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HISTORY OF MEDICINE

Brian Sollers, DO
OB/GYN, PGY III

It may seem routine to walk into the sterile environment of the OR where nursing staff is standing by to gown and glove, anesthesia has already placed the patient in an induced slumber, and antibiotics are hung. This was obviously not the case for our early pioneers of surgery. They initially fought the ideas of aseptic technique and didn't have the luxury of anesthesia for their patients. Abdominal

surgery was not readily performed and when it was, it was usually for emergent reasons. Experiments were performed on young patients that came to be the early stages of what we now know as modern surgery.

The works of an early abdominal surgeon, Ephraim McDowell, (1771-1830) described performing surgery on a woman with a large ovarian mass in 1809. McDowell discusses a patient that presented to him with the desire to have surgical treatment for a worrisome pregnancy that was not a pregnancy at all. She rode for 60 miles by horse to have the procedure performed. McDowell obtained what was a verbal informed consent, something that is much more in depth today. He then removed her clothing, as to not impede with the surgical procedure. Her abdomen was incised and a large ovarian mass was removed. Her intestines spilled onto the operating table and had to be replaced in the abdomen after the mass had been evacuated. Twenty three and a half pounds of tumor was removed from the patient. Do to the lack of suction, something that is very convenient now, the patient had to be rolled to one side to allow the blood to drain out. The complete surgery was performed in 25 minutes. Her abdomen was closed with early suture and adhesive plaster between the sutures. The patient was seen five days post operatively, and was found to be up at bedside making her own bed. It was this that led McDowell to encourage early ambulation post operatively; a practice that

we as the medical community digressed from but now use currently and with great benefit.

It is the history and stories of our forefathers that guide the hands of our current practices with the help of evidence based medicine. For all the double blind trials, and "studies show that..." we must still remember our roots and the luxuries of gloves, aseptic agents and anesthesia that we sometimes take for granted. So the next time surgery is indicated, whether as the patient, the medical staff, or physician, take a moment to remember where we came from and be thankful for those that helped us be where we are today.

FASCINATING CASE A

Joshua Batt, DO
Emergency Medicine, Incoming PGY I

CASE PRESENTATION

A 22 year-old male presented to the emergency department after an altercation with another individual in which he had an injury of unknown mechanism to his right foot. The patient complained of 5/10 pain with ambulation, significant swelling of the foot and no other symptoms. He had no associated history of illness, injury or surgery and denied the use of substances.

On examination the patient's blood pressure was 138/89, pulse 80, respirations 16, and oxygen saturation 99%. While calm and cooperative, he had an obvious limp upon arrival favoring use of his left foot. The dorsum of the right foot demonstrated significant soft tissue swelling with ecchymotic changes of the skin. The midfoot was tender to palpation with limited pedal range of motion at the digits, midfoot and ankle due to pain. The pedal pulses were

strong and regular with a capillary refill less than 2 seconds and intact sensation. These findings were comparable to the left lower extremity and therefore determined to be within normal limits. No other acute findings were noted on examination.



WHAT IS THE DIAGNOSIS?

Lisfranc fracture-dislocation of the right foot

DISCUSSION

The Lisfranc joint consists of the five articulations between the midfoot and forefoot at the tarsometatarsal joints. The Lisfranc ligament is the only ligamentous connection between the first and second metatarsals adding tension to the foot's transverse and longitudinal arches. As this joint acts as a keystone to the foot, diagnosis of such fractures is critical to a positive prognosis. Patients may have swelling out of proportion with normal roentgenograms,

ecchymosis of the plantar midfoot or localized midfoot instability. Tenderness is commonly elicited at the tarsometatarsal joint upon palpation, weight bearing or motion testing.

Lisfranc injuries are uncommon and up to 20% may be missed on initial presentation to the emergency department due to radiographic subtleties. An anteroposterior image of the foot is considered positive for a Lisfranc dislocation if the medial border of the second metatarsal base and medial border of the middle cuneiform are not in alignment. Separation of the first and second metatarsal bases greater than 2mm is consistent with a Lisfranc injury, as can be seen in the image above. A pathognomonic finding, also seen above and in 90% of Lisfranc injuries, is the “fleck sign” wherein an avulsion fracture of the second metatarsal or middle cuneiform can be visualized between rays on imaging. This commonality lends to the “fracture-dislocation” nomenclature as both present concurrently in the majority of cases. Lateral views may demonstrate malalignment of the superior borders of middle cuneiform and the first metatarsal base. Oblique views may show poor medial border alignment of the cuboid and fourth metatarsal base. Computed tomography, magnetic resonance imaging and bone scanning may be performed for further evaluation and surgical management.

TREATMENT

Conservative management is acceptable when a Lisfranc injury has less than 2 mm of displacement on radiography between the first and second metatarsal bases. Well-molded, short leg casting for 6 weeks with orthopedic follow-up is standard procedure in such cases. The patient should be instructed not to bear weight on the injured limb during the recovery period of 6-12 weeks.

Intermetatarsal base separations greater than 2mm or non-reducible injuries of the Lisfranc joint merit surgical evaluation as improper management may lead to complications including arthritis, malalignment, pedal instability, infection, compartment syndrome and, rarely, complex regional pain syndrome.

An investigator starts research in a new field with faith, a foggy idea, and a few wild experiments. Eventually the interplay of negative and positive results guides the work. By the time the research is completed, he or she knows how it should have been started and conducted.

~Donald J Cram

FASCINATING CASE B

Lithium Toxicity, Management in a State Prison Environment

Kohl Mayberry, DO
Psychiatry, PGY III

A 26 year old white male with a history of bipolar disorder and hypertension presented in May, 2010 while transferring from a county jail into a state prison. The inmate’s medications included lisinopril 10 mg orally, with the same dose over the last year, and lithium 900 mg orally for the last 3 months with the same dose, though lithium levels were not drawn in that period. The inmate denies past medical history other than hypertension, and he reports no history of kidney disease. The inmate arrived by bus at the state prison from county jail and saw both a family practice physician and a psychiatrist (which were done at separate interviews with no exchange of information between both sides initially), and continued

