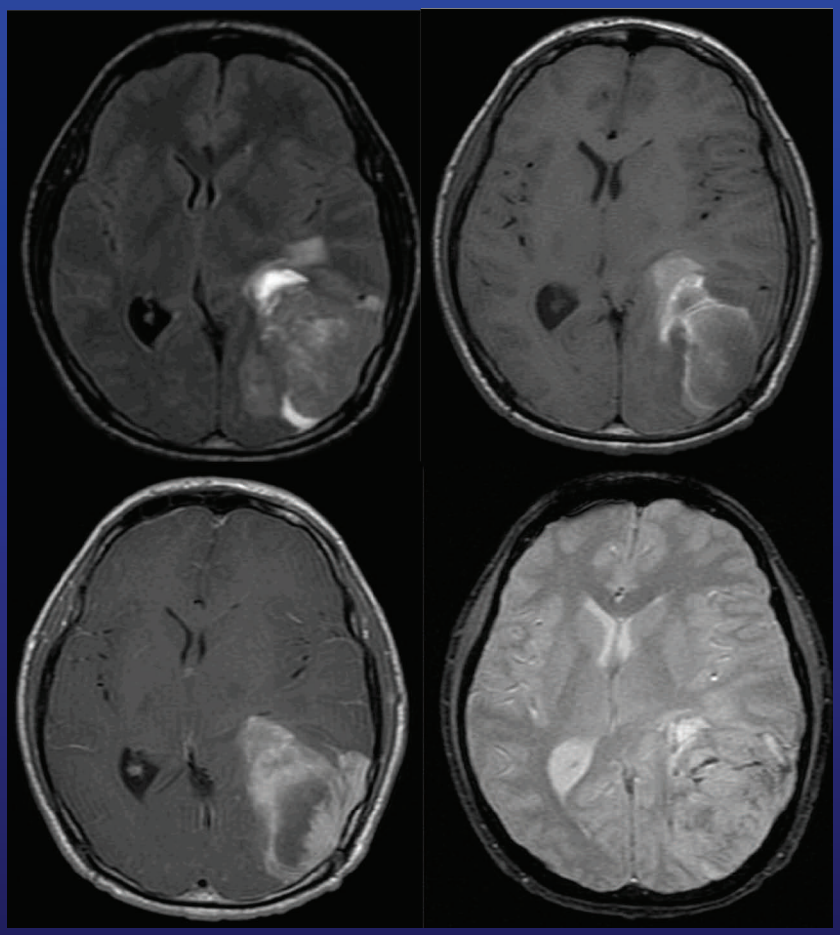
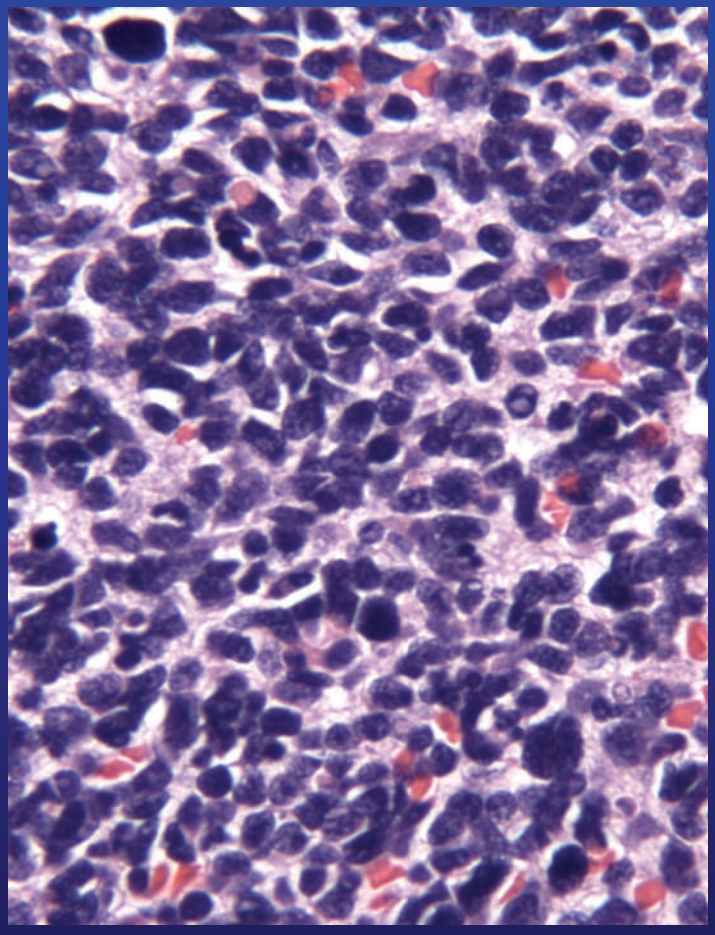
Proceedings of ARMC Research Conference





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- Preface -

June 1, 2012

It is my pleasure to welcome you to Arrowhead Regional Medical Center's Seventh Annual Resident Research Day. My thanks to each one whose research and commitment is illustrated by inclusion in these Proceedings. It is my sincere hope that the submissions from today may go on to help shape and focus the medicine of tomorrow.

I encourage you to read through the Proceedings and engage the various authors in discussion. Perhaps the issues raised between these covers will inspire others to further explore questions raised. Given that these Proceedings represent the seventh year of this endeavor, it is inspiring to witness the sustained commitment and quality exemplified by the various resident physicians whose work has been featured both today and in past years. As always, I remain deeply indebted to Dr. Edward Lee for his tire-less dedication which makes this event a reality each year.

David Lanum, M.D.
Co-Editor

- Contents -

- Contents -

- Contents -

- Contents -

- Contents -

- Contents -

PROGRESSIVE CHANGES IN LIFESTYLE OF EMERGENCY MEDICINE RESIDENTS

Baccaglini G. DO,
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STUDY OBJECTIVES: The objectives of this survey are to evaluate emergency medicine resident satisfaction with the choice of emergency medicine as a specialty and to identify lifestyle choices that contribute to physician burnout.

METHODS: An anonymous, cross-sectional, internet-based, nation-wide survey containing questions regarding emergency medicine practice satisfaction was emailed to approximately 1370 allopathic and osteopathic emergency medicine residents residing in the United States. Participants had a time period of approximately four months to access the thirty-five-question survey and fill in their responses. The sole inclusion criterion for the survey was being an EM resident within the United States.

RESULTS: A total of 905 (66%) of 1370 U.S emergency medicine residents completed the survey. Sixty-six percent of the respondents were aged 25-30 and 55% worked at an academic center. 51% of residents with married, however only 25% had children. EM residents tended to eat a relatively healthy diet, but did not exercise as often as expected. Respondents ate fast food no more than one time per week in 65% of those surveyed. Exercise routines were varied between 37% exercising 2-3 times per week and 44% exercising 0-1 times per week. With regard to social habits 7% of residents marked that they drink alcohol everyday, 23% stated they drink 3-4 drinks with each sitting, and 9% of residents stated they had used an illegal drug in the past year. For personal priorities, about 40% stated that work was their priority while 60% put family first. Differing from what was previously thought and seen on prior surveys, 55% of responders planned on practicing EM as long as physically possible while only 0.4% wished to quit the field as soon as they were done with residency.

CONCLUSION: The results of this study show that resident physicians are overall satisfied with their jobs and therefore perhaps have less risk of future burnout. This differs from multiple other studies, supporting a high level of projected attrition among emergency physicians.

CHRONIC MENINGITIS WITH HYDROCEPHALUS SECONDARY TO SUBARACHNOID NEUROCYSTICERCOSIS

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CASE REPORT

Neurocysticercosis (NCC) is a central nervous system (CNS) parasitic infection caused by cysticercus cellulosae, the larva form of Taenia solium [1]. It is further classified into parenchymal, subarachnoid, intraventricular or spinal type depending on the location of the lesion and is most commonly diagnosed with imaging studies demonstrating cystic lesions [2, 3, 4]. Here we present a very rare case of chronic meningitis secondary to subarachnoid neurocysticercosis without visible CNS lesions.

A 53 year old Hispanic male presented to the emergency department with the chief complaint of worsening nausea, vomiting, headache and gait ataxia over a period of eight months. The patient reported visiting Mexico in the months prior to the onset of the symptoms. Head CT and Brain MRI showed communicating hydrocephalus with dilatation of the lateral, 3rd and 4th ventricles. Cerebral spinal fluid (CSF) was slightly hazy and yellow in appearance. White blood cell count in the CSF was elevated at 1238 /UL with 80% neutrophils, 17% macrophages, 2% lymphocytes and 1% eosinophils. CSF glucose was low at 5 mg/dL, total protein elevated at 334 mg/dL. The CSF studies were negative for multiple sclerosis, syphilis, cryptococcal antigen, coccidioides antibody, and acute bacterial or viral infections. The serum HIV, syphilis, lyme, histoplasma antibody and autoimmune tests were negative. However, both the serum and CSF cysticercosis IgG were positive. Subsequently, the patient underwent ventriculoperitoneal shunt placement followed by one month of oral albendazole and decadron for the treatment of subarachnoid neurocysticercosis. Upon completion of the treatment regimen, the patient reported resolution of symptoms with normalization of the CSF studies.

This case is unique because the diagnosis of subarachnoid neurocysticercosis was made without evidence of parenchymal or extra-parenchymal cysts. It also illustrates the importance of a detailed history taking that covers a patient's prior exposures. Neurocysticercosis, especially subarachnoid cysticercosis should be in the differential diagnosis in patients presenting with unexplained hydrocephalus.

WHERE DIAGNOSIS IS MADE WITH HISTORY AND PHYSICAL EXAM

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During my third year of Internal Medicine Residency, I had an opportunity to experience medicine as it is practiced in a government hospital in a developing nation of Ethiopia, Africa. It was an enriching experience in countless ways – the patients, the hospital, the available resources (not much of), the interns, the residents, the attendings, and last but not the least the warm and welcoming nature of the people of Ethiopia. I worked in the Southwestern part of the country in a small town called Jimma—the location of the Jimma University Specialized Hospital serving 11,000,000 inhabitants. The town is located 335 km southwest of the capital city, Addis Ababa. The Jimma Hospital was established over 60 years ago and is the only specialized health facility in the southwest Ethiopia. However, I came to know that the internal medicine sub-specialties are not available at the hospital. For instance, cardiac, nephrology, hematology/oncology, gastroenterology patients still need to be referred to Addis Ababa University for further testing and treatment. Despite these specialties being available in Addis Ababa, the majority of the patients still don't receive the needed care as they are unable to afford the cost of treatment. I witnessed a 50 year old patient expire secondary to unavailability of first line treatment. The patient was suspected to have brain abscess versus malignancy (the top differentials) primarily based on history and physical exam. His presenting symptoms were acute onset of seizures with hemiparesis, nausea and headache. The patient's history revealed weight loss and fevers without cough. Chest x-ray findings were normal. The confirmatory diagnosis could not be made as the hospital does not have CT scans or MRIs. The patient succumbed to death despite being treated with antibiotics as the hospital does not have neurosurgeons—perhaps an operation could have saved his life…

My days at the hospital were filled with many such stories and it was humbling to witness the Ethiopian physicians trying their best to treat patients and save lives despite the limited availability of resources. Their intelligence, medical knowledge, compassion is unequivocal; comparable to physicians practicing elsewhere around the world. I'm tempted to say the Ethiopian physicians are the true clinicians as they have minimum ancillary tests available prior to making the diagnosis… yet they are often right on target… hail to the history taking and superb physical exam skills…

INTRATHORACIC COMPLICATIONS FOLLOWING PERCUTANEOUS INTERCOSTAL DRAINAGE OF ABDOMINAL FLUID COLLECTIONS

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Percutaneous catheter drainage performed to evacuate abdominal fluid collections often necessitates an intercostal approach and thus transgression of the pleural space. Reported complications from this approach include pleural effusions, pneumothorax, or empyema, though no large series has been published. The purpose of our study is to examine all intrathoracic complications following intercostal abdominal drainage procedures.

