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Editorial

Circula nuevamente *El Bisturí*, la revista oficial de Colegio de Médicos Cirujanos de Puerto Rico. Hemos destacado en mensajes anteriores la importancia que tiene para nuestra clase médica el hecho de que su Colegio publique una revista cientifica con artículos debidamente revisados por sus pares y que la misma esté en proceso de obtener acreditación en los centros de sistemas de información de investigación científica.

Encontrarán un número de artículos pertinentes a nuestra realidad como son Chickungunya, Vitamina D y Fibromialgia, Linfedema en la extremidad superior luego de tratamiento de cáncer de mama. También se incluyen artículos sobre Prevención de infecciones en articulaciones, Manejo de complicaciones en cirugía lumbar y "Acromioclavicular joint dislocation and its treatment" entre otros.

Dedicamos también espacio para una entrevista a la Dra. Carmen López Acevedo sobre ejemplo de vocación profesional. Por ultimo, quiero destacar que en este ejemplar se da el interesante fenómeno en que cuatro miembros de una sola familia, la madre y tres hijos suyos, médicos todos y miembros de nuestro Colegio, publiquen simultáneamente en una revista médica. Se trata de la Dra. Carmen López Acevedo, distinguida Fisiatra y sus hijos Antonio, Ernesto y Francisco Otero López, Ortopedas. Es la primera vez que esto ocurre en Puerto Rico y quizás en el mundo. Le felicitamos muy de veras.

Disfruten su revista,

Carlos A. Falcón, MD
Presidente Junta Editora

The Role of Vitamin D Deficiency in the Multifactorial Syndrome of Fibromyalgia

Melba Feliciano Emmanuelli, MD, FACP, FACE

RESUMEN

El Síndrome de Fibromialgia es multifactorial y afecta la calidad de vida y la productividad de aquellos que reciben este diagnóstico. La patofisiología de esta condición es heterogénea y resulta de una combinación de factores y cambios en el sistema nervioso central y alteraciones hormonales. Un hallazgo interesante en estos pacientes es la deficiencia de Vitamina D y la mejoría de parte de su sintomatología con la corrección de esta deficiencia. Este artículo resume la literatura reciente que apunta a la patofisiología compleja de la condición y una revisión de publicaciones que presentan la coexistencia de deficiencia de vitamina D en este grupo de pacientes. El propósito de esta revisión es concienciar sobre la importancia de evaluar los niveles de vitamina D en los pacientes de Fibromialgia, para identificar y tratar una deficiencia, lo que contribuye a mejorar los síntomas y la calidad de vida en esta población.

SUMMARY

The Fibromyalgia Syndrome is a poorly understood condition which affects the quality of life and productivity of those who are diagnosed with the condition. Its pathophysiology is a heterogeneous combination of central nervous system and neurological changes besides hormonal alterations. An interesting finding in this population has been Vitamin D deficiency in some cases, and improvement in pain and symptoms with correction of the deficiency. This article reviews recent literature on the pathophysiology of the condition described up to this day and the coexistence of Vitamin D deficiency in some patients and the impact of Vitamin D deficiency correction in symptomatology. The purpose of this article is to create awareness on the importance of Vitamin D evaluation in patients with fibromyalgia syndrome to address another element which contribute to symptomatology and that is amenable to therapy.

Keywords: Vit D deficiency, fibromyalgia, fatigue

INTRODUCTION

Fibromyalgia has been a poorly understood syndrome which causes emotional and physical disability, usually to young women in their productive years. This diagnosis has been devastating for the patients, their family and for the workforce. Through the years many women in their productive years are retired from work due to fibromyalgia and to prevent worsening of the condition due to stress at the workplace. There's no specific data on incidence and prevalence of the syndrome in different countries.

In USA, approximately 2% of adult population presents a syndrome compatible with fibromyalgia and these numbers are increasing, as many patients are diagnosed with the condition without a clear understanding of its cause or cure. No one knows what really triggers this syndrome. After considering the multiple factors implicated and the chronic fatigue characteristics, it is usually treated with antidepressant medications to increase the threshold for pain and to decrease the associated depression.

CLINICAL PRESENTATION

The fibromyalgia symptomatology includes chronic widespread pain, sleep disturbances, fatigue, inflammatory bowel syndrome, headaches, and mood disorders. Through the years the number of cases diagnosed have been increasing and the uncertainty of the pathophysiology, therapy and prognosis have stimulated a review of the diagnostic criteria by the American College of Rheumatology in 2010, and a continuous research and epidemiological studies of this syndrome. Fibromyalgia syndrome should not be a diagnosis of exclusion, but a systemic symptoms based disease[2]. For many years, this syndrome has been a mystery and an exclusion diagnosis in need of a thorough workup in search of the etiology or the contributing factors to the disease. Basic evaluation should include Vitamin D levels, B complex vitamins, iron levels, Epstein Barr virus titers, thyroid evaluation, cortisol, and sex hormone levels. Some patients diagnosed with fibromyalgia have also Vitamin D deficiency and refer improvement in the syndrome, the fatigue and pain, with correction of Vitamin D to sufficient

level [26]. Sometimes B12 deficiency correction also improves symptoms of depression and fatigue.

PATHOPHYSIOLOGY

In recent years many articles have been published to address the pathophysiology of the mysterious condition of Fibromyalgia, and the origins have been directed to changes in brain areas with excessive response to pain, disorders of pain regulation classified under central sensitization [4,11,12,13] attributed to neurotransmitters changes, opioid receptors changes, including upregulation in the periphery and reduction of some peptides in the brain [7,8]. Substance P, a neuropeptide associated with chronic pain is increased in the CSF of patients compared with controls. Increased brain and plasma brain–derived neurotropic factor has also been found in patients [13,14], and differences in activation of certain areas of the brain associated with pain sensitivity have been demonstrated by functional neuroimaging techniques such as functional MRI [11-14]. More limited information has been obtained using the Positron Emission Tomography (PET) which has shown reduced dopaminergic activity in response to pain in patients with fibromyalgia compared to controls [13,14]. Affective and cognitive factors influence pain processing in the CNS and patients with fibromyalgia and comorbid depression demonstrate an increase in cerebral blood flow to the amygdala and anterior insula which are areas important for the affective response to pain [16,17,19], but still there's no single event identified to cause fibromyalgia.

Morphometric analysis of the brain by MRI in patients with fibromyalgia in some studies suggests premature aging of the brain [20], greater in patients with longer duration of disease. The gray matter loss has been observed in areas related to pain and stress processing and also in areas related to cognitive function [18]. In another study following a similar methodology, there was no significant difference in gray matter between patients with fibromyalgia and controls when controlling for depression which is known to cause cognitive change [21]. More sophisticated studies have found deficits in intracortical modulation of GABAergic and glutamatergic mechanisms. Fibromyalgia patients compared with controls had higher levels of glutamate associated with lower pain threshold. In patients with severe symptomatology, inositol levels were higher in the right amygdala [20, 23] and right thalamus.

CENTRAL NERVOUS SYSTEM IN FIBROMYALGIA

The central nervous system dysfunction described in some of the studies on pathophysiology also points to disordered sleep patterns which preceded the development of pain and have been correlated with severity of symptoms [23]. Phasic alpha sleep activity is the most characteristic of fibromyalgia [23]. Hyperactivity of the stress response, demonstrated by abnormalities of the hypothalamic pituitary axis has been observed in some cases [23,24]. Some neurohormonal abnormalities strongly correlate with cortisol levels and pain upon awakening, and one hour after waking in patients with fibromyalgia compared with controls [23]. In some cases there are abnormal levels of growth hormone [29]. There is no evidence of alterations in sex hormones in fibromyalgia [30]. Many physical and emotional triggers have been observed to provoke or aggravate the condition, and there is a genetic predisposition in this condition.

Considering the symptomatology associated with Vitamin D deficiency which may be contributing to the fibromyalgia syndrome, diffuse bone pain, muscle weakness and difficulty walking are reported with sometimes waddling gait, muscle cramps, spasms and in severe cases hypocalcemia, tingling and numbness are present. Muscle weakness is proximal, associated with muscle wasting, hypotonia and discomfort with movement in severe cases [1,3].

Vitamin D deficiency is diagnosed frequently in the young and elderly population in spite of the sunny climate in our island; also in Africa, Saudi Arabia and Pakistan according to recent clinical studies done in those countries [31, 25].

Vitamin D inadequacy constitutes a largely unrecognized epidemic in many populations worldwide. It has been reported in healthy children, in young adults, especially African American and middle aged and elderly adults. The prevalence of low vitamin D levels is 36 % in otherwise healthy adults from 18-29 years, 42% in black women from 15 to 49 years, 41% in outpatients from 45 to 83 years and higher in Europe from 28 to 100% of healthy adult and elderly people, according to data published in different studies [1, 3].

Medical literature particularly from Saudi Arabia, Israel, and Pakistan evaluate the relation between vitamin D deficiency and fibromyalgia syndrome. In a study done at a Neurology Clinic in the kingdom of Saudi Arabia in veiled, non veiled and conservatively dressed population, vitamin D deficiency was found in the fibromyalgia patients. Effective treatment with high dose vitamin D resulted in clinical improvement in all thirty females included in the study [9,10].

Another study done in Saudi Arabia and published in Pain Medicine in 2012, defined the relationship of vitamin D deficiency and fibromyalgia in 100 women. Of the 100 women studied, 61 presented deficiency and 42 presented improvement in pain when Vitamin D 25 OH level became greater than 30 ng/ ml, and this improvement became more significant when blood level of Vitamin D 25–OH exceeded 50 ng/ml. In conclusion, the authors recommend that vitamin D deficiency has to be considered in the anagement of fibromyalgia [10].

A study from Canada addresses the need for testing and treating for vitamin D deficiency in Fibromyalgia patients. They conducted a review of Medline for all relevant research done in this area between the years of 1990-2010. They concluded that patients with concurrent risk factors for deficiency should be tested and treated for Vitamin D deficiency to minimize osteoporosis risk and maximize muscular strength.

CLINICAL STUDIES

A study done in Iran shows a positive association of Vitamin D deficiency with a variety of non-specific bone pains particularly in women. Increasing vitamin D levels to sufficient range greater than 30 and follow up may provide longitudinal evidence of the relation to Vitamin D deficiency and pain [(26)].

A study done in Pakistan evaluated 40 female patients with Fibromyalgia and vitamin D deficiency was found in this group [(31)].

On the other hand, in Brasil, a group of 87 patients with Fibromyalgia were evaluated for Vitamin D deficiency and compared with a group matched for age and sex without pain and they did not find a significant difference in both groups in terms of Vitamin D deficiency or insufficiency to characterize the fibromyalgia patients [(27)].

Acupuncture Medical Journal published a review article of myofascial pain and fibromyalgia, and factors which promote their persistence. Metabolic factors such as iron deficiency, hypothyroidism and vitamin D deficiency are mentioned among the important factors to be corrected to resolve the myalgias of the condition [(31)].

Considering the neuromuscular effect of Vitamin D deficiency and the extraskeletal actions of Vitamin D in the immune system, bone and for general well-being of the patient, an early detection of Vitamin D deficiency in the fibromyalgia syndrome will contribute to add another therapeutic element to this condition. Vitamin D 25-OH levels should be part of the basic evaluation of Fibromyalgia patients and chronic fatigue patients.

A prospective evaluation of the Vitamin D deficiency correction in patients with symptomatology of pain will be useful. A pain and symptoms questionnaire including the pain scale rate one hour after waking and at bedtime, will be useful to assess the impact of Vitamin D correction on symptoms.

RESULTS OF VITAMIN D THERAPY OR SUPPLEMENTATION

The effect of Vitamin D supplementation on functional outcomes as pain and quality of life has been studied in geriatric populations with chronic illnesses and it is still not clear. Six studies assessed the effect of Vitamin D on patient's quality of life using standardized instruments such as (SF-36, SF-12 and Medical Outcome Survey Short form [(8)]. A metanalysis demonstrated no significant change in physical component score (standardized mean difference (07; 95% CI, 0.03-.16) or the mental component score (standardized mean difference (0.02; 95% CI,-.05 to .09). The individual domains for quality of life were reported in three studies and did not differ at the end of the follow up period [(32-36)]. However, these studies were done in elderly frail people which is a population of different characteristics to the one with fibromyalgia which is usually a young and middle age female population.

Some studies showed a possible beneficial effect of Vitamin D replacement on pain and symptoms of fatigue. In the study of Arvold et al, they evaluated the correlation of symptoms with Vitamin D deficiency and symptoms response to cholecalciferol treatment in a randomized controlled trial [(35)]. Patients with mild to moderate Vitamin D deficiency (10-25 ng/dl) were randomized to Vitamin D3 50,000 units per week for 8 weeks or placebo. The study evaluated scores on the Fibromyalgia Impact Questionnaire and reported that those with mild to moderate deficiency had more fatigue and joint and muscle aches at baseline than placebo, but no impairments in terms of activities of daily living. Supplementation with Vitamin D3 led to statistically significant improvement in fatigue symptoms as compared with the placebo group. A third arm of severe deficiency (not randomized) had more severe baseline symptoms and marked improvement with supplementation of D3. In a population of patients with rheumatoid arthritis, Brohuld and Johnson reported decreased pain and analgesic use in those patients after using a large dose of vitamin D for one year. Sixty seven percent of those in the Vitamin D group patients improved versus 36% in the control group (P value less than (.05) [(37)].

SUMMARY AND CONCLUSIONS

In summary, conclusions from studies which evaluated the effect of vitamin D supplementation on pain and quality of life are very limited due to the heterogeneous nature in terms of the population studied, cohort size, outcome definition and imprecision [(32-38)].

After a review of recent literature on Vitamin D deficiency and fibromyalgia my research question is: "Is Vitamin D deficiency an important contributor to the myalgia and chronic fatigue symptoms in fibromyalgia syndrome?

The role of Vitamin D deficiency has been recognized in several studies and more controlled studies are needed. Fibromyalgia patients depend on a careful study of possible components of the disease for improvement of their symptomatology.

The purpose of this review is to create awareness of the importance of Vitamin D evaluation in patients with chronic fatigue and musculoskeletal pain early in their condition to prevent disability, falls, improve quality of life and prevent osteoporosis in a young female population. The benefit of this awareness is to provide an additional therapy for the mysterious syndrome of fibromyalgia and to modify the message that fibromyalgia is an incurable disease to a syndrome which can improve addressing the unique elements of its pathophysiology amenable for therapy.

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Chikungunya: A Clinician's Challenge

Raina M. Phillips, MD and Tyler M. Sharp, PhD*

RESUMEN

Chikungunya es una enfermedad febril aguda causada por infección con el virus que lleva el mismo nombre y la cual es transmitida por mosquitos. Este virus se introdujo en el Caribe a finales de 2013. Los síntomas de chikungunya incluyen fiebre y poliartralgia, y por lo general estos auto-resuelven en 7–10 días. Sin embargo, síntomas reumáticos pueden reaparecer y persistir durante meses. Adultos de mayor edad y personas con presentación inicial de artralgia severa o artritis están en mayor riesgo de síntomas reumáticos recurrentes. Los bebés y niños pueden sufrir de manifestaciones dermatológicas y neurológicas. La transmisión de madre a hijo puede ocurrir si la madre tiene viremia al momento del parto y los recién nacidos pueden manifestar enfermedad grave (e.g., encefalitis, enfermedad parecida a sepsis). Diferenciar el dengue y la chikungunya es un desafío clínico; por lo cual el manejo apropiado del paciente con dengue puede salvarle la vida, mientras que el chikungunya es raramente fatal. Por lo tanto, los casos sospechosos de chikungunya deben ser tratados como si fuesen casos de dengue, evitando el uso de los medicamentos no esteroidales y dando seguimiento a los pacientes para el desarrollo de señales de alerta de dengue severo. La protección contra las picaduras de mosquitos es la única herramienta disponible actualmente para evitar la infección con el virus de chikungunya.

ABSTRACT

Chikungunya is an acute febrile illness caused by infection with the mosquito-transmitted chikungunya virus, which was introduced into the Caribbean in late 2013. Symptoms of chikungunya include fever and polyarthalgia, and typically self-resolve in 7–10 days. However, in some patients, rheumatic symptoms may persist or recur for months. Older adults and people with pre-existing arthritis are at higher risk for recurrent rheumatic symptoms. Case series have described rare neurologic disease (e.g., seizures, meningoencephalitis) and atypical cutaneous manifestations (e.g., vesiculobullous lesions, hyperpigmentation) among infants and young children. Mother-to-child transmission can occur if the mother is viremic at the time of delivery. Many neonates infected intrapartum become symptomatic and are more likely to develop encephalopathy or sepsis-like disease. Differentiating dengue and chikungunya is clinically challenging; however, appropriate patient management can be life-saving for dengue patients, whereas chikungunya is rarely fatal. Thus, suspected chikungunya cases should be treated as if they have dengue by avoiding NSAIDs and monitoring patients for evidence of warning signs for severe dengue. Protection from mosquito bites is the only method currently available to avoid chikungunya virus infection.

Keywords: chikungunya, viral syndrome

Chikungunya virus (CHIKV) is the cause of chikungunya, and is transmitted through the bite of infected Aedes species mosquitoes (e.g., Ae. aegypti, Ae. albopictus), which also transmit the four dengue viruses. CHIKV was first isolated in 1952 in Tanzania and means "that which bends up," reflecting the most troublesome symptom of chikungunya: arthralgias. In subsequent decades, CHIKV spread to India, islands of the Indian Ocean, and southeast Asia. CHIKV was introduced into the Americas in late 2013 and has since spread throughout the Caribbean and the Americas, where more than 600,000 clinically compatible cases had been reported by the end of August, 2014.

The first laboratory-confirmed chikungunya case in Puerto Rico had illness onset in May, 2014. Through August 26, a total of 6,227 clinical chikungunya cases have been reported, of which 2,003 were laboratory-positive for CHIKV infection. Although incidence was highest in the San Juan metropolitan area, laboratory-positive chikungunya cases had been reported from 39 municipalities. Since the population of Puerto Rico is immunologically naïve to CHIKV, the virus is expected to continue spreading throughout the island. Clinicians evaluating patients with acute febrile illness should therefore be aware of the signs and symptoms of chikungunya and appropriate clinical management strategies.

SIGNS AND SYMPTOMS:

In contrast to dengue, the majority (72–97%) of individuals infected with CHIKV will develop symptoms, usually in 3–7 days. Rapid onset of fever and arthralgias are the most common symptoms, followed by rash. Polyarthralgia is typically symmetric and may be severe and debilitating. Pain and effusions can occur in any joint but most frequently affects distal joints, including the knees. The rash is usually maculopapular, and typically starts on the torso and extends to the limbs, potentially including the palms and soles. Other common symptoms of chikungunya include headache, arthritis, conjunctivitis, nausea, vomiting, and myalgia.

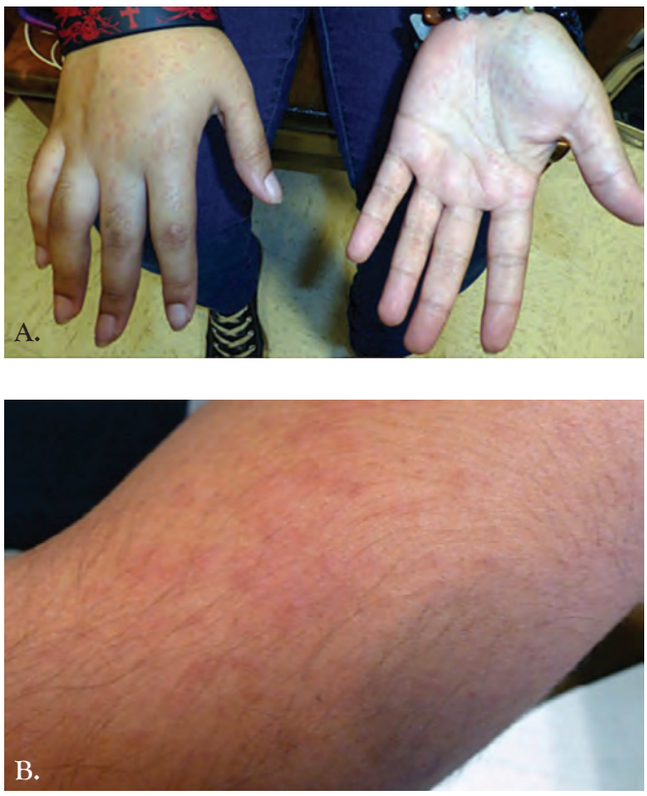

Figure 1. An 18-year-old female from Puerto Rico with chikungunya, August 2014. A. Rash on palms and swelling around metacarpophalangeal joints. B. Confluent macular rash on upper arm, pruritic.

CLINICAL COURSE

Symptoms typically resolve in 7–10 days; however, arthralgias and/or arthritis may persist for months or years. Studies vary widely in methodology and time of follow up, making it difficult to report a reliable percentage of patients who are symptomatic months to years later. Older adults and people with pre-existing arthritis are at higher risk for recurrent rheumatic symptoms. Some studies identified female gender or severe acute arthralgia as risk factors for prolonged symptoms; however, these findings have not been consistently observed.

ATYPICAL AND SEVERE DISEASE

Patients infected with CHIKV can present with symptoms other than fever and arthralgia. Such cases are often referred to as "atypical chikungunya cases". Atypical cases are uncommon (~0.3% of all clinically apparent cases), but can be severe (i.e., require assistance to maintain vital functions) and are associated with higher mortality. Severe chikungunya most commonly manifests as cardiovascular disorders, neurologic disorders, and pre-renal acute kidney injury.[11] Individuals with hypertension, heart disease, diabetes, immunosuppression, adults over 65 years of age, and neonates are at higher risk for atypical and severe disease.[11] One study reported that atypical cases aged 40–60 years were 2.5 times more likely to develop severe disease than younger individuals, and 90% of atypical cases had an underlying medical condition.[11] Age ≥ 85 years and alcohol abuse were associated with increased mortality on La Reunion, an island near Madagascar.[11] The same study found that, among 610 adults with atypical disease, 222 (36%) were seriously ill, 84 (14%) were admitted to the intensive care unit, and 65 (10%) died.[11] The cause of death for atypical severe cases included heart failure (23%), multi-organ system failure (18%), hepatitis (11%), or meningoencephalitis (9%).[11]

CHILDREN

Children may have lower rates of symptomatic disease following CHIKV infection, less severe polyarthralgia, and lower risk of prolonged or recurrent symptoms compared to adults. However, case series have described rare neurologic disease (e.g., seizures, meningoencephalitis) and atypical cutaneous manifestations (e.g., vesiculobullous lesions, desquamation, hyperpigmentation) among infants and young children[11,12,16].

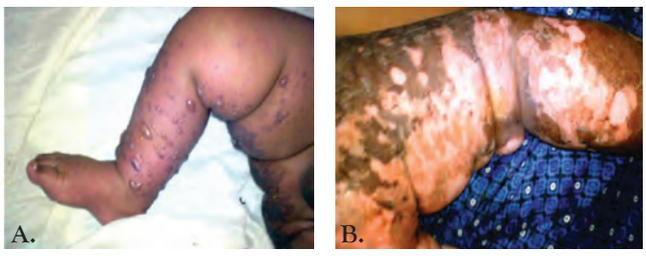

Figure 2. Dermatologic manifestations in infants from La Reunion. A. Vesiculobullous lesions, which usually develop after day 3 of fever. B. Desquamation on legs and perianal area leading to scarring with hyper- or hypopigmentation. (Images reprinted with permission from the Indian Journal of Pediatrics.)[12]

Mother-to-child transmission of CHIKV was first documented during the outbreak on La Reunion. Of 40 neonates born to mothers who were viremic at the time of delivery, 19 (49%) developed symptoms by day 7 of life. Neonates infected intrapartum are frequently symptomatic (e.g., fever, poor feeding, pain with movement), and may also develop thrombocytopenia-induced intraparenchymal hemorrhage, encephalopathy, or sepsis-like disease. [16]

DISTINGUISHING CHIKUNGUNYA FROM DENGUE

Chikungunya and dengue share many similar presenting symptoms and risk factors, thus posing a challenge to even the astute physician. A study in Malaysia found that chikungunya was independently associated with arthralgia and rash while dengue was independently associated with myalgia, increased liver function enzymes, and leukopenia. Several studies have found arthritis in chikungunya patients, whereas arthritis is rarely seen in dengue patients. In children living in Thailand, rash with concurrent fever was 13 times more likely to be present in patients with chikungunya compared to those with dengue. The same study found that chikungunya was over diagnosed during the outbreak, suggesting that cases of dengue and other acute febrile illnesses were misdiagnosed as having chikungunya.

MANAGEMENT:

Clinicians in Puerto Rico should include in the differential diagnosis of suspected chikungunya patients, other common etiologic agents (e.g., leptospirosis, influenza). In particular, dengue and chikungunya can have very similar clinical manifestations. Although chikungunya is rarely fatal, early identification and proper clinical management of dengue cases can reduce the case-fatality rate of hospitalized patients from 10% to <0.1%. Therefore, patients suspected of having dengue or chikungunya should be managed as having dengue until dengue can be ruled out. Patients with warning signs for severe dengue (e.g., persistent vomiting, severe abdominal pain) should be hospitalized for close monitoring and management. If no warning signs are present, patients should be discharged home with anticipatory guidance that if such warning signs develop, they should return immediately for medical care.

Pain and fever in patients with suspected dengue or chikungunya should be managed with acetaminophen. If insufficient, narcotics such as morphine may be considered for pain management. Aspirin and other NSAIDs should not be given to such patients due to increased risk of bleeding manifestations if the patient has dengue. If patients have been afebrile for ≥48 hours, have no warning signs for severe dengue, and still complain of joint pain, NSAIDs may be considered. Physical therapy may also be beneficial. There is no indication for antivirals, antibiotics or steroids, as these will not help the patient and may have side effects including excessive bleeding, thrombocytopenia, gastritis, acute kidney injury, electrolyte imbalance, and hyperglycemia.