on the same doses of lithium and lisinopril. A lithium level was ordered to be drawn in 3 days by the psychiatrist. The inmate presented for a psychiatric follow up appointment 1 week later with no chief complaint. No lithium level had been drawn and a lithium level was then reordered. Three days later, the lithium level was drawn. The blood was sent to a lab and the lithium level was toxic at 4.7 mEq/L and results were given on a Wednesday to the outside lab company. During the week, the inmate had been in the infirmary with complaints of nausea, vomiting, tremor, ataxia, and had altered mental status, but he was seen only by an infirmary nurse who gave the patient symptomatic treatment and was then sent back to the compound. On Friday night around 2000 hours (2 days after the toxic level was known by the outside lab company), the lab finally called the infirmary nurse and reported the toxic 4.7 mEq/L level. All medical doctors were only accessible by phone on the weekends. Both the on-call family practice physician and psychiatrist were called over the phone. It was immediately ordered for the patient to be placed in the infirmary and given large amounts of fluids with orders to obtain the CBC, CMP, thyroid panel, EKG, and lithium level. The nurse called security numerous times in order to get the inmate from the compound; however security would not allow the inmate to go to the infirmary. The inmate did not arrive to the infirmary until 2300 hours because security was in a "re-count" and would not allow the patient to move. The patient came in vomiting, tremulous, and ataxic with altered mental status. The patient was given fluids but was not sent to the hospital, and no hemodialysis was performed. Over the weekend the patient was monitored within the infirmary and the lithium level came down to 3.0 mEq/L on Saturday, and 2.5 mEq/L on Sunday, and then 1.7 mEq/L on Monday. The

patient was then released from the infirmary and seen by the psychiatrist on Monday. The patient denied any changes in his lithium and lisinopril dosages and denied taking any larger doses, as he was given both medications at a pill line where nurses checked to make sure the patients were compliant. The inmate recovered completely from the acute lithium toxicity, however the long-term effect remains to be seen.

WHAT IS LITHIUM?

Lithium carbonate is a mood stabilizer used in the treatment for both the maintenance of bipolar disorder and for the acute manic episodes in bipolar disorder. Lithium is more effective in treating an acute manic episode than simple maintenance. The exact mechanism of action is unknown, but it is proposed to act by blocking inositol-1-phosphatase within neurons subsequently interrupting the second messenger, phosphatidylinositol. Lithium toxicity is a life and death management situation due to its narrow therapeutic index. Lithium is excreted by the kidneys so anything that blocks the excretion of lithium such as impaired renal function or changes in total body fluid such as fluid intake can cause lithium toxicity. Lithium is a salt, so it will continue to build up in the body if not excreted. Before being placed on lithium, all patients should receive a basic chemistry panel to assess BUN and creatinine, electrolytes, complete blood count, thyroid panel, pregnancy test, and EKG. To achieve the prophylactic effect of lithium, it can take up 2 months or more, and to achieve a therapeutic effect it takes 4-6 months. For this reason, patient compliance and proper drug level monitoring is extremely important. Lithium is pregnancy category D and should not be used in pregnancy. The average dose of lithium is 900-1200 mg/day, usually in divided doses but is based on patient's

weight and metabolism and has a therapeutic index within 300-2700 mg/day. An average blood level of lithium is 0.8 mEq/L-1.2 mEq/L, but the level is not always indicative of toxicity, so clinical symptoms are most important for diagnosis. There are no absolute contraindicated drugs used in conjunction with lithium, but there are several key medications that interfere with the functions of the kidney, including NSAIDs, ACE Inhibitors, and most diuretics. Common systemic side effects of chronic lithium therapy include nephrogenic diabetes insipidus and hypothyroidism. Patients with kidney and heart disease, along with those who have a history of dehydration or chronic hyponatremia should not be on lithium. Lithium toxicity includes a wide array of symptoms including less severe: diarrhea, nausea, vomiting; moderately severe: tremor, muscle weakness and more severe: muscle fasciculations, ataxia, altered mental status, hyperreflexia, seizures, coma, and the least common yet most lethal, cardiac arrhythmias. Lethal outcomes most commonly are attributed to cardiac arrhythmias. The treatment for lithium toxicity includes IV fluids, but when any neurological signs are present, hemodialysis is indicated. A lithium level greater than 2.0 mEq/L should prompt consideration of hemodialysis treatment, but this is controversial, as the diagnosis of lithium toxicity is based on clinical symptoms and not just lithium levels alone.

THE MEDICAL MANAGEMENT LIMITATIONS OF THE PRISON SYSTEM

The etiology of the inmate's lithium toxicity was unknown, as the inmate had been taking the same medications on a consistent basis, but the lithium levels were not being monitored. However, inmates have been known to not be entirely truthful and this could have been a possible overdose if the

patient was "cheeking medications." The patient denied any history of suicidal ideation. Most prisons do not allow inmates to keep psychotropic medications as KOP (keep on person), and they must go to a pill line during scheduled hours where they are checked to by staff to see if they are "cheeking their meds." The inmate most likely should have been switched from an ACE inhibitor to a different antihypertensive. Prison infirmaries do not have the ability to perform hemodialysis. The patient may have benefitted from emergent transport with IV hydration to the hospital for hemodialysis. However, transporting a patient to the hospital becomes very difficult without a physician on site as is the case during weekends. Most prisons send their blood samples to multiple outside labs and do not have electronic or even readily available responses. Laboratory results can take several weeks to come back, often get lost, and sometimes because of the environment are not drawn as ordered. The prison staff is occasionally understaffed and overworked due to funding and multiple tasks. Although, worse outcomes could have occurred, the quick thinking of onsite healthcare personnel, using resources available, prevented a disaster. Security in the prison system is always the number one priority; it took several hours for the infirmary nurse to get the patient to the infirmary because security was counting the inmates. The inmate most likely was toxic for several days and could have developed several side effects, including but not limited to kidney and thyroid dysfunctions from the damage caused by the lithium toxicity. Security guards and fellow prisoners are not trained or expected to monitor an inmate's health status so reaction to health problems usually occurs when disease becomes toxic. Health education and health maintenance should become a mainstay of the infirmed prison population.

HOW I DO IT-COLOSTOMY REVERSAL

Joseph Vivian Davis III, DO
Program Director General Surgery (AOA)

One of the most satisfying procedures for both the surgeon and the patient is the colostomy reversal. The original colostomy placement is usually due to some reason for spillage of colon contents which results in that section of colon being removed. Due to the contamination and inflammation, a colostomy is prepared because it would be dangerous to reconnect the colon under the circumstances of inflammation. This results in a distal colon segment, the proximal colon section, and the colostomy; which can be reconnected in the future. Colostomy can be the result of diverticular disease, diverticulitis and abscess formation. It might be from some form of penetrating injury to the colon such as a gunshot wound or knife stabbing that result in stool spillage. Occasionally it might be from colon cancer that results in perforation.