We retrospectively reviewed medical records and imaging from image guided percutaneous catheter drainage procedures for intra-abdominal fluid collections. Only procedures requiring an intercostal approach without pre-existing transpleural drainage catheters in place were included, while percutaneous biliary or cholecystostomy drainage catheters were excluded. Intrathoracic complications that developed immediately following catheter insertion or revealed on subsequent imaging, laboratory, or procedures were recorded and categorized. Catheter type and duration, intercostal space transgressed, and intrathoracic findings at the time of drainage were also studied.

Intercostal drainage procedures meeting criteria were performed on 27 patients (29 drains) for 11 perihepatic, 7 peripancreatic, 4 intrahepatic, 2 perisplenic, 2 perigastric, and 1 perirenal fluid collection. The mean indwelling catheter time was 35 days (range 1-184 days). Six drains transgressed the ribs 7-8, 3 through ribs 8-9, and 1 through ribs 9-10. There were 5 major complications, including 3 subsequent pigtail thoracostomies, one nerve ablation and one video assisted thorascopic procedure for empyema. We discovered 6 minor complications: 2 increased pleural effusions, 2 intrapleural contrast extravasations, 1 drain-associated pain, and 1 inadvertent tube loss.

We demonstrated that percutaneous drainage from an intercostal approach resulted in significant number of major intrathoracic complications including requirement for secondary interventions. The majority of complications occurred after catheter insertion above the ninth intercostal space.

GLIOBLASTOMA MULTIFORME (GBM) AND CONCOMITANT SUPERIMPOSED MRSA ABSCESS: CASE DISCUSSION AND LITERATURE REVIEW OF A RARE ENTITY.

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The incidence of an intracranial tumor with a concomitant intratumoral abscess preoperatively is rare. The majority of cases reported include sellar tumors (e.g., pituitary tumors, cranio-pharyngiomas) with highest association secondary to seeding via direct spread from nearby colonized regions such as the sinuses. Intratumoral abscesses have also been identified in parasagittal and posterior fossa meningiomas, with hematologic spread via venous sinuses postulated to be the etiology for intratumoral infections. The incidence of glioblastoma multiforme (GBM) and intratumoral abscess is even more rare. Based on a thorough literature review, only five cases of GBM with concomitant superimposed intratumoral abscess have ever been reported. All five cases identified are related to likely bacteremic spread of infectious agents to the necrotic center of the malignant glioma. Of these documented cases, only two identified Staphylococcus aureus as the primary infectious agent. No documented cases of preoperative concomitant GBM and MRSA were identified. In one year, our service has diagnosed two such cases. The following is a case presentation with thorough discussion and literature review of a highly rare entity.

A MEASUREMENT OF HEALTH CARE LITERACY AT MCKEE FAMILY HEALTH CLINIC

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ABSTRACT:
Health literacy is defined as "the ability to read, understand, and act upon health information". As primary care physicians we are encouraged to follow "The Healthy people 2020" Health Initiative, sponsored by the U.S. Department of Health and Human Services, which lists lack of health literacy as a major disparity that needs to be addressed. Numerous studies link low health literacy to poor medical outcomes, including reduced treatment success, increased morbidity, increased mortality, increased risk of medical errors, and decreased patient satisfaction, and compliance. Our goal was to determine the level of health literacy at McKee Family Health Clinic (FHC), in order to be both better guides and advocates for our patients on their medical conditions. In our study, we questioned 52 randomly selected individuals at McKee using the REALM-SF tool to assess their health literacy level. We found that 52% of our subjects were below that minimum level of health literacy. As compared to similar analyses of the general American population, our study suggests that our patient population at McKee FHC may have a substantially lower number of health literate adults. Awareness of this barrier particular to our clinic clientele will allow our clinicians to better tailor communication and advice to the patients, as well as to strategize alternative communication interventions to improve the delivery of our services to them and ultimately improve their care.

EXERCISE REGIMEN SELECTION: AN ANALYSIS OF PHYSICIAN'S AND HEALTH-CARE WORKER'S WORKOUT PATTERNS

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BACKGROUND:
Although the benefits of exercise have long been recognized to have multiple health benefits, adherence to workout regimens remains low. The study objective was to survey healthcare professionals about their own workout regimens in order to get insight on how lifestyle, preferences, and other various demographic variables impact their choices and adherence to those choices. This will provide valuable information on how to counsel patients on their approach to workout routines.
MATERIALS AND METHODS:
Data was collected in the form of an initial online survey, along with a follow up survey at 2 months. The 46 participants were queried about their demographic data, including age, job description, hours worked, presence of children, and how long they had been participating in their respective workout regimens. Workouts were categorized into Home based, Gym based, and Outdoor based, with options for combinations of each.
RESULTS:
Respondents who chose home routines did so primarily because of time constraints in their lifestyle. Home routines typically consisted of independently directed workouts such as calisthenics, yoga and free weights. Video based programs were also popular among those who chose home workouts. Those who chose home routines averaged 2.2 workouts per week. Home workouts were most popular among respondents less than 35 with 56% (14/25) choosing to do home workouts. Also, as participants worked more hours, their selection of home routines increased.
Gym routines were mostly chosen by those who enjoy using, but do not have gym equipment for various reasons such as lack of space and cost. Those who liked to create an event out of working out as well as those who enjoyed gym administered classes also chose gym workouts. They were also popular among people under 50 years old, with 15/30 (50%) choosing to work out in the gym in that age group. On follow up, those who chose gym workout routines had the highest compliance rate (2.4 workouts per week).
Outdoor workouts were chosen by respondents who valued fresh air as a component of their workout regimen. Respondents whose age was greater than 51, as well as those who had children, selected outdoor routines more often than other respondents. Those who incorporated outdoor routines in their regimen did so an average of 1.73 times per week.
CONCLUSION:
This study outlines some of the reasons behind physician's and other health care worker's selection of workout regimens as well as their adherence to those routines. In order to counsel a patient on undertaking a lifestyle change as great as beginning a workout routine, the healthcare provider must not only be armed with the knowledge of the various routines available, but also take into consideration how the patient's lifestyle and demographics impact their adherence to a workout regimen. Our study was small, and although some valuable information has been gathered, more research into how we may increase exercise compliance in terms of workout selection needs to be done.

OPPORTUNITIES FOR REDUCING READMISSION RATES: A RETROSPECTIVE EVALUATION

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BACKGROUND
In October 2012, Medicare will penalize hospitals by reducing reimbursements for all discharges by 1% for patients readmitted within 30 days for the following conditions: acute myocardial infarction, pneumonia, and heart failure. Readmissions cost Medicare $17.4 billion in 2004, 20% of which are readmitted within 30 days of initial discharge. Public safety-net hospitals are at an increased risk of reduced revenue, as patients experience socio-economic challenges that often result in failure to adhere to prescribed therapy.
OBJECTIVES
Determine how pharmacist intervention following discharge from a county hospital can help avoid readmission. Identify and categorize factors contributing to patient readmissions.
METHODS
Follow-up phone calls are currently being conducted by a pharmacist for patients 18 years and older who have been discharged to home within 10 days of admission on five or more medications. The study consists of a retrospective chart review of patients that have been discharged with five or more medications. The following data elements are being collected: patient demographics, diagnosis at admission and discharge, medications on discharge, and dates of pharmacist interventions.
RESULTS
100 patients were interviewed over the phone. 15 of 100 patients were readmitted within 30 days of their previous discharge, 3 of which were for heart failure exacerbation. Compared to 2011 30-day readmission data during the same time frame, 21 patients were readmitted for heart failure.
CONCLUSIONS
The effects of pharmacist interventions will be presented, and the implications on the long-term management of chronic disease will be discussed.

RACIAL DISPARITIES IN CLINICAL PRESENTATION, TREATMENT, AND OUTCOME OF WOMEN WITH BREAST CANCER: ANALYSIS OF NATIONAL INPATIENT SAMPLE DATABASE

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BACKGROUND: Despite the established consensus, guidelines, and treatment protocols, there is wide variability in practice patterns among women treated for breast cancer, leading to variable results, with less favorable outcomes among minorities. We conducted this study to examine racial/ethnic disparities in stage of disease and comorbidities at presentation (pre-treatment factors), surgical treatment allocation (breast conserving surgery (BCS) versus mastectomy (MAS)), and postoperative complication and mortality (post treatment outcomes).
METHODS: National inpatient sample is a nationwide clinical and administrative database compiled from 44 states representing 95 percent of all hospital discharges in the Unites States. Women with primary discharge diagnosis of breast cancer from 2005 to 2009 who underwent breast surgery (BCS or MAS) were identified using International Disease Codes 9th edition. Information about demographics, hospital characteristics, comorbidities, stage, surgical treatment, post-operative complications, and in-patient death was obtained. Multivariate logistic regression analyses were used to examine risk adjusted association between race and the aforementioned outcomes.
RESULTS: We identified 93, 375 patient discharges with a mean age of 62 years. White women were 58.3%, as compared to 8.5% Blacks, 5.6% Hispanic, 2.6% Asian/Pacific islander, 4% Native American, 2% other, and 22% unknown. Regarding pretreatment factors, compared to Whites, Blacks were more likely to present with regional or metastatic disease (1.17, p <0.001) and more likely to present with comorbidities (1.58, p 0.003). Hispanics were also more likely to present with comorbidities (1.11, p <0.001). Regarding treatment allocation, compared to Whites, Blacks (1.30, p <0.001) and Hispanics (1.20, p <0.001) were more likely to receive BCS whereas Asians were less likely to undergo BCS (0.80, p 0.01). Regarding post-treatment outcomes, compared to Whites, Blacks were more likely to develop post-operative complications (1.35, p<0.001) and more likely to die in the hospital (1.87, p 0.13). Other racial groups showed no statistically significant difference compared to Whites.
CONCLUSION: After controlling for potential confounders, we found some racial/ethnic disparities in clinical presentation, treatment, and outcomes. Those disparities were especially noted between White and Black women. However, magnitudes of associations were generally weak. Future researches should examine the underlying factors of such disparities. A better understanding of these factors will facilitate the development of strategies to help eliminate the health care disparities.

COMORBIDITY AND OUTCOMES AFTER SURGERY AMONG WOMEN WITH BREAST CANCER: ANALYSIS OF NATIONAL INPATIENT SAMPLE DATABASE

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BACKGROUND: Comorbidity influences the outcomes of hospital care such as to length of stay, development of postoperative complications, and mortality. However, this effect has not been specifically studied among breast cancer patients. Our objective was to examine the effect of comorbidity on risk of postoperative complications, prolonged hospitalization (defined as above median length of stay), and in-patient death among women with breast cancer.
METHODS: National inpatient sample is a nationwide clinical and administrative database compiled from 44 states representing 95 percent of all hospital discharges in the Unites States. Women with primary discharge diagnosis of breast cancer from 2005 to 2009 who underwent breast surgery were identified using International Disease Codes 9th edition (ICD-9). Information about demographics, hospital characteristics, comorbidities, stage, and surgical treatment was obtained. Comorbidities were identified as secondary diagnoses using ICD-9 codes and used to calculate modified Charlson comorbidity index (CCI). The CCI is a global measure of comorbidities that is calculated according to presence of four atherosclerotic comorbidities of peripheral arterial disease, myocardial infarction, cerebrovascular disease, and congestive heart failure, and 13 nonatherosclerotic comorbid condition, including diabetes mellitus, chronic lung disease, gastrointestinal ulcer, arthritis, paraplegia, renal failure, malignancy, AIDS, dementia, liver disease, and liver failure. Each of these comorbidities is given a specific score and these scores are then added up to a single index score which reflects the overall comorbidity of the patient. We divided patients based on these scores into 4 groups: 0, 1, 2, and 3 or more. Multivariate logistic regression analyses were used to examine risk adjusted association between CCI score and the aforementioned outcomes.
RESULTS: We identified 93, 375 patients' discharges. The mean age was 62 years. Racial distribution was 58.3% White, 8.5% Black, 5.6% Hispanic, 2.6% Asian/Pacific islander, 4% Native American, and 24% other and unknown. About 68% of patients had a CCI score of 0, 20% had a score of 1, 6% had a score of 2, and 6% had a score of three or more. Compared to patients with a CCI score of 0, as a reference group, CCI scores of 1, 2, and 3 or more increased the risk of post-operative complications by 1.7 fold, 2.6 fold, and 4.6 fold, respectively (p <0.001). Compared to patients with a CCI score of 0, CCI scores of 1, 2, and 3 or more increased the risk of prolonged hospitalization by 1.2 fold, 1.6 fold, and 2.3 fold, respectively (p <0.001). Similarly, Compared to patients with a CCI score of 0, CCI scores of 1, 2, and 3 or more increased the risk of in-patient death mortality by 3.1 fold, 5.4 fold, and 15.8 fold, respectively (p <0.001).
CONCLUSION: After controlling for potential confounders, we found a strong and statistically significant association between comorbidities and outcomes of patients with breast cancer after surgery. Effective control of comorbidity in breast cancer patients may reduce post-operative morbidity and mortality.