DIAGNOSTIC TESTING:

At present, Puerto Rico Department of Health (PRDH) is requesting that all suspected chikungunya cases be reported. To do so, clinicians should write "CHIK" at the top of the dengue case investigation form: (*http://www.cdc.gov/dengue/resources/dengueCaseReports/DCIF_Spanish.pdf*) and send it along with a serum specimen to PRDH. Specimens will be tested for both chikungunya and dengue by virus-specific RT-PCR and IgM ELISA. Results will be conveyed back to the physician or hospital that reported the case.

PREVENTION:

There is no vaccine for chikungunya. Thus, as with dengue, the only method to avoid CHIKV infection is by preventing mosquito bites. Individuals should use repellent on exposed skin, wear long sleeves and pants when possible, and stay in residences with air conditioning and/or intact screens on windows and doors. Covering or emptying water containers, both indoors and out, can reduce mosquito populations. Individuals suspected to have chikungunya and their household members should protect themselves against mosquito bites, as mosquitoes that feed on patients who are viremic can acquire the virus and may then bite and infect household members or neighbors.

CONCLUSIONS:

Like many who are introduced to La Isla del Encanto, chikungunya is not likely to leave any time soon. Therefore, clinicians should be aware that the clinical manifestations may differ by age and are most severe at the extremes of life. Adults and older children usually weather the initial infection without complications, but in some patients rheumatologic symptoms may persist for months or years. In all dengue endemic areas, including Puerto Rico, distinguishing chikungunya from dengue will likely remain a challenge. To avoid complications and minimize bleeding risk, NSAIDs should not be given to patients with suspected chikungunya for the first week of illness. With vigilant personal protection from mosquito bites and public efforts to decrease the mosquito population, the clinical and public health burden of chikungunya may be curtailed.

DISCLAIMER

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

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Linfedema de Extremidad Superior Luego de Avances Recientes en la Prevención y Tratamiento en Cáncer de Mama

Carmen E. López Acevedo, MD

SUMMARY

Breast cancer-related upper extremity lymphedema is an unsolved iatrogenic complication with a reported incidence ranging from 9% to 41%. This condition is one of the most poorly understood, relatively underestimated, and least researched complications of breast cancer or its treatment. Lymphedema is a common side effect of breast cancer surgery that causes painful, debilitating, and disfiguring swelling in the arms. Post-mastectomy Lymphedema has received little attention, and currently no curative treatment is available. Multiple medical treatments are recommended in medical literature; however, the results of the studies related to the effectiveness of those treatments on lymphedema are variable and controversial. Surgical techniques for the treatment of lymphedema have been reported but many investigators consider that the majority of them are on experimental level and not available for the general population.

RESUMEN

El linfedema es una complicación común relacionada al tratamiento de cáncer de mama. La incidencia reportada incluye un rango amplio entre 9%-41%, lo que evidencia la poca atención por parte de los investigadores hacia esta condición. Sí es de consenso en la literatura médica el que se desconoce un tratamiento curativo para el linfedema. Aunque hay múltiples tratamientos médicos recomendados en la literatura médica, los resultados de estos estudios realizados sobre la efectividad de estas técnicas de tratamiento en linfedema son variados. En relación a las técnicas quirúrgicas, muchos investigadores consideran que están todavía en etapa experimental y no están disponibles para la población en general.

Keywords: lymphedema, breast cancer, axillary node dissection, disability, manual lymphatic drainage, compression bandage, exercises.

INTRODUCCION:

El cáncer de Mama es un problema importante de salud pública a nivel mundial debido a su alta incidencia y mortalidad [11]. Se encuentra como una de las tres primeras causas de muerte en mujeres alrededor del mundo[4]. Se ha estimado que cada año en los Estados Unidos se diagnostican más de 200,000 casos nuevos de cáncer de mama en mujeres, y sobre 1,050,000 casos alrededor del mundo [18,21]. En la actualidad, la razón de mortalidad por cáncer de mama se ha reducido gracias a los avances en la detección temprana y la aplicación de terapias adyuvantes efectivas, pero a su vez, tenemos como resultado algunas secuelas y complicaciones de estos tratamientos. Por lo tanto, es esencial la prevención y manejo de estas complicaciones, que impactan la funcionalidad de la extremidad superior y la calidad de vida en estas pacientes [13].

El edema de extremidad superior o linfedema relacionado al tratamiento de cáncer de la mama, como la cirugía y la radioterapia entre otros, es una de las complicaciones más comunes, y quizás la más temida [7]. Linfedema es un efecto secundario común al tratamiento en cáncer de mama que causa dolor, debilidad, pérdida de función, deformidad cosmética, fatiga y aflicción psicológica (Figura 1). Esta es una complicación iatrogénica, no resuelta, con una incidencia reportada entre 9%-41% [7]. En general, esta complicación ha tenido poca atención por los investigadores y en la actualidad se desconoce un tratamiento curativo de la condición. Por lo tanto, el propósito principal de este artículo es revisar conceptos modificados de diagnóstico, tratamiento-conservador y quirúrgico, y posibles técnicas de prevención de linfedema relacionado al tratamiento de cáncer de mama.

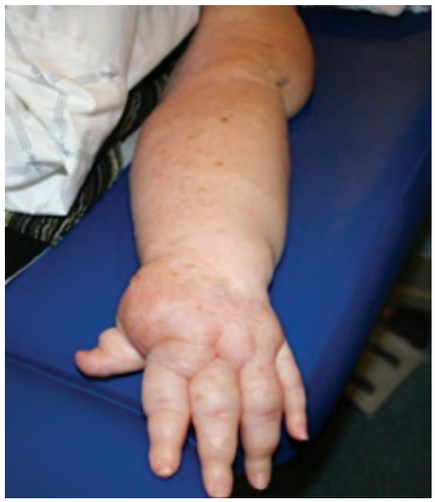

Figura 1: Linfedema Extremidad Superior

CONCEPTOS BÁSICOS DE ANATOMÍA Y PATOFISIOLOGÍA DEL SISTEMA LINFÁTICO:

Los componentes principales o básicos del sistema linfático son: fluido intersticial y linfa, espacio intersticial y la red de vasos linfáticos, las células linfoides localizadas en órganos o que migran libremente [1,2,3]. Los vasos linfáticos son una parte integral de una red de vasos los cuales van aumentando en calibre e incluye la presencia o no de válvulas que nos permiten tener un control de la dirección en que debe fluir la linfa. Esta red incluye los capilares linfáticos, los pre-colectores, los colectores linfáticos, y por último, los ductos linfáticos que componen la mayor parte de los vasos de transporte y el ducto torácico. Los vasos linfáticos colectores están localizados cerca de las venas para su intercambio y drenaje, y vacían en los nódulos linfáticos regionales (Figura 2). Primero la linfa se moviliza desde los capilares linfáticos hacia los vasos linfáticos colectores grandes. Estos vasos tienen pared muscular y válvulas en una dirección que permiten mantener la linfa en movimiento en la dirección correcta. Muchos de estos vasos se localizan justamente bajo la superficie de la piel. Por la distribución anatómica de la red de vasos linfáticos podemos lograr un transporte de linfa que va desde distal a proximal, de superficial a profundo y viceversa, concepto esencial al momento de considerar las técnicas de tratamiento conservador [1,2,3].

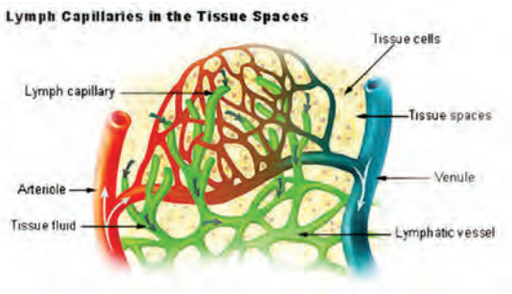

Figura 2:Vasos linfáticos

Como parte integral del Sistema Linfático están los nódulos linfáticos los cuales se encuentran organizados en grupos o cadenas. El primer nódulo de este grupo es el que denominamos el nódulo centinela [21] (Figura 3). La linfa del tejido mamario drena en la cadena de nódulos linfáticos de la región axilar y puede llevar consigo células cancerosas. Como práctica médicamente aceptable en el pasado, los cirujanos removían gran parte de los nódulos de la región axilar, lo que se conoce como disección de nódulos linfáticos axilares. Al presente se favorece el procedimiento de biopsia del nódulo centinela. Con este procedimiento se remueve un número mínimo de nódulos o los que son responsables de drenar la linfa desde la mama. Si los nódulos centinelas están negativos o libres de células cancerosas no es necesario remover otros nódulos [1,2,3].

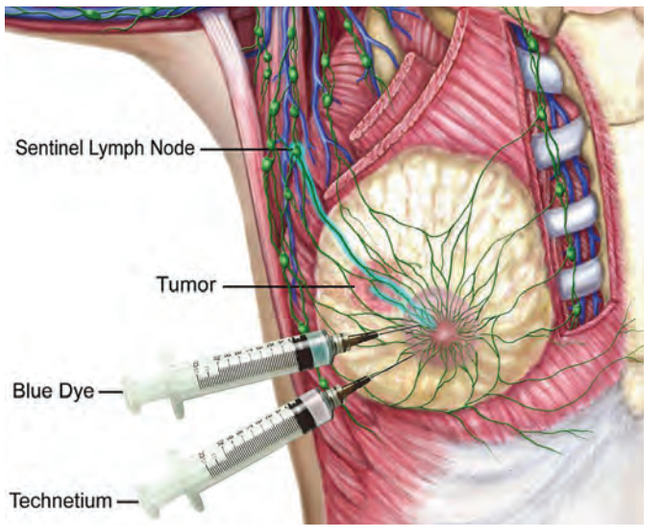

Figura 3: Nódulo centinela

Dependiendo si se realiza solo biopsia de nódulos centinelas o si se considera la disección de nódulos linfáticos axilares, posiblemente se remueven desde 2 hasta 40 nódulos de la región axilar, como resultado el drenaje de la linfa de la región se va a haber interrumpido, y ésta va a tener que buscar rutas alternas para su movilización.

Patofisiológicamente los cambios más comunes que se desarrollan y llevan al estancamiento de la linfa y, como resultado, el linfedema son: dilatación de los colectores linfáticos, daño funcional y morfológico de las células endoteliales de los vasos, esclerosis de los colectores linfáticos, reducción de células de músculo liso de las paredes de los vasos linfáticos, y migración de leucocitos polimorfonucleares y un proceso inflamatorio secundario [10,12,13,15].

DIAGNÓSTICO

Definición:

Linfedema es la acumulación en el espacio intersticial o tejido subcutáneo de un fluido rico en proteínas el cual causa una inflamación crónica y una fibrosis reactiva de los tejidos afectados [1,2,3,4,15].

Factores de riesgo más comunes [1,2,3,12]:

Separación de suturas luego de cirugía, infección de la herida quirúrgica, desarrollo de ceroma, obesidad, mujeres de edad avanzada, el proceso de ofrecer terapia física muy intensa y en una etapa muy temprana, radioterapia, cirugía reconstructiva del seno, el número de nódulos axilares removidos, y cáncer que se ha extendido a los nódulos linfáticos.

Incidencia:

Entre los factores de mayor incidencia está la mastectomía radical más radioterapia, incluyendo el área axilar con un 44.4%, la mastectomía radical modificada más radioterapia con un 28.9% y la mastectomía radical sin radioterapia para un 22.3%. La menor incidencia se encontró en el grupo donde se le conservaba el seno y no recibían radioterapia [18,21].

Clasificación:

Grados de severidad por circunferencia de la extremidad [1,2,3,13,5]:

- **Grado 1:** aumento en la circunferencia de la extremidad no más de 3 cm. que la extremidad opuesta. Una extremidad levemente edematosa.
- **Grado 2:** es más grande que la extremidad opuesta por 3 a 5 cm. en circunferencia, moderadamente edematosa.
- **Grado 3:** lo que va a crear una diferencia de 5-6 cm. o más entre las extremidades comparadas, severamente edematosa. (Figura 4)

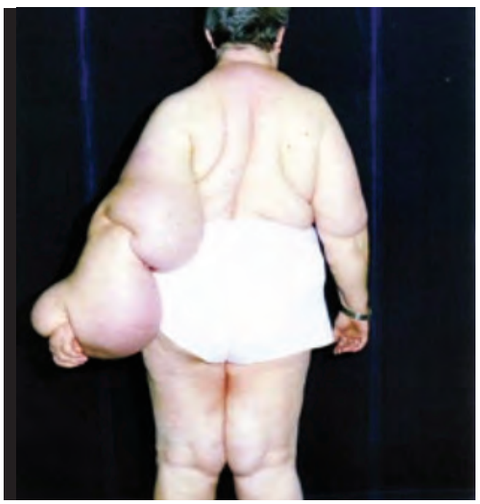

Figura 4: Linfedema Grado 3

Estadios de Linfedema, Brunner y Foldi, Sociedad Internacional de Linfología [1,2,3,13,15].

- **Estadio 0:** no puede ser detectado clínicamente, solo por medio de un examen microscópico o un mapa linfático manual.
- **Estadio I:** espontáneo e hinchazón reversible del tejido blando. Se puede deprimir fácilmente el tejido cuando se presiona sobre el área edematosa y no se observa alteración de la estructura de la piel, "Stemmer sign" puede ser negativo o dudoso positivo, regresión del edema con la elevación de la extremidad.
- **Estadio II:** espontáneo, irreversible, no ocurre regresión del edema con elevación de la extremidad, surgen cambios a nivel de la piel y fibrosis, tanto de piel como tejido subcutáneo, por lo tanto, no podemos lograr que se produzca indentación con la depresión local, "Stemmer Sign" es positivo.
- **Estadio III:** cambios fibróticos marcados a severo del tejido subcutáneo y cambios escleróticos, presencia de papilomas y la evidencia de hiperqueratosis. (Figura 5)

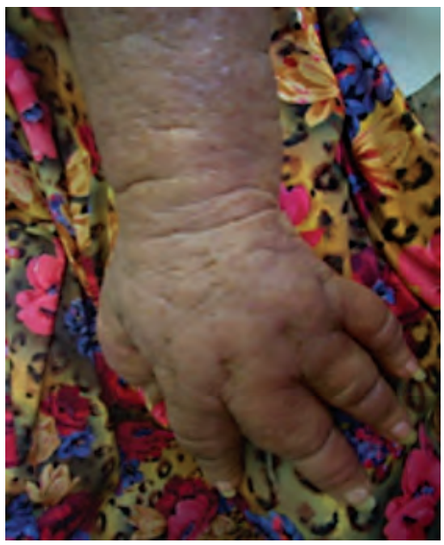

Figura 5: Linfedema Estadio III

Componentes esenciales del Procedimiento Diagnóstico [10,11,12,14]:

- Historial comprensivo de la condición.
- Examen físico: inspección, palpación y medidas de volumen de la extremidad.
- Estudios de imágenes: linfoscintografía (la principal prueba no invasiva para la evaluación de linfedema de cualquier causa), ultrasonido, tomografía computarizada, resonancia magnética y la espectroscopia de bio-impedancia.

Complicaciones: Infecciones como celulitis, linfangitis; Linforrea; Dolor por compresión a nervio y fibrosis; Pérdida de función de la extremidad por la hinchazón y los cambios tisulares; Depresión, Trombosis Venosa Profunda, Cáncer Linfático: ejemplo-Linfangiosarcoma-Stewart-Treves Syndrome [12].

Prevención: Cuatro categorías de intervenciones en prevención de linfedema se mencionan repetidamente en la literatura de cáncer de mama: evitar traumas o lesiones en la extremidad, evitar infecciones, evitar vestimenta restrictiva, y uso excesivo y ejercicios extremos de la extremidad [9,21]. Sin embargo, no hay evidencia científica que haya demostrado que alguna de estas estrategias es más efectiva que otra, o más aún, que éstas sean efectivas como medidas preventivas. Como medidas nuevas de prevención se recomienda lo que se conoce como "reverse arm mapping", donde se define mejor la función de los nódulos linfáticos en la axila. También como técnica quirúrgica de prevención de linfedema para pacientes de alto riesgo es la posible conexión de los vasos linfáticos colectores grandes a una rama de la vena axilar, los cuales fueron previamente identificados. De esta manera, se intenta restablecer el flujo de la linfa y reducir significativamente el riesgo de desarrollar linfedema [12].

TRATAMIENTO:

El tratamiento médico conservador de linfedema tiene como meta el eliminar el estancamiento del fluido proteico y restaurar la circulación linfática dentro de los parámetros de lo más normal posible [6,15]. El tratamiento a ofrecerse debe comenzar tan pronto como sea posible antes de que se desarrollen los cambios fibroescleróticos irreversibles en el espacio intersticial [9,15]. Es importante enfatizar en el paciente el hecho de que es esencial el cumplimiento estricto del protocolo de tratamiento que se le ofrece, y que el tratamiento es para toda la vida. La mayoría de los pacientes que son responsables con el cumplimiento del tratamiento pueden ser tratados con las medidas conservadoras de forma exitosa.

El tratamiento médico conservador recomendado para el manejo de linfedema incluye los siguientes componentes: cuidado de la piel, programa de ejercicios individualizado, evaluación y tratamiento nutricional para mantener un peso adecuado, drenaje linfático descongestivo manual (MLD), mangas o medias de compresión, bomba neumática intermitente para terapia de compresión (individualizar su indicación), y terapia farmacológica [6,9,10,13,19].

El drenaje linfático manual se recomienda como parte de la terapia completa descongestiva, pero también puede ser utilizado en combinación con otros tratamientos [10,12]. En nuestro análisis de la literatura comprobamos que no se ha probado con certeza la efectividad del drenaje linfático manual, pero sí han podido demostrar que la terapia completa descongestiva es efectiva y esta incluye el drenaje linfático manual [6,11,16,17,20]). En el caso de las mangas de compresión, los estudios de investigación no evidencian la efectividad del uso aislado de estas para el manejo de linfedema, pero sí como un componente del conjunto de tratamiento [6,17]) (Figura 6). Por otro lado, la bomba neumática intermitente para terapia de compresión se consideró el pilar en el tratamiento de linfedema antes del advenimiento de la terapia descongestiva, pero al presente no se recomienda como alternativa aislada de tratamiento en linfedema [6,10,13]. Otras técnicas noveles que se han estudiado recientemente para el manejo de linfedema son la aplicación de kinesio-tape y la terapia de laser de bajo-nivel la cual fue aprobada por FDA para el tratamiento de linfedema [8].

Figura 6: Linfedema Estadio III

El ejercicio es un componente esencial del plan de tratamiento de los pacientes con linfedema. En un momento dado del desarrollo de programas de tratamiento para linfedema en cáncer de mama, a las pacientes se les recomendaba evitar ejercitar la extremidad afectada, por el posible riesgo de empeorar la condición de linfedema [5,7]. Los estudios de investigación actualizados han demostrado que si las pacientes comienzan ejercicios lentos del brazo, sin sobre estirarlo, estos no empeoran la condición. Algunos estudios sugieren que pueden hasta reducir la re-activación de la condición [7].

En la terapia farmacológica para linfedema se han estudiado los diuréticos y los benzopirenos. Aunque los diuréticos son de utilidad en reducir ciertos tipos de edema en el cuerpo, estos no tienen efectividad en el exceso de linfa en las áreas afectadas. En el caso de los benzopirenos, los estudios clínicos no han confirmado su beneficio, mientras que demostraron que pueden causar problemas hepáticos.

Algunos estudios han evaluado la efectividad de ciertas técnicas quirúrgicas en casos de linfedema severos o que no responden a otras técnicas conservadoras. Aunque algunos resultados fueron prometedores, muchos consideran que estas técnicas quirúrgicas están todavía en etapa

experimental y no están extensamente disponibles. Entre los procedimientos quirúrgicos recomendados se encuentran: anastomosis de nódulo linfático-vasos linfáticos-vena, trasplante de nódulos linfáticos vascularizados y vasos linfáticos, liposucción, remoción de nódulos linfáticos fibróticos, y remoción de tejido redundante luego de drenaje linfático manual con reducción de volumen [10,11].

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Prevención de Infecciones en Reemplazo de Articulaciones

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SUMMARY

The incidence of hip and knee replacement surgery has increased substantially in the last forty years. Patient satisfaction rate is between 90-95 percent. The risk of complications is very low and deep infection is one of them. It is the number one cause of hospital readmission in the first postoperative month. Prevention is the alternative to diminish the number of this dreaded complication. To optimize the hospital environment and patient general health prior to surgical intervention are key to lower the infection rate. This approach may help to increase the success of those procedures that are life changing for the proper candidates.

RESUMEN

Las cirugías de reemplazo de articulaciones de extremidad inferior han aumentado dramáticamente en los últimos cuarenta años. El éxito de estos procedimientos es incuestionable e incluye un 90-95% de satisfacción en los pacientes. Estos procedimientos no están exentos de complicaciones. De éstas, aunque infrecuente (1-1.5%), las infecciones profundas son la causa número uno de readmisión al hospital en los primeros treinta días. La prevención es la alternativa para enfrentar el problema de las infecciones en el campo de las artroplastias. El optimizar el ambiente hospitalario y la salud del paciente previo a su intervención quirúrgica son los puntos clave y modificables en el reto de disminuir su incidencia. Este enfoque preventivo puede abonar más al éxito de estos procedimientos que tienen la capacidad de cambiar positivamente la calidad de vida de los pacientes.

Keywords: prevención, infecciones, artoplatia, factores de riesgo, ambiente hospitalario

La incidencia de reemplazo de articulaciones de extremidad inferior ha aumentado dramáticamente en los últimos cuarenta años en los Estados Unidos. La cirugía de reemplazo de cadera se ha triplicado (300,000 anuales) y la de rodilla es siete veces mayor (600,000 anuales). El éxito de estos procedimientos es incuestionable e incluye un 90-95 % de satisfacción en los pacientes. Esto ha llevado a estos procedimientos a convertirse en una de las cirugías más exitosas de la medicina como lo calificó el diario New York Times en años recientes.

El éxito de estos procedimientos no está exento de complicaciones. De éstas, aunque infrecuente (1-1.5%), las infecciones profundas son la causa número uno de readmisión al hospital en los primeros treinta días. La razón de readmisión en los primeros treinta días luego del alta se ha convertido en un indicador de calidad de cuidado médico importante en nuestros tiempos. El alto costo que implican estas admisiones tempranas ha llevado al CMS (Center for Medicare and Medicaid Services) a penalizar a los hospitales con una tasa alta de éstas.

La prevención es la alternativa para enfrentar el problema de las infecciones en el campo de las artroplastías. El optimizar el ambiente hospitalario y la salud del paciente previo a su intervención quirúrgica son los puntos claves y modificables en el reto de disminuir estas complicaciones.

LA SALUD DEL PACIENTE

La diabetes, que, por su alta incidencia se califica en los Estados Unidos como una epidemia, en Puerto Rico es aún mayor, con una prevalencia de hasta 12.8% en el año 2010. La isla lidera a todos los estados en este renglón. Los diabéticos tienen un riesgo de 2.8 veces mayor de infección en cirugía de reemplazo que la población general.

La hemoglobina glicosilada es un marcador de control a largo plazo de la glucosa en sangre y toma tres meses para

cambiar. Su valor ideal es menor de siete y su alteración aumenta el riesgo de complicaciones perioperatorias. Este valor debe ser utilizado como guía, y su elevación no implica que la cirugía tenga que ser pospuesta. En el período postoperatorio, donde el estrés quirúrgico antagoniza la insulina, es importante mantener el valor de la glucosa en sangre entre 90-125 g/dl.

La epidemia de la obesidad a nivel mundial la ha convertido en la preocupación más importante de los sistemas de salud. Además, usualmente va acompañada de otras comorbilidades. En nuestro campo, ante el hecho de ser un factor de riesgo para el desarrollo de enfermedad degenerativa articular, es un problema muy común en los candidatos quirúrgicos. El 63% de los puertorriqueños están obesos.

El índice de masa corporal (BMI) es el peso en kilogramos dividido por la estatura en metros cuadrados (kg/m^2). La persona se califica obesa con BMI >30 y es obeso mórbido con BMI>40. Múltiples estudios reportan mayor incidencia de complicaciones en esta población, 6.7 veces mejor en rodilla y 4.2 veces mayor en cadera.

El estratificar la obesidad de acuerdo al BMI refleja un aumento exponencial en la incidencia de complicaciones de hasta un 22% de riesgo mayor de infección con BMI>50. Los obesos mórbidos, a pesar de que presentan mayor incidencia de complicaciones, mejoran significativamente los parámetros de dolor y de función. En conclusión, a esta población se le debe recomendar bajar peso antes del procedimiento o informarles que aunque hay posibilidad de éxito, presentan un riesgo aumentado de complicaciones que la población general. Con un BMI mayor de cincuenta la cirugía debe ser pospuesta.

Los pacientes con malnutrición presentan cinco a siete veces mayor riesgo de infección que la población general. Entre los sectores de alto riesgo están los envejecientes, los alcohólicos y los pacientes de cáncer. La población obesa puede reflejar malnutrición paradójica. Las pruebas objetivas para su medición son el contaje total de linfocitos (<1500mm/3), la albúmina (<3.5 g/dl) y la transferina (<200mg/dl). En estos grupos de alto riesgo cualquier alteración significativa de estos valores debe incluir una recomendación de evaluación nutricional antes del procedimiento.

La anemia preoperatoria, que puede estar relacionada a la malnutrición, es otro factor de riesgo. La razón principal es porque aumenta la posibilidad de transfusiones de sangre, y por cada unidad de sangre transfundida el riesgo de infección aumenta 9%. Es importante establecer un algoritmo de manejo de la sangre. Esto incluye optimizar la hemoglobina preoperatoria con productos eritropoiéticos, el uso de ácido transhexámico durante la cirugía y ser juicioso a la hora de transfundir a un paciente en el período postoperatorio.