Usually, after several months when all of the contamination has resided and the abdominal contents have progressed through the inflammatory process the colostomy reversal can take place. Preparation begins with a barium enema to review the anatomy and possible residual disease process. The barium enema places barium in through the rectum to examine the distal segment to ascertain its length and assess for any other disease, especially diverticulosis. Barium is also placed in through the colostomy to check the proximal portion of the colon to assess its length, condition and disease state and to check the amount of residual diverticular disease. In the case of cancer it might note polyps or even another mass in these segments that would need to be assessed prior to the colostomy reversal. Having this

additional information would allow the proper information being discussed with the patient for the proper informed consent so the patient would know exactly what would be taking place surgically.

Simplistically, it is connecting the proximal portion of the colon back to the distal segment that allows continuity of stool and eliminates the colostomy where stooling is through the abdominal wall. Mentally, this gives great satisfaction to the patient having a normal BM and sitting on the toilet and not having to deal with bags on their abdominal wall.

In the operating room it begins with knowledge of the barium enema. If the distal segment is short the patient is placed in the lithotomy position where the legs are spread providing access to the rectum. This allows for special mechanical suturing devices to be utilized through the rectum because the short distance makes it difficult to suture low in the pelvis reconnecting the proximal and distal segments. If the distal segment is long the patient is placed in the supine where they are laying on their back allowing opening of the abdomen and access to both the proximal and distal segments within the abdomen.

In connecting the distal segment and the proximal segment they can be sutured by hand in one or two layers or there are several mechanical suturing devices that can be used to help approximate these two segments together. Whether by hand or mechanically sutured, the two segments grow together with the lumens in continuity. This allows food turning to stool to be passed through the colon into the rectum to be defecated.

Prior to beginning the procedure antibiotics are given in the operating room before the operation begins. Antibiotics are given

sometimes for a dose or two after the operation is complete due to possible stool contamination at the reconnection site. Often to decrease the amount of stool that is in the colon cleansing preparation are taken by the patient to force out and eliminate stool from the intestines. This eliminates the stool load as much as possible. Even though both are used the colon can never be made completely sterile. Therefore, an infection in the abdomen or in the surgical wound is

always possible and is prevented as much as possible.

Once the procedure is complete, the patient should pass gas or have a BM from residual colon contents within three days. Once this takes place the patient can be fed and then given oral medications. They then can be discharge with no colostomy bags and usually with a smile on their face.

POSTER PRESENTATIONS FOR ARMC'S 7TH ANNUAL RESIDENT RESEARCH DAY

PROGRESSIVE CHANGES IN LIFESYLE OF EMERGENCY MEDICINE RESIDENTS

Baccaglioni G., Welch M., Lee L., Neeki M.

CHRONIC MENINGITIS WITH HYDORCEPHALUS SECONDARY TO SUBARACHNOID NEUROCYSTICERCOSIS

Rachna B., Kambiz R., Kuo-Liang H.

WHERE DIAGNOSIS IS MADE WITH HISTORY AND PHYSICAL EXAM

Rachna B.

INTRATHORACIC COMPLICATIONS FOLLOWING PERCUTANEOUS INTERCOSTAL DRAINAGE OF ABDOMINAL FLUID COLLECTIONS

Bhanu S., Durack J., LaBerge J., Kerlan R.

GLIOBLASTOMA MULITFORME (GBM) AND CONCOMITANT SUPERIMPOSED MRSA ABSCESS:

CASE DISCUSSION AND LITERATURE REVIEW OF A RARE ENTITY

Bieber A., Capua J., Minasian T., Won D., Miulli D., Siddiqi J.

A MEASUREMENT OF HEALTH CARE LITERACY AT MCKEE FAMILY HEALTH CLINIC

Bohn H., Goharbin A., Ito B.

EXERCISE REGIMEN SELECTION: AN ANALYSIS OF PHYSICIAN'S AND HEALTHCARE WORKER'S WORKOUT PATTERNS

Chang R., Gupta P.

OPPORTUNITIES FOR REDUCING READMISSION RATES: A RETROSPECTIVE EVALUATION

Chen L., Lowe A.

RACIAL DISPARITIES IN CLINICAL PRESENTATION, TREATMENT, AND OUTCOME OF WOMAN WITH BREAST CANCER:

ANALYSIS OF NATIONAL INPATIENT SAMPLE DATABASE

Dehal A., Abbas A., Johna S.

COMORBIDITY AND OUTCOMES AFTER SURGERY AMONG WOMAN WITH BREAST CANCER:

ANALYSIS OF NATIONAL INPATIENT SAMPLE DATABASE

Dehal A., Abbas A., Johna S.

MEDICAL ERRORS- A COMPLICATION OF POOR PAITENT HANDOFF IN 2012: IDENTIFYING THE ROOT PROBLEM

Gillham S.B., Melendez M.

ROLE OF SUBCONJUNCTIVAL BEVUCIZUMAB IN POST PTERYGIUM EXCISION MANAGEMENT

Brar G., Storkersen K., Tokuhara K.

WILDERNESS MEDICINE ELECTIVE

Hamstra, A., Evans J.

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

Herr C., Neeki M.

ELEPHANTIASIS NOSTRAS VERRUCIOSA, A CASE OF THERAPEUTIC BENEFIT WITH MULTILAYER COMPRESSION BANDAGING

Ho E., Melendez M.

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

Hodeib R., Valenzuela G., Espinoza R.

PREVALENCE OF PERIPARTUM ANEMIA AT ARMC

Holthouse A., Valenzuela G.

INTRACRANIAL HEMORRHAGE FOLLOWING BATH SALT USE: A CASE REPORT

Johnson K., Widenski A., Jones K., Mistry J., Miulli D., Nguyen A.

LAPAROSCOPIC EXCISION OF SPLENIC ARTERY ANEURYSM: CASE REPORT

Kim Y., Johna S.

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

Koning J., Melendez M.

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

Lawandy S., Hariri O., Miulli D., Siddiqi J.

LUPUS AND PARALYSIS

Lin F., Velasquez J.

STERILIZATION DISPARITY IN ETHNIC GROUPS

LoCascio E., Valenzuela G., Wong S.

RECURRENT LEFT CHEST MASS: A CASE REPORT

McCague A., Navarro R., Kong L.

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

Mesisca M., Neeki M., Edwards S., Richards A., Mercer M.

TRAUMATIC TYPE III DURAL ARTERIOVENOUS FISTULA: CASE PRESENTATION WITH DISCUSSION AND LITERATURE REVIEW

Minasian T., Lawandy S., Asif Taqi M.

