias, lower extremity swelling, darkening urine, and transformation of the rash into more painful, open sores and bulla. Nephrology was consulted, and pulse steroids and lisinopril were initiated. A renal biopsy confirmed IgA nephropathy without crescent formation. After four days of hospitalization, the sores began to heal appropriately, and the patient was transferred to inpatient rehabilitation.

This is a case of adult-onset IgA vasculitis with severe dermatologic manifestation and renal involvement. The course of the disease is clearly illustrated – a viral prodrome, an inappropriate immune response leading to vasculitis, then renal disease. Recognition, early diagnosis, and treatment with high-dose steroids are essential to avoiding severe complications of IgA vasculitis, especially in adults.