La asociación de infecciones de orina preoperatorias e infecciones quirúrgicas no está clara. Hay que preguntarle al paciente por síntomas y evaluar el urinálisis requerido. La cirugía se debe posponer si el paciente tiene síntomas urinarios junto a un contaje de bacterias > 1 X 10^3 cfu/ml y si existe una obstrucción en la vía urinaria. Bacteriuria (>1 X10^3) sin síntomas o conteo de bacterias < 1 X 10^3 sin síntomas se tratan con antibióticos orales postoperatoios y no deben postergar el procedimiento.

Staphylococcus aureus es el organismo más común asociado a infecciones en la cirugía ortopédica. El 20-30% de la población es portadora de la versión sensitiva a la meticilina y 5% a la resistente (MRSA). Los pacientes que sean portadores de estos organismos deben recibir por cinco días antes de la cirugía muporicina intranasal al 2% y baños de cuerpo de clorhexidina. Este protocolo ha sido exitoso en la erradicación de estas bacterias.

EL AMBIENTE HOSPITALARIO

El ambiente en la sala de operaciones requiere medidas estrictas y protocolares cuando se realizan artroplastías. La mayor fuente de bacterias son las personas, por tanto, hay que limitar el número de personas en el quirófano, así como su entrada y salida.

Los antibióticos preoperatorios deben ser administrados no más de una hora previo a la incisión. Las cefalosporinas de primera generación son las recomendadas porque tienen actividad en contra de los estafilococos, una media vida larga y buena penetración al tejido. A los pacientes con peso mayor de 80 kg se le debe dar 2 gramos. En caso de que el tiempo quirúrgico sea extenso y el sangrado sea más de lo esperado, se debe redosificar. La vancomicina se debe utilizar en casos selectos y no como agente único. Este agente tiene baja penetración de tejido, tiempo largo de infusión y pobres propiedades en contra de los estafilococos.

La preparación de la extremidad debe incluir soluciones con base de alcohol y cubiertas adhesivas con iodo. El cirujano debe utilizar doble guante y, aunque la evidencia es conflictiva, es altamente recomendado el uso de trajes de tipo espacial. Las soluciones de betadina (17.5ml/100ml) y de clorhexidina luego de la implantación de la prótesis han demostrado reducciones significativas de infecciones profundas.

En resumen, el optimizar los factores de riesgo modificables en los pacientes candidatos a cirugía reconstructiva ortopédica puede abonar más al éxito de estos procedimientos que tienen la capacidad de cambiar positivamente la calidad de vida de éstos.

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Acromioclavicular Joint Dislocation and its Treatment

Francisco J. Otero López, MD, FAAOS

RESUMEN

Avances en el tratamiento de las patologías encontradas en el hombro han aumentado el interés del ortopeda, especialmente el especialista en medicina deportiva con relación a condiciones de la articulación acromioclavicular. También al aumentar la participación de atletas profesionales y recreativos en actividades deportivas extremas que envuelven el contacto físico y caídas peligrosas, hemos estado tratando más frecuentemente estas lesiones. Históricamente las lesiones de la articulación acromioclavicular han sido manejadas sin necesidad de intervención quirúrgica, pero al estos pacientes desear continuar participando en estas actividades a un nivel competitivo se han desarrollado diferentes maneras de tratamiento. La clasificación de este tipo de lesiones es bien conocida, pero el cirujano debe individualizar de acuerdo a la actividad del paciente y sus expectativas.

ABSTRACT

Advances in the treatment of shoulder pathology have increased the interest of orthopedists, especially sports medicine specialists in relation to acromioclavicular joint conditions. Also, increased participation of professional and recreational athletes in extreme sport activities that require close physical contact and may produce dangerous falls, these lesions are being managed more frequently. Históricamente las lesiones de la articulación acromioclavicular han sido manejadas sin necesidad de intervención quirúrgica, pero al estos pacientes desear continuar participando en estas actividades a un nivel competitivo se han desarrollado diferentes maneras de tratamiento. La clasificación de este tipo de lesiones es bien conocida, pero el cirujano debe individualizar de acuerdo a la actividad del paciente y sus expectativas.

Keywords: Acromioclavicular joint dislocation non operative and operative treatment, arthroscopy, sports medicine, coracoclavicular ligaments, coracoacromial ligament, distal clavicle excision

Advances in the treatment of shoulder pathologies have increased the awareness of the physician and particularly the sports medicine specialist to conditions related to the acromioclavicular joint. Also, with more professional and recreational athletes participating in extreme activities that involve physical contact and dangerous falls, we have been treating more frequently this type of injuries. Historically, the acromioclavicular joint had been treated non-operatively, but since patients with this type of injuries would like to continue to participate at their highest level of achievement, treatment options have been developed. A classification has been well known and tries to guide on our treatment options, but the surgeon has to individualize according to patient activity level and expectations.

Surgical treatments for acromioclavicular joint dislocations type III were started in the mid 1970's. Then during the 1990's non surgical treatment was the mainstay for 72.7% of the patients. Today we are more inclined for a minimal intervention and there is a trend for coracoclavicular (CC) fixation and/or reconstruction. There are approximately 100 procedures described to treat surgically this type of dislocations. Among these are: trans-articular fixation across the joint using pins, screws, tension band wiring, plates; CC fixation with screw or slings; fascial weaves; dynamic muscle transfers and reconstruction using coracoacromial ligament (CAL) with or without distal clavicle excision.

MECHANISM OF INJURY

This type of dislocations occurs mainly after direct blow to the point of the shoulder. They are commonly seen in cyclists, during motor vehicle accidents, especially while driving a motorcycle.

Among athletes there is an incidence of 40-50% injuries located in the shoulder one of them being at the acromioclavicular (AC) joint (9% of all injuries).

HISTORY AND PHYSICAL EXAMINATION

Patient will describe a direct trauma to the shoulder in the majority of the cases. Upon physical examination there will be a gross deformity and sometimes skin tenting. Palpation on the AC and CC will elicit pain. Evaluation of patient motion will provoke pain. There are special test that can be positive with this injury such as Cross arm or O'Brien. The stability of the joint should be assessed as well as the sternoclavicular joint. The neurovascular examination is extremely important since it can be associated with a braquial plexus injury.

CLASSIFICATION

Initially Allman described the dislocation pattern in 1967 and then Rockwood and Young in 1990 classify the AC dislocations in 6 different types, according to structure injured and displacement. The classification at first was according to severity up to type III, then type IV means a posterior displacement, and type VI inferior displacement below the coracoid. (Fig. 1)

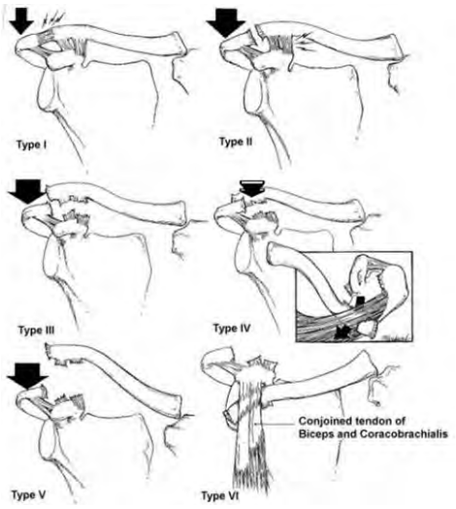


Figure 1

RADIOGRAPHS

For better visualization of the injury and displacement a Zanca view in which the AP is centered at AC joint with 10 degrees of cephalic tilt should be obtained. Radiograph with traction are not needed since it will not change the management.

NON OPERATIVE TREATMENT

Mainly this type of injury is treated non operatively. Type I and II are managed with ice and protection until pain subsides, and this should be between 7 to 10 days. Patients should be able to return to sports within 1 or 2 weeks or as pain allows. There are no benefits with the use of specialized brace. Type III dislocation treatment remains controversial and should be individualized. If non operative treatment is choose it consists the same as type I or II. Operative treatment should be warranted for the throwing athlete or the overhead worker. The predominant reason for persistent pain and disability is inadequate rehabilitation. The rehabilitation should emphasize the following group of muscles: deltoid, trapezius, sternocleidomastoid, subclavius, rotator cuff and periscapular stabilizers.

OPERATIVE TREATMENT

For a type II dislocation that continues with chronic pain a distal clavicle excision and/or reconstruction of CC ligaments may be necessary. Active patient will benefit from surgical treatment as well as patients with type IV to VI dislocation. Among the surgical procedures available are the coracoids process transfer to distal clavicle transfer which is a dynamic muscle transfer, this carries a poor long term outcomes. Primary AC joint fixation, primary CC fixation, coracoacromial (CA) ligament transfer with distal clavicle excision and CC ligament reconstruction are some of the alternatives in treatment, this latter can be done open versus arthroscopic. The arthroscopic primary CC repair versus reconstruction is the preferred method for treating this type of patient that needs surgical management. If primary AC joint fixation is selected it should be known that some of the problems are pin migration and plate removal. Primary CC fixation can be achieved with screw or with sutures or wires. For some time the weaver dunn procedure, that consist in a CA ligament transfer to distal clavicle with modifications such as distal clavicle excision and CC ligaments repaired or augmented, was the most common treatment for this type of patients.

REHABILITATION

After primary CC fixation patient should remain on a sling and cold therapy for 2 weeks, then passive range of motion and active range of motion below shoulder level can be started. After 2-3 months, the screw is removed (if used) and full active and passive range of motion is allowed. If reconstruction is performed with autogenous or allograft ligament, patient can start Codman exercise at 2 weeks, light activities of daily living at 4 weeks, at 8 weeks passive range of motion and active range of motion and then light resistance at 3 months. Patients should be able to return to play if full range of motion and strength as compared to the contra lateral side is achieved.

COMPLICATIONS

If non operative treatment is selected patient can develop late AC arthrosis, persistent instability and distal clavicle osteolysis. Also complications can occur with surgical treatment, but this depends on the elected technique. There can be hardware failure and migration with resultant injury to the great vessels, aseptic foreign body reaction and infection, fracture of the coracoid or clavicle, brachial plexus and/or axillary artery, which lies medial to the coracoid can occur. Patient can complain of persistent pain. Sometimes recurrent instability or loss of fixation is observed.

OUTCOMES

Glick treated 35 patients with unreduced AC dislocations type III that were professional and competitive recreational athletes and found that none were disabled, none had pain after a supervised rehabilitation program. Cadaveric studies have been done, one was performed by Thomas, where he did a biomechanical comparison of CC reconstruction technique and found that the anatomic allograft reconstruction had superior biomechanical properties (948+/- 148 Newton). There have been a couple of review articles, one that compared Weaver Dunn that resulted in 90% good to excellent results with 17% recurrent deformity for chronic cases, and Weaver Dunn with AC fixation that had the same results but with slight less recurrence of deformity (15%) that was not significant. Weaver Dunn with CC screw fixation was studied with comparable results. Acute or chronic dislocation had similar results, and there was no effect in the results with retention of the distal clavicle.

SAMPLE CASE

A 17 y/o male had trauma to the right shoulder after falling from a bicycle. Radiographs were taken at the Emergency Room. (Fig. 2) They revealed a type V dislocation. After evaluation that demonstrated gross deformity (Fig. 3) and discussion with the parents, surgery was recommended and they agreed. During the diagnostic arthroscopy there were some fraying of the rotator interval. (Fig. 4) The coracoid process was exposed. (Fig. 5) Fixation to the coracoids was obtained with a cortical button (Fig. 6) with a suture tape thru the coracoid and clavicle and fixed with another cortical button at the clavicle after reduction. The procedure was perform through small incisions and patient healed well. (Fig. 7) At 6 weeks post operatively a follow up radiographs were obtained (Fig. 8) and patient was send to rehabilitation to start passive and active assisted range of motion.

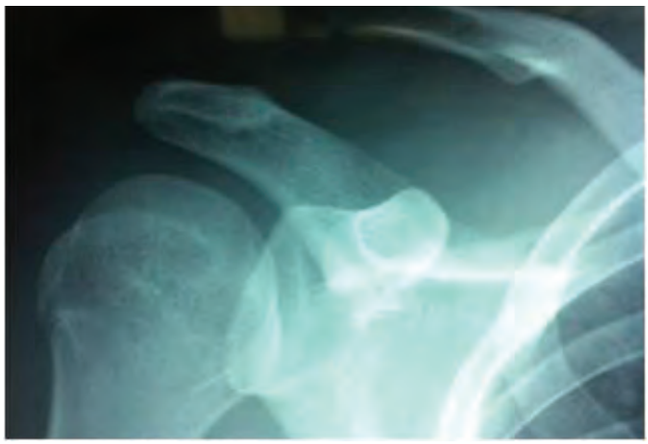


Figure 2

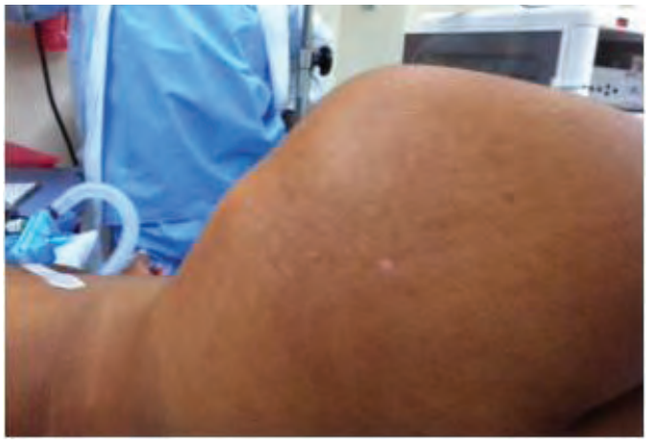
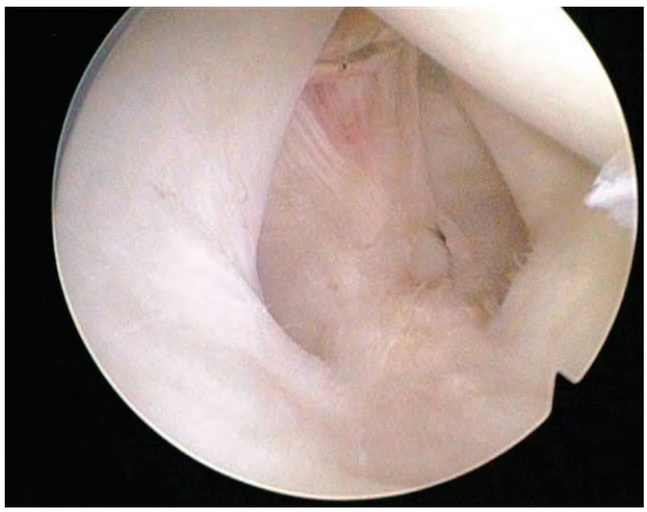


Figure 3



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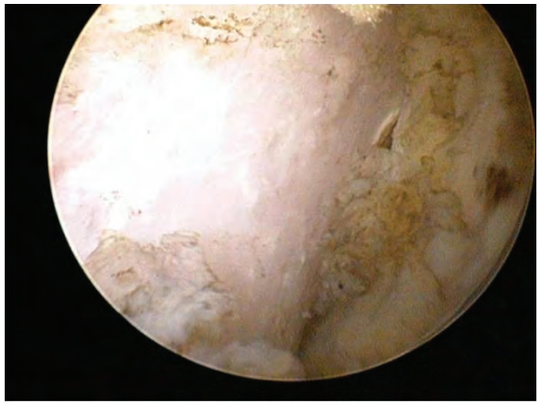

Figure 5

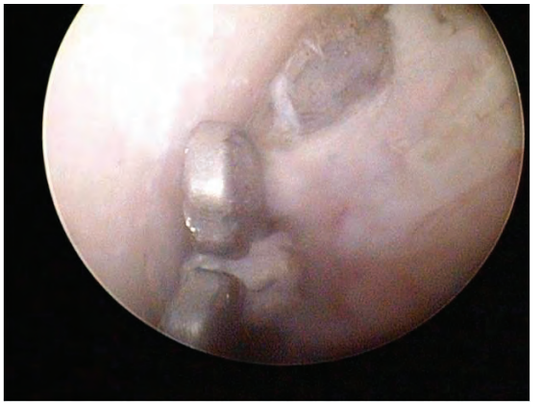

Figure 6

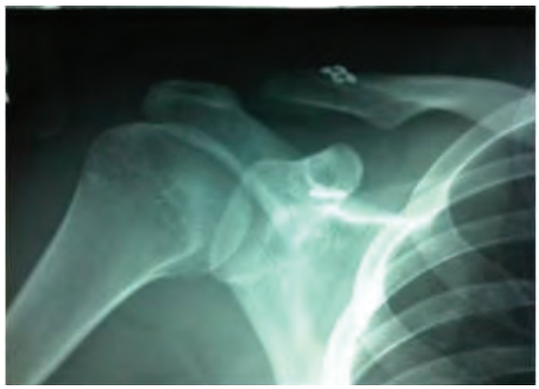

Figure 7

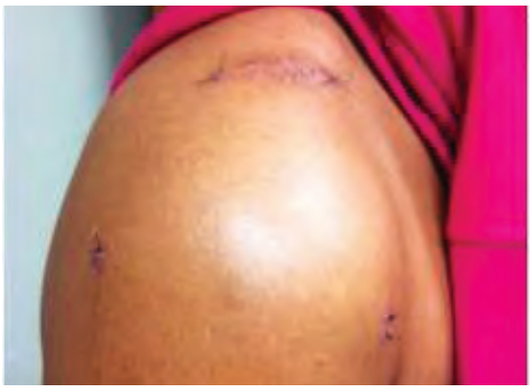

Figure 8

SUMMARY

Type I and II should be treated non surgical and type IV, V and VI surgically. Type III remains unknown, but overhead athletes and heavy laborer may require surgery. Successful outcomes for type III depends on adequate rehabilitation. And there has been a trend recently for coracoclavicular fixation due to advances and successful results.

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Avances Recientes en la Prevención y Manejo de Complicaciones Asociadas con Cirugía Electiva Lumbar

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RESUMEN

Al resumir algunos de estos puntos, hay que tomar en consideración factores como el tiempo de cirugía, el sangrado, y el número de personas dentro de la sala de operaciones, que afectan las tasas de infección. Mientras que es poco probable erradicar completamente el desarrollo de una complicación como esta en la cirugía de espalda, es de suma importancia identificar las causas de estos eventos y manejarlas según van apareciendo. La medicina pasa por una época difícil donde se busca lo más costo-efectivo. La evidencia no es contundente en cuanto a estas prácticas, que probablemente han prevenido muchas complicaciones, pero lo mejor es individualizar al paciente y establecer como cirujano lo que hay que tomar en cuenta en cada caso para lograrlo.

SUMMARY

When summarizing some of these aspects, you have to take into consideration factors such as surgical time, estimated blood loss, and operative room transit, which affect the infection rate. Even though eradicating complications in spine surgery can be a tough task, it is of the utmost importance to identify the causes of these events promptly, and manage them. Medicine is currently in a difficult era, and we are looking for the most cost-effective solution. The evidence is not convincing with these practices, that have probably prevented many complications, but the best alternative is to individualize the patient and establish for you, as a surgeon, what you have to take into account in a particular case in order to achieve it.

Keywords: Lumbar, Infección, Disquitis, Factores Preoperatorios, Malnutrición

Anualmente, se realizan sobre 448,000 procedimientos quirúrgicos en el área de la columna vertebral en los Estados Unidos[1]. Se han reportado una tasa de complicaciones entre un 4% y un 19%[2]. Entre las más comunes, se encuentran las infecciones del área de la herida quirúrgica, hemorragia y/o eventos tromboembólicos.

La prevención de infección es un tema de suma importancia para todos los cirujanos de columna. Recientemente el enfoque se ha dirigido a la erradicación de la flora bacteriana normal de la piel antes de un procedimiento, la descolonización de la flora nasal, aplicación de antibióticos tópicos, manejo de equipo estéril y nutrición preoperatoria. Esta revisión de la literatura gira en torno a evidencia reciente sobre la identificación y prevención de estas complicaciones comunes, específicamente, las infecciones.

INFECCIÓN DE ÁREA QUIRÚRGICA

Se estima que de los 27,000,000 de operaciones que se realizan anualmente en los Estados Unidos aproximadamente un 22% se infectan[1]. Además de las comorbilidades del paciente, hay factores preoperatorios, intraoperatorios y postoperatorios que aumentan el riesgo. Las Infecciones son complicaciones costosas que afectan tanto directa como indirectamente a la clase médica y a las instituciones hospitalarias.

Reconocer una infección es de suma importancia para establecer un plan de tratamiento. Sin embargo, no hay rasgos o síntomas típicos, por lo tanto se requiere una alta sospecha de parte del clínico, evaluando hallazgos radiológicos, de laboratorio y síntomas, para llegar a un diagnóstico.

La presentación clínica más común es aumento del dolor luego de una cirugía después de un periodo de alivio del

dolor esperado, usualmente de 2 a 3 semanas desde que se operó. Es un dolor descrito como profundo, que puede o no, estar asociado a síntomas sistémicos de fiebre o escalofríos. En segundo lugar, dolor fuera de proporción a lo esperado siempre debe ser considerado un hallazgo importante. Tercero, cambios neurológicos nuevos asociados a cualquiera de los síntomas anteriormente mencionados es una clave para el diagnóstico de una infección. Por último, al examinar la herida quirúrgica se pueden apreciar cambios inflamatorios a lo largo del margen de la incisión, inflamación o dolor acompañado de drenaje seroso o purulento. Sin embargo, una herida con una apariencia indolente no descarta la posibilidad de un proceso infeccioso.

La medida de los indicadores de infección en sangre es un excelente método confirmatorio. Luego de una cirugía, la elevación del conteo de neutrófilos y la disminución de linfocitos es proporcional a la intervención quirúrgica, que se llevó a cabo, y sus valores retornan a la normalidad entre cuatro a veinte días luego del procedimiento. Takahasi et al, mostraron que una linfopenia persistente era evidente en pacientes operados de fusión lumbar con instrumentación que presentaban con infección en el área quirúrgica[3]. Entre otros valores, la Proteína Reactiva C (CRP) y la Tasa de Sedimentación de Eritrocitos (ESR) reflejan el grado de inflamación y daño quirúrgico. El CRP es más confiable y predecible ya que posee una media vida de 2.6 días[4]. Basado en esto, es razonable esperar que este valor se halla normalizado entre una y dos semanas luego del procedimiento índice a diferencia del ESR que se puede mantener elevado. Por lo tanto un valor de CRP que se haya mantenido elevado más allá de dos semanas debe alertar que hay un proceso infeccioso ocurriendo, aunque los hallazgos clínicos no apunten a esto.

Finalmente, los hallazgos radiológicos van retrasados luego de la clínica y los laboratorios. Las radiografías pueden presentar una perdida temprana de la fijación de la instrumentación dentro del pedículo de la vértebra o colapso de espacio en el disco vertebral. Mientras que la Resonancia Magnética puede mostrar más detalle en la anatomía ósea y los tejidos blandos, sus resultados se deben interpretar cuidadosamente ya que los hallazgos patológicos son similares a los esperados luego de una cirugía. Hallazgos incluyen colecciones de fluidos, abscesos epidurales y aumento en el espacio del disco intervertebral (ver figura 1-A y 1-B). Otros estudios como la Tomografía Computarizada pueden mostrar hallazgos limitados y a su vez riesgo de radiación.

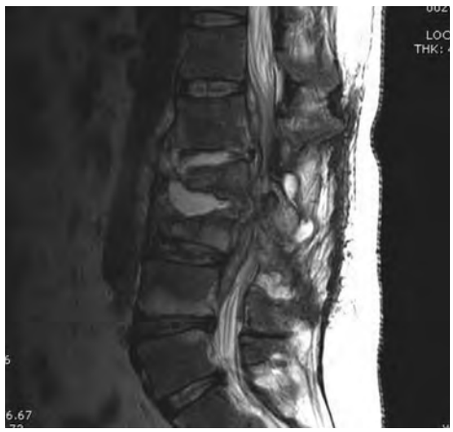

Figura 1-A. Resonancia Magnética T2 del área lumbar, confirmando la presencia de aumento en señal entre los discos intervertebrales L1-L2 y L2-L3 así como erosión de los cuerpos vertebrales consistente con Disquitis.

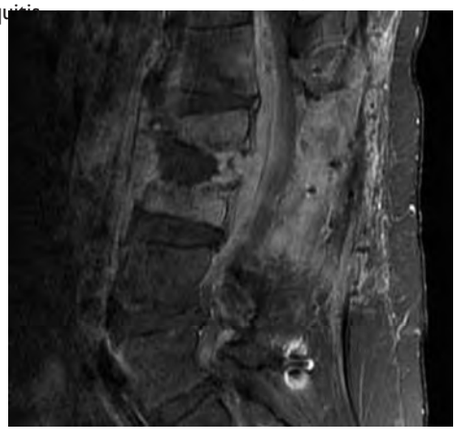

Figura 1-B. Vista T1 con contraste de gadolinio captando un aumento en señal en los cuerpos vertebrales así como intensidad en el canal espinal consistente con osteomielitis y formación de absceso epidural.

FACTORES PREOPERATORIOS

En primer lugar, el estado nutricional de un paciente antes de una operación está ligado a los riesgos de una infección. Pacientes malnutridos están en un estado de inmunosupresión, lo que conlleva una predisposición para un pobre sanado de las heridas y, por lo tanto un mayor riesgo de presentar un cuadro infeccioso. En la evaluación, deben estar incluidos los niveles de pre albumina, albumina y linfocitos totales. Específicamente, un valor de albumina <3.5g/dL y linfocitos totales <1500-2000 células/mm^3 implican un estado de malnutrición en el paciente[5]. Por otro lado, el manejo de la glucosa es de suma importancia para garantizar mayor éxito en un procedimiento. Los niveles de glucosa en sangre responden a la tensión de una cirugía o lesión. Una diabetes sin diagnosticar o pobremente controlada predispone a su vez a una infección. Valores de glucosa en sangre entre 90-130mg/dL en ayuna y valores de Hemoglobina Glucosilada <7% son los deseados para prevención[6,7,8.] De no ser así, se debe atrasar el

procedimiento. En estos casos es recomendable tener un manejo multidisciplinario para optimizar al paciente previo al procedimiento. La evidencia sobre el tratamiento a su vez es débil ya que solo son estudios de nivel de evidencia III y IV.