MEDICAL ERRORS – A COMPLICATION OF POOR PATIENT HANDOFFS IN 2012: IDENTIFYING THE ROOT PROBLEM

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BACKGROUND: Poor patient handoffs have been shown too be a consistent source of medical errors. Few studies have surveyed residents to determine the prevalence of medical errors and root problems accounting for poor patient handoffs. The Accreditation Council for Graduate Medical Education requirements require teaching institutions and residents to identify errors and innovate a system level change.
METHODS: Using a cross sectional survey design, we surveyed residents and attending physicians (n = 62) from multiple disciplines at a teaching County hospital in Southern California. Residents and Attending physicians reported self perceived medical errors directly attributable to the patient handoff process and the specific components of the handoff process most prone to causing medical error. In addition residents were surveyed about receiving adequate training in the patient handoff process as residents and medical students.
RESULTS: Of 62 residents surveyed, 54% of residents reported a medical error due to a poor patient handoff. Forty-five (72.6%) out of 62 residents reported receiving no patient handoff training as a medical student. Residents reported the verbal component (44%) as opposed to the written component (41%) of the patient handoff to be the most important component. The patient handoff list not being up to date and inaccurate was identified by 78% of residents as contributing most to poor patient handoffs. Not having a dedicated location for patient handoffs was identified by 94% of residents as contributing least to poor patient handoffs. Ten out of 62 surveys were incomplete and only portions filled out appropriately were used in calculating results.
CONCLUSION: Our data suggest that resident self-perceived errors are not trending down and that more attention to patient handoff training needs to occur for residents and medical students. Our data points to the written component of the patient handoff to be most responsible for medical errors and highlights the need for future investigation into system-based solutions to minimize errors and increase valuable information found in written component.

ROLE OF SUBCONJUNCTIVAL BEVUCIZUMAB IN POST PTERYGIUM EXCISION MANAGEMENT

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BACKGROUND. A pterygium is a proliferative fibrovascular condition of the bulbar subconjunctival tissue that encroaches into the cornea. While the exact pathogenesis is unknown, previous research has demonstrated that various growth factors, including VEGF, play a role in pterygium formation. While VEGF inhibitors bevacizumab and ranibizumab have already been successful at treating other ocular disorders associated with abnormal vascular conditions in the retina, the evidence for their use in pterygia has been inconclusive.
OBJECTIVES. Compare the effects of wound healing and recurrence rates in postoperative bevacizumab versus pterygium excision alone.
METHODS. Prospective trial. 52 patients with a pterygium of at least 2mm in size were selected for the study. Exclusion criteria included any previous ocular surgery in the studied eye, including a previous pterygium, and any pre-existing diagnosis of glaucoma. 21 patients received subconjunctival bevucizumab and predforte drops at postop weeks two and six, while 17 patients received only the predforte drops. Outcome measures included best corrected visual acuity, intra-ocular pressure, signs of recurrence, and any sight-threatening complications at 2 weeks, 2 months, and 6 months.
PRELIMINARY DATA. The study is currently still in progress, as many of the patients have not yet had their six month post-operative visits. However, preliminary data suggest that Bevucizumab may not decrease the risk for pterygia recurrence. Of the 14 treatment group patients who have had all of their post-op visits thus far, 5 have had evidence of recurrence (35.7%). This is actually slightly higher than the control group, in which there were 3 recurrences out of 11 (27.2%).

WILDERNESS MEDICINE ELECTIVE

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Wilderness medicine is the practice of medicine in a remote setting, be that a mountain peak or the side of a highway. Medical school and residency focus on administering care in a health care center with trained personnel, medication and supplies all readily on hand. In a remote setting one usually has none of these luxuries. Whether an outdoor enthusiast or not, anyone could be confronted with a medical emergency in a remote setting. Wilderness medicine focuses on assessing a situation rapidly, being resourceful in administrating to the patient's needs with limited supplies, triaging when to treat on scene and when to transport a patient out, and being competent in basic survival skills.

The goal was to create a four-week elective for residents that would provide an introduction to both the theory and the practice of wilderness medicine. A multimodality approach was used. Text-books and daily lectures addressed the common ailments found in wilderness recreation and different ways to provide improvised care. Case scenarios challenged us to diagnose, triage, and treat patients based on differing situations and supplies present. Basic survival skills were taught, as one does not want to become a part of the disaster or crisis. Accordingly, workshops on GPS equipment, maps, compasses, fire building and shelter building were conducted in addition to the medical workshops on transporting victims, improvised splints, suturing and knots. And finally we attended a search and rescue team's meetings and training sessions. With this multipronged approach, we gained theoretical knowledge, concrete skills and a much better appreciation for what wilderness medicine entails and the hard work that search and rescue teams perform.

THE ROLE OF TECHNOLOGY IN COMMUNICATION BETWEEN PATIENTS AND HEALTH-CARE PROVIDERS IN LARGE URBAN COMMUNITY EMERGENCY DEPARTMENT IN SAN BERNARDINO COUNTY

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ABSTRACT. The goal of this research was to investigate whether email communication between emergency medicine physicians and their patients could be a possibility. The new millennium has engaged the population with numerous advances with communication technology. Yet, in an urban community emergency department population, such advances are not readily available. The overall conclusion of this study displayed that only 63% of the population surveyed had access to email. Therefore, email communication within an urban community emergency department population is slightly favorable, but realistically improbable.

ELEPHANTIASIS NOSTRAS VERRUCOSA , A CASE OF THERAPEUTIC BENEFIT WITH MULTI-LAYER COMPRESSION BANDAGING.

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Elephantiasis nostras verrucosa (ENV) is non-filarial lymphedema with characteristic skin changes. It is an uncommon condition and can cause significant morbidity. Its diagnosis is supported by clinical findings, imaging, and histology. Treatment is challenging, but benefit has been shown with mechanical, drug, and surgical therapies. This case reports documents a presentation of ENV which is treated with four-layer compression bandages and manual lymph drainage with clinical improvement in short term follow up.

DIABETES SCREENING IN PREGNANCY. A COMPARISON OF PRE AND POST HAPO GUIDELINES.

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The objective of the Hyperglycemia and Adverse Pregnancy Outcome (HAPO) Study was to clarify unanswered questions on associations of maternal glycemia, less severe than overt diabetes mellitus, with risks of adverse pregnancy outcome. In our study, we compared the detection rate of gestational diabetes using the traditional Carpenter-Coustan criteria “pre-HAPO” versus the HAPO criteria. In the retrospective analysis of approximately 250 patients’ charts, we were able to show a much higher rate of diabetes mellitus 12.9% in the post-HAPO group vs 6.2% in the pre-HAPO group. The HAPO criteria presents an opportunity for obstetricians to utilize a set of screening guidelines that can lead to more detection of gestational diabetes. This can be an opportunity to allow for early intervention to prevent some of the common sequelae associated with gestational diabetes. Macrosomia and shoulder dystocia are some of the commonly associated consequences of pregnancies complicated by gestational and overt diabetes that we would hope to prevent with early intervention.

PREVALENCE OF PERIPARTUM ANEMIA AT ARMC

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INTRODUCTION

Anemia is a preventable butsignificant health risk with inexpensive means of treatment if identified early. Anemia is more prevalent in low socio-economic populations world wide, and therefore this finding would probably extend the patient population at ARMC. Unfortunately, the prevalence of anemia in our population is presently unknown, making it difficult to know if the secondary anemia with pregnancyis a significant health issue. To address this, we retrospectively examined medical records of labor and delivery patients at ARMC to determine prevalence of peripartum anemia.

BACKGROUND

During pregnancy, there is a physiologic change allowing for 50% increase in total blood volume with only 40% increase in red cell mass.This creates a need for increased maternal iron supplies, usually accomplished by adequate nutrition and routine prenatal vitamins. Without this, anemia can occur. A compounding factor for anemia of pregnancy is the loss of blood at the time of delivery (500-600 ml with vaginal delivery and 1,000 ml with cesarean). The incidence of anemia postpartum is about 10%, and this population is at greater risk of both maternaland fetal mortality and morbidity. Studies suggest a correlation between anemia and low birth weight and preterm delivery.

METHODS

Expected results of the study were the prevalence of anemia before and after delivery at ARMC would be higher than average due to low socioeconomic population. Data was collected retrospectively from labor and delivery records at ARMC from January and February of 2012. Age, gravidity, parity, weeks of gestation at delivery, hgb prior to and after delivery, and method of delivery were recorded. Anemia was defined as hgb less than 9.5g/dl. A total of 300 patients were included in the analysis, 165 vaginal and 135 cesarean deliveries. The average $\pm$ SD for the continuous variables was calculated and prevalence of anemia determined (95% CI).

RESULTS

Overall prevalence of anemia in peripartum patients at ARMC pre-delivery is 6%and 33% post-delivery. A significant difference was found in the prevalence of post-delivery anemia in cesarean patients(39%, P 0.0003). More transfusions were required for the cesarean patients, but the difference was not statistically significant. No statistical difference was appreciated in the average pre-delivery hgb or prevalence of anemia with either method of delivery.

CONCLUSION

Incidence of post-partum anemia in the general population is about 10%, where findings of this study indicate a prevalence of 33%. Anemia can often be prevented by more cost-effective means prior to delivery. When not addressed sooner, the overall cost is significantly increased with transfusions, prolonged hospital stay, and treatment of related complications. Since the prevalence anemia in our population is high, it would suggest that this is an important issue to address for possible improved patient outcome and lower overall healthcare cost. Future research could be aimed at possible cost effectiveness of intervention prior to delivery. Future studies could also look into the hgb of ARMC patients at the postpartum visit to examine if low-income women remain at risk of suffering from anemia for a substantially longer period.

INTRACRANIAL HEMORRHAGE FOLLOWING BATH SALT USE: A CASE REPORT

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D.M. is a 42 year old male who arrived to the emergency department via ambulance at 9:35amfor reported altered mental status, right sided weakness, slurred speech, blurry vision and dizziness. On evaluation in the emergency department, the patient complained of a persistent headache and dizziness, reporting resolution of any focal weakness or slurred speech prior to arrival. The patient admitted tousing"bath salts"via nasal insufflations multiple times prior to symptom onset, with his last use being a few hours prior to arrival.

A Head CT scan showed a left-sided thalamic intracranial hemorrhage with brain stem extension and blood tracking into the 4th ventricle, causing obstructive hydrocephalus, requiring an emergent ventriculostomy that was placed by the neurosurgical physician. The patient was subsequentlyadmitted to the neuro-surgical intensive care unit, and after 4 days was extubated. At that time, the patient demonstrated a disconjugate gaze and speech impairment, later requiringaventriculoperitoneal shut 9 days after hospital admission. The patient continued to improve throughout the rest of his hospital stay and was later discharged into the care of his family with continued outpatient rehabilitation therapy.

With names such as *White Ice*, *Ivory Wave*,*Ocean Snow*, *Lunar Wave*, and *Vanilla Sky*, the dangerous consequences from the increasing use of bath salts are easily foreshadowed. Reports on morbidity and mortality due to bath salts havesharply increased in recent years. In 2011, The American Association of Poison Control Centers reported 6,138 calls for related bath salt use, up from only 304 calls in 2010, and as of February 2012 had already received over 400 calls.