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

Minasian T., Tashjian V.

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

Minasian T., Ritter Y., Mamic M.

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

Mjos N., Neeki M., Mamic M.

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

Mondek N., Velasquez J.

CONGENITAL TRIANGULAR ALOPECIA

Mortensen W., Wong W., Espinosa D.

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

O'Hara E., Gupta P.

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

O'Neil M., Gupta P.

**ONE YEAR FOLLOWUP OF A PATIENT AFTER TWO LEVEL EXTREME LATERAL INTERBODY FUSION (LIF) WITH
INTERLAMINAR LUMBAR INSTRUMENTED FUSION (ILIF)**

Panchal R., Minasian T., Hariri O., Duffner D., Siddiqi J.

MALIGNANT MENINGIOMA INFILTRATING INTO EXTRACRANIAL SOFT TISSUES: A CASE REPORT

Parsa K., Siddiqi J.

INCIDENCE OF VERTEBRAL ARTERY INJURY WITH TRAUMATIC CERVICAL SPINE SUBLUXATIONS

Parsa K., Hariri O., Miulli D., Siddiqi J.

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

Pop L., Lowe A.

PARATHYROID ADENOCARCINOMA: A CASE REPORT

Rollins J., Gupta P.

THE ACUTE PRESENTATION OF HERPES ENCEPHALITIS

Roten R., Neeki M.

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

Rundio J., Neeki M.

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

Sandy J., Tokuhara K.

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

Shi A., Pill S., Morrissey B., Cross C., Park S.

CULTURALLY COMPETENT CARE OF THE LATINO PATIENT

Smith R., Raval N.

PEDIATRIC PERSISTENT NEPHROGRAM WITHOUT CONTRAST-INDUCED NEPHROPATHY AFTER TRAUMA

Tan J., Melendez M.

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

Ung J., Lowe A.

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

Hua Wan Q., Stepanyan T., Fritzmorris S.

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

Young M., Velasquez J.

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

Budde A., Ebert E.

A PREGNANT GOUTY ARTHRITIS SECONDARY TO PSEUDORBARTTER'S SYNDROME

Boshra H., Metyas S., Arkfeld D.

**PLEASE CONGRATULATE ALL THOSE THAT PARTICIPATED IN ARMC'S 7th ANNUAL RESIDENT
RESEARCH DAY, JUNE 1ST 2012.**

Winners will be announced at a later date. Good Luck!

**A big thank you to Dr. Lanum and Dr. Lee, for organizing this annual event,
Family Medicine Support Staff for assisting with the poster set up,
and to those who took time out of their day to be judges and view the event.**

RESEARCH PROJECTS AT ARMC

Are you interested in research? Are you a student, resident, staff, or faculty member at ARMC? Please contact the offices listed below to participate in any of the following ongoing studies. We thank all the faculty primary investigators of the following projects.

Cardiology

Fitzmorris, Steven MD, Cardiology Wan, QuiHua DO Int Med Resident	Comparing Accuracy of Transthoracic Echocardiogram vs Trasesophageal Echocardiogram and Cardiac Catheterization in Obese Population
Emergency Medicine 909-580-6370	
Ho, Anthony DO PGY IV	Retrospective Evaluation of the Proportion of Systolic Heart Failure in Young Patients With and Without a History of Methamphetamine Use in a California County Hospital Facility
Mesisca, Michael DO PGY IV Kwong, Eugene MD	A 10-Year Retrospective Review of Patient Outcomes Undergoing Emergency Thoracotomy at a Level-Two Trauma Center
Neeki, Michael DO Garabedian, Tigran DO PGY III	Manifestation of Necrotizing Fasciitis: A Retrospective Review of Patients Presenting to San Bernardino County Emergency Department
Seng, Sakona DO, PGY III (Weingrow, Daniel DO)	Retrospective Analysis of the Effect of Specific Cost Containment Measures on MediCal Patients Presenting to an Urban Emergency Department with Non-Traumatic Dental Complaints
Alconcel, Franklin DO PGY1	Estimated time of arrival of EMS for trauma alerts and activations.
Fenati, Greg DO PGY 1	Link between allergies and psych disorder
Johnson, Joshua DO PGY1	1.What characteristic result in a match to emergency medicine in the osteopathic match 2. Survey regarding if patients in the ED would not mind be contacted or find results via electronic communication.
Mamic, Marko DO PGY 1	Link between allergies and psych disorders

Baccaglioni, Gabriella DO PGY II	EM Resident Lifestyle Survey
Horan, Jennifer H DO PGY II	Minor burn care in the Emergency Department
O'Kelley, Timothy DO PGYII	Nec fasc and DKA, Research project: a ten-year retrospective review of patient outcomes undergoing emergency thoracotomy at a level II trauma center
Orhard, Derek A DO PGY II	Survey International Medicine and the Obstacles Involved
Welch, Mary E DO PGY II	EM Resident Lifestyle Survey
Garabedian, Tigran DO PGYIII	Efficacy if 23.4% Nad on decreasing ICP
Kuhnen, Keasha, DO PGY III Jones Kevin, DO PGY III	Retrospective analysis of the correclation between subjective abdomincal pain and intra-abdominal injury on CT in pts, with blunt abdominal trauma
McAfee, Lisa DO PGY III	Do patients expect to be tested for HIV?
Roten, Ryan DO PGY III	Utility of CT in cervical spine clearance in the acutely intoxicated
Seng, Sakona DO PGY III	Retrospective analysis of assembly bill X35 on Medi-cal pts presentng with dental complaints
Herr, Christie DO PGY IV	Email correspondence in an urban community ER
Ho, Anthony DO PGY IV	Prospective study on the use of normal saline versus bicarbonate in IVF prevention of renal failiure in patients with exercise indused rhabdomyolysis.
Mesisca, Michael DO PGY IV	Thiamine deficiency among adult patients with diabetic keto-acidosis presenting to the emergency department
Minera, Robert DO PGY IV	A retrosepective review of blunt arotic injury: Are trauma supine portable chest x-ray sufficient enough to rule out blunt aortic trauma?
Mjos, Nathan DO PGY IV	1.Testicular torsion emergency medicine survey 2. An analysis of CA-MRSA prevalence cultured from ultrasound probes and cords in an urban emergency dept.
Stone, Benjamin DO PGY IV	I&D treatement of abscesses in an EM dept: Clinical evaluation of a 100% sodium, carboxymethylcellulose (NaCMC) ribbon dressing with ionic silver and strenghening fiber as a primary dressing.