En segundo lugar, la descolonización de bacterias nasales es otro factor de prevención, que está descrito en la literatura. La prevalencia de portadores de Staphylococcus Aureus resistente a la Meticilina (MRSA) es de un 33%. La habilidad para detectar su presencia con técnicas de replicación permite saber en 2 minutos si el paciente es un portador. Si es así, el tratamiento consiste en utilizar un antimicrobial tópico (Mupirocin) por 5 días. La erradicación de esta flora microbiana disminuye el riesgo de infección postoperatoria de acuerdo a estudios multicéntricos realizados[10]. Aun así, la recomendación es débil porque los estudios son retrospectivos calificados como nivel de evidencia III.

Por último, el control infeccioso en grupos hospitalarios y en cirujanos puede bajar la tasa de infecciones postoperatorias[11]. La preparación de implantes de columna requiere una atención especial ya que trabaja con tejidos duraderos como el hueso, anulo fibroso y ligamentos. Estos materiales son difíciles de remover de instrumentos, especialmente cuando se han secado luego de una cirugía. En muchos casos las bandejas pasan por un proceso de limpieza en trasferencia de un hospital a otro, pero este evento no está estandarizado. Bandejas han sido encontradas con restos biológicos, aun después de haber sido lavadas[12]. Implementando un tiempo de 48 horas para poder inspeccionar las bandejas es recomendado en la institución, además de educar al personal sobre el lavado intraoperatorio y postoperatorio de los instrumentos. Por la misma parte, no se deben utilizar ciclos de esterilización rápida y los implantes que se van a quedar dentro del paciente deben estar empaquetados y esterilizados desde la fabricación así asegurando un control de calidad. Las bandejas pesadas (>15lb) a su vez deben tener protección en las esquinas para evitar roturas durante la movilización. En cuanto a la evidencia, los estudios son sobre epidemias y brotes bacterianos que han ocurrido y no poseen una evidencia contundente sobre los métodos que se deben utilizar, por lo tanto es una evidencia en consenso basado en experiencias previas.

FACTORES INTRAOPERATORIOS

El día que va un paciente al quirófano existen una serie de riesgos para los que se pueden tomar medidas en la batalla contra las infecciones. Primero que todo, es de suma importancia la profilaxis de antibióticos y su administración optima con más de una hora antes de comenzar el procedimiento. Si no cumple con esta guía o se administra luego de haber comenzado el procedimiento se califica como una administración subóptima y aumenta el riesgo de infección por 3.4 veces[13]. La recomendación es de una Cefalosporina 1-2 gramos si no hay alergia a la penicilina. Los estudios en este campo califican la evidencia como moderada con la mayoría de ellos siendo nivel II.

Por otra parte, la descolonización en la piel antes de un procedimiento va en acorde con erradicar la flora microbiana no específica y se ha convertido en el estándar de tratamiento en preparación para una cirugía. Por mucho tiempo se han utilizado soluciones de yodo con eficacia variable, pero se ha encontrado que soluciones antisépticas como las de 2% clorhexidina con 70% de alcohol isopropilico (ChoraPrep) y 0.7% yodo con 74% de alcohol isopropilico (DuraPrep), que han salido recientemente, disminuyen el riesgo de infección postoperatoria a la mitad en comparación con las soluciones de yodo[14]. A su vez, luego del lavado, el uso de toallas adhesivas con o sin yodo impregnado no hacen diferencia en cuanto a la tasa de infección en comparación con no usarlas[15]. El nivel de evidencia es de moderado a fuerte donde la mayoría de los estudios consisten en nivel I y II.

Otras de las medidas de prevención es la irrigación con yodo diluido al 3.5% antes de cerrar una herida, lo cual recomendamos. Es una medida de bajo costo, simple, particularmente si ocurre algún tipo de contaminación inadvertida durante el procedimiento[16]. En este caso es una evidencia moderada nivel II.

Uno de los temas más recientes, es el uso de antibióticos en polvo directamente en la herida antes de cerrar. Usualmente se utiliza 1-2 gramos de Vancomicina. Dada la absorción baja de este antibiótico, el efecto sistémico es excepcionalmente bajo y no ha mostrado evidencia de toxicidad local, como complicaciones de herida[17]. Este método, de acuerdo a estudios realizados, ha bajado la tasa de infección de un 2.6% a un 0.2% hasta tanto como un 13%[17,18]. La evidencia en este campo es nivel III debido a la ausencia de estudios prospectivos y/o randomizados lo que la califica como una recomendación débil por el momento ya que hay muchos estudios en proceso.

Por último, el uso de drenajes en la herida está asociado a infección luego de 48 horas. Es luego de este periodo de tiempo donde se duplica la tasa de infección según 2 estudios nivel III. Por lo tanto no se debe dejar un drenaje más allá de ese tiempo. La recomendación es débil basado en el nivel de evidencia.

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ENTREVISTA
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¿Por qué la educación ha sido mi norte desde mi niñez? Eso quizás es fácil de contestar, ya que me crie y desarrollé en una familia donde un porciento muy alto de ellos se dedicaron a la educación tanto primaria, secundaria y universitaria. Recuerdo a mi abuela materna, la cual fue maestra en una escuela rural de primero a sexto grado, enseñarle a cada uno de sus nietos a leer y escribir antes de entrar a la escuela primaria. Mi tío paterno el cual fue principal de una escuela rural primaria e intermedia, solía decirme "Elenita, podrás haberte graduado con honores de la Escuela Superior del pueblo, pero no cursaste estudios en mi escuela, la Universidad de Palmarejo", como el solía llamar a su escuela. Esto demuestra ese compromiso y orgullo de estos educadores, que aun con las limitaciones existentes de la época, daban el todo por el todo para educar a su pueblo. Son experiencias vividas y de aprendizaje que te marcan para toda la vida y que mejor que estos ejemplos para seguir.

Comencé estudios en la Universidad de Puerto Rico con la meta de estudiar Arquitectura. Si así es, en ese momento no pensaba estudiar medicina, no tenía a nadie a mí alrededor que me inspirara o fuera mi mentor para inclinarme por la medicina. Mi padre era un arquitecto innato, aunque nunca tuvo estudios formales en arquitectura. Tenía un talento natural para la pintura y el diseño, y no cabe más que decir que mi padre fue uno de mis modelos. Por falta de una buena orientación en la Escuela Pública, de un pueblo del centro de la isla donde me crie y eduqué, desconocía que para entrar a la escuela de Arquitectura había que solicitar desde la escuela superior y entrar al programa desde el primer año. Quiero mencionar que aunque la orientación para seguir carreras universitarias no fue la mejor en mi escuela, sí la educación fue integral y de excelencia. Se nos enfatizó mucho en la lectura, análisis crítico, en las ciencias y matemáticas lograron programas avanzados, hasta participamos en cursos de arte como teatro, música y literatura avanzada. Esto era el resultado de maestros comprometidos verdaderamente con la enseñanza sin importar a muchos de ellos cuál sería su ingreso o beneficios al final de su jornada. Estos maestros también fueron mis modelos de compromiso y amor por la educación.

Comencé la Universidad de Puerto Rico en un programa general de honor donde tuve la grandiosa experiencia de poder desarrollar mucho más allá el amor por la lectura y el análisis crítico, gracias a muchos profesores comprometidos con la verdadera educación universitaria. Logré transferirme al programa de Bachillerato en Ciencias Generales, Colegio de Ciencias Naturales, el cual finalicé en tres años y medio graduándome *Magna Cum Laude*. Uno de mis mentores en esa etapa de mi vida, me orientó sobre la posibilidad de que continuara estudios en medicina, la cual comencé a considerar más detenidamente como una posibilidad. Nunca olvidé mi amor por la educación por lo cual todas mis electivas para completar mi bachillerato las tomé en el Colegio de Educación. Aunque tengo que mencionar, en este momento, que en mi tercer año de la universidad me casé y tuve que examinar desde otra perspectiva mi futuro inmediato. Se podrán imaginar cual fue mi decisión en esos momentos, pues si, decidí dedicarme a la enseñanza en un Colegio Católico Privado, donde comienzo a impartir clases de ciencias, matemáticas, y aunque ustedes no lo crean me asignaron a dar una clase de Historia de Puerto Rico, por la simple razón que yo era puertorriqueña. No se pueden imaginar todo lo que tuve que estudiar para poder enseñar a mis pupilos sobre Historia de Puerto Rico. Yo siempre hago

el recuento de que cuando yo estudiaba en la escuela superior teníamos como requisito en un año escolar, dos semestres de Historia de los Estados Unidos, pero un solo semestre de Historia de Puerto Rico, o sea, terminábamos conociendo mejor la Historia de Estados Unidos que los propios ciudadanos de ese país y desprovistos de un conocimiento verdadero de nuestra historia.

Estos tropiezos en esa etapa inicial de convertirme en educadora me llevaron a pensar en la alternativa, que quizás le había dado una pausa, de continuar estudios conducentes al grado de doctor en medicina. Luego de dos años dando clases a nivel de escuela intermedia comienzo en la Escuela de Medicina, Universidad de Puerto Rico. Cabe señalar que cuando comienzo mis estudios ya era madre de una preciosa niña de dos años y medio, y mi primer hijo de 6 meses de edad. En mi tercer año, primer año clínico, en la Escuela de Medicina tuve mi tercer hijo. No fue fácil todo este proceso de estudios y desarrollo profesional teniendo una familia con tres niños entre las edades de 6, 4, y 2 años, pero pude contar con el apoyo incondicional de mi esposo lo cual me permitió terminar sin muchos tropiezos mis estudios de medicina y el programa de residencia en Medicina Física y Rehabilitación en la Universidad de Puerto Rico. Dos años más tarde, luego de terminado mi programa de residencia, tengo a mi cuarto y último hijo.

Un mes antes de finalizar mi programa de residencia el Dr. Rafael Berríos-Martínez, me llama a su oficina para dialogar conmigo y me ofrece una plaza de Instructora en la Sección de Medicina Física y Rehabilitación, Escuela de Medicina, UPR. No se pueden imaginar mi reacción de orgullo, satisfacción y el sentirme honrada de que me consideraran formar parte de la facultad de la Escuela de Medicina, UPR, mi alma mater. Me convertiría en educadora a nivel post-grado como siempre lo había soñado. Fue tanta mi sorpresa y alegría que ni siquiera le pregunté al Dr. Berrios-Martínez cual sería mi ingreso en esa posición. Varios años más tarde recibo un cheque de la quincena con una cantidad mucho mayor de lo acostumbrado, por lo cual la secretaria del departamento se comunica con recursos humanos preguntando porque el error en la emisión del cheque. La contestación fue que no era un error, todo lo contrario, era que se estaba corrigiendo un error de varios años donde se me estaba pagando menos de lo que correspondía a la plaza que yo ocupaba. Pero como ya expresé, lo importante para mí en aquel momento fue el poder formar parte de la Facultad de la Escuela de Medicina y ser partícipe de la educación de una gran fracción de los médicos de nuestro país. Desde mis comienzos como Profesora de la Escuela de Medicina mis responsabilidades han sido las siguientes, entre otras: coordinar los cursos y programas en Medicina Física y Rehabilitación a los estudiantes de medicina-UPR y de otras escuelas tanto en Puerto Rico, como a estudiantes visitantes de escuelas de medicina de otros países, coordinar el programa académico y clínico de la Residencia en Medicina Física y Rehabilitación, directora del programa de residencia desde el 2010, desarrollo de cursos de educación continua en Fisiatría para el departamento y la comunidad en general, ofrecer conferencias y talleres en el campo de Medicina Física y Rehabilitación en Puerto Rico y otros países, miembro activo del Comité de Propuesta de Desarrollo del Departamento de Medicina Física, Rehabilitación y Salud Deportiva, Escuela de Medicina, UPR, miembro del Comité de Educación Médica Graduada, y Comité de Educación Médica Continua de la Escuela de Medicina, UPR. Pero yo considero que uno de mis grandes logros en la educación ha sido el poder ser partícipe del desarrollo académico y profesional de mis tres hijos cuando cursaban estudios en la Escuela de Medicina, UPR, logrando los tres obtener un grado de doctor en medicina y una especialidad en Cirugía Ortopédica, y teniendo el orgullo que mis dos hijos mayores son actualmente mis compañeros en la Facultad de la Escuela de Medicina. Como una nota jocosa, mis hijos recuerdan cuando eran pequeños, que en muchas ocasiones cuando no tenían tareas asignadas en la escuela nos dedicábamos a estudiar de mis libros la anatomía musculoesqueletal en lugar de estar viendo televisión o con los video-juegos, por lo cual podríamos pensar que posiblemente de ahí surge su interés en la medicina y la ortopedia.

Fuera del ámbito de la Escuela de Medicina he mantenido el entusiasmo de poder educar a nuestros colegas y la comunidad en general, a través de diferentes medios y alternativas de educación, tratando de llegar a la mayor parte de ellos y no solo limitándonos a los estudiantes de medicina dentro de un anfiteatro o experiencias clínicas. Siendo parte de la Junta de Directores de COSVI, desarrollamos un programa de radio, en la estación que se conocía como la Gran Cadena, para educación a la comunidad en general sobre diferentes asuntos de especialidades médicas, donde se invitaban a médicos prominentes de la comunidad académica a discutir tópicos de su especialidad, en el cual yo participaba como moderadora.

Cuando comienzo como miembro de la Junta del Instituto de Educación Medica Continua, CMCPR,

logramos ofrecer cápsulas de orientación sobre salud en la estación Radio Oro a las 7:00 AM todos los miércoles, de forma gratuita y sin ningún costo para el CMCPR. Más adelante fui electa a la Presidencia del IEMC-CMCPR, y junto a los miembros de la Junta del IEMC logramos darle un gran giro al diseño curricular de la Convención Anual del CMCPR: programa científico basado en evidencia, múltiples actividades simultáneas donde se impactaban a mucho más médicos generalistas y especialistas, foros para presentación de trabajos científicos de la comunidad médica en general, y conferencias magistrales sobre asuntos de salud pública. Desde la Presidencia del CMCPR con la Dra. Marisel Velázquez, se estableció la meta de lograr para el IEMC-CMCPR la acreditación por ACCME. Gracias al gran esfuerzo y trabajo de la Dra. Felicita Gotay se logró a través de la Asociación Médica de Puerto Rico una acreditación provisional por ACCME. Antes de retomar la presidencia del IEMC y con el esfuerzo de algunos miembros de la Junta del IEMC y el apoyo de la Presidenta del CMCPR, Dra. Alicia Feliberty, logramos la máxima acreditación que ofrece ACCME a proveedor alguno en educación médica continua. También nos enfocamos en lograr que se reconociera por los organismos reguladores a la Acupuntura Médica, como lo que es, un componente esencial de la medicina alterna y complementaria basada en evidencia y como herramienta para el manejo de condiciones médicas. Proveer un curso con un diseño curricular como se desarrollan en las Escuelas de Medicina, con una facultad de gran experiencia y expertos en el campo de la acupuntura, sistemas de avalúo basado en competencias y al finalizar el curso el estudiante pueda ser candidato a tomar el *American Board of Medical Acupuncture*. Ofreciendo a nuestro pueblo médicos competentes y adiestrados en la acupuntura médica y no personas con cursos por correspondencias o de pobre diseño curricular que ponen en descrédito el verdadero valor científico de la acupuntura como herramienta de manejo médico.

En conclusión, puedo entender que gracias al modelaje y ejemplo de mi familia, maestros y verdaderos educadores, mis hijos, mis estudiantes y residentes, y compañeros médicos es que he mantenido ese entusiasmo, interés y compromiso con la educación médica, y no me cabe la menor duda que mi norte seguirá siendo la educación.

The American College of Physicians

VP#12

LOWER GI BLEEDING ASSOCIATED WITH AORTIC STENOSIS

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Lower GI bleeding associated with Aortic stenosis Dr. Víctor Ortiz Rodríguez, PGY-2, Internal Medicine Program, Mayagüez Medical Center, Ponce School of medicine consortium lower gastrointestinal bleeding due to angiodysplasia in a small number of cases (0.9-1.5%), is associated with aortic stenosis. This association is called Heyde's syndrome. It is an important cause of unexplained gastrointestinal bleeding and anemia. A 72 y/o male patient who came to the ER due to bleeding per rectum. Patient informed us that he started noticing episodic small amount of fresh red blood in stools since four months ago. In that month patient was diagnosed with severe aortic stenosis for which he had an aortic valve replacement surgery. Since before and after surgery patient has been presenting these symptoms, but in the last week, bleeding during defecation has been present daily and was described as large amounts of bright red blood and clots with bowel movements. Patient also complained of constipation, with bowel movements every other day since few months ago. Patient visit his primary physicians who send him to the ER after CBC was done. He denied dizziness, chest pain, and shortness of breath, nausea, palpitations, abdominal or rectal pain. Patient only complained of generalize malaise and weakness that was interfering with his normal daily activities. Vital signs showed high blood pressure. Physical Examination showed pale skin, loud Aortic ejection click and systolic cardiac murmur, non-tender or distended abdomen, rectal exam showed external hemorrhoids non thrombosis, brown color of stools. Labs were normal except CBC that showed Hemoglobin of 10.4 and Hematocrit of 32. EKG showed left axis deviation, poor R wave progression and low voltage. A colonoscopy was made to find out possible cause of lower gastrointestinal bleeding that revealed multiple angioectasias and arteriovenous malformation of colon and rectum. Argon Plasma Coagulation was suggested to treat these lesions. Patient Hemoglobin remained stable during hospitalization and patient had no other complication after procedure. Heyde's syndrome is usually present in patients over 65 y/o, diagnosed with aortic valve disease or has undergone aortic valve replacement which is used to correct the bleeding associated to the arteriovenous malformation in patients with aortic stenosis. Although this case could not be corrected by surgery, we could recognize an uncommon cause of lower gastrointestinal bleeding in patients with aortic valve disease.

VP#13

A RARE TUMOR IN AN UNUSUAL SITE

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Introduction: Inflammatory myofibroblastic tumor (IMT) is a rare benign tumor with unclear pathogenesis. It is considered a strange benign pseudotumor lesion of admixed inflammatory infiltrates with myofibroblastic spindle cells and plasma cells proliferation. IMT can be seen in the lung, but it can occur in various organs, including the pancreas, a site not typically found. Case presentation: 68 year old male with past medical history of type 2 diabetes mellitus, hypertensive vascular disease, benign prostatic hypertrophy and chronic smoker for 25 years, quitting 20 years ago, who was on his usual state of health, until he began complaining of an intermittent, 5/10 of intensity, pressure-like abdominal pain without irradiation, lasting two weeks. Associated symptoms were nausea, anorexia, fever, chills, mild shortness of breath, general malaise and weight loss, night sweats and diaphoresis. Pain episodes increased in frequency and decided to go to his primary care physician (PCP). Blood tests were ordered and pain medication given. Went back to his PCP with hyperglycemia, and leukocytosis and decided to admit him with the diagnosis of bronchopneumonia and diabetic ketoacidosis. During the hospital stay, he was treated for these conditions, but he continued with fever and moderate abdominal pain for which an abdominal sonogram was performed and results came normal. Chest CT scan ordered for follow up on his atypical lung complains, reported emphysema changes. Incidentally, marked pancreatic calcifications were seen in the head of pancreas, suggestive of chronic

pancreatitis and suspected pancreatic cancer. Due to these findings the gastroenterologist services ordered an MRCP, which showed small focal areas of abnormal signal intensity throughout the liver suggestive of benign small simple cyst. Also, an EGD was performed, showing a large tumor in the second portion of the duodenum most likely pancreatic origin and a fistula-like structure actively draining purulent secretion. As part of diagnostic studies due to these finding mentioned previously, an abdominal CT scan was performed, reporting chronic pancreatitis with superimposed acute pancreatitis and a focal cystic mass at pancreatic head measuring 3.5cm with a distended gallbladder and severe duodenitis. Surgical service was consulted, where they performed a gastrojejunostomy and cholecystojejunostomy with a Roux-en-Y loop. Pancreatic biopsy was taken, where pathology report showed inflammatory myofibroblastic tumor. Discussion: Twenty-five cases of pancreatic IMT were reported in the English language scientific literature. Common presenting clinical symptoms are abdominal pain, a palpable abdominal mass, weight loss and anemia. As mentioned previously some of these symptoms were observed in our patient. IMT was most commonly mistaken for a pancreatic cancer clinically and radiologically, and its definitive diagnosis was made only by histologic examination which shows a myofibroblastic proliferation and a varying degree of inflammatory infiltrates consisting mainly of lymphocytes, plasma cells and histiocytes, like our patient.

VP#14

A HEART BREAKING STORM

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Case of a 33 y/o female patient G0 without previous history of systemic illness, no known allergies or toxic habits, that was in usual state of health until August 2008 who presented, after computer tomography with IV contrast was performed, worsening tremors, palpitations, sweaty hands and anxiety; requiring hospitalization. De novo hyperthyroidism complicated by thyroid storm was diagnosed. Afterwards patient was lost to follow up due to poor medical compliance. Three years later patient presented for evaluation at outpatient clinics with menstrual irregularities, dysphagia, irritability, hair loss and muscle cramps. Laboratory results were remarkable for suppressed thyroid stimulating hormone level with elevated triiodothyronine and thyroxine levels. Thyroid scan at that time revealed increased homogenous uptake without focal defects consistent with diffuse toxic goiter. Radioactive Iodine Uptake was increased at 74.8%. Thyroid Ultrasound showed markedly enlarged thyroid gland with diffuse hypoechoic and echogenic strands with associated hypervascularity, without evidence of nodularity. Patient was then started on antithyroid medications and beta-blockers, and was further sent for definitive therapy with radioiodine ablation therapy. She was again lost to follow up, but presented months later complaining of shortness of breath and worsening dyspnea, requiring several visits to emergency departments and admission where a diagnosis of congestive heart failure was done. Right and left heart catheterization showed normal coronary vasculature, but decreased systolic function and high cardiac output with pulmonary artery hypertension (MAP >25 mmHg, EF 44%). Subsequently patient suffered decompensation of heart disease, requiring another hospital stay. Throughout the course of illness, uncontrolled thyroid condition persisted and further attempts for radioablation therapy were interrupted. 2D echocardiogram showed global hypokinesia, moderate left ventricular and bilateral atrial enlargement with mitral, tricuspid and pulmonary valve regurgitation with elevated pulmonary artery pressure (EF 40%, a wave present). In absence of ischemic heart disease or other precipitating risk factors patient was diagnosed with Thyrotoxic Heart Failure. In recent years the relationship between the thyroid and the cardiovascular system has been increasingly documented. Moreover, although atrial fibrillation is the most common recognized cardiac disturbance, overt cardiac failure can occur, characterized by concomitant pulmonary hypertension. This clinical presentation is uncommon with prevalence estimate less than 2% in USA. Clinicians should keep in mind these cardiac manifestations when reevaluating a patient with history of hyperthyroidism and symptoms suggestive of heart disease, because it has been described that the restoration of the euthyroid state leads to the reversal of the cardiac dysfunction.

VP#15

SEPTICEMIA AND MENINGOENCEPHALITIS DUE TO PASTEURELLA MULTOCIDA

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We present a 56-year-old female referring three days of general malaise, sore throat, fever and cough. On the day of admission, she presented hallucinations, aberrant behavior, and confusion. She was found febrile, disoriented, with

neck rigidity, and unstable gait. A presumptive diagnosis of sepsis with encephalitis and meningitis was made. A head CT showed ethmoidal, sphenoidal, and maxillary sinusitis. Blood, urine and CSF samples were taken for viral, bacterial and fungal agent's investigation. Treatment with ceftriaxone, ampicillin, vancomycin, acyclovir and dexamethasone was started. Blood work showed leukocytosis with left shift, glycemia 180 mg/dL, ammonia <1 umol/L. CSF study resulted in glucose of 24 mg/dL, total protein of 514 mg/dL, leukocytes of 8900 per mm3 with 99% PMN, and gram stain was negative. The hypothesis of bacterial meningitis was favored. Acyclovir was discontinued. On day two, fever remitted and gait stability improved. Additional CSF laboratory work demonstrated negative serological tests for Hemophilus influenzae, Streptococcus pneumoniae, Streptococcus group B, Neisseria meningitides and cryptococcus antigens. On third day, blood and CSF cultures resulted with growth of Pasteurella multocida. Vancomycin and dexamethasone were discontinued. At reinterview, the family informed that the patient was licked regularly by the pet dog on her face and mouth. By day four, the patient was oriented and coherent, but she still had slow and unbalanced gait. On the fifth day, a brain MRI showed pansinusitis and associated right otomastoiditis plus a minute acute infarct in the left posterior area of the parietal lobe of the brain. She complained of moderate headache on right side of the head with associated photophobia. Clinically the patient had no focal neurological deficit and no papilledema. At day eight, patient had ear stuffiness, neck pain and right frontal headache associated to photophobia. This presentation was similar to episodes of migraine she had before the present illness. Gait balance and writing were greatly improved. She received loratadine, paracetamol/butalbital with favorable response. The patient was discharged home after two weeks in the hospital. She completed three weeks of ceftriaxone and ampicillin at home. Control head CT was normal. This is a case of bacterial meningitis with an infrequent etiology, Pasteurella multocida, a normally inhabitant of the dog mouth. The case illustrates the ability of these bacteria to reach CNS through inflamed mucosal surfaces. The germ may have reached the CNS via paranasal sinuses-ethmoid cribiform plate route; and/or via pharynx-ear-mastoid. The case illustrates the severity of the infection evidenced as septicemia and meningoencephalitis with focal cerebral infarction probably due to vasculitis. For comparative analysis, we reviewed the reports of Pasteurella multocida infection available on medical databases.

VP#16

WHEN IT STROKES YOU!