Bath salts contain derivatives of cathinone, isolated from the East African plant *Catha edulis*, which share structural similarities to methamphetamines and MDMA (ecstasy). Since the mid-2000s, unregulated cathinone derivates have appeared in American and European drug markets. According to the Drug Enforcement Agency, the most common compounds thatcomprise bath salts and are responsible for most of their effects are MDPV (3,4 – Methylenedi-oxypyrovalerone) and Mephedrone (4 – Methylmethcathinone). Their consumption via various routes leads to a toxidrome similar to the combined effects of ecstasy and methamphetamines, believed to work by both direct agonist activity and re-uptake inhibition of norepinephrine, serotonin, and dopamine. The product is usually in powder or crystal form, with a white or tan brown color, and often carries the label "not for human consumption" on their packaging to subvert government control. Most users willnasallyinsufflate the powder form or smoke the crystalline form, but oral ingestion, rectal suppository, intramuscular, and intravenous forms are also reported.

More and more articles and case reports have been published in recent years after the rising use of bath salts for their euphoric and sympathomimetic effects. However, as of April 2012, no prior reported cases of intracranial hemorrhage due to bath salts abuse have been reported.

LAPAROSCOPIC EXCISION OF SPLENIC ARTERY ANEURYSM: A CASE REPORT

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INTRODUCTION

Splenic artery aneurysm is more frequently diagnosed today with the advancement and liberal use of imaging modalities. A symptomatic aneurysm, an aneurysm of any diameter in a pregnant woman or a woman in childbearing age, or an aneurysm larger than 2 cm are all strong indications for surgery because of significant increased risk for splenic artery rupture.

CASE DESCRIPTION

A 35-year-old morbidly obese African American female presented with constant left flank pain for 4 weeks. Angiography confirmed a 2.5 cm splenic artery aneurysm near the splenic hilum. Since angio-embolization was unlikely to succeed due to extensive collaterals and the aneurysm's proximity to the splenic hilum, laparoscopic excision of the aneurysm with splenectomy was performed.

DISCUSSION

Any splenic artery aneurysm with significantly increased risk of rupture requires a prompt intervention. Although percutaneous embolization of the splenic artery is the most frequently applied therapy today, surgical repair is the preferred for all symptomatic aneurysms because of the greater likelihood of success. Here, we report a successful laparoscopic surgical treatment of a 2.5 cm splenic artery aneurysm.

TECHNIQUE, SAFETY, AND EFFICACY OF ^{90}YTTRIUM FOR THE TREATMENT OF CHEMOREFRACTORY COLORECTAL LIVER METASTASES

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INTRODUCTION: Colorectal cancer is the third most common cancer diagnosed in the United States and the third most common cause of cancer-related death in both men and women in 2011[1]. Up to 25% of patients with colorectal cancer will have liver metastases at the time of diagnosis, and as high as 50% will develop liver metastases at some point during the course of their disease[2]. In the event of hepatic metastases of primary colorectal carcinoma surgical resection is an option in only 10% to 20% of patients at the time of diagnosis and about 65-72% of patients will experience recurrence of hepatic metastases within three years following surgical resection, with or without peri-operative chemotherapy[3]. Other treatment options exist, including surgical resection, systemic intravenous chemotherapy, liver directed therapies such as radiofrequency ablation, and radioembolization. For patients whose disease is not amenable to surgical resection or liver directed therapies and progresses despite intravenous chemotherapy, radioembolization has been utilized. Intraarterial radioembolization has been employed either alone, or with an alternative concomitant systemic chemotherapy agent; however, the number of studies in this population is limited and further research is needed. The purpose of this non-quantitative review is to examine the currently available literature regarding the use of yttrium 90 (^{90}Y) microspheres alone in the treatment of chemorefractory colorectal liver metastases, covering the technique, safety, monitoring, and efficacy of the treatment.

METHODS: A literature search was conducted using PubMed keywords "yttrium 90 unresectable hepatic colorectal metastases," and these results were manually searched further for studies regarding patient groups undergoing radioembolization with ^{90}Y alone after receiving systemic intravenous chemotherapy. Studies involving patients undergoing treatment with radioembolization and concomitant systemic chemotherapy were excluded, while studies involving patients who had undergone other available treatment modalities prior to radioembolization such as surgical resection were included, as long as the patients met the criteria of failed intravenous chemotherapy treatment.

RESULTS: A total of 9 studies were found, ranging from retrospective reviews to phase II clinical trials[4-12]. Overall, the average response rate including complete responses, partial responses, and minimal responses was 31.2% (range 0-74.1%). The average median survival was 13.8 (range 9.4 – 24.6); however, some studies measured survival from the time of radioembolization, while others measured survival from the time of diagnosis, leading to a longer survival bias[4]. Generally, radioembolization with yttrium 90 was well tolerated, with the most frequent complaints being nausea, vomiting, and fatigue; however, possibly treatment-related hospitalization occurred within one month from treatment in some studies, including patients with gastric ulceration, pneumonia, cholecystitis, and one with a pulmonary embolus[4-6].

CONCLUSIONS: While this review looks exclusively at chemorefractory patients with colorectal hepatic metastases being treated with microspheres alone, the next logical step in the treatment of these tumors is the combination of the newest and most effective chemotherapy regimens with radioembolization. Phase I dose escalation studies with modern chemotherapy oxaliplatin and irinotecan regimens combined with yttrium-90 radioembolization are just beginning to be published[13,14]. Clearly, more research is needed in this promising treatment.

A CASE OF SUPRATENTORIAL PRIMITIVE NEUROECTODERMAL TUMOR IN AN ADULT AND A PROPOSAL FOR A MOLECULAR AND GENETIC WORKUP

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GOAL: Supratentorial Primitive Neuroectopdermal Tumors (sPNET) are tumors present predominantly in children and are unique to the adult population. Less than a hundred cases of sPNET have been confirmed in adults. This case study reports this rare incident. Moreover, we are interested in stressing the crucial role of creating a standardized immunohistochemical and genetic workup for such tumors which would affect prognosis and possibly future treatment methods.
CASE: 22 year-old male presenting with headaches, blurry vision, diplopia, intermittent vomiting, and grossly decreased vision was found to have a left posterior parietal, 4.2 x 7.2 x 7 cm, heterogeneously enhancing mass. After craniotomy and resection of mass, it was determined histologically to be a PNET. Standardized immunohistochemical studies for brain mass were carried out.
CONCLUSION: reviewing the literature, we have concluded that some additional immunohistochemical and genetic workup should be included in the standardized pathological workup for PNET tumors to provide information about prognosis. Immunohistochemical assay for CD99 and FISH assay for the (11; 22) translocation could differentiate central from peripheral PNETs; each of which carries a different prognosis. In addition, alterations of IDH1, TP53, and c-myc/N-myc genes, that would differentiate adult sPNET from their pediatric equivalents, would alter potential genetic treatments that are currently being investigated.

LUPUS AND PARALYSIS

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Acute transverse myelitis is a rare and serious complication of Systemic Lupus Erythematosus. Delay in diagnosis and treatment is associated with significant morbidity. Acute transverse myelitis (ATM) is a focal inflammatory disorder of the spinal cord resulting in motor, sensory, and autonomic dysfunction. Best treatment often depends on a timely and accurate diagnosis. This paper briefly reviews a case on the Family Medicine service and seeks to find potentially effective interventions for acute transverse myelitis when it is encountered in the setting of Systemic Lupus Erythematosus. (SLE)

A 27-year-old Hispanic lady initially presented to ARMC in September 2010. She was diagnosed with Systemic Lupus Erythematosus at Saint Bernadine's Medical Center in May of 2009. She was treated by Rheumatologist at Saint Bernadine's, but was lost to follow-up. She had multiple admissions as a result of complications due to SLE, including thrombocytopenia, autoimmune hemolytic anemia, ascites of unclear etiology, and paraplegia. She suffered multiple decubitus ulcers as a result of her paraplegic condition. She has been on long-term steroid therapy and has multiple side-effects from steroid therapy, including osteoporosis and hirsutism. In July 2011, she developed intra-abdominal abscess and bowel perforation. She underwent surgical repair of bowel perforation and passed away from complications of infection in July 2011.

For our patient in this case, there was not a definitive diagnosis of acute transverse myelitis. There were no available imaging studies or Cerebrospinal fluid analysis done at the time of onset of paraplegia. Per history, patient already had complete loss of motor function of bilateral lower extremities for several months prior to her presentation to ARMC. However, based on the history provided by the patient and family, she exhibited symptoms highly suggestive of ATM. When ATM is suspected, it is often useful to obtain MR imaging of the spine as well as lumbar puncture to obtain CSF samples for analysis. Abnormal enhancement of the spinal cord together with CSF pleocytosis or elevated CSF IgG index in the context of neurological symptoms of bilateral lower extremity weakness may be highly suggestive of diagnosis of ATM.

The association of SLE and ATM has been firmly established in the medical literature. Numerous cases have been published in the previous two to three decades. However, given its low prevalence, less attention has been devoted to the diagnosis and treatment of ATM in the setting of SLE. The reported treatment options for ATM in the setting of SLE have included mostly corticosteroids. However, more favorable responses in terms of recovery from neurological sequelae have been reported when pulse intravenous cyclophosphamide was utilized concomitantly with steroid therapy.

STERILIZATION DISPARITY IN ETHNIC GROUPS

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AIMS. In this study, we hypothesized that certain ethnic group (Hispanic) in the San Bernardino County hospital population would have a higher prevalence of tubal ligation, as well as having higher parity at time of tubal ligation. We expected to see a significantly higher amount of tubal ligation in the Hispanic population and at a higher parity. The alternative hypothesis is that they would have similar rate. **BACKGROUND:** There is a clinically perceived difference that certain ethnical groups tend to have more children and thus choose to have permanent sterilization at a higher parity. We decided to investigate whether there are differences in the parity at which different ethnic group elect to have permanent sterilization. There has been a disparity among ethnic groups in regards to contraceptive choice. In review of the current literature, minority women are more likely than white women to choose tubal sterilization. This may be due to the fact that minority women more often experience unintended pregnancy and this may be in response to prior experience with an unintended pregnancy (**1).** Another possibility is that women with no or public insurance were more likely to have tubal sterilization compared with Caucasian and women with private insurance, respectively **(2).** In our population of pregnant women that we serve, about 60% the primary language is Spanish. However, there may be regional differences, rate of adaptation and integration to American culture in our region, by immigrant Hispanic. **METHODS / DESIGN**: The research protocol was approved by the Institutional Review Board before the chart review was started. Retrospective chart review of Labor and Delivery records books over three years (January 2009-December 2011) at Arrowhead Regional Medical center to determine the difference among ethnic groups and parity in regards to tubal ligation both associated with a birth. We reviewed the labor and delivery and operative books over three years (January 2009-December 2011) and evaluated ethnicity and parity at the time of tubal sterilization. Ethnicity was self-defined by the patient as they completed their admission records. Those without a declared ethnicity were not utilized. Data collected were ethnicity, age, gravidity, parity, and method of delivery (CS vs. vaginal). A total of 353 patients were included in the study. Of these 313 were Hispanic (88.6%), 40 were Caucasian (11.3%). The characteristics of women of Hispanic ethnicity compared to Caucasian ethnicity undergoing postpartum tubal ligation are demonstrated in table 1. **RESULT:** There was no difference in parity between Caucasian or Hispanic in age, or parity at which they did get their tubes tied. The percentage of Hispanics undergoing BTL is similar to our population (75% of all our deliveries are Hispanic) vs 78.5% of the people that underwent BTL are Hispanic. **CONCLUSION:** Both Caucasian and Hispanic groups had about the same rate of sterilization, and our conclusion is that some values of the general society may be adapted faster than what it is apparent by the language used. The current post-partum choice of permanent sterilization is similar between both ethnic groups and our clinical observation that Hispanic cultures choose BTL more often is not correct.

RECURRENT LEFT CHEST MASS: A CASE REPORT

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INTRODUCTION: Empyema necessitans is a rare complication of untreated pleural space infections. Untreated empyema that spontaneously burrows through the parietal pleura can present with a subcutaneous abscess.