Family Medicine 909-580-6236

Bohn, Heather DO PGY III Goharbin, Amir MD PGY III, Ito, Bonnie LCSW	Health Literacy in English Speaking patients at McKee-FHC
Boshra, Heba MD PGY III; Matyas, Samy MD	Pregnancy in a patient with gouty arthritis secondary to ppseudo bartter syndrome
Budde, Audra DO PGY III Ebert, Emily MD	Effect on patient satisfaction of OMT for musculoskeletal complaints in the primary care setting
Chang, Rudolph, DO PGY III; Gupta, Pooja DO	Exercise regimen selection: An analysis of physicians' and healthcare workers' workout patterns
Ho, Eugene, MD PGY III; Melendez, Martha MD	Elephantitis verrucosa nostra
Lin, Felix DO PGY III; Velasquez Juan MD	Lupus and Paralysis
O'Hara, Erin DO PGY III; Gupta Pooja, DO	Highly resistant class IV & V lupus nephritis: A case study and review of treatments
O'Neil, Michelle DO PGY III; Gupta Pooja, DO	ATrioventricular block as a presernting symptoms of a systemic lupus erythematosus flare
Rollins, Jessie DO PGY III; Gupta Pooja, DO	Parathyroid carcinoma: a rare case study
Smith, Rory MD PGY I II; Raval, Niren DO	Chief project: culturally competent care for the latino patient
Young, Mathew MD PGY III; Velasquez, Juan MD	Hereditary hemorrhagic telangiectasia

Internal Medicine 909-580-6266

Bali, Rachna DO PGYIII	A case of pulmonary arteriovenous malformations secondary to hereditary hemorrhagic telangiectasia characteristics and treatment outcome of spinal epidural abscess: A county hospital experience of 100 cases over 10 years
Hadi, Molood, DO PGY II	Vancomycin Sensitivity in MRSA Strains Causing Hospital Acquired Pneumonia

Ober, Robin DO PGY Int Med Resident	MAD Sepsis: <u>M</u> anual vs <u>A</u> utomated <u>D</u> ifferential Sepsis
Pearce, Daniel DO Int Med/Western U Ani, Chizobam	Relative Risk of Mortality From Acute Myocardial Infarction: HIV Seropositive vs Seronegative Individuals
Pearce, Daniel DO Western U /Int Med	Who Should Receive Cardio Pulmonary Resuscitation (CPR)? Evaluation of the Modified Pre-Arrest Morbidity Indices
Pearce, Daniel DO Western U /Int Med	Are obese patients at increased risk of developing ACE-inhibitor or ARB associated angioedema?
Pearce, Daniel DO Western U/Int Med	How does toxoplasmosis seropositivity affect testosterone levels and therapy in HIV infected males.
Pearce, Daniel DO Internal Medicine Western University	California Medical Monitoring Project (MMP)
Sherman, Catherine DO PGY III; Khan, Tony DO PGY II; Reynolds, Kyle DO PGY II	To evaluate the accuracy of persantine cardiolute stress tests in patients that have also undergone coronary angiography.
Stepanyan, Tigran, DO PGY III	Lemierre's Syndrom: A case report.
Vinn, Vanessa DO Int Med, Resident	Septicemia and catheter related infections in dialysis patients at ARMC.
Wan, Peter, DO PGY III	Isolated L4 vertebral cryptococcosis in an immunocompetent patient-case report.
Neurosurgery 909-580-1366	
Huynh, Katie DO PGY III Lowe, Andrew PharmD Le, Tina PharmD	Does dihydropyridine calcium channel blockers lower serum sodium:amlodipine vs nifedipine on sodium levels.
Siddiqi, Javed MD Ramakrishnan, Vivek DO PGY III	Anti-Epileptic Prophylaxis in Traumatic Brain Injury (TBI) Patients Undergoing Craniotomy vs Decompressive Craniectomy Operations
Siddiqi, Javed MD Minasian, Tanya DO PGY II	An Analysis of Neuron Specific Enolase (NSE) in Traumatic Brain Injury (TBI) Patients
Ophthalmology	
Rudometkin, Nathan MD	Investigation of Retinal Traction Associated with Lung Cancer
Tokuhara, Keith MD Storkersen, Kris MD	Role of Sub-Conjunctival Bevacizumab in Post Pterygium Excision Management
Pharmacy 909-580-0016	
Lowe, Andrew PharmD	Effect of Ketorolac Tromethamine (Toradol) on Pain Perception and Narcotic Use
Hiroshige, C. PharmD Love, Jessica Pharmacy	Recognizing and Evaluating Potential Causes of Hypoglycemic Events in Hospitalized Patients
Le, Tina PharmD Resident	Efficacy of High Dose Nutritional Vitamin D3 in Decreasing PTH Levels in Hemodialysis Patients as Compared With Paricalcitol
Ng, Steven PharmD resident	Anti-Emetic Effects of Dronabinol in Chemotherapy Induced Nausea and Vomiting
Surgery 909-580-3362	
Culhane, John MD Surgery	Amount of Residual Intra-gastric Feeding Formula in ICU Patients Undergoing PEG Placement or Tracheostomy Placement
Culhane, John MD Surgery	Retrospective Review of Muscle Relaxants as Adjunct to Standard Pain Management in Surgical Patients
Joe, Victor MD Surgery Sadia Khan, DO PGY III	Does the Gail Model Help Stratify Women with Breast Imaging Reporting and Data System (BI-RADS) Classification 3 Lesions to Biopsy Rather than Short Term Follow Up?
Davis, Vivian Joseph DO, Surgery Woods, Bill Coord	Transcutaneous Oxygen (TcPO2) Change Following Hyperbaric Oxygen Therapy
Joe, Victor MD Wong, David T MD	A Randomized Clinical Trial of Restrictive vs. Traditional Blood Transfusion Practices in Burn Patients
Joe, Victor MD Surgery	Commercial Burn Wound Dressings: Evidence and Experience – A Retrospective Analysis of the Use of Commercial Wound Dressings in the Treatment of Superficial Partial Thickness Burn Wounds
Wong, David T MD	Intrathoracic Pressure of Patients Measured Through Chest Tubes