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Case of a 33 year old female with history of Attention Deficit Hyperactivity Disorder and migraines that complained for two weeks of intractable headaches and left neck pain. Two days prior to admission the patient suddenly lost speech, then consciousness. She was taken to the emergency room where head CT scan, brain and neck MRA showed ischemic cerebrovascular accident due to thrombosis of the left internal carotid artery and left middle cerebral artery. The patient was then transferred to the Internal Medicine service of the University District Hospital for further evaluation. The patient's medical history was only remarkable for smoking, a past history of injected contraceptives and the current use of Ritalin and Strattera. The patient's mother denied any knowledge of recent trauma, previous episodes of arterial or venous thrombosis and any family history of rheumatoid or hypercoagulable diseases. Upon evaluation the patient presented with aphasia, dysphagia, right side nasolabial flattening, hemiplegia and hemianesthesia. Follow up head CT scan showed ischemic cerebrovascular accident with associated edema causing left to right midline shifting. Neurology service was consulted and recommended the administration of mannitol as anti-edema measures and aspirin 325mg daily. EKG had normal sinus rhythm and was unremarkable for acute or subacute ischemic changes. 2d echocardiogram was performed and showed no valvular or functional abnormalities with an estimated ejection fraction of 65 %. Carotid Doppler showed left internal carotid occlusion. Neurosurgery service was consulted and recommended a four vessel angiography to determine percentage of artery occlusion. Angiography revealed complete occlusion of left internal carotid artery all through the left middle cerebral artery; it also revealed a left internal carotid dissection. Due to complete occlusion of artery, the patient was not a candidate for surgery. Anticoagulation was continued with aspirin 325mg daily. Hematology service evaluated case and recommended hypercoagulable state laboratory workup which was performed and results for all tests were negative. Physical Medicine was consulted and recommended inpatient rehabilitation for the patient. The patient was discharged from internal medicine ward and transferred to an inpatient rehabilitation facility. Annual incidence rates for aortic strokes in adults younger than 45 years old ranges from 3.4 to 11.3 per 100,000 people per year and as high as 22.8/100,000 in black populations. The most

common causes and risk factors for aortic stroke in young adults tend be congenital or acquired cardiac abnormalities, valvulopathies, hypercoagulable hematological states, pregnancy, smoking, hypertension, arthrosclerosis, drugs and migraines. Strokes caused by spontaneous dissection are rare but occur at any age. Treatment for ischemic strokes due to dissection is still controversial due to the lack of randomized controlled trials. At the moment there is no evidence that favors anticoagulation versus antiplatelet therapy.

VP#17

THE DRESS IN MY SKIN

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Case of a 55 year old woman with history of Alzheimer's disease that presents with one month history of generalized pruritic erythematous macules and plaques that progressively worsened with associated unquantified fever. Hands and soles were affected but mucosal areas spared. The patient was initially evaluated by primary physician who diagnosed scabies and prescribed permethrin cream. After one application of permethrin the patient's skin lesions persisted and developed exfoliative dermatitis. The patient had no history of allergies or adverse reaction to medication. The patient's family denied recent illness or vaccination, bulla, vesicles or cyanosis, nausea, vomiting, decreased appetite, abdominal pain, hypoactivity, cough, or shortness of breath. One month ago primary physician discontinued Risperdal and prescribed Lamictal for agitation. Laboratories were remarkable for marked eosinophila and transaminitis. Suspected offending agent, Lamictal was discontinued, intravenous steroids and supportive management including aggressive hydration and high caloric intake was started. Dermatology service performed skin biopsy which showed a predominance of eosinophils. Once the offending agent and steroids were started serum eosinophils and liver enzymes showed a decreasing trend and after 4 days eosinophils were within normal limits. Clinically the patient's skin was less erythematous and pruritic, but macules and plaques persisted. After serum liver enzymes returned to normal limits the patient was discharged with oral steroids for 2 months and with outpatient follow up at Dermatology clinics. Drug-induced hypersensitivity syndrome or most commonly called drug rash with eosinophilia and systemic symptoms (DRESS) is a severe adverse drug reaction mediated by T cells. It usually presents with rash, fever, lymphadenopathy, eosinophilia, and organ damage such as liver, kidney, heart and lungs. Drugs commonly known to cause DRESS are sulfazalazine, NSAIDS, minocycline, allopurinol, abacavir and antiepileptic's (including carbamazepine, phenytoin and lamotrigine). Treatment consist of discontinuation of suspected offending agent in this case lamotrigine and supportive management. Steroid use is still controversial due to its immunosuppressive effects, but it is known to inhibit IL-5 on eosinophils accumulation and thus preventing further eosinophilic infiltration to organs.

VP#18

SYSTEMIC TUBERCULOSIS WITH RETROPERITONEAL PRESENTATION WITHOUT PULMONARY SYMPTOMS

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Tuberculous Lymphadenitis is among the most frequent presentations of extrapulmonary tuberculosis (approximately 40% of extrapulmonary cases). Isolated peripheral tuberculous lymphadenopathy is usually due to reactivation of disease at a site seeded hematogenously during primary TB infection. HIV has been associated with increased incidence of extrapulmonary TB cases. A 40 year old woman with hypothyroidism, polymyalgia rheumatica, fibromyalgia and osteoarthritis. Referred previous exposure to patient with active TB. Was evaluated at ER with an acute onset, abdominal pain, radiated to the back, sharp, constant, 10/10 in intensity, presenting partial relief by lying down, and worsened by movement. Abdominal pain was accompanied by nausea and emesis of green-yellow color, without blood, presenting approximately 7-8 episodes. Also with diarrhea of two days of evolution, non-bloody, mucoid, and non-malodorous. She denied any pulmonary symptoms. No lymph nodes were palpable during physical examination. Presented with 19 pounds weight loss in one month, and continued presenting loose stools with diffuse abdominal discomfort. Was followed as outpatient. Chest X ray with clear lungs, no infiltrates, masses, pleural or mediastinal processes. Stool studies negative. Nonreactive VDRL. HIV test negative. Endoscopy showed small hiatal hernia. Colonoscopy showed small edema and congestion with small lymphoid aggregates. Abdomino pelvic CT scan with IV contrast showed peripancreatic and celiac axis lymphadenopathy with consideration of metastatic disease. Quantiferon TB gold positive. Peripancreatic core needle biopsy showed lymphoid tissue, fibrosis and granuloma formation with central necrosis. Immunohistochemistry

analysis showed findings compatible with lymphoid hyperplasia. Another case of a 70 year old male with previous exposure to tuberculosis, presented with dysphagia and weight loss, no pulmonary symptoms presented no palpable adenopathies upon physical exam. Work up performed showed chest CT scan with multiple nodular densities representing adenopathies in thoracic, mediastinal and mesenteric regions suggestive of malignancy. Pet scan showed diffuse hypermetabolic lymphadenopathy with suspicious of lymphoma. Upper endoscopy and colonoscopy were negative for malignancy. Celiac and subcarinal mass FNA showed necrotizing granulomatous inflammation. Quantiferon TB gold was positive. These two patients presented with extrapulmonary TB as tuberculous lymphadenitis. Both cases were confirmed by lymph node biopsy and Quantiferon TB gold test positive, indicating the presence of infection by Mycobacterium Tuberculosis. This cases illustrate how extrapulmonary TB is more common than expected in non HIV patients, presenting as a primary infection and not secondary to reactivation of disease as it usually occurs. Extrapulmonary tuberculosis must be part of the differential diagnosis in patients presenting with systemic symptoms, weight loss and peripheral lymphadenopathy. History taking is an important part of the process at the moment of thinking in risk factors for development of this condition.

VP#19

POSTPARTUM HEMORRAGE AS A PRESENTATION OF ACQUIRED HEMOPHILIA, A MANAGEMENT AND DIAGNOSTIC CHALLENGE

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Acquired Hemophilia, due to Factor VIII inhibitors, is a rare bleeding diathesis caused by autoantibodies directed against clotting factor VIII and associated with an increased morbidity and mortality, presenting with catastrophic bleeding episodes, despite having no prior history of a bleeding disorder. It is most commonly found in the elderly and may be associated with several underlying pathologies. The postpartum state is one of the more frequent settings in which acquired hemophilia occurs. A 24-year-old woman G3P3A0 admitted because of profuse postpartum vaginal bleeding, that began one week after an uncomplicated delivery. An initial assessment of retained placental tissue was performed and D&C was performed. Patient was discharged, but returned to the hospital with profuse vaginal bleeding, hemoglobin of 5.0 g/dL, prolonged PPT and normal platelet count. Review of her past medical history showed no known medical illness, no bleeding during prior deliveries or surgical procedure.Her family history was unremarkable. Gynecological examination showed blood clots in the vaginal canal, a closed cervix without any lesions, a movable, anteverted, nontender uterus of 14-16 cm with nonpalpable, non-tender adnexa. Within the first 24 hours 3 units of PRBC were transfused raising her hemoglobin level to 9.2 g/dL. However, her hemoglobin drops to 5.7 g/dL. The bilirubin levels, liver enzymes and platelet count were normal. Coagulation studies showed a prolonged PTT of 49.5 seconds and a normal fibrinogen. Mixing study showed an initial correction of PTT at 30 minutes; however, further incubation during 120 minutes revealed no correction of the PTT. Factor VIII levels were found in 8% (Normal: 60-150%), and inhibitor against Factor VIII were 4.5 BU (Normal: < 0.4 BU). A diagnosis of acquired Factor VIII inhibitors was done. Initially, cryoprecipitate and FFP, were given, but then she was started on activated prothrombin complex concentrate (FEIBA®), 3,900 U IV every 12 hours and prednisone 1mg/kg. The vaginal bleeding improves for 5 days, but then started with bleeding with a rise in the Factor VIII inhibitor levels to 7.2 BU. Rituximab 375 mg/m2 x 2 was given without improvement in bleeding and levels further increased to 11 Bu, therefore it was discontinued. Patient developed hypovolemic shock requiring vasopressors. Uterine embolization with subsequent total abdominal hysterectomy was performed. Cyclophosphamide (100 mg) was added to prednisone. Subsequently the bleeding was controlled, and the inhibitor decreased to 1.4 Bu while the FVIII levels increased. She was discharged. Repeated studies showed a Factor VIII inhibitor level of 0 and the FVIII levels of 109%. Prednisone and cyclophosphamide was tapered and then discontinued. This case illustrates the high morbidity and potential mortality of this condition as well as the challenge in management.

VP#20

AUTOIMMUNE PANCREATITIS: AN UNUSUAL CAUSE OF RECURRENT JAUNDICE AND BILIARY STRICTURE RESPONSIVE TO MEDICAL THERAPY

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Autoimmune pancreatitis (AIP) is a rare disorder of presumed autoimmune etiology that is associated with characteristic

clinical, histologic, and morphologic findings. We report a case of a 58-year-old female who presented with a three-month history of painless jaundice, 30-pound weight loss, and generalized pruritus. She had no comorbidities, was not taking any medications, and denied tobacco use or significant alcohol intake. Physical exam revealed scleral icterus and jaundice, an enlarged, nontender left submandibular node, and an enlarged, painless gallbladder. Lab studies revealed an elevated bilirubin and alkaline phosphatase level, 3.4 mg/dL and 1,722 U/L, respectively. CA 19-9 was mildly elevated at 52 U/ml. CT scan showed subcarinal and paraaortic lymph nodes, intra- and extra-hepatic duct dilation, pancreatic duct dilation and enlargement of the pancreatic head. A biopsy was performed of the submandibular node, which revealed reactive follicular hyperplasia without evidence of lymphoma. ERCP identified a distal biliary stricture for which a stent was placed. Endoscopic ultrasound (EUS) revealed a dilated pancreatic duct and a focal homogenous area in the pancreatic head, suspicious for a mass. EUS-guided fine-needle aspiration (FNA) was performed and revealed normal acinar and ductal cells. Serum IgG4 levels were checked and were found to be markedly elevated, consistent with AIP. Prednisone was started and two weeks later ERCP was repeated. Previously placed biliary stent had spontaneously passed and biliary stricture resolved. CT scan revealed resolution of the pancreatic head enlargement and a pancreatic duct of normal diameter. Four months after tapering off from steroids, patient's jaundice recurred. Lab studies reported a bilirubin level of 17 mg/dL. Abdominal sonogram revealed biliary duct dilation. Recurrence of her distal biliary stricture was identified on ERCP and stent was placed. Along with steroids, patient was started on azathioprine. Patient's jaundice resolved, stent was removed, and steroids were successfully tapered off. She remains stable without evidence of disease recurrence at approximately 1-year follow-up. This case highlights the complexity of determining the exact etiology of biliary strictures. AIP is a rare entity with specific histopathologic features and an excellent response to steroids. An important aspect to consider is distinguishing AIP from pancreatic cancer. Proper diagnosis and response to medical therapy can prevent disease progression and avoid complications associated with surgery.

VP#21

ACUTE MOTOR AXONAL NEUROPATHY: A PUERTO RICAN PRESENTATION OF CHINESE PARALYTIC SYNDROME

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Acute Motor Axonal Neuropathy (AMAN) is a rare variant of Guillain Barré Syndrome more common in children and in Japan, China, Mexico and third world countries. It was described by Feasby and colleagues in 1986 and termed the Chinese Paralytic Syndrome prior to its discovery in other populations. AMAN constitutes 5%-10% of GBS presentations in Western countries and is characterized by motor nerve fiber degeneration with sparing of sensory fibers. Most cases have antecedent infection with Campylobacter jejuni and many have antibodies directed toward GM1 ganglioside-like epitopes, but the mechanism of nerve fiber injury has not been defined. The characteristic electrophysiological features of acute motor axonal neuropathy are reduced amplitude or absence of distal compound muscle action potentials indicating axonal degeneration. We present this rare presentation of Guillain Barré Syndrome in a 65 year old male with no recent history of travel. A 65 year old male presented to our institution with complaints of progressive weakness that began bilaterally in his lower extremities and progressed in a matter of 48 hours to include his upper extremities as well. Weakness was initially distal but subsequently progressed to include proximal extremity weakness as well. There was no involvement of respiratory muscles and history revealed a preceding non-specific gastroenteritis episode one week prior to the development of current symptoms. Physical examination revealed increased lower extremity deep tendon reflexes, decreased strength 3/5 in all extremities and decreased temperature and vibratory sensation in the lower extremities. MRI of the spine ruled out our initial suspicion of transverse myelitis, brain MRI ruled out multiple sclerosis, HIV was negative and HgBA1C, TSH, B-12 levels, urine arsenic levels and serum electrolytes were all found to be within reference intervals. IgG titers for CMV and EBV were positive, C. Jejuni titers results were in the equivocal range and GM ganglioside titers are currently pending. Spinal tap performed one day after admission revealed glucose at 95mg/dL, protein at 41mg/dL, albumin at 23mg/dL, findings which are non-specific. Electromyography revealed an axonal pattern of neuropathy without sensory involvement consistent with AMAN. Treatment with IV immunoglobulins was started and after 5 days of IVIG and physical therapy our patient developed improvement of strength and normalization of lower extremity deep tendon reflexes. This case illustrates the fact that Guillain Barré has various different clinical presentations and hyper-reflexia does not rule it out as a cause of ascending paralysis. One third of patients with the AMAN subtype of Guillain Barré may present with hyper-reflexia. Motor axonal neuropathy must be included in the differential diagnosis in a case presenting with features of Guillain Barré Syndrome and present deep tendon reflexes.

VP#22

WHEN CAVITARY LUNG LESIONS BECOME COMPLICATED

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When Cavitary Lung Lesions become Complicated Juan C. Malpica MD[1], Hiram Maldonado MD[1], Fernando González MD[1], Madeleine Gutierrez MD[1] ,Carolina Collazo MD1, Samuel Valentin MD[2], Rosangela Fernández MD[2], Carmen Ballesté MD[3] [1]Internal Medicine Department, [2]Pulmonary Department, [3]Infectious Disease Service; San Juan City Hospital, San Juan, PR. A 33-year-old female from Dominican Republic presented with shortness of breath, chest tightness and productive cough, with green sputum, of 5 days of evolution. Two weeks prior she had body aches, eye irritation, nasal congestion, fever (39.5°C) and night sweats. At emergency room she had massive hemoptysis. Patient referred these symptoms differed from a previous pulmonary tuberculosis infection, diagnosed and treated in 2003. She has history of second hand smoking and occupational exposure to chlorine products as a housekeeper. Physical examination was remarkable for bibasilar crackles worse on the left side and decreased left upper lobe breath sounds. Laboratory findings were significant for anemia and sed rate of 28. Chest X-ray showed patchy increased density of the left hemithorax with small rounded lesions and chest CT showed numerous parenchymal cavities, a mass like opacity suspicious of a fungus ball and a right apical small cavity with right lower lobe ground glass opacities. Admitting diagnosis required intensive care unit and isolation due to suspected recurrent tuberculosis versus presumptive Aspergilloma. Initial antibiotics were vancomycin, imipenem/cilastatin, azithromycin and voriconazole, no anti-tuberculosis medications were given until initial Bronchioalveolar Lavage (BAL) samples were obtained. She continued in airborne isolation with voriconazole and was started on rifampin, pyrazinamide, ethambutol, and moxifloxacin. BAL and sputum culture results were only positive for Pseudomonas aureginosa 2 samples, with negative AFB smears. Another bronchoscopy was performed to obtain adequate distal BAL samples and had negative AFB smear results and negative specialized stains. Antibiotics for Pseudomona aeruginosa were optimized and anti-Tb medications were discontinued. In view of resolution of her acute infectious process she was safely discharged home with pulmonary follow-up. This is a curious case of a cavitary lung lesion as a residual lung structural damage secondary to Mycobacterium tuberculosis that got infected with Pseudomona aeruginosa, causing her hemoptysis secondary to inflammation and a direct encounter of the capillary bed in cavitations. Management was a challenge in terms of which empiric treatment to start without masquerading important laboratory workup to rule out other infectious processes, such as Mycobacterium tuberculosis infection with a possible multidrug resistant strain. In conclusion, these cavitations were infected with Pseudomona aureginosa, a known cause for necrotizing pneumonia, thus in contrast to most of the literature this patient didn't complete criteria to consider her as immunocompromised and at risk for Pseudomona infection. Primary physicians should ask themselves: May the history of structural damage to the lungs be an equivalent to being immunocompromised?

VP#23

SINUS OF VALSALVA FISTULA IN YOUNG MAN CAMOUFLAGED BY CONGESTIVE HEART FAILURE

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This is a 39-year-old Hispanic man with a history of arterial hypertension diagnosed five years ago and treated with vasotec 20 mg oral daily. The patient has no regular medical follow-up. He is a construction worker and has been a heavy alcohol drinker for the past 20 years. He complained of worsening shortness of breath of one week duration. Initially, the symptoms were exacerbated by mild activity, like walking less than a block, but the day before his admission to the hospital they were present even at rest. He also presented orthopnea, paroxysmal nocturnal dyspnea, and nocturia. Physical examination was significant for bilateral lung basilar crackles, JVD of 7 cm, and holosystolic murmur, which was best heard at the cardiac base. During this admission, the patient was treated with loop diuretics, nitrates, oxygen, and beta blockers. Cardiology service was consulted. A 2D ECHO with color flow was remarkable for an EF of 72%, mild right heart enlargement, and an abnormal left to right shunt: due to rupture of a sinus of valsalva aneurysm. Cardiac catheterization findings were relevant for a fistula from the ascending aorta to right atrium. Amplatzer duct occluder was intended to be placed but the diameter of the fistula was more than 16 mm. As a result, a surgery correction was needed. Sinus of valsalva aneurysm consist of a localized weakness of the wall of the sinus of valsalva that leads to a focal bulging of the coronary sinus which may rupture into the adjacent cardiac chamber,

creating an aortic fistula. This is not the same as the diffuse dilation of all sinuses seen in patients with connective tissue disorders. This type of aneurysm is usually congenital, but may follow or lead to bacterial endocarditis.

VP#24

"EAR PAIN": A NEAR FATAL PRESENTATION

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This is an 82-year-old man with history of chronic lymphocytic leukemia, hypertension and type two diabetes who presented to the emergency department with right ear pain. There were two episodes of pain, one earlier that same day which resolved spontaneously, and the other later in the afternoon which prompted the patient to visit the emergency department. Vital signs and initial physical examination at emergency department (ED) fast track, where initial triage is performed, did not reveal any significant abnormalities. In view of progressively worsening ear pain that radiated down to right neck and axilla, without obvious etiology or signs of acute infectious process, a 12 lead electrocardiogram was done. Electrocardiogram showed a first degree atria-ventricular block as well as prominent ST-segment elevations over leads II, III, aVF, V5 and V6 accompanied by reciprocal changes, compatible with infero-lateral ST-segment elevation myocardial infarction. He was immediately started on double anti-platelet therapy with aspirin, clopidogrel, and a loading dose of heparin was also given intravenously. Patient was taken to cardiac catheterization laboratory for emergent left heart catheterization (LHC) with possible percutaneous coronary intervention (PCI). LHC showed two-vessel coronary artery disease with a 70% and 75% obstruction over mid and distal left anterior descending coronary artery (LAD) respectively and a 100% occlusion of the proximal right coronary artery (RCA). The latter was identified as the culprit lesion. A bare metal stent was placed over proximal RCA and re-perfusion was achieved successfully restoring blood flow within 65 minutes of initial presentation to ED. Eptifibatide as well as bivalirudin were added to medical therapy while at catheterization laboratory. He was transferred to the Coronary Care Unit (CCU) for further monitoring. Cardiac enzymes began to show a decreasing trend which along with cessation of chest pain and a decrease of more than 50% of original ST-segment elevations suggested that adequate reperfusion had occurred. The patient did not experience any major post-PCI complications such as recurrent chest pain, bleeding, pulmonary edema, or lethal arrhythmias. Thus, patient was transferred out of the CCU 72 hours after admission and no complications arose during the rest of stay. He was discharged home five days later with follow up appointment in cardiology clinics as outpatient. Acute chest pain is one of the most common causes of emergency department visits and hospitalizations. Atypical presentations of chest pain are common in the elderly, diabetics, and women. In the Framingham Heart study, nearly 53% of patients with unrecognized myocardial infarction (MI) had a silent infarction, with 47% having some atypical symptoms with a 10-year mortality rate of up to 58%. Efficient triage and medical awareness of possible atypical presentations might have a permanent impact in patient's survival and prognosis.

VP#25

SMOLDERING? "TO EXIST IN A SUPPRESSED STATE"

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Multiple myeloma (MM) is characterized by the neoplastic proliferation of a single clone of plasma cells producing a monoclonal immunoglobulin and/or light chains. MM accounts for approximately 1% of all cancers. The diagnosis of MM is often suspected because of anemia, bone pain, elevated creatinine, hypercalcemia, weight loss, paresthesia, and/or hepatomegaly. Serum protein electrophoresis (SPEP) will demonstrate a localized band in 82% of patients with myeloma and the addition of immunofixation increases the sensitivity to 93%. A 67y/o male with CKD stage 3, hypertension, type 2 diabetes mellitus, CAD with PCI x 2, abdominal aortic aneurysm, and spontaneous right kidney subscapular hematoma 9 months prior to the admission, who was admitted due to worsening creatinine with associated nephrotic range proteinuria (13g/day). He refers unintentional weight loss of 10 pounds in the last year. Physical exam was unremarkable. He was been followed by Hema/Onco service due to "smoldering myeloma" 8 months prior to admission. Multiple SPEP and UPEP (24hour urine collection) were done and were negative. Serum immunofixation was negative. Free serum Kappa was 41,300mg/L, with a Kappa/Lambda ratio of 1,117, and Beta-2-microglobulin of 13mg/L. Bone marrow biopsy showed 12% of plasma cells and was positive for congo red stain. Bone survey was negative for lytic lesions. Abdominal sonogram showed large kidneys and hepatomegaly. Approximately 6% of patients with MM have no M-protein in the serum or urine on immunofixation at the time of

diagnosis. Free light chain (FLC) assays can be used to detect monoclonal protein in the absence of M protein. These patients have oligo-sercretory myeloma, defined as absence of measurable disease in serum or urine by electrophoresis and immunofixation but with a positive FLC assay. Patients who produce excess monoclonal light chains can develop AL amyloidosis in which immunoglobulin fragments deposit in the kidney and other tissues. MM occurs in association with AL amyloidosis in only 10-15% of patients. The fibrils in AL amyloidosis are derived from the variable region of lambda light chains in 75% of cases, and kappa in the remainder. The final diagnosis in our patient was oligo-sercretory myeloma with associated AL amyloidosis secondary to kappa light chains. The identification of a monoclonal light chain is critical to the diagnosis of plasma cell malignancies and a high serum FLC levels is associated with an increased risk of kidney injury. Documentation or strong suspicion of renal deposition of monoclonal light chains requires prompt anti-plasma cell therapy given the rapid progression and irreversible nature of light chain induced kidney injury.