DESCRIPTION: In the following case report we present a 55 year old male who presented with an intermittent left chest mass later to be diagnosed as empyema necessitans. The patient suffered from a hemothorax treated by tube thoracostomy three years prior. The patient had been seen several times and no mass could be appreciated. The patient was diagnosed with empyema necessitans on computed tomography and treated with a left thoracotomy.

CONCLUSION: Empyema necessitans can develop if pleural infections are left untreated. We present an unusual presentation of this rare complication. Empyema necessitans should be kept in the differential diagnosis of patients with left chest masses or abscesses.

THIAMINE DEFICIENCY AMONG ADULT PATIENTS WITH DIABETIC KETOACIDOSIS PRESENTING TO THE EMERGENCY DEPARTMENT.

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This study intended to determine if adult patients presenting to the emergency department with acute diabetic ketoacidosis have decreased serum thiamine levels compared controls with diabetes not in diabetic ketoacidosis. Thiamine (vitamin B1) is a cofactor in carbohydrate and amino acid catabolism and deficiency can lead to a myriad of cardiovascular, neurologic and other systemic complications. Prior data suggests that diabetics have greater thiamine deficiency, related to increased renal excretion and poor dietary intake. Case reports have documented the concurrence of diabetic ketoacidosis (DKA) and severe thiamine deficiency. Here, a two group prospective, non-randomized trial using patients presenting to a large county emergency department in Southern California was performed. Control subjects were patients with diabetes presenting, not in ketoacidosis, requesting a medication refill. The study group were patients presenting to the study site emergency department, age 18 years old or greater, in acute diabetic ketoacidosis. All enrolled subjects had thiamine levels assessed by a Vitamin B1, Whole Blood High Performance Liquid Chromatograph. A total of 36 patients (n = 22 controls; n = 14 study) were consented and enrolled in the research trial. Four patients (3 Control; 1 Study) were excluded for incomplete data. The range of normal whole blood thiamine level reported by the laboratory is 87-280 nmol/L. The control group had an average thiamine level of 112.68 (range: 53-201 nmol/L) and the study group had an average thiamine level of 128.31 (range: 62-202 nmol/L), showing no statistical significance between the two groups (p = 0.250). The control group had 2 subjects (n=19, 10%) with thiamine level below the normal limit (87 nmol/L.), 53 and 77 nmol/L respectively. Similarly the study group also had 2 subjects (n=13, 15%) with low thiamine levels, 62 and 83 nmol/L respectively. The thiamine levels between Type 1 and Type 2 diabetics, irrespective of whether they were in DKA or not, were not found to be statistically different. Among the DKA group, there was no relationship between the degree of acidosis found on the venous blood gas and the whole blood thiamine level. In this study, of the diabetic patients presenting to the emergency department for a medication refill, without an acute medical condition, 10.52 % (2/19) had a low whole blood thiamine level; and of those patients presenting in acute diabetic ketoacidosis 15.38 % (2/13) had a low thiamine level. The data did not support the hypothesis that there is an association between diabetic ketoacidosis and thiamine deficiency. As a pilot study with a small size (n=32), clinical conclusions are very limited. However, acute care physicians should be aware that 10-15% of diabetics presenting to the emergency department in a large county institution are thiamine deficient and providers should have a low threshold for empiric treatment, particularly in light of the fact that patients rarely present with a clear clinical presentation of severe disease (confusion, ataxia, and opthalmoplegia).

TRAUMATIC TYPE III DURAL ARTERIO-VENOUS FISTULA: CASE PRESENTATION WITH DISCUSSION AND LITERATURE REVIEW.

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Intracranial dural arteriovenous fistulas (DAVFs) are rare and unique, accounting for only 10-15% of all intracranial arteriovenous lesions. DAVFs are a direct, abnormal arteriovenous connection located within the dura. Clinical course may be benign, with spontaneous regression, or highly aggressive. Trauma is an uncommon predisposing factor, with only a few case reports having been reported. The middle meningeal artery is the most frequently involved in traumatic DAVF, followed by the occipital and superficial temporal arteries.
The following is a case presentation, discussion, and literature review on a traumatic external carotid artery DAVF. A 61 year old Caucasian male with excessive alcohol history presented with multiple recent falls and status post tonic clonic seizure; patient was obtunded, disoriented, having dysarthria, and subtle left sided weakness on initial exam. History was significant for cirrhosis and alcohol induced thrombocytopenia. Initial non-contrasted head CT was consistent with right sylvian fissure and perimesencephalic subarachnoid hemorrhage with some component of right parietotemporal subdural hematoma. Based upon a suspicious CT angiogram, patient underwent a formal cerebral angiogram and was found to have a type III DAVF supplied by the frontal branch of the middle meningeal artery with drainage to the meningeal vein and superficial temporal vein. Patient underwent successful transarterial glue embolization with complete obliteration of DAVF. Patient had no complications during or after the procedure, and was discharged home within a few days without any neurologic deficits.
Though rare, trauma can precipitate a DAVF. Suspicious imaging, such as with the case presented, must be further investigated. Diagnosing and appropriately treating a DAVF, especially a more aggressive type, can prevent worsened neurologic deterioration or even mortality in patients. Endovascular embolization is the mainstay of treatment in external carotid artery DAVF, with over 95% cure rate.

SUPRATENTORIAL HEMANGIOBLASTOMA WITH ASSOCIATED VON HIPPEL LINDAU DISEASE. A RARE ENTITY: DISCUSSION AND LITERATURE REVIEW.

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Hemangioblastomas (Hgb) are the most common primary intra-axial tumor in the adult posterior fossa, also typically found in the spinal cord. They are highly vascular, benign lesions composed of endothelial and stromal cell components, can be solid or cystic, occur sporadically (approximately 70%) or are associated with von Hippel-Lindau disease (VHL, approximately 30%). Hgb typically present as a mural nodule projecting into a cyst. Differential diagnosis includes benign astrocytoma, pleomorphic xanthoastrocytoma, ependymoma, neuroblastoma, choroid plexus papilloma, and angiomatous meningioma, among others. Confirmation of final diagnosis is only made with histologic findings. Supratentorial location of an HGB is very rare. Currently, to our knowledge, there are only approximately 150 cases ever reported in the literature. And only 3-6% of supratentorial HGB are associated with VHL. The following is a case discussion and literature review on a rare entity: supratentorial Hgb with associated VHL. The importance of including HGB on the differential diagnosis with imaging findings of a supratentorial intracerebral cyst with mural tumor nodule is crucial. The likelihood of concomitant VHL is possible, requiring the need for appropriate workup to be initiated promptly in the treatment plan of the patient.

USE OF A TUBULAR RETRACTOR SYSTEM DURING AN AWAKE CRANIOTOMY FOR RESECTION OF HIGH GRADE NEOPLASM.

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The use of a tubular retractor system for resection of intraparenchymal and intraventricular brain tumors have been well described in the literature. This minimally invasive technique for brain surgery has been developed as a way to lessen the negative effects of compression on surrounding brain tissue. Brain retraction for extended periods of time has been shown to correlate with significant brain injury, contributing to cerebral edema, seizures, arterial and venous infarcts, and worsened cognitive and neurologic deficit. Multiple studies have compared the tubular retractor system with conventional retraction, with overwhelming support that tubular retractor systems not only provide a corridor for direct visualization of the tumor with the ability to freely move the port without causing damage, but also lessen the effects of aggressive retraction on brain tissue. The use of a tubular retractor system during an awake craniotomy has never been previously documented. The ability to combine this technique of retraction with an awake craniotomy for resection of a high grade neoplasm in eloquent tissue, shows promise in providing patients with a minimally invasive craniotomy, helping to prevent damage to surrounding eloquent brain tissue, while still allowing for complete or near complete resection of highly aggressive tumors. The following is a case which illustrates the operative technique and successful outcome.

THE RATE OF TESICULAR DETORSION IN EMERGENCY MEDICINE: A SURVEY STUDY

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BACKGROUND: Testicular torsion represents a true urologic emergency due to the ischemic pathology that results from twisting of the spermatic cord potentially causing necrosis of the testicle. The extent and duration of torsion prominently influence both the immediate salvage rate and late testicular atrophy. Testicular salvage most likely occurs if the duration of torsion is less than 6-8 hours. If 24 hours or more elapse, testicular necrosis develops in most patients. Emergency medicine literature describe and recommend consideration of manual detorsion of the affected testis for both emergent as well as preoperative treatment, confirmation prior to performing the procedure. [1,7]

METHODS: A survey was electronically mailed to board certified emergency medicine physicians currently practicing in the United States as well as US residents in both ACGME and AOA accredited emergency medicine training programs with answers anonymously posted to a password-protected website and then tallied over a 3 month period.

RESULTS: 192 responses were collected. 25 respondents did not decide whether or not to perform detorsion due to not having seen testicular torsion at the time of the survey. Of the 167 that did, 38.3% (64/167) state they would attempt to detorse first while the majority (61.7% or 131/167) state they do not attempt to detorse prior to ultrasound confirmation.

CONCLUSION: The results of this survey demonstrate a high reliance on ultrasound for diagnostic purposes as well as confirmation of clinical suspicions. However, with such a time sensitive disease process the clinicians suspicion as well as the ability to perform a simple bedside procedure seems to be lacking in the emergency medicine community represented in this survey. While manually detorsing a testicle is not considered definitive care, the possibility of restoring marginal if not compete blood flow should make this procedure more commonly applied in clinical practice.

GULF WAR VETERAN WITH EXPOSURE TO ACETYLCHOLINESTERASE INHIBITORS & MULTI SYSTEM CONDITIONS : A CASE DISCUSSION AND LITERATURE REVIEW

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It is estimated that of the 700,000 veterans who served in the 1991 Gulf War 15-35% are inflicted with chronic multi system illness. The condition, know as Gulf War Syndrome has been characterized by a wide range of acute and chronic symptoms including fatigue, musculoskeletal pain, cognitive problems, skin rashes, and psychological disturbances. Nearly 20 years later, some 250 million dollars in United States medical research has failed to confirm a novel war-related syndrome and controversy over the existence and causes of idiopathic physical symptoms has persisted.
Proposed mechanisms of illness are numerous including ingestion of military issued pyridostigmine bromide pills, exposure to organophosphate pesticides, sarin nerve gas inhalation, anthrax vaccinations or physiological manifestations to post traumatic stress disorders. A large contingent of patients and researches contend that exposure to acetylcholinesterase inhibitors from pyridostigmine ingestion, along with exposure to organophosphate pesticides and nerve gas may be a casual factor. With the existing ambiguity in etiology and diagnosis it remains a pressing health issue for both patients and health care providers alike.
Our case report subject is a 43 year old Caucasian male Gulf War veteran with a history of acetylcholinesterase inhibitor exposure presenting to our clinic with multi system complaints of weight loss, night sweats, and diffuse body pains.
It is the goal of this case report to shed light on this highly controversial and complex disease thought the use of our case subject and a literature review of the existing research that attests to the alleged association of injury of acetylcholinesterase inhibitors (in the form of pyridostigmine bromide tablets and organophosphate pesticides or neurotoxin gas) from exposure in Gulf War veterans. It is our hope to provide the clinician with a knowledge basis for formulating his or her own approach in serving these veterans of war as well as those who may have occupational exposure to organophosphates.

CONGENITAL TRIANGULAR ALOPECIA

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Congenital triangular alopecia is a circumscribed non-scarring alopecia that is typically triangular or lancet shaped and occurs over the temporal regions of the scalp. The condition usually presents as a unilateral loss of hair, but can also present bilaterally. Although the hair loss is believed to be congenital, it is often not diagnosed until later in childhood. Our case involves a newborn baby girl born at 36 weeks gestation who was found to have a 5.5 by 3 cm triangular area of non-inflammatory hair loss on her right frontotemporal region. Due to the fact that congenital temporal alopecia often presents as a circumscribed area of focal hair loss, the most important differential diagnosis is alopecia areata. Congenital triangular alopecia is a stable condition with a poor prognosis of hair growth with treatment options including surgical excision or hair transplantation. Making the correct diagnosis will avoid potentially harmful and unnecessary treatments, including topical or intralesional corticosteroid injections.