Raja Gnanadev Student	
Ho, Catherine DO PGY V	Limiting preoperative fasting prior to percutaneous endoscopic gastrostomy: Is there an aspiration risk? Case study
Khan, Sadia DO PGY III; Quigley, Jeff DO PGY I	Birads Three Gail Model for early breast cancer detection.
Quigley, Jeff DO PGY I; Dr. Joe MD	ICU vs. Burn Unity-Normal Flora vs. Regular ICU
Quigley, Jeff DO PGY I; DR. Davis, DO	Osteopathic evaluation of vagal stimulation in cardiac dysfunction
Quigley, Jeff DO PGY I; Dr. Joe MD	Patterns of normal flora, colonization and infection in burn unit patients.
Lin, Erin DO PGY III	Compare the complication rate of wound infection between tram flaps and tissue extender
Lin, Erin DO PGY III	Case report: Trichobezoar
Gelvezon, Nani DO PGY III; Dr. Hussain MD	Pancreatic head sparing duodenectomy in a trauma setting
Gelvezon, Nani DO PGY III	Clinical case: brown-sequared plus syndrome in a trauma
Dr. Davis DO	Incidence of vertebral artery injury with traumatic cervical spine subluxations
McCague, Andrew DO; Dr. Navarro MD, Dr. Kong MD	Recurrent left chest mass: a case report
McCague, Andrew DO PGY IV	Empyema necessitans presenting as transient chest mass
McCague, Andrew DO PGY IV	Osteopathic manipulation on trauma patients
McCague, Andrew DO PGY IV	Percutaneous dilational tracheostomies in the emergent setting
Traditional Year 909-580-1369	
Alvarez, Ixchel DO PGY I; Miulli, Dan DO	Labor Inducing Medications and Incidence of Stroke
Bae, Esther DO PGY I; Miulli, Dan DO	Presenting serum sodium levels in patients with ischemic stroke and associated outcomes.
Young, Jacob DO PGY I; Miulli, Dan DO	Exploring the relationship between hyper-thyroidism, hypercoagulability and incidence of cerebrovascular ischemic events
Kavipurapu, Kiran DO PGY I; Miulli, Dan DO	Pregnancy resulting in Chronic Back pain
Hariri, Omid DO PGY I; Miulli, Dan DO	Incidence of Vertebral Artery Injury with Traumatic Cervical Spine Subluxations
Kim, Min DO PGY I; Miulli, Dan DO	The Effectiveness of Aspirin on Preventing Recurrent Ischemic Stroke
MaCneil, Colin DO PGY I; Miulli Dan DO	Estimated time of arrival of EMS for trauma alerts and activations.
Mejia, Cheryl DO PGY I; Miulli, Dan DO	Motorcycle accidents; correlation between helmet use and GCS levels.
Nelson, Chris DO PGY I; Miulli, Dan DO	Methamphetamine Abuse on Size of Stroke-a Retrospective Study
Schulte, Adam DO PGY I; Miulli, Dan DO	Neurologic impairment as a result of fat embolism: comparison of rates between gunshot related fractures and orthopaedic operative management
Scolnick, Jill DO PGY I; Miulli, Dan DO	Immune responses to Beta-Amyloid in Alzhimers Disease
Syu, Trixy DO PGY I; Miulli, Dan DO	Young Adults with Diabetes and Incidence of Stroke
Tracey, Robert DO PGY I; Miulli, Dan DO	Testosterone levels in incidence of stroke
Zall, Mona DO PGY I; Miulli, Dan DO	Pain management in Central Post-Stroke Syndrome
Miulli, Dan DO Lawrence, Teckah M.Ed	Intercranial Hemorrhage: Size and Location Based on Admitting Cholesterol Levels and Prior Statin Use.

Transitional Year 909-580-3367

Bhanu, Shiv MD PGY1	Intrathoracic complications following percutaneous intercostal drainage of abdominal fluid collections
Gillham, Seth MD PGY 1	Poor Patient Handoffs Lead to Adverse Outcomes in Patient Care
Hamstra, Ashley MD, PGY 1	Wilderness Medicine
Koning, Jeffrey MD PGY 1	Technique safety, and efficacy of Yttrium-90 for the Treatment of Chemo refractory Colorectal Liver Metastases
Mondek, Nick MD, PGY 1	Gulf war veteran with exposure to acetyl cholinesterase inhibitors & multi system conditions: a case discussion and literature review
Mortenson, William MD	Congenital Alopecia Acreata
Nanayakkara,Rajika MD PGY1	Multimodal Pre-emptive Pain Management versus Standard Pain Control for Post-Operative Pain Relief: A Prospective Randomized Controlled Trial.
Rotchel, Sepher MD PGY 1	The Acute Presentation of Herpes Encephalitis
Sandy, Jewel MD PGY 1	Role of Prokera as Adjuvant Treatment to Complex Cataract Surgery
Shi, Anna MD PGY 1	Correlation Between Macular Pigment Optical Density and Macular Volume in Normal Subjects and Subjects with Cystic Fibrosis
Tan, Jeffrey MD PGY 1	Pediatric Persistent Nephrogram Without Contrast-Induced Nephropathy After Trauma

Womans Health 909-580-3470

Burke, Julia DO PGY IV	The Course of Preeclampsia in the Setting of Methamphetamine Use
Hodieb, Rafik DO PGY IV	Comparing the Rates of Detection / Diagnosis of Gestational and Overt Diabetes Mellitus Using Old vs New Screening Guidelines
Valenzuela, G. MD	Difference in GDM detection rates pre and post HAPO
Hodeib, Rafik DO PGY IV	Difference in GDM detection rates pre and post HAPO
Roloff, Kristina DO	Cord C-Peptide: Is Fetal Hyperinsulinemia the Link to Macrosomia in the Obese Non-Diabetic Population Too?
Roloff, Kristina DO	Nutrition in the Obese Gravid Patient: Is Improved Nutrition a Factor in Preventing Fetal Macrosomia?
Valenzuela, MD	Interval From Skin Incision to Delivery of the Newborn: The Effect of Body Mass Index
Valenzeula, G. MD	Interval From Skin Incision to Delivery of the Newborn: The Effect of Body Mass Index
Women's Health	
Valenzuela, G MD	Tubal Sterilization Disparity in Ethnic Groups
Women's Health	
Valenzuela, G MD	A Retrospective Study Examining the Frequency of Induced Abortions According to Religious Preference
Hong,Karen DO PGY IV	A Retrospective Study Examining the Frequency of Induced Abortions According to Religious Preference
Valenzuela, G MD	Changes in the Incidence of Severe Shoulder Dystocia
Valenzuela, G. MD	A Prospective Evaluation of Omental and Subcutaneous Fat in Normal and Obese Women to Study the Adipose Tissue Renin Angiotensin System During Pregnancy

There are many ways for ARMC residents to become involved in research. Here is a list of the current ongoing studies at Western University. If you are interested in finding out more on a particular topic please contact the GME Research Coordinator, **Teckah Lawrence**, for more information. Research is organized by faculty member.