VP#26

AFTER A DECADE IN REMISSION, SARCOIDOSIS STRIKES BACK WITH A HODGKIN MAKEOVER

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A 52 year-old man with hypertension, hypercholesterolemia and Pulmonary Sarcoidosis (PS) in remission presented with complains of low grade fevers, fatigue, weight loss, night sweats and general malaise. PS was diagnosed by lymph node excision ten years prior presentation. At that time, he was provided with eight weeks of corticosteroids that vanished away months of similar symptoms. Chest CT and Gallium scan favored a left lower lobe consolidation vs. primary lung malignancy with possible liver metastasis vs. sarcoid infiltration. Response to empiric antibiotherapy was transient thus, multiple transbronchial biopsies were taken, but only signs of inflammation were noticed. Follow up PET Scan demonstrated interval development of multiple hypermetabolic lesions in the liver and lungs. Laboratories had elevation of acute phase reactants and hepatocellular injury. Due to worsening fatigue, decreased DLCO on pulmonary function tests and sarcoid reactivation high on the differential, corticosteroids were started and patient was scheduled for a lung biopsy. Within four weeks, the lesions were markedly decreased and symptoms improved thus, patient deferred the proposed biopsy. A slow steroid tapering was attempted but had to be aborted due to recurrence of symptoms. Another two months elapsed and patient presented to follow up complaining of fatigue, low grade fevers and RUQ pain with post-prandial nausea and vomiting. Hepatocellular pattern worsened. Abdominal CT with contrast showed further decrease of the lesions but with interval development of a large heterogeneous hypodense area in the right hepatic lobe suggestive of an abscess. The patient was admitted, steroids were tapered and empiric antibiotics were started. Percutaneous abscess drainage was attempted but no fluid was obtained. MRI favored a granulomatous pseudotumor, nevertheless considering its paradoxical growth, liver biopsy was pursued for definite tissue diagnosis. Six core biopsies were obtained successfully that were remarkable for the presence of multiple necrotizing granulomas with lymphocytic infiltrates and large CD15+ and CD30+ Reed Sternberg-like cells compatible with Hodgkin Lymphoma (HL). The occurrence of HL in Sarcoidosis patients is rare and has been ascribed to the chronic inflammation of those with a remitting-relapsing multi-systemic disease. In contrast, the development of Sarcoidosis in patients with HL has been attributed to chemotherapy-induced mutations. In this case, HL with a sarcoid presentation was diagnosed ten years after an indolent remission of PS. This raises the question of a common trigger for both processes with varied expression over time, rather than one being a risk factor for the other to occur. In this context, a classic presentation of Sarcoidosis, even in areas of higher prevalence must not preclude clinicians from obtaining tissue diagnosis. Furthermore, tissue diagnosis should be granted in suspected relapses of both conditions to avoid missing a potential malignancy or to not overkill with chemotherapy a much simpler granulomatous process.

VP#27

CONFUSING STROKE PRESENTATION

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Moyamoya disease is a chronic progressive cerebrovascular disease characterized by bilateral stenosis or occlusion of the arteries around the circle of Willis with prominent arterial collateral circulation. "Moyamoya" is a Japanese word meaning puffy or hazy like a puff of smoke in the air. Thus, the term was used to describe the smoky angiographic appearance of the vascular collateral network. Case of 37 year old female with no past medical history who was in her

usual state of health, when she suddenly fell from her own feet at work. After this, she developed complete left sided weakness with associated headache, nausea and vomiting. She denies any head trauma, loss of consciousness, dizziness, palpitations chest pain, shortness of breath, dyspnea on exertion. Patient denies past medical history, recent hospitalizations, ill contacts, surgical interventions and denies drug allergies. No recent accidents or prior head trauma was referred. Patient denied alcohol, tobacco or illicit drug use. Patient denies any recent travel history or prior medication use. No significant family history for vascular events referred. On physical examination patient was found to be awake, alert and oriented to time, place and person. Neurologic exam revealed profound left hemiplegia associated with left facial palsy. No sensory deficits detected, and patient was able to verbalize coherently without any difficulty. Rest of physical examination was essentially unremarkable as well as initial laboratories which included BMP, CBC, urinalysis and coagulation profile. Head CT scan initially revealed right MCA distribution ischemic stroke, patient was then admitted to telemetry ward with neurology services consulted who recommended thrombolytic treatment as patient was within therapeutic window. Thrombolytics were administered successfully; however, no changes in patient neurologic status were seen. Further studies aimed at detecting stroke etiology exposed decreased right carotid artery velocity suggesting intracranial etiology. Transthoracic-echocardiography originally suggested left ventricular mass; however this was later cleared with cardiac MRI which refuted such findings. Patients' condition continued to deteriorate and follow up CT scan showed increased edema and midline shifting for which craniotomy was required and done so successfully. Patients' condition improved gradually and subsequentially was discharged to inpatient physical therapy facility. Follow up CT angiogram of head and neck performed two months later revealed hypoplasia of right coronary artery proximally and distally with complete obstruction of the supraclinoid portion of the right internal carotid artery with M1 segment stenosis of right middle cerebral artery. Cerebrovascular ischemic events are traditionally diagnosed promptly and treated accordingly. This case presented a diagnostic challenge as this diagnosis is not usual in North America and Europe. I believe this case presents an alternate, although rare, cause for cerebral ischemia and can therefore remain in our differential diagnoses when we attend to our patients in the future.

VP#28

COPD CAN MASK LUNG MALIGNANCY

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Pseudomesotheliomatous adenocarcinoma of the lung is an uncommon malignancy mimicking diffuse malignant pleural mesothelioma. The low incidence but aggressiveness of this kind of malignancy is relevant for the medical community since pseudomesotheliomatous adenocarcinoma can be easily misdiagnosed. More than 70% of cases are related to smoking history. A case of a 68 year old female with past medical history of COPD, hypertension, gastritis, anxiety and hypothyroidism presents to her pulmonary specialist for a pre-operative medical evaluation in order to be able to go for an orthopedic surgery of her left hip. Patient was a heavy smoker of 1ppd cigarettes for 40 years. She quit 8 years ago and is an obese female that used to work as a worktable lady. Physical exam presented a mild fatigue patient with expiratory wheezing and decreased bibasilar breath sounds, more prominent on left side. CXR reported an incidental new, left small pleural effusion with haziness of the lung more prominent on left side. CXR also revealed a parenchymal opacity in left lung base without pneumothorax or any other gross finding. Computed tomography (CT) of the chest reported multiple lobulated soft tissue density pleural based lesions in the inferior left hemithorax with two lobulated soft tissue nodules at the lung base measuring 3.3cm and 2.3cm, respectively. Granulomatous disease cannot be excluded. Pleural metastasis and mesothelioma was considered as possible diagnosis. ABG's revealed mild respiratory acidosis. Pulmonary function test reported severe obstructive lung disease with poor response to bronchodilators consistent with COPD. A left video-assisted thoracoscopic surgery with left thoracotomy was performed. At the operation partial decortication of left pleura was performed with biopsy of left pleura. Pericardial window was also performed with biopsy of pericardium due to a pleural and pericardial effusion. Immunohistochemically, strongly favors the diagnosis of pseudomesotheliomatous adenocarcinoma in left pleura and pericardium with a primary adenocarcinoma of the lung. The tumors were positive for carcinoembryonic antigen (CEA), keratin cocktail, EMA, PolySpecific Antibody, TTF, Ber-Ep4, MOC-31, CK7 and NAPSIN A. They were negative for calretinin, thrombomodulin, Gross Fluid Cystic Disease Protein-15, mammagloblin, Cytokeratin, WT-1 and CK20. Patient was discharged successfully from hospital. She was referred to Oncology service for OPD treatment. Patient has received chemotherapy and is currently on remission.

VP#29

EXTRAPULMONARY MANIFESTATION OF SQUAMOUS CELL LUNG CANCER

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Lung cancer is the second most common type of malignancy and the leading cause of death from cancer. Its incidence is decreasing in men, but increasing in women, and the most common age group is 55 to 65 years old. Prognosis of lung cancer is quite poor with an overall 5-year survival rate of about 15%. The most common histologic type is adenocarcinoma, followed by squamous cell carcinoma, small cell carcinoma, large cell carcinoma, and bronchial carcinoid. The most frequent metastatic sites for lung cancer include hilar nodes, adrenal glands, liver, brain, and bone. Cutaneous manifestations from lung cancer are extremely rare but must be ruled out in patients with suspicious skin lesions and history of lung cancer. The percentage of patients with lung cancer that develop cutaneous manifestations ranges from 1 to 12%. Cutaneous manifestations from lung cancer possess neither uniform nor a pathognomonic gross appearance and may be mistaken by the clinicians for a variety of benign conditions, such as dermal or subcutaneous growths, drug reactions, chemotherapy side effects or skin infectious process. We describe the case of a 64-year-old male patient with past medical history of stage IV squamous cell lung cancer (SCLC) who presented new onset of painful mucosal ulcerations during his 1st cycle of chemotherapy with Gemcitabine. Subsequently, he developed disseminated polymorphous skin lesions with progression to blistering eruptions on the face, eyes, scalp, trunk and extremities. The patient also developed numerous confluent vesicles and erosions on the trunk and extremities, accompanied by severe malaise, myalgias, fatigue and progression of the lung cancer by imaging studies. At that time, histologic examination by the dermatopathology service showed subepidermal bulla with prominent dermoepidermal separation and upper dermal bandlike (lichenoid) infiltrate, consistent with paraneoplastic phemphigus. Later, skin biopsies were repeated and demonstrated eroded skin with metastatic undifferentiated tumor. Immunoperoxidase studies with pankeratin AE1/AE3 and cytokeratin 7, highlighted aggregates of metastatic carcinoma in dilated vessels. Neoplastic cells were negative for cytokeratin 20 and CD45, which supports the diagnosis of metastatic carcinoma, suggesting lung as primary tumor. Skin manifestations associated with lung cancer are extremely uncommon and usually portends an aggressive clinical course. It can be either synchronous with the underlying malignancy or can be a sign of recurrence or progression of the disease, such as our patient. Results are usually poor in this subset of patients with standard platinum-containing doublet chemotherapy. With the advent of newer chemotherapy agents like permetrexed, bevacizumab and erlotinib, the patient's survival may improve significantly.

VP#30

NEUTROPENIA FEVER: DRUG-INDUCED OR INTRINSIC IN ETIOLOGY?

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Veterans Healthcare System

A 56-year-old woman, G2P2A0, status post elective hysterectomy 28 years prior to presentation, with a pertinent medical history of vitamin b12 deficiency due to pernicious anemia (+) Intrinsic Factor-Antibody and multinodular goiter treated with methimazole (MMI) 15mg daily as maintenance therapy, was brought to Veterans Hospital Emergency Room due to a five-day history of episodes of unquantified fever and general malaise. Upon evaluation, patient complained of intermittent headaches, anorexia, chills, retrorbital pain, runny nose, and 3-4 daily episodes of watery, non-bloody diarrhea. In addition, patient referred MMI dosage had been increased to 20mg daily two weeks prior. Initial evaluation revealed an acutely ill looking, anxious female, febrile (101.2F), tachycardic (133bpm), dry oral mucosa, and without respiratory distress. Laboratory studies revealed a white blood cell count (WBC) of 0.3 x 103 and peripheral smear showed few smudge cells with macroplatelets. Influenza rapid test was negative as well as Human immunodeficiency virus. The patient was admitted to the medical intensive care unit with the initial diagnostic impression of neutropenic fever, acute leukemia, and suspected viral syndrome. Cultures were taken and patient was and placed on protective isolation. MMI was held. Bone marrow biopsy was done; which initial report revealed agranulocytosis with no monoclonal population, hence she was started on granulocyte-colony stimulating factor (G-CSF) 300mcg subcutaneous daily was. Empiric antibiotic treatment with cefepime was provided. Blood cultures were positive for Pseudomonas species susceptible to current therapy, with bacterial translocation due to profuse diarrhea suspected as culprit for bacteremia. Fecal

leukocytes were reported negative, as well as rest of diarrhea work up. After 7 days of antibiotic therapy follow up blood cultures were negative. Patient improved clinically around 48hrs, reason for which she was transferred to internal medicine ward to continue treatment. Despite partial improvement, she continued with symptoms of tachycardia and anxiety, reason for which propanolol was started. Five days later, patient was discharged asymptomatic, and with a WBC count of 6.5 0.3 x 10^3. Official biopsy results confirmed hypo cellular bone marrow with absent granulocytic precursors, and normal erythropoiesis and megakaryocytopoiesis. Agranulocytosis, defined as an absolute granulocyte count of less than 500/m^3 is the most potentially life threatening side effect of anti-thyroid drugs, with an approximate frequency of 0.1-0.5% among hyperthyroid patients. Side effects of MMI are dose related; hence recent increase in dosage concentration was key for suspicion of thionamide-induced agranulocytosis. Early recognition lead to withdrawal of offending agent and administration of G-CSF that, in addition to empiric antibiotics to cover in between other Pseudomonas species, are the mainstay of treatment for methimazole induced agranulocytosis with neutropenic fever presentation.

VP#31

EXPECT THE UNEXPECTED: AN UNCOMMON BACTEREMIA IN AN IMMUNOSUPPRESED PATIENT

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An 86-year-old man with medical history of hypothyroidism, idiopathic thrombocytopenic purpura (ITP) on prednisone tapering for the previous two months, and penicillin allergy, presented to the emergency room with the chief complaint of productive cough with yellow sputum, and occasional streaks of blood of three days of evolution. The patient also referred associated unquantified fever and chills. He denied other symptoms, such as shortness of breath, chest pain, nausea, vomiting, diarrhea, and night sweats, as well as sick contacts and recent travel. Upon initial evaluation, vital signs were remarkable for sinus tachycardia, and laboratory studies revealed a normal white blood cell (WBC) count, but with elevated band forms, neutrophilia, and lymphopenia. Other laboratory results were consistent with a normocytic-normochromic anemia, thrombocytopenia, adequate renal function, and no electrolytic abnormalities. A chest radiograph revealed bilateral sub-lobar lung opacities suggestive of pneumonia. The patient was admitted to the internal medicine ward with a diagnostic impression of community-acquired pneumonia (CAP) with a CURB 65 score of 2. The patient was started on empiric antibiotherapy with levofloxacin. Chest CT scan was performed, which was remarkable for bilateral nodular infiltrates more confluent at the right lung with associated ground glass opacities, and a large right-sided pleural effusion. At this point, the differential diagnosis included a mycobacterial infection, a fungal infection, or infection with Nocardia. Blood cultures revealed growth of Gram positive beaded filaments with branching, suggestive of Nocardiosis. Trimethropim/sulfamethaxole (TMP-SMX) was begun, and the Infectious Diseases service was consulted for further recommendations. A thoracentesis was performed, and pleural fluid analysis was remarkable for an LDH ratio of 0.52, indicating an exudative process. Pleural fluid culture was negative for growth of bacteria. The final identification of the organism that grew on blood cultures was confirmed to be Nocardia asteroides. The patient received 18 days of TMP-SMX with good clinical response while admitted and negative follow up blood cultures were obtained. Patient was discharged home to continue treatment for one year and is currently being monitored at Infectious Disease clinics. The patient in this case had a history of corticosteroid use, and presented with Nocardia infection in blood without bacterial growth in pulmonary cultures. Nocardiosis is usually seen in impaired cell-mediated immune response, as occurs in corticosteroid treatment, immunosuppression, organ transplantation, tuberculosis, and AIDS. Nocardia infections are usually limited to the lungs, skin, and central nervous system. Bacteremia due to Nocardia is an uncommon event with endovascular foreign bodies being the only identifiable associated risk factor. Given that this patient did not have an endovascular catheter insertion makes this an extraordinary case. Hence, nocardial bacteremia should be included in the differential diagnosis upon evaluation of an immunosuppressed patient in order improve chances of survival.

VP#32

IGG-4 RELATED SCLEROSING DISEASE MIMICKING GRAVES DISEASE

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Introduction: An elevated serum titer of immunoglobulin G4 (IgG4), the least common of the 4 subclasses of IgG,

as well as tissue infiltration by IgG4- positive plasma cells, accompanied by tissue fibrosis and sclerosis serve as markers for the recently characterized IgG4- related sclerosing disease. The syndrome affects predominantly middle-aged and elderly patients, with male predominance. The patients present with symptoms referable to the involvement of 1 or more sites, usually in the form of mass lesions. The prototype is IgG4-related sclerosing pancreatitis (also known as autoimmune pancreatitis) and also retroperitoneal fibrosis. Other associated syndromes include IgG4 thyroiditis. Case Presentation: We report a case of a 58 y/o male that was in his usual state of health until he noticed a Lt eye proptosis in 2007 and neck adenopathy. He was diagnosed with hyperthyroidism and left sided exophtalmus. Treatment consisted of PTU. On 2008 MRI of the orbit showed enlargement of the tendons and muscles, not characteristic of Graves. In view of these results, multiple biopsies were done reporting lymphoid hyperplasia with fibrosis in the left lacrimal gland and left orbit and dense lymphoid proliferation with inmunohistologic findings suggesting reactive lymphoid hyperplasia in left lateral rectus muscle. He was referred to us for further management. On 03/30/2011 a neck MRI showed bilateral neck nodes. Subsequently three FNA biopsies of cervical lymph nodes were read as lymphoid hyperplasia. Eventually excisional biopsies were performed and initially the slides were read as Castleman's disease. Two biopsies of left lacrimal gland and left lateral rectus muscle were read as lymphoid hyperplasia. The material was then sent to MD Anderson Cancer Center for an expert hematopathologist evaluation. The left submandibular gland was interpreted as reactive hyperplasia with capsular and multifocal peritrabecular sclerosis with focal non-necrotizing granulomatous inflammation of lymph node. The histology was reminiscent of Ig4-related sclerosing disease. Inmunohistochemical stain for IgG4 revealed many positive plasma cell which confirmed this diagnosis. Because most of the cells in the germinal centers and mantle zone were CD20+ he was started on Ritual weekly x 4 weeks. The patient responded well to treatment with resolution of proposes as well as his adenopathies. He has continuously remained in remission for 11 months. Discussion: The dramatic response to corticosteroids is well-known in this entity; multiple studies have shown its efficacy but chronic administration is required and is not curative. This case illustrates the difficulty in reaching a diagnosis because of the non-specific histological findings which usually lead to a diagnosis of lymphoid hyperplasia. The potential use of Rituximab as a single agent in patients presenting IgG4 CD20+ sclerosing disease. Further experience with Rituximab is necessary in order to determine its definitive role in management of this disorder.

VP#33

NEW GENERATION CANNABINOID DESIGNER DRUGS: THC-LIKE DESIGNER COMPOUNDS AND THEIR POTENTIAL FATAL EFFECTS

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There has been an intense research for the past four to five decades around the drug named cannabis, commonly known as marihuana and its pathophysiology at the molecular level. During the past two decades this research has provided important data around this subjects and specific targets on central nervous system. Those findings have been the foundation for the development of new synthetic drugs that target the same neurological receptors and pathways. Case of a 25 years old man with no systemic illness that was brought via ambulance after having at least three witnessed episodes of seizure like involuntary body movements after smoking a new herbal blend that he bought on a gas station near his house. Patient left his home to visit a friend after eating with his family around 11:30 pm the night before his admission. When he arrived to his friend's house they both started smoking a new herbal blend called "Happy Hour" that he bought on a gas station nearby. After smoking a bottle of the substance (1gram) they went to sleep around 2 am on day of admission. Later that morning patient was found having several episodes of emesis and seizure like movements for which he was taken to our facility. Laboratory values demonstrated profound dehydration and elevated creatine kinase levels in serum consistent with rhabdomyolysis. This altogether with recurrent fever spikes and overall altered mental status and negative results for lumbar puncture cerebrospinal fluid analysis. Patient has no history of seizures prior to these episodes and denies use of other illegal drugs. Spice Drugs (common name for this THC mimetic drugs) are synthetic compounds that originally were meant to target delta9-tetrahydrocannabinol (THC) receptors CB1 and CB2 on the brain. The effects of this drugs are wide, in general describing a sense of well being somehow like cannabis, but still more recent reports expand this experience and describe the following: symptoms of nausea, anxiety, agitation/panic attacks,

tachycardia, paranoid ideation, hallucinations, euphoria, disinhibiting effect, loss of consciousness, confusion, unresponsiveness, seizures, agitation, and irritation to mention the more recently described ones, related to the consumption of this so called herbal blends. Although all this symptoms had been described, no specific site of action had been described besides the cb1 and cb2 receptor and hence the question: why subjects that are exposed to regular marihuana have similar but not identical side effects.

VP#34

SEVERE HYPONATREMIA INDUCED BY HYPOTHYROIDISM AND AMIODARONE

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INTRODUCTION: We present a woman with hypothyroidism that developed severe symptomatic hyponatremia induced by amiodarone therapy that required its discontinuation and thyroid hormone replacement to normalize sodium levels.

CASE PRESENTATION: A 74- year- old woman with hypertension, dyslipidemia, hypothyroidism, and COPD, was brought to the emergency department with shortness of breath and palpitations. She denied smoking, alcohol or drug use. She was taking simvastatin 20mg, enalapril 10mg, levothyroxine 25 mcg, inhaled corticosteroids, and short-acting beta agonists.

On admission the temperature was 36.7°C, respiratory rate 24rpm, heart rate 119bpm and blood pressure 162/94mmHg. The physical exam was unremarkable except for moderate bilateral expiratory wheezing, with poor inspiratory effort. The Hgb was 15.4 g/dL, Hct 45.9 %, WBC 20.6 x 10^3/µL , Plt 239 x 10^3/µL, sodium levels 139 mmol/L, potassium 4.7 mmol/L, chloride 102 mmol/L, bicarbonate 29 mg/dL, BUN 13 µg/dL and creatinine 0.63mg/dL and TSH 0.95 mIU/L. The free T4, and the coagulation profile were normal. The ECG showed atrial fibrillation with a fast ventricular response.

The patient was admitted with decompensated COPD and community acquired pneumonia and paroxysmal atrial fibrillation with a fast ventricular response. She was treated with intravenous antibiotics, IV steroids, diltiazem drip, anticoagulation with lovenox 60mg subcutaneous q12hrs, and Coumadin 5 mg daily. Amiodarone 800 mg IV loading dose was given followed by 200mg PO every 12hrs. On the 9th hospital day, the sodium levels were 132mmol/ml and on the 11th day the patient became disoriented with a short-term memory loss. The sodium was level 105 mmol/L, despite fluid restriction and the administration of hypertonic saline. Amiodarone therapy was discontinued. Hyponatremia secondary to a presumed syndrome of inappropriate ADH secretion (SIADH) caused by hypothyroidism was considered. The TSH increased to 11 mIU/L, and levothyroxine was changed to 88mcg daily. The sodium levels increased from 105 mmol/L to 110 mmol/L 3 days later and to 142mmol/L eight days after amiodarone was discontinued. The TSH decreased to 2.00 mIU/L. The atrial fibrillation persisted with controlled ventricular response and the patient was discharged on Coumadin 5mg daily.

DISCUSSION: Hypothyroidism can induce hyponatremia in patients with normal fluid intake. Water retention occurs due to the inability to suppress ADH. Amiodarone, a structural analogue of the thyroid hormone, can further decrease production of thyroid hormone due to its interaction with thyroid hormone receptors. In addition, amiodarone can produce hyponatremia by desensitizing the kidneys to ADH. Internists should recognize unapparent mechanisms that can cause severe symptomatic hyponatremia.

VP#35

SYSTEMIC MASTOCYTOSIS BY CHANCE?

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Systemic Mastocytosis (S.M.) is an uncommon disorder. It's even more uncommon to find a patient with this diagnosis due to the heterogeneity of its signs and symptoms. It's a heterogeneous clonal disorder of the mast cell and its precursors characterized by the infiltration of mast cells in extra cutaneous organs. There is no epidemiologic data on the incidence of Systemic Mastocytosis. Some studies in Great Britain showed 2 cases per year from a study population of 300,000. The current case report presents a 50 year old male with history of Celiac Disease and Chronic gastritis that is referred to a Hematologist/Oncologist by his Gastroenterologist due to unexplained laboratory findings. Further history evaluation reports occasional non-bloody diarrheas (in spite a strict gluten free diet) and itchiness of the skin in the past few months. On physical exam, the only abnormality was the Darier's sign after the patient stroke his skin due to itchiness. Routine laboratories showed: WBC (3.8x10^3), Hgb(10.2g/dL), Hct(30%), Neutrophils

and Lymphocytes at (78%). An anemia workup, which consisted of retic count, total iron, iron % of saturation, LDH, total iron binding capacity, urine iron binding capacity, ferritin levels, vitamin B12 levels and folate levels, came with normal results. Even serology test for HIV and Hepatitis panel came out negative. The team recognizes it is necessary to perform a bone marrow aspirate and biopsy. The results revealed atypical mast cells with highlighted tryptase and aberrant CD25/ CD117 expression. Also the patient had a positive KIT point mutation at (D816V codon) by PCR and serum tryptase at 23 ng/mL(normal values < 20 ng/mL). These findings are diagnostic for Systemic Mastocytosis. After the diagnosis of S. M. was made, patient was treated with Omeprazole and Montelukast Sodium. A month later, patient came back for a follow up visit and his symptoms got better. Literature review reveals that there is a correlation between gastrointestinal symptoms (e.g. diarrhea), and biopsy finding (e.g.celiac disease and gastritis) with Systemic Mastocytosis. There is no standardized treatment for GI (gastrointestinal) symptomatology in this type of condition. This case discusses the importance of gastrointestinal manifestations in Systemic Mastocytosis. Due to high prevalence of GI symptoms, it deserves better characterization and treatment in order to improve the patient's quality of life.

VP#36

JEJUNAL GASTROINTESTINAL STROMAL TUMOR: RARE CAUSE OF OBSCURE GASTROINTESTINAL BLEEDING

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Introduction: Obscure gastrointestinal bleeding (OGB), is recurrent bleeding without a defined source after esophagogastroduodenoscopy, colonoscopy and radiographic evaluation of the small bowel have been negative. The following is an unusual example.

Case presentation: A 67-year-old woman with diverticulosis, hypertension, intermittent bronchial asthma, rheumatoid arthritis and major depressive disorder was admitted to the hospital after a 6 month history of recurrent hematemesis, melena, and occasional bloody diarrhea. Eight months prior to admission esophagogastroduodenoscopy, colonoscopy, and an abdominal-pelvic CT scan, did not yield the source of bleeding. A capsule endoscopy only revealed erosive duodenitis and ileal punctuate angiomas. On admission the patient complained of epigastric discomfort. She was alert and well oriented. The vital signs were normal. The physical exam was unremarkable with the exception of pale skin and conjunctival as well as moderate mild tenderness to palpation without rebound or guarding. The rectal exam showed bright red blood. The Hgb was 5 gm, Hct 15.2 %, Plt 263, MCV 84.7, MCHC 33.1, and RDW 17.7. The coagulation profile and electrolytes were within normal limits. Repeated abdominal-pelvic CT scan, small bowel series and a bleeding scan were negative. Esophagogastroduodenoscopy (EGD) showed gastritis and colonoscopy internal hemorrhoids and diverticulosis. Bleeding stopped on the fourth hospital day. After transfusions of 4 units of blood the Hgb increased to 11.4gm. The patient was discharged. Three weeks later she was readmitted with hematochezia. The Hgb had decreased to 6.7gm. Technetium-labeled red blood cell scans revealed an active site of bleeding medial to the right lower quadrant. A CT angiogram showed a bleeding mass in the proximal jejunum. A 4.5cm tumoral mass located 15 cm after the ligament of Treitz was resected. Histological and immunohistochemical markers of the excised lesion were consistent with gastrointestinal stromal tumor (GIST) spindle cell type positive for CD117 and CD34. To avoid recurrence and malignant transformation, Imatinib 400mg daily was initiated.