HIGHLY RESISTANT CLASS IV + V LUPUS NEPHRITIS: A CASE STUDY AND REVIEW OF TREATMENTS

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Systemic lupus erythematosus is a devastating autoimmune disease affecting the majority of organ systems, with the kidneys being the most predominantly effected. Lupus nephritis, renal damage due to systemic lupus erythematosus, is associated with significant morbidity and mortality. Diffuse proliferative (Class IV) and membranous (Class V) lupus nephritis are known to be highly resistant to treatment, especially when in combination with one another. A 24 year old Hispanic male presented to our hospital with new onset systemic lupus erythematosus manifesting with fevers, hypertension, pericardial effusion with tamponade, nephrotic syndrome, and lupus nephritis. Renal biopsy illustrated Class IV + V lupus nephritis with crescenteric lesions, acute interstitial nephritis, and thrombotic microangiopathy. Treatment consisted of 3 days of pulsed intravenous methylprednisolone and azathioprine, followed by oral cyclophosphamide and prednisone, and four treatments of plasmapheresis. As a result of these renal lesions being highly resistant to treatment, an acute deterioration of renal function occurred resulting in end stage renal disease requiring hemodialysis. There are multiple treatment options for lupus nephritis and here we discuss their potentials, effectiveness, and application in the highly resistant types of lupus nephritis, Class IV and V.

ATRIOVENTRICULAR BLOCK AS A PRESENTING SYMPTOM OF A SYSTEMIC LUPUS ERYTHEMATOSUS FLARE

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Systemic lupus erythematosus is an autoimmune disease that causes inflammation and dysfunction in all organs of the body. In general, however, in the majority of cases patient with systemic lupus erythematosus report joint, skin and renal manifestations. In some cases, patients may also develop cardiac symptoms such as pericarditis, endocarditis and myocarditis. On rare occasions, a systemic lupus erythematosus flare may cause conduction abnormalities ranging from asymptomatic 1st-2nddegree atrioventricular block to fatal arrhythmias. Although there have been documented cases of cardiac conduction abnormalities in adults, this condition is mostly associated with neonates who are born to mothers with systemic lupus erythematosus. In this case presentation, we will describe a case in which a 21 year old female was admitted secondary to intractable nausea and vomiting then, subsequently, found to have an atrioventricular block as a manifestation of a concurrent systemic lupus erythematosus flare. Additionally, this paper will address the cardiac risks, the hypothesized etiology of atrioventricular blocks as well as the treatment recommendations for control of this condition in patients with systemic lupus erythematosus.

ONE YEAR FOLLOW-UP OF A PATIENT AFTER TWO LEVEL EXTREME LATERAL INTERBODY FUSION (LIF) WITH INTER-LAMINAR LUMBAR INSTRUMENTED FUSION (ILIF).

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Degenerative conditions of the lumbar spine are a major source of pain and disability among Americans. The goal of surgery is to restore degenerative disc height, achieve solid interbody fusion, and minimize damage to surrounding structures, while achieving the best post-operative functional outcome for the patient. The development of minimally invasive techniques, including the Extreme Lateral Interbody Fusion- XLIF and Interlaminar Lumbar Interbody Fusion- ILIF (NuVasive, Inc., San Diego, CA), have been propelled to the forefront of lumbar spine surgery. Minimally invasive techniques provide patients with decreased intraoperative complications, postoperative morbidity, and hospital stay, quicker postoperative rehabilitation, in addition to a reduction in operative time for the surgeon. We present the case of a patient with severe pre-operative disability due to degenerative lumbar disc disease, who undergoes an Extreme Lateral Interbody Fusion- XLIF with Interlaminar Lumbar Interbody Fusion- ILIF (NuVasive, Inc., San Diego, CA) at L2-L3 and L3-L4, with excellent post-operative results at 1 year follow up.

MALIGNANT MENINGIOMA INFILTRATING INTO EXTRACRANIAL SOFT TISSUES: A CASE REPORT

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INTRODUCTION:
Meningiomas compromise approximately 15-20% of all primary brain tumors (1). The majority of these tumors are WHO grade I tumors making them benign in nature. There exists however, WHO grade II and WHO grade III meningiomas as well. The higher grade meningiomas are far less common, however cranial base lesions with infiltration into extracranial soft tissues as an initial presentation in our patient makes this case unique. A literature search revealed that malignant cranial base meningiomas (WHO grade III) occur at a rate of 0.7% (2). There is no report of the incidence of these meningiomas that extend into surrounding extracranial soft tissues.

CASE PRESENTATION:
Our patient is a 59 year old male who presented to the emergency room because of a seizure. The tumor was palpable along his left temporal and frontal regions. He also presented with proptosis and ptosis. He was not an accurate historian and his demeanor was best described as ''la belle indifference''. Further history was only obtained from the patients pastor and his estranged wife.
Imaging subsequently showed a giant left basal temporo-frontal lesion with extension into the orbit and extracranial zygomatic and lateral orbital area. He initially underwent a biopsy of the extracranial components resulting in the diagnosis of WHO grade II meningioma. The patient then underwent endovascular embolization and finally a cranio-orbital-zygomatic craniotomy to achieve an almost complete resection. Intraoperative evaluation indicated that the tumor likely initiated from the sphenoid wing. The intraorbital contents where left behind and planned to be treated with radiation. Post-operatively the patient recovered appropriately, his proptosis resolved and pstosis improved. He was also able to have a more coherent conversation. His final pathology resulted in WHO grade III. He was eventually discharged from the hospital and planned to undergo radiation therapy.

DISCUSSION:
It is generally proposed that most malignant meningiomas are initially benign and then show histological progression to their malignant state (4). In our patient, this is also a likely scenario. Extensive discussion with the family indicated that he was been slowly having changes in his personality over years. Progressing to memory deficits and lack of concern. His rapid worsening of his eyesight, ptosis and proptosis with the visible left facial mass developed over the past month prior to presentation. This is probably the point where his tumor progressed into a malignant one.
The optimal treatment for malignant meningiomas is maximal surgical resection followed by radiation therapy and repeat surgery, as these tumors tend to recur rapidly (1,3,5,7). The overall 5 and 10 year survival rate for grade III meningiomas is quoted as 44 and 14.2 % respectively. However the progression free survival rate was 8.4 and 0% (4). These reports may support the rational that all meningiomas showed be treated and not observed as it is done with many non-symptomatic tumors found incidentally through imaging.

INCIDENCE OF VERTEBRAL ARTERY INJURY WITH TRAUMATIC CERVICAL SPINE SUBLUXATIONS

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INTRODUCTION: The incidence of vertebral artery injuries in traumatic cervical spine subluxations has been reported to be highly variable, ranging anywhere from 3%-88% [1-6]. These arterial injuries can be potentially devastating. Therefore, the purpose of this study is to investigate this variable incidence at Arrowhead Regional Medical Center (ARMC), the second busiest trauma center in southern California.
METHODS: Retrospective data analysis was collected from ARMC trauma registry from January 2000-June 2011 to analyze the incidence of vertebral artery injury, Blunt Cerebrovascualr Injury (BCVI) Grading, and the anatomical extent of injury.
Search criteria included: (1) All traumatic cervical spine fractures presenting to the emergency room, (2) All traumatic subluxed cervical spine, (3) Subluxed cervical spine injuries and vertebral artery injuries. All patients' radiographs were reviewed for accuracy. Exclusion criteria included: (1) No imaging available to review, (2) Injury occurring because of damage to subclavian artery, (3) Injury occurring because of damage to neck soft tissue, (4) Imaging not consistent with reported injury, which was the most common exclusion criteria.
RESULTS:A total 852 patients (mean age: 40.2 1.30, 582 male, 270 female) presented with traumatic cervical spine fractures. 102 (12%) patients had cervical spine subluxation injuries**.** 13 patients had subluxed cervical spine injuries with vertebral artery injuries**.** This is 1.5% ($P < 0.01$, 95% confidence interval (CI) of 0.00-0.02) of all cervical spine fractures presenting to ER, and 12.7% of all traumatically cervical subluxation patients.
The anatomical characteristics and extent of injuey of these 13 patients were: (1) 5 (38.4%) involved severe fracture with subluxation resulting in translocated vertebral bodies. (2) 5 (38.4%) involved vertebral artery occlusion secondary to a perched facet and minor subluxation. (3) 2 (15.4%) were gunshot wounds associated with fractures and vertebral artery occlusion. (4) 1 (6.6%) vertebral artery dissection associated with similar severe fracture and subluxation. Injuries according to the Blunt Cerebrovascualr Injury (BCVI) Grading are: 9 (69.2%) Grade IV (occluded), 3 (23.1%) Grade II (dissection) and 1 (6.6%) Grade V (transection). All injuries were to one vertebral artery and there were no patients with bilateral vertebral artery injuries. There were no intracranial vertebral artery injury, no subarachnoid hemorrhage, and only one dissection that did not extend or throw emboli.
CONCLUSIONS: At ARMC over the past 11.5 years, our data suggests that we have a 1.5% incidence of vertebral artery injuries when associated with traumatic fractures. There was no incidence of vertebral artery injury without a fracture. Compared to the most recent report by Mueller *et al,* and all other major studies mentioned previously, our results falls within the lower range. Occlusion (Grade IV) was the most common form of vertebral artery injury. In patients with traumatic cervical spine fractures, vertebral artery injuries are not frequent.

37

A COMPARISON OF LIPID MANAGEMENT: A PHARMACIST MANAGED REFERRAL CLINIC VS. PRIMARY CARE

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OBJECTIVE: The purpose of this study was to retrospectively compare the outcomes of lipid reduction therapy in pharmacist-managed clinics versus primary care centers where care is managed by family medicine residents and nurse practitioners.

METHODS: Computerized patient records for a one year period were reviewed. Patients between the ages of 18 and 60 with a diagnosis of hyperlipidemia were included. The following data elements were collected: demographics, lipid levels, diagnoses, and response to therapy.

RESULTS: Student T-test was performed to analyze patient demographics as well as lipid levels in response to therapy.

CONCLUSION: The pharmacist-managed lipid patients with an LDL-c goal of ≤100 mg/dL met this goal 100% of the time as opposed to 50% in the primary care managed patients. For all other therapeutic goals, there were no significant differences between the two groups. Furthermore, patients with pure hypertriglyceridemia experienced a 70% decrease in their triglycerides compared to a 12% increase in the primary care managed patients.
clinic setting.

38

PARATHYROID ADENOCARCINOMA: A CASE REPORT

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Parathyroid adenocarcinoma is a rare endocrine malignancy that accounts for a small proportion of cases of primary hyperparathyroidism and presents a diagnostic challenge and furthermore this disease and its complications may be difficult to treat. Suspicious features include marked hypercalcemia, fatigue, kidney stones, and neck mass. Parathyroidectomy with ipsilateral-hemithyroidetomy and nodal clearance gives the best chance of reducing local tumor recurrence, but overall is associated with a poor prognosis.
This case report describes a 54-year-old African-American female who presented to the ED with worsening nausea, vomiting, polydipsia, and excessive fatigue over the course of five days and 25 pound weight loss in one month. Further laboratory, radiologic, and ancillary investigation revealed Calcium 22.6 mg/dl, Ionized Calcium 2.54, intact PTH 4381 pg/mL. Patient was admitted to the intensive care unit for treatment of diabetic ketoacidosis and hypercalcemia. Patient was placed on an insulin drip, given IV fluids and given pamidronate and furosemide for treatment of hypercalcemia, and further workup of hyperparathyroidism was initiated.
Further workup included sestamibi parathyroid scan with revealed large mass extending from the thoracic inlet into the mediastinum, suggestive of a thyroid mass. Soft tissue CT of the neck with contrast revealed a large complex mass with course central calcification arising from the inferior aspect of the right lobe of the thyroid gland extending inferiorly into the retrosternal space with vessel displacement. Mass was later determined to be unresectable due to large vessel involvement.
Management of hypercalcemia posed a great challenge as patient's calcium levels remained severely elevated (24.1-27.5) despite administration of pamidronate and aggressive intravenous hydration with normal saline and aggressive diuresis with furosemide. Patient was placed on calcitonin and cinacalcet which ultimately controlled patient's hypercalcemia (calcium 9.4 – 17.0). Biopsy of right neck mass was performed and revealed parathyroid carcinoma. Patient expired at home due to complications from parathyroid carcinoma 3 months after initial diagnosis.