Al-Tikriti, Mohammed

The morphological and histochemical effects of administration of cisplatin on the GIT of the least shrew.

Barnes, Edward

Effects of Patient engagement and Dietary Education on glycemic control in Diabetic patients.

Benninger, Brion

Finger probe ultrasonography - anatomy and clinical benefits
Unhappy triad - knee and elbow terminology controversy
Definition, morphology, and classification of subcondylar fractures

Bi, Xiaoning

Angelman-autism project: protein synthesis, degradation, and actin polymerization in spine plasticity

Behavior and epigenetic in mouse models of imprinting disorders

Neurodegeneration in Niemann-Pick type C disease
Epilepsy, excitotoxicity, and gene susceptibility

Brar, Rajivinder

Oxidative metabolism of linoleic acid derivatives and the enzymes involved in that process.

Chew, Amy

Collaborative pilot work for submission of an NSF proposal (deadline July 15, 2012) to investigate climate and environmental change and their effects on the early Eocene Willwood mammal fauna from the Bighorn Basin, WY

Collaborative analysis and description of the species-area bias on different methods of rarefaction using GIS, with K. Oheim, Suffolk County Department of Planning.

Collaborative description of Bridgerian *Thysbemis* (middle Eocene rodents) with D. Anderson, St. Norbert College.

Curation and description of a late Eocene rhino bone bed from Sespe Formation, Orange County, currently stored at the Cooper Center, Cal State Fullerton.

Review of Paleocene-Eocene Thermal Maximum for Grizmek's Extinction volume.

Darmani, Nissar A.

Mechanisms of antiemetic drugs including cannabinoids.

Chemotherapy-induced vomiting.

Mechanisms of serotonergic drugs such as antidepressants, hallucinogens.

Covasa, Mihai

The role of NMDA receptors on control of food intake.

Changes in sensitivity to satiation signals in obesity and diabetes.

The role of gut microbiota in control of food intake and regulation of body weight

Darmani, Nissar (website)

Developmental effects of drugs of abuse on the newborn.

Serotonergic mechanisms of cocaine's actions.

Mode of action of antidepressant drugs.

Adaptive mechanisms of serotonergic 5-HT₂ receptor functions.

The role of delta-9-THC and synthetic cannabinoids on chemotherapy- and radiotherapy-induced vomiting. His laboratory had the first opportunity to demonstrate the mechanisms of antiemetic actions of marijuana.

Role of 5-HT₃-, Dopamine D_{2/3}-, Leukotriene CysLT₁- and NK₁-receptors in emesis and application of their antagonists as antiemetics.

The role of osteopathic manipulative medicine on the blood levels of endogenous cannabinoid-like compounds and other pain markers in patients with back pain. He had been successful in obtaining several million dollars of research grants from numerous funding agencies including the Pharmaceutical industry, the National Institute of Drug Abuse, the National Institute of Cancer, the Department of Defense and the Environmental Protection Agency.

Ethell, Douglas

Evaluation of amyloid-beta specific CD4+ T cell responses in Alzheimer's

A Physiological Role for the Alzheimer's Peptide Amyloid-beta in Angiogenesis

Fragile X Subject-derived iPSCs as a Source for Human Neurons with Clinically-relevant FMR1 Mutations.

Fraix, Marcel

Effectiveness of Osteopathic Manipulative Treatment (OMT) and Vestibular Rehabilitation Therapy (VRT) alone or in combination on Balance and Visual Function in Individuals with Vertigo and Somatic Dysfunction

Henriksen, Steven

VTA GABA neurons: Role in Neocortical Activation and Neurological Dysfunction

Impairment of memory consolidation by galanin correlates with in vivo inhibition of both LTP and CREB phosphorylation

Methamphetamine and Lentivirus Interactions: Reciprocal Enhancement of CNS Disease

Strain-Specific Viral Distribution and Neuropathology of Feline Immunodeficiency Virus

Hovorka, Michelle

Histological examination of the presence of sensory neurons (ganglia) along the C1 spinal nerve

Biliary tree changes with age and disease (waiting on IRB approval)

Hu, Jin-Shan (from website)

Multidimensional NMR methods and their application in structural biology.

Structures and functions of the DNA repair and tumor suppressor proteins.

Molecular mechanism of the RecQ helicases function in DNA metabolism and in maintaining genome integrity.

Issar, Manish

Quantitative analysis of 13-HODE and 13-Oxo-ODE in human placenta, shrew liver, brain and heart by HPLC.

Characterization of 13-HODE dehydrogenase in the liver of shrew and human placenta.

Quantitation of 13-HODE and 13-Oxo-ODE in the shrew brain after treatment with antineoplastic agents. (not initiated but under planning).

Kandpal, Raj

Molecular profiling of retina in a mouse model of diabetic retinopathy: Understanding molecular basis of disease etiology and candidate drugs.

Receptor tyrosine kinases in breast carcinoma cells: Implications for diagnostics and therapeutics.

Glen Kisby

Role of Environmental Factors in Residents of Southern Oregon with ALS.

Determine if environmental genotoxins trigger underlying mechanisms of cancer in amyotrophic lateral sclerosis (ALS) and Alzheimer's disease (AD).

Examining the effect of the viral regulatory protein P13 on neuroinflammation in animal models of neurodegenerative disease.

Role of pesticide-induced oxidative stress and DNA damage in agricultural workers.

Development of a community-based health and wellness program at COMP-NW.

Examining epigenetic changes (i.e. histone modifications) in the brain of individuals with Alzheimer's disease.

Kraatz, Brian

A Geometric Morphometric Analysis of Skull evolution in the Lagomorpha (rabbits, hares, and pikas)

Faunal Evolution of the Arabian Peninsula as from Late Miocene

Fossils from the United Arab Emirates

Paleontological Exploration of Paleogene Faunas of Oman

The Evolution of the Locomotor System of Lagomorpha

Modeling the Stability of Paleocommunities Throughout Earth's History

Malecki, Marek

Molecular mechanisms of osteopathic manipulative medicine.

Environmental pollution and epigenetics.

Novel methods of gene sequencing.

John Mata

Synergism of natural products with 5-alpha reductase inhibitors to inhibit growth of prostate cancer cells in vitro.

CT guided third molar ablation in swine.

Martin, James

Saw Palmetto effects on glycemic control in Type II Diabetes.