Discussion: When repeated upper and lower endoscopies and wireless capsule endoscopy fail to reveal the site of the bleeding lesion, technectium-labeled red-blood cell scans provide the best sensitivity for detection. Angiography requires a bleeding rate greater than 1 mL/min. GISTs in the jejunum are extremely rare and have the potential for metastasis. One year treatment with Imatinib is recommended to decrease recurrence after the resection of tumors expressing c-kit (CD117).

VP#37

WHEN HYGIENE GOES WRONG!

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This is the case of a 49 year old woman without history of systemic illnesses complaining of right ear pain associated with diffuse severe headache, dizziness, mastoid swelling and decreased hearing. Patient denied fever, chills, ear discharges, tinnitus or recent illnesses. Symptoms started three days ago after cleaning her ear with a cotton tipped applicator and progressively became worse. Upon evaluation, the patient

was found afebrile, tachycardic, lethargic but oriented in time, person and place. Her right auricle and mastoid area were found swollen, erythematous and exquisitely tender to external manipulation. Otoscopic examination revealed a pus-filled canal with a bulged opaque tympanic membrane. Patient also found with decreased hearing, photophobia and positive Kernig and Brudzinski signs. Laboratories showed marked leukocytosis with neutrophilia. Lumbar puncture revealed a turbid cerebrospinal fluid with neutrophilia exocytosis and decreased CSF glucose levels, consistent with bacterial meningitis. Head CT images showed right sided mastoiditis and temporal osteomyelitis. The patient was subsequently admitted to internal medicine ward and was started promptly on empiric intravenous antibiotics. Otorhinolaryngology service performed a myringotomy procedure to drain pus from middle ear. During hospitalization and due to persistent severe headaches, a head MRI was performed, which showed pan-meningitis with a left infratemporal empyema. Given its small size and location, the empyema was not amenable for neurosurgical intervention. Through the course of the hospitalization, the patient responded to aggressive intravenous antibiotic therapy with marked clinical improvement. Follow up head MRI showed resolution of left infratemporal empyema, mastoiditis and temporal osteomyelitis. Auricle and mastoid areas were no longer erythematous or tender to palpation. After receiving 54 days of therapy with ceftriaxone and vancomycin, the patient was discharged home clinically stable without any complications reported while hospitalized. Cerumen is a protective substance in the ear canal with antibacterial and antifungal properties. A common but potentially hazardous practice is the misuse of cotton tipped applicators to remove this covering. This could result in wax impaction, infection or perforation of tympanic membrane. Mastoiditis and temporal bone osteomyelitis are some of the complications associated with severe external or middle ear infection. Pathogens may erode directly into or spread via venous sinuses and cause epidural or subdural abscesses accompanied by severe meningitis. These are rare but serious complications that could lead to death if not managed appropriately. As primary care physicians, it is our responsibility to orient our patients to avoid introducing objects that could potentially harm the delicate lining of their ear canal and tympanic membrane, leading to hearing loss or even worse: a severe infection with life threatening complications, like in the case presented above.

VP#38

THE NEGATIVE CONSEQUENCES OF EMPIRIC THERAPY

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Case of a 37y/o female from Dominican Republic, without history of systemic illness who arrived to ER complaining of a two month 30 pound weight loss and one-week duration shortness of breath, abdominal distention and unquantified fever. Patient denied productive cough, nausea, vomiting, diarrhea or sick contacts; and states visited other emergency room three days before where she was diagnosed with Community Acquired Pneumonia, but refused therapy. Upon arrival to our institution patient was found cachectic, tachypneic, and tachycardic with temperature of 38.6 C and hypotensive. Oxygen saturation by pulse oximetry was 89% at room air and a V-mask was placed. On physical examination patient found with dry mucosa, bilateral crackles and a non-productive cough. Laboratories were pertinent for severe microcytic hypochromic anemia and hypovolemic hypernatremia. Chest Computer Tomography Scan was remarkable for bilateral ground glass opacities suggestive for Pneumocystis Jiroveci. Abdominal Computer Tomography was remarkable for focal distended jejunal loops, without evidence of obstruction. Patient started in trimethoprim-sulfamethoxazole with intravenous steroids. Blood cultures were remarkable for Enterococcus faecium and antibiotics treatment adjusted for coverage. Human Immunodeficiency Virus tests ordered on admission due to suspected immunosuppression resulted positive by ELISA and Western Blot. On the following days patient continued deteriorating with development of severe hypoxemia requiring mechanical ventilation. Despite multiple blood transfusions patient persisted with anemia without evidence of gross bleeding and alveolar hemorrhage was suspected. Bronchoscopy confirmed hemorrhage, and bronchoalveolar lavage showed Mucormycosis, Acinetobacter Baumanii and Strongyloides Stercoralis. Steroid therapy was immediately discontinued and Ivermictin and Posaconazole therapy started. Patient continued deteriorating and developed multiple generalized erythematous serpiginous skin lesions characteristic of Strongyloidiasis. Despite aggressive therapy patient developed septic shock and multiorgan failure, requiring vasopressors, dying two days afterwards. Due to catastrophic course of disease patient was sent for autopsy, with final result of: Acquire Immunodeficiency Syndrome

with disseminated Strongyloidiasis (involving duodenum, lungs and lymph nodes), pulmonary Mucormycosis and Acinetobacter Baumanii infection. Strongyloidiasis is caused by infection with Strongyloides stercoralis. Manifestations of infection can range from asymptomatic eosinophilia in the immunocompetent host to disseminated disease with septic shock in the immunocompromised host. The massive dissemination of larvae to the lungs, liver, heart, central nervous system, and endocrine glands induces inflammation that may result in symptomatic dysfunction of these organs. The likelihood of developing the hyperinfection syndrome is increased if cell-mediated immunity is impaired by Human Immunodeficiency Virus, congenital immunodeficiency, underlying malignancy, malnutrition, alcoholism, hematopoietic stem cell transplantation, or the administration of corticosteroids or cytotoxic drugs. Mucormycosis, caused by the fungi Mucor, causes aggressive tissue destructive pneumonia, in predisposed immunossupresed patients. This is a clear example of the importance to suspect other opportunistic pathogens in immunocompromised hosts, to prevent delays in treatment and possible fatal outcomes.

VP#39

DOCTOR, I CAN'T MOVE! PLEASE HELP ME!

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A thyroid storm is a well-known complication of hyperthyroidism. Prompt diagnosis and management is vital since delay in treatment may be life threatening. It has medical criteria that aid its diagnosis, but sometimes, its clinical presentation can be obscure. We present the case of a man who arrived to the emergency department with muscle paralysis and ventricular tachycardia. A 34 year-old Puerto Rican man without known medical condition, presented to the emergency department with paralysis of arms and legs. Weakness was prominent in shoulders and hips. He had slurred speech, difficulty swallowing and shortness of breath. Physical exam revealed a man in respiratory distress with heart rate of 164 beats per minute. EKG showed monomorphic ventricular tachycardia. Vital signs revealed hypotension for which cardioversion was performed and amiodarone was given. Physical exam was noteworthy for bilateral proptosis with lid lag, 1/5 proximal muscle strength bilaterally in arms and legs. Initial laboratory work-up was remarkable for hypokalemia (1.6 mEq/L) and troponin levels of 0.548 mcg/L. IV potassium was immediately started. Patient's initial complaints and symptoms could have been explained by hypokalemia but the cause of the severely low potassium was uncertain. After stabilizing our patient, a thorough review of systems was performed. He initially denied physical problems except for anxiety and nervousness. Direct questioning lead to complaints of unintentional weight loss, 6 loose bowel movements daily, occasional palpitations with sweating, and periodic morning weakness over the past six months. He attributed these symptoms to increased stress at work and financial issues. Clinical picture lead us to consider hyperthyroidism. Thyroid-stimulating hormone level was <0.015 U/mL for which he was admitted with severe thyrotoxicosis (thyroid storm) and periodic paralysis secondary to hyperthyroid state. He was started on PTU, propranolol and iodine solution. The patient recovered his strength and was discharged after undergoing total thyroidectomy. He is currently symptom-free on oral thyroid hormone replacement. Thyrotoxic periodic paralysis is a type of periodic paralysis associated with all forms of hyperthyroidism. Its pathogenesis is unclear, but is thought to be secondary to the thyroid hormone effect on the Na-K ATPase pump leading to an increased potassium uptake into myocytes, thus promoting painless paralysis. Thyrotoxic paralysis is a life-threatening disease, which may lead to respiratory failure and malignant cardiac dysrhythmias. The symptoms and signs are often subtle for which careful history is needed to unmask the etiology. Only three cases of Thyrotoxic periodic paralysis have been reported in Puerto Rico, with just two being of Hispanic descent. This case shows us internist the importance of a thorough and specific medical history. The initial presentation of paralysis and ventricular tachycardia could have been explained by the hypokalemia. Careful examination unmasked the true culprit of this patient paralysis.

VP#41

A RARE CAUSE OF HEPARIN INDUCED THROMBOCYTOPENIA IN A PATIENT WITH INHALATION INJURY

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Inhalation injury is an acute respiratory tract insult caused by the exposure of steam, toxic gases or fumes. This is a 77 year-old man with unknown medical history who arrived to our institution after he was rescued from a burning house. Patient was admitted to the intensive care unit with

suspected carbon monoxide intoxication and suspected inhalation injury. Respiratory exam was essentially negative for pathology. Patient was initially placed on mechanical ventilation to maintain a patent airway and to deliver 100 percent of oxygen. A fiberoptic bronchoscopy was performed and confirmed the diagnosis of inhalation injury. Bronchoscopy revealed an upper airway with severe edema, erythema, and ulcerations with black mucous on right, left mainstem bronchus and carina. Laboratories revealed marked leukocytosis (27.3) with macrocytic hyperchromic anemia (11.1), and no thrombocytopenia. Patient also was found with hypokalemia (3) acute kidney injury with high anion gap metabolic acidosis, hypoalbuminemia (3.4), hypomagnesemia (1.3) and hyperphosphatemia (5.3). Arterial blood gases showed a, ph 7.32, due to metabolic acidosis with adequate respiratory compensation. Also we found PaO2/FiO2 ratio on 241 which indicates patient with moderate acute respiratory distress syndrome. He was started on aerolite unfractionated heparin with N-acetylcysteine. A second fiberoptic bronchoscopy was performed showing an improvement on ulcerations and only scant soot was seen on the respiratory mucosa. On day eight, aerolite heparin was discontinued due to a clinical suspicion of Heparin induced thrombocytopenia (HIT) when platelets decreased from 104 to 54. The decision was taken after patient was found with a high probability pretest clinical score of 4T''s for the diagnosis of HIT. One month after his admission patient died due to multiorgan failure. HIT is the development of a prothrombotic state and thrombocytopenia on patient receiving unfractioned heparin or low molecular weight heparin due to development of antibodies against the platelet factor four and the increase in thrombin production. It is characterized by decrease in platelets by 50 percent from 5 to 14 days of therapy and the development of venous or arterial thrombosis. It is more common in surgical patients compared with medical patients and incidence ranks from 0.2 to 5 percent. The gold standard for the diagnosis of HIT is to detect heparin dependent anti platelet antibodies using the 14C-serotonin release assay. Administration of aerolized heparin to mechanically ventilated patients, attenuates acute respiratory distress syndrome. Aerolized Heparin was not associated with any serious adverse events, and at higher doses it increased APTT levels. However, HIT caused by nebulized heparin has not been documented in the literature. Further research about aerolized heparin is needed in view to the high mortality of inhalation injury is important to report adverse effects of aerolized heparin.

VP#42

A LIFE THREATENING COMPLICATION OF ORBITAL CELLULITIS

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69-year-old man patient with medical history of schizophrenia who was brought to the emergency department due to worsening right cheek swelling and productive cough of one week of evolution, associated with unquantified fever, chills and anorexia. A week prior to admission he was evaluated for similar complaints elsewhere for which a short course of moxifloxacin was prescribed without significant response. Upon arrival, he was found tachycardic, tachypneic, with high grade fever and somnolence. Physical examination was remarkable for right severe proptosis, periorbital swelling, warmth and erythema extending 9x7 cm along right frontal and upper cheek. There was dullness to percussion, decreased breath sounds and tactile fremitus up to half of left lung. Admission laboratories revealed 29,000 White blood cells with left shifting, elevated inflammatory markers and hypovolemic hyponatremia. Chest X-ray was noteworthy for widened mediastinum for which a Chest CT scan was ordered. Study showed multiple loculated empyemas in both lungs, most predominant in the left side. Orbital CT scan revealed multiple facial abscesses, ophthalmic and facial vein thrombosis, and septic thrombophlebitis. Patient was admitted and broad-spectrum antibiotics were started. Within the first 24 hours, patient developed respiratory failure and hypotension reason why he was placed on mechanical ventilation, vasopressor supports and transferred to the intensive care unit. Hours later, he was taken to the operating room for lung decortication. Despite interventions, patient was clinically deteriorating and with worsening mental status. Lumbar puncture, orbital MRI and echocardiogram were performed. The latter resulted negative for vegetations, lumbar puncture was suggestive of bacterial meningitis and the orbital MRI demonstrated cavernous sinus thrombosis. Subsequently, blood and pleural fluid cultures came positive for methicillin resistant Staphylococcus aureus, and antimicrobial therapy was tailored accordingly. The patient was eventually extubated, made a full recovery, and was discharged home. Septic dural sinus thrombosis is an uncommon disease with only several hundred of cases reported in the medical literature. The cavernous sinus is the most frequent dural sinus to become infected and thrombosed. The sinus receives blood from facial veins and pterygoid plexus via the inferior and

superior ophthalmic veins. Infections of the face including the nose, orbits, tonsils, and soft palate can spread to the cavernous sinus by this route. The fact that these channels are valveless, these sinuses are vulnerable for spread of infection leading to septic thrombosis. Staphylococcus and streptococcus are the most commonly associated pathogens. Since the introduction of antibiotics, septic cavernous sinus thrombosis has become very infrequent from near 100% mortality to 20-30% with the availability of broad spectrum antibiotics. As in this case, prompt recognition, diagnosis and treatment of cavernous sinus thrombosis are crucial to minimize risk of adverse events.

VP#43

HEADACHE WITH SEIZURES: A DIAGNOSTIC CHALLENGE

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This is the case of a 31 year old woman athlete with history of migraine, that developed severe constant headaches, with irradiation to the neck, mildly relieved by Tylenol, with associated nausea and vomiting that started 2 weeks prior to admission. The patient also reported one episode of loss of consciousness with involuntary movements consistent with tonic-clonic seizure follow by temporary dysarthria and leg weakness 3 days before admission. No other focal neurologic deficits were described. Patient denied fever, chills, cough, recent infections, or diarrhea. She was in an abusive monogamous relationship with an unfaithful partner. She has no toxic habits, history of Sexually Transmitted Diseases or Human Immunodeficiency Virus testing, or recent traveling or outdoor hobbies. She was evaluated and discharged from an emergency room at a community hospital after laboratory only reported leucopenia, mild anemia, and no more witnessed seizure episodes. However, patient returned 3 days later complaining of severe, worsening headaches, unquantified fever, photophobia, nausea, and vomiting but no seizures were reported. She was once again discharged home with oral antibiotics and analgesic medication, reason why she decided to go to our institution. Intracranial pathology was considered. No focal neurologic signs present; Brudzinski and Kernig signs were negative, and the patient did not have nuchal rigidity. Lumbar puncture was performed to assess the possibility of meningitis after a negative head Computer Tomography scan. Cerebrospinal Fluid analysis showed an increased opening pressure, with an encapsulated organism on India ink, and a subsequent positive cryptococcal antigen. Patient was started on Amphotericin B and flucytosine, and was positive for Human Immunodeficiency Virus. Patients with cryptococcal meningitis are most commonly immunocompromised, with Acquired immunodeficiency syndrome being the most common cause. Cryptococcal meningoencephalitis has been an AIDS-defining illness for 60 percent of the HIV-infected patients in whom it is diagnosed. It is uniformly fatal if untreated. Its Clinical presentation is variable and challenging, given that some patients have symptoms for months prior to the diagnosis, whereas others present with an acute illness of only a few days. Fever is observed in approximately half of cases, while stiff neck and photophobia are seen in one-fourth to one-third of patients. Typically, headache, lethargy, personality changes, and memory loss develop over two to four weeks. This timeframe can delay a clinical suspicion of subacute meningitis, especially if immunodeficiency is not known. Lack of fever, meningeal signs or papilledema does not categorize a headache as benign, even in patients with migraine. This case highlights the importance of maintaining a high index of suspicion for meningitis (even when the patient does not present with the classic symptoms or signs) in order to make an adequate workup to reveal the diagnosis and thus correctly manage the patient.

VP#44

CONCERTIN-LY NOT YOUR TYPICAL ECG

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A 36 year-old man with history of intravenous drug abuse, HIV and Hepatitis C presented severe back pain. Upon evaluation, he was found septic and admitted for treatment of osteomyelitis, diskitis of L4-S1 and suspected infective endocarditis. Routine electrocardiogram (ECG) was performed. At first glance, a ventricular bigeminy pattern was apparent with wide QRS complexes following each sinus beat. Closer examination revealed presence of with prominent delta waves most notable in precordial leads and short PR interval, consistent with ventricular pre-excitation or Wolff-Parkinson-White (WPW) pattern. Pre-excited beats displayed increased R:S ratio on V1-V2 as well as negative delta waves in I and aVL and positive delta waves in inferior leads, consistent with a left anterolateral accessory pathway (AP). This pattern was intermittent with only every other beat being pre-excited (pre-excitation alternans). The patient denied prior history of palpitations, arrhythmias,

syncope or family history of sudden cardiac death (SCD). The patient denied knowledge of this condition despite multiple hospitalizations in the preceding years, which may be due to the intermittent nature of pre-excitation or the possibility of this diagnosis going unnoticed. A WPW pattern may be seen in 0.13-0.55% of the general population. It is characterized by ECG evidence of a short PR interval and wide QRS due to fusion of ventricular depolarization via the normal conduction system and that of the pre-excited myocardium via the AP. Despite its well established ECG criteria, WPW still remains a diagnostic challenge to internists around the world, owing mainly to the heterogeneity of presentation, inexperience due to low prevalence, and similarity to other conditions such as bundle branch blocks, myocardial infarcts, etc. Also, pre-excitation can be intermittent, such as this case, suggesting the AP has a long refractory period. However, because the QRS is a product of fusion depending on the volume of ventricular mass that is pre-excited and the PR interval is inversely proportional to this mass, the sum of the PR interval plus the QRS width remains constant regardless of the degree of pre-excitation. This is known as the Concertina Effect and is seen in less than 50% of patients with WPW. The patient presented this very interesting phenomenon, which is uncommon to find it in the surface ECG. WPW patients are known to be at increased risk of SCD. However, intermittent pre-excitation suggests a very low risk of SCD, thus AP ablation is not indicated. This case is particular for two reasons: from an internist's point of view, it is a challenging presentation of a well-known condition, demonstrating the importance of careful ECG analysis; also, there is a low but appreciable risk of SCD in these patients and thus every internist should recognize this pattern when presented.

VP#45

A CURIOUS CASE OF PANCREATITIS

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Pancreatitis is an inflammatory condition of the pancreas frequently caused by gallstones, chronic alcohol abuse or medications. However, an infectious etiology must always be considered when evaluating a patient with pancreatitis. A 55 years old man with past medical history of diabetes mellitus type II was brought to our Emergency Room with a two day history of severe upper abdominal pain associated with fever, chills, vomiting, and general malaise. The physical examination revealed epigastric and right upper quadrant abdominal tenderness, jaundice, and conjunctival suffusions. The rest of the physical examination was unremarkable. Laboratory tests revealed leukocytosis, increased amylase and lipase levels, thrombocytopenia, acute renal failure, elevated creatine kinase, hyperbilirubinemia, and elevation of hepatic transaminases. The patient´s calculated Ranson´s score was 3. Furthermore, an abdominal ultrasound was ordered which showed gallbladder sludge without evidence of cholecystitis; and no biliary duct dilation. Upon further questioning, the patient confirmed a household exposure to rats. The patient was admitted to the Internal Medicine service for the implementation of adequate supportive measures and antibiotic therapy. Intravenous ceftriaxone was started for the treatment of a suspected Leptospirosis with Weil's syndrome. The Leptospirosis was later confirmed with a positive result on a leptospira antibody test. During the hospitalization, the patient´s abdominal pain subsided and his clinical and laboratory parameters improved. After a marked clinical improvement and 7 days of therapy with ceftriaxone, the patient was discharged home. This case illustrates the importance of considering infectious agents such as Leptospira as potential causes of Pancreatitis. Although, a Leptospira infection as a cause of pancreatitis is rare, it must be considered in patients presenting with clinical features of pancreatitis and an exposure to an environment contaminated by animal urine. Recognition of the association between Leptospirosis and Pancreatitis is particularly important in Puerto Rico, since it is known that Leptospirosis is endemic to the tropics.

VP#46

A SEVERE NOSEBLEED

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49 y/o man without systemic illness, who came to the hospital due to progressive weakness, fatigue, and dyspnea of 1 week of evolution. Patient complained of daily epistaxis of an estimated amount of 11 ounces for as long as he could remember. He said that his brothers and his father died of profuse bleeding. He had not had any other source of bleeding such as melena, hematochezia, hematuria, and hematemesis. Physical exam was pertinent for a chronically ill man, with regular tachycardia. He had pale conjunctiva and coagulated blood was present around both nares. Oral mucosa was with superficial telangiectasias over soft palate.

Laboratories showed severe microcytic hypochromic anemia of hemoglobin 1.8g/dL. He had adequate platelet count. Coagulation parameters were within normal levels. Chest CT showed pulmonary arteriovenous malformation (AVM) in the anteromedial segment of the left lower lobe measuring 3.5cm long by 2.2cm anteroposteriorly, and 2.4cm transversely. This man was diagnosed with hereditary hemorrhagic telangiectasia (HHT) or Osler Weber Rendu. HHT is an autosomal dominant vascular disorder that presents variably with epistaxis, gastrointestinal bleeding (GI), iron deficiency anemia, and mucocutaneous telangiectasias. Additionally it presents with AVMs predominantly in the pulmonary, hepatic, and cerebral circulation. Manifestations usually develop with increasing age. Usually presents with epistaxis. The Curacao criteria (2002) continue to be the mainstay for clinical diagnosis of HHT, which is based on four findings: recurrent, spontaneous epistaxis, mucocutaneous telangiectasias, visceral AVMs, and positive family history of HHT (affected first-degree relative). The diagnosis can be classified as definite when three to four criteria are present, suspected when two criteria are present or unlikely when only one is present. The diagnosis can also be confirmed by genetic testing. This man met all of these criteria. HHT management will depend on clinical presentation. Asymptomatic individuals may require no treatment. Massive epistaxis may require and GI bleeding will require blood transfusions and iron supplements. Epistaxis may also require nasal packing, while GI bleeding may demand endoscopic treatment. Pulmonary AVMs may cause hypoxemia, hemoptysis, pulmonary hemorrhages, and may facilitate paradoxical emboli. They are usually treated with embolization. Cerebral AVMs may cause headaches, seizures, ischemia, or hemorrhage. They are treated with embolectomy, surgical removal, or stereotactic radiotherapy. Hepatic AVMs may present with high output cardiac failure, portal hypertension, and biliary disease. If medical treatment is no sufficient, liver transplantation should be considered. Like in this case, many patients with HHT are unaware of their diagnosis and its implications. It is important for physicians to be aware of the life-threatening complications of this condition since the prognosis for patients with the disease is good as long as bleeding is promptly recognized and adequately controlled.

VP#47

EVERY STORY HAS A BEGINNING BEHCET'S DISEASE

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A 31 year old Puerto Rican woman with chronic sinusitis who presented with a 1-month diffuse, progressive and severe crampy abdominal pain, associated with intermittent diarrhea, tenesmus, bloating, and flatus. Diarrheas were bloody, malodorous and with mucous. A week later she developed painful and pruritic oral and vaginal ulcers, a diffuse rash and multiple joint pains. The rash started as maculopapular lesions that progressed to ulcers on the face with subsequent spreading of similar lesions through the lips and pustular lesions on extremities. She does refer pain during swallowing, un-quantified fever, night sweats, pallor and fatigue. History of sexually transmitted diseases, sick contacts, recent travels, nocturnal bowel movements, prior ulcers, visual disturbance, and family history of bowel disease were denied. Physical examination revealed an acutely ill patient in severe pain with hypotension and tachycardia. Her skin revealed multiple ulcerative maculopapular lesions with reddish base on face, lips and mouth. The abdomen was mildly distended and diffusely tender to deep palpation, without rebound, Murphy's and Rovsing signs. No hemorrhoids, fistula, abscesses, skin tags, sinus tract or bloody or black stools were seen in the rectal examination. She had bilateral tender wrists, knees, and malleolus and decrease active range of motion due to pain. Laboratory showed normocytic normochromic anemia with elevated erythrocyte sedimentation rate and C-reactive protein. Stool for leukocytes was positive. Human Immunodeficiency Virus test, antinuclear antibody, DNA double stranded, HLA-B51, serum complement levels, rapid plasma regain, blood cultures and stool for fat were negative. Nonspecific skin reactivity to needle prick also was normal. Contrast enhanced abdominal computerized tomography revealed multiple segments of colonic wall thickening of the descending colon. A sigmoidoscopy study showed a multiple ulcers and pseudopolyps. Examination of biopsy specimens obtained from the ulcers and polyps showed non-specific inflammatory changes. Becher's has been described as a multisystemic inflammatory disease of unknown etiology. Genetic and environmental

components have been associated to its pathogenesis and a relationship between this condition and auto inflammatory diseases have also been evaluated. Clinical presentation includes cutaneous manifestations including oral aphtous and genital ulcerations, musculoskeletal complications and gastrointestinal symptoms. The International Study Group Criteria for Becher's Disease in 1999 established major and minor criteria for its diagnosis. Being this a primary presentation, recurrence of symptoms is missing as the major criteria for diagnosis. It is known that this disease mainly affects young males with a higher prevalence along Eastern region of Asia and Eastern Mediterranean. Evidence of this condition in the western world is lacking due to its extremely low incidence and prevalence. Since this is a rare condition we as primary care physicians must have a low threshold to recognize such presentation in our population due to its implication on choosing therapy.