THE ACUTE PRESENTATION OF HERPES ENCEPHALITIS

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Rapid recognition and diagnosis of herpes encephalitis is vital for good patient care as it currently stands as the most common form of acute encephalitis. Starting treatment early with acyclovir and seizure control is crucial for the patient's prognosis. In this case report, we discuss a patient with the cardinal signs of herpes simplex encephalitis (HSE), but with atypical laboratory values and epidemiology. It has been shown that earlier treatment with acyclovir may prevent severe cognitive impairments in HSE patients. Despite early therapy, many patients, like ours, may have persistent cognitive deficits. However, early treatment saved our patient from more debilitating cognitive sequela. Neuropsychological evaluation should be considered in such patients because it might show deficits that a standard neurological exam may not reveal.

BATH SALTS – THE LONGER, MORE DANGEROUS HIGH

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INTRODUCTION: In recent years a new class of illicit drug has made its way across the Atlantic from the European club scene. These new designer drugs, known as bath salts, are legally sold in smoke shops across the country by placing the term *not for human consumption* on the package. Bath salts are synthetic derivatives of the naturally occurring stimulant cathinone, which comes form *Catha edulis* plant native to the Middle East. These synthetic analogous have unpredictable amphetamine-like and psychogenic effects. Overdoses of bath salts have been shown to cause extreme agitation, hallucinations, paranoia and delusions that lead to serious morbidity. Others have presented with severe hypertension, hyperthermia, stroke and even cardiac arrest.
CASE DESCRIPTION: Day 1, a 22 year old, 6 foot 8 inch, 127 kg male presents to jail the night prior for public intoxication. Initial reports states patient may have been using bath salts. No other history could be obtained secondary to extreme combative and psychotic behavior. When questioned, the patient repeatedly threatened to "steal the souls" of those interviewing him. Only one set of vitals and limited physical was obtained initially for safety reasons. Patient was afebrile, BP 154/95, HR 105 and he was in no acute distress with normal respiratory effort and no ataxia. On days 2 and 3 patient was still confined to his cell secondary to extreme combative behavior. No change in exam. Despite delusions he was oriented to location and person, and remembered the previous days encounter with healthcare providers. Psychiatric evaluation suspects substance abuse rather than acute psychotic disorder. Early afternoon, day3, the patient was involved in an altercation with guards and was shot with bean bags delivered from a shotgun and tazed multiple times before being subdued. At this point he was sent to the emergency department for evaluations. He was intubated and sedated on arrival for safety reasons. CT head, lumbar puncture and full laboratory evaluation were without acute abnormality. Day 4, patient was extubated and returned to baseline mental status. An interview of the patient obtained after discharge showed a well mannered, good humored male that admitted to smoking 2 grams of Diablo Spice (bath salt) at approximately 2:00 pmthe day prior to the for mentioned events. He had only patchy memories of days 1-3. The patient was altered for greater than 72hours after using one large dose of bath salts.
DISCUSSION: According to poison control records this is the only reported bath salt intoxication lasting greater than 3 days. Generally intoxication does not last greater then 24-48 hours. There is a scarcity of data on the effects of bath salts and how to effectively treat toxicity. This combined with the potential for a long duration of extreme psychotic behavior makes these patients difficult to treat. Benzodiazepines and antipsychotics are the mainstay of treatment, along with supportive measures.

ALTERNATIVE APPROACH TO REMOVAL OF A RECTAL FOREIGN BODY: A CASE REPORT

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Rectal foreign bodies (RFBs) are becoming an increasingly common chief complaint encountered by emergency Physicians. RFBs can come in all types of shapes, sizes and materials. Thus, creating a unique presentation and management opportunity with each case. Many low-lying RFBs are able to be removed transanally in the emergency department without any surgical intervention. Therefore, emergency physicians should have a good understanding of the challenges and techniques involved in the management of RFBs. A 51 y/o male presented to the emergency room because of abdominal pain and nausea starting about 20minutes prior to arrival. The patient quickly added that just before the pain began, he had been using a home-made object fashioned from a "pool noodle" to anally pleasure himself. The patient also added that he lost hold of the object and stated, “it is inside of me". With stable vital signs and in the absence of any peritoneal abdominal signs; the decision was made to attempt to remove the RFB transanally. X-ray confirmed low-lying RFB without evidence of perforation. Under deep sedation, the RFB was directly palpated on digital rectal exam. Several attempts were made to remove the RFB; including manual extraction, ringed forceps extraction, and passing a urinary catheter around the object. However, all attempts failed. On further exploration of the RFB, there appeared to be a central lumen within the object. At this point, a 24fr urinary catheter was inserted through the internal lumen of the RFB, inflated with normal saline and the RFB was removed without resistance. The patient remained symptom free after 6 hours of observation and was discharged home.
This case illustrates some of the difficulties involved in managing RFBs. A good understanding of human anatomy as well as the anatomy of the foreign body itself can help devise a plan to safely extract RFBs.

EVALUATION OF THE ROLE OF PROKERA AS ADJUVANT TREATMENT TO COMPLEX CATARACT SURGERY WITH HISTORY OF NEUROTROPHIC KERATITIS

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OBJECTIVES: To report the efficacy of ProKera, a cryopreserved human amniotic membrane, as adjuvant therapy to maximize corneal wound healing in the postoperative period following complex extraction of mature cataract in an eye with history of neurotrophic keratitis.

METHODS: Prokera was inserted during the complex extraction of a mature cataract in the right eye of a 61year old female with a long history of neurotrophic keratitis that had undergone previous treatment with lateral tarsorrhapy, punctual cautery and had reached some level of stability prior to cataract surgery

RESULTS: At 1-month follow-up, there were minimal punctate epithelial erosions, no epithelial defect and improvement in visual acuity from CF to 20/80 in the right eye.

CONCLUSIONS: This suggests that Prokera, when used as adjuvant treatment for cataract surgery with chronic neurotrophic keratitis may be effective in preventing corneal sequelae (e.g. corneal decompensation) and maximize corneal wound healing post-operatively.

CORRELATION BETWEEN MACULAR PIGMENT OPTICAL DENSITY AND MACULAR VOLUME IN NORMAL SUBJECTS AND SUBJECTS WITH CYSTIC FIBROSIS

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BACKGROUND: As advances inthe treatment strategies of patients with cystic fibrosis (CF) continue to improve, thus extending their quality of life and survival, these CF patients develop systemic conditions that may lead to macular changes that put them at risk for vision loss from age-related macular degeneration.
CONDITIONS: These include chronic carotenoid deficiency, CF-related insulin dependent diabetes, consistent abnormalities in polyunsaturated fatty acid (PUFA) metabolism of lipids prevalent in photoreceptor cells, micronutrient antioxidant deficiencies and overly exuberant inflammatory-immune processes in some tissues.
METHODS: Macular pigment density (MPOD) and macular volume (MV) were determined by heterochromatic flicker photometry (HFP) and Fourier-domain optical coherence tomography (Fd-OCT) respectively in 9 eyes of CF patients (ages 29-46) and in 14 normal eyes of age-matched control subjects.
RESULTS: Although visual acuity (VA) was normal in both groups,MPOD and MV were both significantly decreased in eyes of CF patients when compared with eyes of age-matched control subjects.
CONCLUSIONS: Although younger adult CF patients appear to have normal vision, the lower MPOD and MV noted in their eyes suggest the possibility that the macula may be at an increased risk for age-related degenerative changes compared to the general population. As CF patient life expectancy continues to increase into the 50s and beyond, clinicians may consider carotenoid supplementation and should maintain a heightened surveillance for possible macular abnormalities in this population.

CULTURALLY COMPETENT CARE OF THE LATINO PATIENT

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The topic of Culturally Competent Care for the Latino Patient is extremely relevant to the practice of Family Medicine, especially to the practice of Family Medicine in the state of California. The majority of patients at the Fontana family health center are of Latino ethnicity and an understanding of the cultural intricacies unique to the Hispanic population is essential for any primary care physician.

According to the 2008 U.S. Census Bureau, there are 46 million Hispanics living in the U.S., and 36.7% of the population of California in 2010, were of Hispanic heritage. The projections are that the Latino population will be the largest ethnic group in California by the year 2020.

The Latin American population has a high prevalence of diseases that are common to primary care. Diabetes, according to the U.S. Health and Human Services, is 1.9 times more likely to be diagnosed in an Mexican-American than in a non-Hispanic white adult. Mexican-American women were 20 percent more likely to have hypertension than non-Hispanic white women. Obesity was 1.4 times more likely to be present in Latin American children as opposed to non-Hispanic white children. These are just some examples of common chronic diseases that the Family Practice physician treats every day. These diseases are epidemics in the U.S. Latino population.

The Family Medicine doctor's role is unique in the health care setting. They not only serve as a healer but also as a patient advocate. The long-term care that is cornerstone to Family Medicine is based on a trusting relationship between doctor and patient. It would be impossible to create this trust with a Latino patient without a basic understanding of their cultural beliefs and expectations.

The goal of this project is to demonstrate that cultural competence in the care of Latino patients is essential for the Family Medicine physician, and does not require a mastery of Spanish.

PEDIATRIC PERSISTENT NEPHROGRAM WITHOUT CONTRAST-INDUCED NEPHROPATHY AFTER TRAUMA

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A 2-year-old girl was admitted for dehydration, leukocytosis, behavioral change, and diffuse abdominal pain status post unwitnessed blunt trauma. Initial labs revealed mild leukocytosis and bandemia, and marked elevation of AST (12903 IU/L) and ALT (5356 IU/L), CPK (4447 IU/L), and lipase (3125 IU/L). CT scan of the head and CT of the abdomen and pelvis with contrast were negative for bleed or organ injury. A skeletal survery was done 14 hours later which showed no osseous injuries, but revealed renal cortical retention of contrast medium, otherwise known as persistent nephrogram. This finding is worrisome for contrast-induced nephropathy (CIN); however, clinically the patient showed no signs of decreased renal function, and BUN and serum creatinine continued to improve since admission. KUBs done 1 and 2 days following initial CT scans showed persistent opacification of the kidneys.

This is a unique case of persistent nephrogram in a pediatric patient without CIN. That there is retention of contrast likely indicates some kind of kidney injury or change, and etiology is likely multi-factorial. The patient presented with pre-renal azotemia, considerable blunt trauma to the abdomen, and likely myoglobinuria from rhabdomyolysis. The possibility of a viral nephropathy also cannot be ruled out. There have been previous cases of persistent nephrogram without CIN, but it is unusual that our patient does not show any decline in renal function besides her initial pre-renal presentation. Persistent nephrogram may be used as a sign to indicate some extent of kidney injury where function is not compromised. This patient's findings may also indicate previous kidney abnormality such as calcification of renal parenchyma, but unfortunately follow-up imaging and testing was unable to be obtained.

EFFECT OF PHARMACIST INTERVENTION ON PATIENT EXPERIENCE

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OBJECTIVE: Patient satisfaction during hospital stay is an important factor to the overall experience of health care. One aspect of the patient experience is education regarding medication regimens. Surveys conducted by Press Ganey after discharge have revealed that the patients' knowledge of medications is often incomplete. Further, a large number of patients respond that no one has communicated information regarding medications to them. Pharmacists are in a unique position to improve this aspect of care. The objective of this project is to determine if pharmacist intervention in the area of medication education improves the patient experience as reflected in the post-discharge surveys.
METHODS: All patients aged 18 years and older admitted on one inpatient unit since March 1st, 2012 were evaluated for medication knowledge. A clinical pharmacist provided education on all medications that the patients were taking during the hospital stay. The following data elements were collected: demographics, diagnosis, medications, and the level of knowledge before and after pharmacist intervention. The monthly HCAHPS scores were reviewed.
RESULTS: The results that were collected during the interviews prior to pharmacist intervention were retrospectively compared against HCAHPS scores when evaluating the impact of pharmacist intervention.
CONCLUSION: Medication education provided by a pharmacist improves the patients' understanding of therapy. However, this improvement has not, so far, resulted in a significant increase in HCAHPS score. The limitations and implications of these findings will be discussed.

EFFECTS OF PHARMACIST INTERVENTION ON PATIENTS' PERCEPTIONS OF PAIN CONTROL DURING HOSPITALIZATION

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Adequate pain control is at times elusive in the hospitalized patient. In addition to discomfort and potential physiologic negative effects and delays in healing, inadequate pain relief results in low scores on satisfaction surveys, and may lead to a decrease in reimbursement from third-party payers. Pharmacists can play a unique role in the assessment and optimization of analgesic therapy. The objective of this study is to assess the patients' perception of pain control before and after pharmacist intervention. Patients aged 18 and older hospitalized on one nursing unit are included. During their hospital visit, the patients' pain level is assessed daily by a pharmacist. The pharmacist recommends necessary therapy changes to the primary care provider. The following data elements are collected: demographics, diagnosis, analgesic regimen, daily pain scale scores and vital signs. HCAPS scores before and after pharmacist intervention will be reviewed. The effects of the pharmacist intervention will be presented, and the implication on the patient experience will be discussed.

EJECTION FRACTION COMPARISON BETWEEN TRANSTHORACIC ECHOCARDIOGRAM VERSUS CARDIAC CATHETERIZATION IN OBESE PATIENT

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INTRODUCTION: Echocardiogram is a commonly employed non-invasive study to evaluate the dynamic function of the heart. As the obesity epidemic worsens, the results of echocardiograms are often suboptimal secondary to patient's obese body habitus. Many of these results are labeled as technically difficult studies. As clinician, we do frequently rely on these results to make important clinical decision. For example, ejection fraction guides us on medical management of congestive heart failure; ejection fraction and left ventricle size guides us on the need for defibrillator implantation. In this retrospective chart review, we will investigate and compare the difference in patient's ejection fraction between Transthoracic Echocardiogram versus cardiac catheterization in patient with different weight. We hypothesize that there is large difference in the ejection fraction between the TTE vs cardiac catheterization in patient who weights more.

STUDY DESIGN: This will be a retrospective chart review study on patient who has had both transthoracic echocardiogram and transesophageal or cardiac catheterization done. The population that is included in this study will be both male and female over the age of 18, who has both studies done in ARMC within the same hospitalization visit. Patient who has had a prior mastectomy will be excluded in this study. We will be comparing ejection fraction between TTE cardiac catheterization, and to see if increasing weight will skew the value of EF in patient who weights more. No patient identifier will be stored. Research data will be stored in a password protect data base, and only Dr. Fitzmorris, Dr. Wan, and Dr. Stepanyan will have access to the data base and password to the data base. The data base will be physically stored in the 4th floor of the main hospital in the Internal Medicine attending office where it has a locked door and usually only Internal medicine attending has access to the room.

A CASE REPORT ON HEREDITARY HEMORRHAGIC TELANGIECTASIA FROM A PRIMARY CARE PERSPECTIVE

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Hereditary hemorrhagic telangiecstasia (HHT), also referred to as Osler-Weber-Rendu syndrome, is an autosomal-dominant, rare complex genetic blood vessel disorder, characterized by telangiectases in the nasal mucosa, mouth, gastrointestinal tract, and skin of the face and hands, as well as artery-vein malformations (AVMs) in the major organs (including the lungs, brain, and liver).[1]Telangiectasias and arteriovenous malformations in HHT are thought to arise because of changes in angiogenesis, the development of blood vessels out of existing ones. The development of a new blood vessels requires the activation and migration of various cell types, chiefly endothelium, smooth muscle and pericytes. The exact mechanism by which the HHT mutations influence this process is not yet clear, but it is likely that they disrupt a balance between pro- and antiangiogenic signals in blood vessels. The wall of telangiectasis is unusually friable, which explains the tendency of these lesions to bleed.[1]This process takes twenty to thirty years to manifest.

The initial manifestation of the disorder can be a catastrophic pulmonary or cerebral event, yet the condition is amenable to early identification and presymptomatic diagnosis withtesting and available treatments in already established centers of excellence. If left misdiagnosed or untreated, HHT can result in considerable morbidity and mortality. Patients are at risk for a sudden rupture of the blood vessels in major organs, such as the brain and lungs. Other complications include nosebleeds and gastrointestinal bleeding resulting in anemia, liver failure, and resultant heart failure. Without intervention, fifty percent of patients with lung AVMs will develop embolic stroke, brain abscess, or massive hemorrhage.[2,3]

Timely diagnosis and treatment is important for most medical conditions. The importance is tied directly to the need to avoid a poor, even tragic outcome. One would think that any condition with 95% prevalence of an obvious presenting symptom, like bloody nose, should have an excellent pickup rate. But this is not the case with HHT. This case report describes the clinical characteristics of a 32 year old man who presented with a nose bleed in 2008 and later suffered a subarachnoid hemorrhage and neurological deficits in 2010; even though a radiologist mentioned the diagnosis of HHT from the outset.

EFFECT ON PATIENT SATISFACTION OF OSTEOPATHIC MANIPULATION THERAPY FOR MUSCULOSKELETAL COMPLAINTS IN THE PRIMARY CARE SETTING: A SURVEY-BASED STUDY

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BACKGROUND

With the hotly debated transformation of the American Healthcare System, quality and value are the consumer's utmost concern. Understanding the unique doctor patient relationship that the Osteopathic Manipulative Technique (OMT) provides from the patient's perspective is required to maximize its inclusion in the evolving health system and improve patient satisfaction.

OBJECTIVE

To examine the effect of OMT on patient satisfaction with musculoskeletal complaints in the primary care setting.

METHODS

Surveys were adapted from three different sources. Survey data from 32 patients was obtained and evaluated. Two cohorts of patients, with similar diagnoses and demographic characteristics with one group receiving OMT were included.

RESULTS

Based on the results, patients perceived the "time spent with the physician" as more adequate when receiving OMT than their non-OMT cohorts with statistical significance ($p<0.05$). Out of the 12 OMT respondents, 9 rated their time spent with the physician as excellent (75%), two as very good (17%), one as good (8.33%), none as fair or poor. Out of the 9 non-OMT participants, 4 rated the time spent with the physician as excellent (44.44%), one as very good (11.11%), two as good (22.22%), two as fair (22.22%) and none as poor. The patients receiving OMT were asked three additional questions, of these:

a.) 100% of OMT patients surveyed stated that they would recommend OMT as part of other patients recovery and treatment plan.

b.) 100% of OMT patients surveyed stated they felt OMT was a helpful part of recovery. c.) 75% of OMT patients surveyed stated that OMT decreased their need or frequency for pain medications.

The other nine patient satisfaction and patient perceived quality questions did not show a statistical difference between the two study groups.

CONCLUSION

This study shows these patients perceived OMT as an integral part of their treatment and rated "time spent with the physician" higher than the control group. This supports the idea of continuing to include OMT in the healthcare delivery systems' techniques to improve patient satisfaction. However, overall satisfaction was no different between the groups in this study. A larger study will be needed to more fully explore these concepts.

51-Late Addition

A PREGNANT GOUTY ARTHRITIS SECONDARY TO PSEUDO-BARTTER'S SYNDROME

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Department of Family Medicine
ARMC

A 32 years old woman with pseudo- Bartter's syndrome secondary to excessive use of laxative, presented with hypokalamia, metabolic alkalosis, hyperurecemia, gouty arthritis , and gouty tophi. Patient became pregnant with sever gouty flare of multiple joints, gout was proven by joint aspiration. Few cases reported the association between Bartter's syndrome and gout, but this the only case report of pregnant gouty patient in pseudo-Bartter's syndrome.

- Past Winners -

1st ANNUAL ARMC RESEARCH DAY 2006

1st Place
"Intraoperative Hepatic Radiofrequency Ablation of Metastatic Sarcoma"
Edward W. Lee, M.D., Ph.D.
(Transitional Medicine Program)

2nd Place
"A Prospective Study To Evaluate The Depth Of Sedation
In Patients Undergoing Procedural Sedation"
Jonathan Kelling, M.D.
(Transitional Medicine Program)

3rd Place
“Retrospective Study of Second Trimester Intrauterine Fetal Demise
(IUFD): Methods of Induction”
Lisa Barden, DO
(Department of OB/GYN)

- Past Winners -

2nd ANNUAL ARMC RESEARCH DAY 2007

1st Place
"Effectiveness of ARMC's "Quit Clinic" for Smoking Cessation"
Hansie Wong, MD
(Department of Family Medicine)

2nd Place
"Incidence of Abnormal Blood Gases Among Patients Undergoing Elective Cesarean Section"
Nicole Adair, DO
(Department of OB/GYN)

3rd Place
"Utilization of the Rapid HIV Test in the Emergency Department"
Patricia Kahn, DO
(Department of Emergency Medicine)

- Past Winners -

3rd ANNUAL ARMC RESEARCH DAY 2008

1st Place
"Evaluation of Pre-Hospital and Emergency Department Systolic Blood Pressure as a Predictor of In-Hospital Mortality"
Maria "Angie" Loza, MD
(Transitional Medicine Program)

2nd Place
"A Retrospective Study of Maternal ICU Admission in a County Hospital Setting From 2004-2007 and Review of Literature"
Lauren Prewitt, DO
(Department of OB/GYN)

3rd Place
"The Effect of Breastfeeding on the Number of Sick Visits in the First Six Months of Life for Infants Born at ARMC"
Bichson Pham, DO & Camelia Wogu, MD
(Department of Family Medicine)

- Past Winners -

4th ANNUAL ARMC RESEARCH DAY 2009

1st Place
"Effects of Implementation of a Rapid Response Team
at Arrowhead Regional Medical Center"
Uma Devaki, MD
Mentor: Emily Ebert, MD, MPH
(Transitional Medicine Program)

2nd Place
"Protocol Development: Comparison of Continuous Versus Intermittent Vancomycin Infusion for Methicillin-resistant Staphylococcal Infections"
Linda Lam, PharmD
Mentor: Andrew Lowe, PharmD
(Department of Pharmacy)

3rd Place
“Troponin Elevation in Severe Sepsis and Septic Shock”
Chiado Nguyen, DO
Mentor: Mohammad Aslam, MD
(Department of Internal Medicine)

- Past Winners -

5th ANNUAL ARMC RESEARCH DAY 2010

1st Place
"Are Healthcare Providers Clearly Communicating The Risks of Obesity and Benefits of Exercise and Diet to the Patient Population"
Kevin Felix, DO
Mentor: Aimee Flemmer, MD
(Department of Family Medicine)

2nd Place
"Radiographic Presentation and Patterns in Hospitalized Patients Infected with the Novel H1N1 Influenza Virus"
Scott Fujimoto, DO
Mentor: Andrew Song, MD
(Department of Medical Imaging)

3rd Place
“Bedside Ultrasound in the Surgical Assessment of Acute Biliary Disease”
Katie Huynh, DO and Ravi Shah, DO
Mentor: J. Vivian Davis, DO, JD, MBA
(Department of General Surgery)

- Past Winners -

6th ANNUAL ARMC RESEARCH DAY 2011

1st Place

"*Safety Of Percutaneous Dilational Tracheostomies In The Obese*"

Andrew McCague, DO

Mentor: David Wong, MD

(Department of Surgery)

2nd Place

"*Evaluation Of Involuntary Psychiatric Hold (5150) Among Elderly Patients*"

Katrina Platt, DO

(Department of Internal Medicine)

3rd Place

"*Do Patients Expect To Be Tested For HIV?*"

Lisa McAfee

Mentor: Daniel Pearce, DO

(Department of Emergency Medicine)

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Ms. Rebecca Rivera

Departments
of
Anesthesiology
Emergency Medicine
Family Medicine
Internal Medicine
Neurosurgery
Obstetrics and Gynecology
Pathology
Pharmacy
Pediatrics
Radiology
Surgery

Transitional Program

Traditional Program

ARMC Nursing Staff

ARMC Administrative Staff

San Bernardino County Print Shop
(Especially Ms. Silvia Schreiber)

And

Arrowhead Family Medical Group
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