VP#48

AN UNUSUAL CASE OF DRUG INDUCED VASCULITIS

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Vasculitis refers to a heterogeneous group of disorders characterized by the presence of inflammatory leukocytes in vessel walls with reactive damage to mural structures. The potential causes of the vasculitis are diverse, ranging from autoimmune processes, malignancies, infections or medications. However, recent reports have asserted the emergence of illicit drugs as potential causes of drug-induced vasculitis. A 60 years old female with history of cocaine abuse for the past 30 years presented to the Emergency Room with a complain of recurrent skin lesions for the past three years. On this occasion, the patient refers multiple painful lesions that started appearing 4 days before the admission. The lesions were primarily located on the lower extremities, bilateral earlobes and nose. She referred several instances over the past three years were similar lesions have appeared, only to improve without medical therapy or assistance. The patient refers using crack cocaine for the past 35 years. During the physical examination, several purpuric skin lesions were noted on the tip of the nose and the ears bilaterally. Also, multiple upper and lower extremities superficial ulcers with residual necrotic scars were noted. The right leg had superficial ulcers measuring approximately 6 x 8 cm with profuse bleeding. Laboratory tests were remarkable for a normocytic-normochromic anemia, positive RPR and a positive cocaine toxicology screen. The patient´s HIV test were negative; serum cryoglobulins were negative; and the C3 and C4 complement levels were normal. Also, the myeloperoxidase antibody was found to be elevated. The rest of the laboratory tests were unremarkable. A skin biopsy of the lesions was done which showed vascular thrombosis in the small and mid-sized vascular channels in the dermis, consistent with thrombotic vasculitis. The patient was admitted to the Internal Medicine service for supportive measures and local care of the ulcers. After several days of therapy, the skin lesions began to improve and the patient decided to leave the hospital against medical advice. This case illustrates the importance of considering a levamisole induced vasculitis in cocaine users who present with purpuric skin lesions. This is particularly relevant given that it is estimated that 77% of cocaine in the US is adulterated with levamisole. As such, it is important for physicians to recognize the increasing role of levamisole as a causative agent of vasculitis among cocaine users.

RP#1

MS275 UP-REGULATES FAS EXPRESSION THROUGH DOWN-REGULATION OF MIR-20A IN OSTEOSARCOMA CELLS

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Despite aggressive chemotherapy treatments, prognosis for patients with lung metastases from osteosarcoma (OS) remains poor. It is thus important to pursue new effective therapeutic approaches. The ability of osteosarcoma cells to form lung metastases has been inversely correlated to cell surface Fas expression. Downregulation of Fas allows OS cells to avoid FasL-mediated apoptosis within the FasL positive lung microenvironment. The histone deacetylase inhibitor, MS275, has been shown to up-regulate Fas expression in Fas negative LM7 OS cells and induce regression of established OS lung metastases. But the mechanism through which MS275 exerts its effect is unknown. Recently, studies have shown that overexpression of miR-20a, which is part of the miR-17-92 cluster, results in the down-regulation of Fas expression in SAOS-2 cells and a decreased sensitivity to FasL. Thus, a potential mechanism through which MS275 up-regulates Fas expression is through the regulation of miR-17-92 and miR-20a. In the

current study, LM7 cells were treated with MS275 and its effects on miRNA expression were studied. To address the underlying mechanism of MS275, we characterized the effect of MS275 on miRNA gene transcription and degradation. MS275 suppressed miR-17-92 and miR-20a levels in a time dependent manner. Although MS275 decreased miRNA expression, it enhanced the promoter activity for miR-17-92 as measured by luciferase assay, suggesting that the decrease in miRNA following MS275 treatment is mediated through a post-transcriptional mechanism. Experiments using actinomycin D, a DNA transcription inhibitor, and cycloheximide, a protein translation inhibitor, demonstrated that MS275 did not function by enhancing post-transcriptional degradation. This data suggests that down-regulation of miR-20a by MS275 may occur through other factors that remain to be described.

RP#2

COMPARISON OF THE APPROPRIATE USE OF ANTIBIOTICS BASED ON CLINICAL GUIDELINES BETWEEN PHYSICIANS IN-TRAINING VERSUS PRACTICING PHYSICIANS

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Introduction: The inappropriate antibiotic can lead to serious negative effects on health. It creates multidrug resistant bacteria. The cultural environment predisposes for seek of antibiotics by patients in cases not needed or inappropriately prescribed in events such as viral syndromes. Because of these common issues, guidelines have been developed to educate and control the misuse of antibiotics. The level and exposure to education, based on medical guidelines, can affect the adequate prescription of antibiotics. The objective of this study is to evaluate the effectiveness of professional interventions among Puerto Rican physicians in promoting prudent antibiotic prescribing and how it varies according to years in practice, education, and clinical experience. Methods: A comparative study using a questionnaire about the prudent antibiotic use in commonly seen infections as outpatient as well as inpatient in Puerto Rico based from guidelines from Infectious Diseases Society of America (IDSA) and Centers for Disease Control (CDC). We formulated 15 questions each related to a different topic based on different guidelines with simple everyday conditions. The questionnaire was distributed among the major three internal medicine training programs at San Juan, internal medicine physicians, and general physicians that work in outpatient clinics. Results: A total of 75 physicians were enrolled for this survey. Residents and internal medicine physicians gave more accurate answers than general practitioner physicians. General physicians failed to treat adequately asymptomatic bacteriuria, and overall failed in treating other common conditions when compared with residents and internal medicine physicians. Both residents and general physicians answered 100% correct the question related to Dengue fever. Development of bacterial resistance and the use of the adequate antibiotic for the adequate bacteria is one of the major concerns among Infectious Diseases specialists. One of our questions was related to the treatment of Extended Spectrum Beta Lactamase positive Escherichia coli and more than 50% of the surveyors failed to answer the question correctly. Conditions as viral upper respiratory tract infections and community acquired pneumonia had the higher correctly answered questions among the groups and correlates with the emphases that is given in treating this conditions by means of continuing medical education, core measures and more frequent patient care. Conclusion: Our questionnaire demonstrates that guidelines have to reach the education among the general physician population to decrease the overuse of inadequate antibiotics, and education should be strengthen on those internal medicine physicians that have already completed formal training, to avoid the overuse of antibiotics.

RP#3

COMPLICATION RATE OF EPTIFIBATIDE AMONG GENDER INTO HISPANIC POPULATION

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Purpose: To compare the complication rate of Eptifibatide between Hispanic women and men. To identify difference, if any, between both groups, and if it is significant or not; To measure morbidity and mortality in both groups

Background: Eptifibatide, a synthetic cyclic heptapeptide, is a selective, high-affinity of the platelet glycoprotein IIb/IIIa receptor, which is involved in platelet aggregation. Although its use has been associated with a reduction in the incidence of death or nonfatal myocardial infarction in patients with acute coronary syndrome, a previous research published that compared to non North American

men; there were no effect, small beneficial effect or a detrimental effect in non North American women. However, such a difference among gender was not found in North American population studied. Our interest in this research is to measure any difference that could exist in the complication rate of Eptifibatide between Hispanic males and females diagnosed with NSTEMI and treated with this medication. Methods: This is a retrospective study from the medical record department at the hospital Ramon E. Betances, located in Mayaguez, PR. This research included 70 adult patients from 20 to 89 years old who were diagnosed with NSTEMI and treated with Eptifibatide during a 12 month period (2010-2011). All of them from Hispanic origin. Comorbidities, as well as present medications besides Eptifibatide were also evaluated, as there are similar complications between Eptifibatide and some other medications and some comorbidity could predispose to some complications. All patients diagnosed with NSTEMI during this 12 month period not treated with Eptifibatide were excluded. A comparison was made between Hispanic men and women diagnosed with NSTEMI during this 12 month period that were treated with Eptifibatide in terms of complications.
Results: A total of 70 patients were enrolled between December 2010 and December 2011. As compared to men, women treated with Eptifibatide had 11% of bleeding as a complication, compared to 0% in men; 11% of thrombocytopenia in women, compared to 4.6% in men; 11% of deaths in women, compared to 9% in men and no stroke was identified in any of the groups studied.
Conclusion: None of the difference found in complications among gender analyzed in this study was statistically significant. Same considerations taken with Hispanic males with NSTEMI need to be taken at the time of giving Eptifibatide to Hispanic females with a similar diagnosis.

RP#4

THE EPWORTH SLEEPINESS SCALE AND ITS CORRELATION WITH THE SEVERITY OF OBSTRUCTIVE SLEEP APNEA IN THE PUERTO RICAN POPULATION

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Purpose for Study: Obstructive Sleep Apnea (OSA) is a common sleep-related breathing disorder that involves a decrease or complete halt in airflow despite an ongoing effort to breath. This condition is diagnosed and stratified utilizing the patient's history, overnight Polysomnography Test and the Apnea Hypoapnea Index (AHI). Despite this, Pulmonary Medicine counts with several methods that can complement the diagnosis. One of these methods, known as The Epworth Sleepiness Scale, has become the most frequent questionnaire use worldwide to assess a person's average level of daytime sleepiness; factor that has been related with the severity of Obstructive Sleep Apnea. Previous studies worldwide had questioned the utility and validity of the Epworth Sleepiness Scale correlating severity of daytime sleepiness and OSA. Thus, because the scale has been translated to multiple languages and also due to the fact that this is a subjective questionnaire. To our knowledge, there is no published study on this subject in the Puerto Rico population. The purpose of this study is to determine the correlation between the severity of the Epworth Sleepiness Scale and Obstructive Sleep Apnea determined by Polysomnography in the Puerto Rican population.
Methods: This is a retrospective observational randomized trial performed in the Laboratorio del Sueño (Labsu) in Mayagüez, Puerto Rico; between August and September of 2011. The study consist of a sample of 257 Puerto Rican adult patients (18 to 79 years old) who underwent overnight Polysomnography Test. Population consisted of 36% females and 64% males. Evaluation was complemented with the Epworth Sleepiness Scale.
Results: All patients who underwent Polysomnography Test were included in the study. Patients that were not diagnosed with Obstructive Sleep Apnea (2) or with no available Epworth Sleepiness Scale questionnaire (3), were excluded from the study. After statistical analysis the Spearman's Correlation Coefficient Score between the AHI and the Epworth Sleepiness Scale is of 0.32 ($p<0.0001$) for the general population. With a significant association in the female population (p: 0.0124) and in the male population ($p <0.001$).
Conclusions: This study had found a very significant statistical correlation between the severity of OSA and daytime sleepiness in the female and male Puerto Rican population ;being stronger in the latest one. This could be related to the way in which males and females expressed their lack of sleep and tiredness. Despite controversy, this study demonstrates the utility of the Epworth Sleepiness Scale as a tool for the evaluation of patients with Obstructive Sleep Apnea in the Puerto Rican population.

RP#5

PRESENCE OF DIABETES MELLITUS IN PATIENTS WITH ACUTE CORONARY SYNDROME IN A HOSPITAL OF THE METROPOLITAN AREA OF SAN JUAN FROM FERUARY 2008 TO JUNE 2011.

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Diabetes Mellitus (DM) is a well-recognized heart risk factor equivalent highly contributing in to the development of Myocardial Infarction. The prevalence of DM in Puerto Rico (PR) has been increasing from 9.8% in 2001 to 12.8 in 2010. Puerto Ricans are second to Pima Indians on the prevalence of DM (50% vs 12.8%). In the last years a climbing tendency in other risk factor have been noticed in Puerto Rico mainly Hypertension, Obesity and hypercholesterolemia. The goals of this study were: (1) To determine the presence of DM in patients admitted with Acute Coronary Syndrome (ACS) hospitalized at San Juan City Hospital from February 2008 to June 2011. (2) To calculate new occurrences of DM and impaired fasting blood glucose (IFG) in patients with ACS. (3) To observe the presence of other cardiovascular risks and how they relate to glycometabolic derangements. This study is a descriptive retrospective analysis of medical records of patients admitted to San Juan City Hospital in the Intensive Care Unit with the diagnosis of ACS during the period between February 2008 to June 2011. The prevalence of DM in patients with ACS was obtained from medical records as well as new Diabetes occurrence and IFG. Age, sex, HbA1c, DM duration, other related risk factors were assessed and related to above parameters. Metabolic control in a subgroup of patients who died was examined as well. Analysis to identify any significant relationship between variables was using chi-square and Pearson correlation. Results: 454 patients were admitted to San Juan City Hospital in ICU with ACS. Of those, 59% were male and 41% were females. DM was present in 59.5% of 454 patients with ACS while Diabetes was found in 40.5% at time of admission. In patients with ACS and no history of DM, new occurrence of DM was 22% and 25% for IFG. Mean HbA1c in Diabetic patients with ACS was 9.6%, while mean HbA1c in Diabetic patients who died was 8.4%. Morbid Obesity and Hypertension predominated in patients with ACS and blood glucose derangement while smoking and cocaine use were more prevalent in those patients with ACS and normal blood glucose levels. Conclusions: The presence of DM and IFG is very high among patients with ACS in our community. The new occurrence of DM and IFG among those patients with ACS and no history of DM were significant also. Hypertension and Morbid Obesity is present in a greater proportion in our patients with ACS with glycometabolic derangement.

RP#6

ANTHROPOMETRIC AND DEMOGRAPHIC CHARACTERISTICS OF PATIENTS WITH OSTRUCTIVE SLEEP APNEA IN PUERTO RICO

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Obstructive Sleep Apnea (OSA) is characterized by recurrent episodes of upper airway collapse and obstruction during sleep; it has a strong relation with several diseases including coronary artery disease and hypertension. When OSA remains untreated, mortality due to those co morbidities increases. OSA has been known as a disease of obese people due to previous studies in United States, Europe and Asia but demographic and anthropometric characteristics have been poorly defined in Puerto Ricans. We conducted a retrospective review of records of adult patients recently diagnosed with OSA in a certified sleep laboratory. Objective was to identify the anthropometric and demographic characteristics: gender, age, mallampati score, body mass index (BMI), waist-hip ratio, neck circumference and cardiovascular co morbidities. Seventy one records meet the inclusion criteria and were included in the study. All patients were Puerto Rican; forty five patients were men and thirty six were women; 50% of men had severe OSA, while most of the women (46.15%) had mild OSA; minimal neck circumference in men was 15 inches and 13 inches in women, most of the man with severe OSA had neck circumference of at least 17 inches. mallampati score III-IV was present in 65% of men and in 25% of women with severe OSA; obesity was found in more than 50% in both men and women irrespectively of the severity of OSA. Waist-Hip ratio over 0.96 in men and over 0.85 in women was also identified in more than 50% of patients. Most common co morbidities were hypertension and depression. Eighty four percent of women were postmenopausal. The proportion found between men and

women was similar to previous studies in Caucasian and Asian people. OSA also was associated with older ages since seventy five of patients were 65 years or older. Severe OSA was associated with a minimal neck size of 17 inches that could represent a specific risk factor for Puerto Rican men if subsequent studies find the same results. BMI remains strongly associated with OSA independently of the severity. To our knowledge, this is the first time a study to identify anthropometric and demographic characteristics is in Puerto Rican patients with OSA is conducted. More extensive studies with large populations are required in order to define the demographic and anthropometric profile of Puerto Ricans at risk for OSA, as well on other ethnic groups.

RP#7

PRESENCE OF DEPRESSION IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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Background COPD is a chronic progressive illness that affects 6% of the general population, and is the fourth leading cause of death in the United States. In the last few decades, there has been a global increase in mortality from COPD, which is expected to be the third most frequent cause of death by the year 2020. It has long been suggested that depression is a common emotional disturbance in patients with COPD. Depressed patients with a chronic medical illness are usually sicker than their counterparts and have lower treatment adherence. In COPD patients, depression is a strong predictor of COPD treatment failure, diminished functioning, quality of life, and mortality. The aims of this study were to explore the occurrence of depression in patients with chronic obstructive pulmonary disease to help clinicians to better identify patients at risk for depression and to enhance the opportunity to implement early intervention. Methods: The study was retrospective and descriptive, based on the association of depression in patients with COPD. These patients were selected from general practice and hospitals in the western region of Puerto Rico. COPD was defined as a ratio of forced expiratory volume in 1 second to vital capacity (FEV1/ IVC) before and after inhalation of 400; mg salbutamol below the reference ratio minus 1.64 × standard deviation, FEV1 <80% predicted, reversibility in FEV1 ≤12% of predicted FEV1, and a history of smoking. All patients (n=21) underwent a lung function test to confirm a diagnosis of COPD. On the other hand, all patients were surveyed with PHQ-9 Questionnaire to measure for depression. Patients who did not met the following criteria: Asthma, poor cognitive functioning and presence of an end stage disease (CHF, CLD, ESRD, Malignancy) were excluded. Result: The overall presence of depression in patients with COPD was 42.85%. Significantly, more women than men met the diagnostic criteria for depression (57% vs 43%). In the comparison of inpatient and outpatient groups, there is a higher incidence of depression in hospitalized patients than that of individuals screened at outpatient clinics (67% vs 33%). Conclusions Results indicate that depression is higher in COPD patients, compared to the general population. It is also more prevalent in women than men, and inpatient than outpatient groups. However, the hospital environment could exacerbate depression symptoms. Greater efforts should be made to identify the presence of depression in patients with COPD to improve treatment failure, functioning, quality of life, and mortality.

RP#8

PRESENTATIONS AND OUTCOMES OF COLORECTAL CANCER (CRC) IN A COMMUNITY HOSPITAL IN PUERTO RICO

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Abstract: Background: CRC is the second leading cause of cancer death in Puerto Rico (PR) (1). We conducted a retrospective review of pathological reports of CRC from 2006 through 2011 in a community hospital in Puerto Rico. The aim of our study was to examine the clinical and pathological of CRC in a community hospital in PR and how they correlate with overall survival (OS). Material and Methods: Between 2006 through 2011, the pathology reports of histologically proven CRC who underwent surgery at Hospital Del Maestro were reviewed. Basic demographic data were obtained. Overall Survival was determined by using the social security death index, as well as by reviewing medical records. Results: From 2006-2011 we found 205 pathology reports of colorectal cancer. Adenocarcinoma constituted 98.5% (202/205) of all histologic results; we also found 2 cases of neuroendocrine carcinoma accounting for 0.9% (2/205), and one case of medullary carcinoma 0.4% (1/205). The proportion of females and males was 52% (106/202) and 48% (96/202), respectively. Median age at diagnosis was 71 yrs., ranging from 30 to 96 years. Most common site for presentation was the right colon (cecum +

distal transverse), corresponding to 50% (101/202) of the cases. The left side (splenic flexure + descending colon) was found in 42% (85/202) of cases. Rectum was involved in only 2.5% (5/202) of cases. Of the 202 cases, 96% (193) were pathological staged; in 9 cases lymph nodes could not be recovered. Stage III was the most common at the time of presentation, followed by Stage II, representing 42% (81/193), and 38% (74/193), respectively. Stage I and IV represents 11% (22/193), and 8% (15/193). Median follow up was 44 months. Three-year OS was 72 % for all stages. Early stages (I, II) had better survival than advanced stages (III, IV), 80% vs. 66%, p= 0.007. OS was worst for males been 6-% vs. 78%, which was statistically significant p=0.0045. We also analyzed the number of lymph nodes recovered at the time of surgery for cases with Stage II, and found that the outcome was worse for those who did not have more than 13 lymph nodes recovered: 92% vs. 72% at 3 yrs. Conclusion: To our knowledge this is one of the first studies showing OS in a community hospital in Puerto Rican regarding colorectal cancer. We may need better surveillance, as patients commonly presents with advance stages, therefore screening may need to be improved. Males had the worst OS therefore further evaluation is needed. We also corroborate the importance of lymph node recovery in stage II cases.

RP#9

HYDRATION PLUS ACETYLCYSTEINE, SALINE SOLUTION ALAONE OR NO INTERVENTION: WHICH ONE IS BETTER IN PREVENTING CONTRAST INDUCED NEPHROPATHY AFTER CARDIAC CATHETERISM?

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Introduction: Contrast induced nephropathy (CIN) is one of the most frequent causes of acute renal failure in hospitalized patients. In patients without risk factors, the incidence may be as low as 2%. In patients with diabetes, the number rises to 9%, with incidences being as high as 90% in diabetics with CKD. There is some evidence that its development is associated with increase morbidity and mortality. Several known antioxidants have been studied to assess their effect on nephropathy, especially N-acetylcysteine. However, its usefulness has yet to be confirmed. Our research question is if is hydration with saline solution plus acetylcysteine is superior to hydration with saline solution alone preventing CIN. Methods: The medical records of males and females patients between ages 40 – 88 years old admitted with ACS to Dr. Ramon E. Betances Hospital who underwent cardiac catheterism were followed in a retrospective study for a period of three months. The types of contrast induced prophylaxis received were identified and classified in three groups: those who received prophylaxis with saline solution plus acetylcysteine, saline solution alone or no intervention, and the serum creatinine at 24 – 48 hours were followed. Patients who were discharged from the hospital without renal function follow up after cardiac catheterization were excluded.The results were analyzed using the chi-square test and the F test. Results: A total of one hundred records of males and females patients between ages 40 – 88 years old, admitted with ACS, who underwent cardiac catheterism, were revised. Sixty seven were included and thirty three were excluded. Fifty received saline solution alone, nine saline solution alone, and eight received no intervention. Sixty-three percent were males and 37 percent were females. The major risk factors were diabetes mellitus and high blood pressure. Two out of fifty, one out of nine and two out of eight developed contrast induced nephropathy, in the group of saline solution alone, saline solution plus acetylcysteine and no intervention respectively. Using the chi-square test, there were no significant differences among groups with respect to the percent of CIN (p=0.1599),the difference between saline solution and no intervention was borderline significant (p=0.0564) and using the F test, there was no significant differences among groups with respect to the average difference (p=.1894). Conclusion: In our study, there was no significant statistical evidence which proved that hydration plus acetylcysteine is superior to saline solution alone, or to no intervention.

RP#10

INCIDENCE AND OUTCOMES OF HOSPITALIZED PATIENTS WITH HEALTHCARE-ASSOCIATED AT THE HOSPITAL MUNICIPAL DE SAN JUAN, SAN JUAN, PR

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Background: Hospitalized patients with community-acquired pneumonia (CAP) may have risk factors for multidrug-resistant organisms (MDROs). These types of patients have recently been classified as having healthcare-associated pneumonia (HCAP). In Puerto Rico, the incidence of HCAP among hospitalized patients with CAP and their clinical outcomes are not well defined.
Objective: The objective of this study was to describe the

incidence of HCAP among hospitalized patients with CAP and their clinical outcomes in San Juan City Hospital in San Juan, Puerto Rico.

Methods: All hospitalized patients with a pulmonary infiltrate plus either cough, sputum production, fever, or leukocytosis were classified as CAP. Patients with CAP with risk factors for MDROs according to ATS/IDSA guidelines were classified as HCAP. Patient characteristics and clinical outcomes were compared for HCAP and non-HCAP patients.

Results: A total of 50 patients were enrolled in the study. HCAP was identified in 9 patients (18%). Patient characteristics and clinical outcomes for non-HCAP versus HCAP are depicted in table 1.

Tabla 1

Variable	**Non-HCAP** (n=41) n (%)	**HCAP** (n=9) n (%)	**P-value**
Demographics			
Age, Median (range)	56 (22-89)	56 (34-79)	0.960
Male gender	24 (58.5)	6 (66.7)	0.724
BMI, Median (range)	24.2 (12 – 150)	25.7 (15 – 40)	0.747
Comorbidities			
Cancer	3 (7.3)	3 (33.3)	0.063
Congestive heart failure	6 (14.6)	1 (11.1)	1.00
COPD	6 (14.7)	2 (22.2)	0.623
Cerebrovascular accident	1 (2.4)	0 (0)	1.00
Liver disease	2 (4.9)	1 (11.1)	0.456
Severity of Disease			
Intensive Care Admission	9 (22.2)	2 (22.2)	1.00
Altered mental status	4 (9.8)	2 (22.2)	0.293
Pneumonia Severity Index, Median (range)	79 (0-189)	109 (84-169)	0.025
Clinical Outcomes			
Days to reach clinical stability, Median (range)	6 (2-8)	4 (1-8)	0.763
Length of hospital stay, Median (range)	8 (0-43)	8 (2-35)	0.990
In-hospital mortality	7 (17.1)	3 (33.3)	0.358

Conclusions: This study documents that approximately one out of five hospitalized patients with CAP meet criteria for HCAP. Severity of pneumonia is significantly higher in patients with HCAP than in patients with CAP. It was not found a statistically significant value between these two groups, HCAP versus CAP. These data suggest that the definition of HCAP is not well defined therefore undiagnosed and not properly treated.

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5. Nomenclatura: debe usarse los nombres genéricos de los medicamentos. Podrán usarse también los nombres comerciales, entre paréntesis, si así se desea. Se usará como preferencia el sistema métrico en pesos y medidas.
6. Un resumen no mayor de 250 palabras en estudios clínicos y no mayor de 150 palabras en reporte de casos o reseñas. Debe incluir los puntos principales que ilustren las substancias del artículo y la exposición del problema, método, resultado y conclusión. El mismo debe estar escrito en inglés y en español.

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