2nd to 4th digit ratios relationship to Type II Diabetes and Hypertension

Directional and fluctuating asymmetry: relationship to human chronic diseases

Mehta, Rucha

Inspire Diabetes trial: A multicenter investigator initiated trial to evaluate the efficacy of intensive insulin regimen as a primary treatment of new onset Type 2 Diabetes.

AADE Demonstration Project: This is a diabetes education project aimed at evaluating the efficacy of diabetes education in empowerment of the patient and thereby improving outcomes.

Merbs, William

Canine Thoracic Splanchnic Nerves and Their Comparison to Those of the Homo Sapiens

Clinical Anatomy of the Thoracic Splanchnic Nerves

Pain Pathways of the Pancreas

Mitsouras, Katherine

Analysis of tissue-specific gene expression of an endangered felid, the snow leopard, using transcriptome sequencing.

Analysis of the alternative transcriptome of an endangered felid, the snow leopard

Development of novel methods to annotate gene expression data

Patel, Nishita

increased risk of tuberculosis in Diabetic patients with low glutathione level.

Pumerantz, Andrew

PEGylated liposomal vancomycin (PLV) as a novel drug delivery system to improve patient-centric outcomes with treatment of MRSA pneumonia.

Innovations in health care delivery with integrated practice units to improve patient-centric outcomes.

Expanding integrated health care in China and other developing countries where chronic diseases such as diabetes are emerging on a large scale.

Saviola, Beatrice

Antimycobacterial action of engineered peptides.

PhoP binding and regulation of the *lipF* promoter from *Mycobacterium tuberculosis*.

Role of acidity in gene regulation during *in vivo* infection by *Mycobacterium tuberculosis*.

Seffinger, Michael

Osteopathic manipulation vs vestibular rehabilitation training for patients with vertigo

Osteopathic manipulation vs sham for patients with chronic headaches

Osteopathic manipulation vs sham for patients with asthma

Effectiveness of students performing osteopathic manipulation for patients with musculoskeletal pain

Evaluation of an intensive osteopathic manipulation summer course for entering osteopathic medical students

Venketaraman, Vishwanath

Host immune responses against *Mycobacterium tuberculosis* and HIV infection

Characterization of the beneficial effects of glutathione in enhancing the functions of host immune cells against *Mycobacterium tuberculosis* infection in both healthy individuals and individuals with HIV infection

Elucidation of the underlying causes for increased susceptibility to tuberculosis in individuals with type II diabetes, chronic smokers and in ageing population

Determine the efficacy of vancomycin formulations against MRSA infection by performing *in vitro* and *in vivo* studies

Wagner, Ed

My research interests focus on how cannabinoids regulate the hypothalamic feeding circuitry to affect changes in feeding behavior and energy homeostasis in male and female subjects, and how gonadal steroids modulate this interaction.

Wedel, Mathew

Evolution of the respiratory system in dinosaurs.

Biological challenges of long necks (support, breathing, blood pressure).

Biological limits to large body size in animals, particularly whales and dinosaurs.

Early Cretaceous dinosaur faunas of North America.

Wedel, Vicki

Determining season at death using dental cementum increments

Patterns of bone remodeling among enslaved and freed historical blacks

Detecting a historical epidemic from cemetery samples

Wong, Stanley

Effect of adipose tissue-derived stem cells on skin proliferation and wound healing

Zhong, Li

Profiling autoantibodies for early detection of esophageal squamous cell carcinoma

Validation study of select biomarkers for early detection of esophageal squamous cell

Risk Assessment of Mesothelioma Development Using Autoantibody Signature

SPOTLIGHT ON RESEARCH

Incidence of Vertebral Artery Injury with Traumatic Cervical Spine Subluxations

Omid R. Hariri, DO, PGY 1 Traditional Neurosurgery

INTRODUCTION

The incidence of vertebral artery injuries in traumatic cervical spine subluxations has been reported to be highly variable, 3%-88% [1-6]. These arterial injuries can be potentially devastating. Therefore, the purpose of this study was to investigate the incidence of vertebral artery injuries at our institution, the second busiest trauma center in southern California.

METHODS

Retrospective data analysis was collected from our institution's trauma registry from January 2000-June 2011 to analyze the incidence of vertebral artery injury, Blunt Cerebrovascular Injury (BCVI) Grading, and the anatomical extent of injury. Search criteria included: (1) All traumatic cervical spine fractures presenting to the emergency room or transferred from other hospitals, (2) All traumatic subluxed cervical spine patients, (3) Subluxed cervical spine injuries and vertebral artery injuries. All images were reviewed to ensure that the patient's images/and diagnosis matched their records. Exclusion criteria included: (1) No imaging available to review, (2) Injury occurring because of damage to subclavian artery, (3) Injury occurring because of incidental damage to only neck soft tissue, and (4) Imaging not consistent with reported injury, which was the most common exclusion criteria.



RESULTS

A total 852 patients (mean age: 40.2, 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 and 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 Emergency Department, and 12.7% of all traumatically cervical subluxation patients. The anatomical characteristics and extent of injury of these 13 patients were: 5 (38.4%) involved severe fracture with subluxation resulting in translocated vertebral bodies, 5 (38.4%) involved vertebral artery occlusion secondary to a perched facet and minor subluxation, 2 (15.4%) were gunshot wounds causing fractures which caused vertebral artery occlusion, 1 (6.6%) vertebral artery dissection associated with similar severe fracture and subluxation. Injuries according to the Blunt Cerebrovascular Injury (BCVI) Grading were: 3 (23.1%) grade II (dissection), 9 (69.2%) grade IV (occluded) and 1 (6.6%) grade V (transection). All injuries were to one vertebral artery. There were no intracranial vertebral artery injury, and no subarachnoid hemorrhage.

CONCLUSION

At our institution over the past 11.5 years, our data suggests that we have a 1.5% incidence of vertebral artery injuries when associated with traumatic cervical spine fractures. There was no incidence of vertebral artery injury without a fracture. Occlusion (Grade IV) was the most common form of vertebral artery injury. Thus, in patients with cervical spine subluxation, vertebral artery injuries are about 12.7%.

REFERENCES

1. Willis, B.K., et al., *The incidence of vertebral artery injury after midcervical spine fracture or subluxation*. Neurosurgery, 1994. 34(3): p. 435-41; discussion 441-2.
2. Weller, S.J., E. Rossitch, Jr., and A.M. Malek, *Detection of vertebral artery injury after cervical spine trauma using magnetic resonance angiography*. J Trauma, 1999. 46(4): p. 660-6.
3. Louw, J.A., et al., *Occlusion of the vertebral artery in cervical spine dislocations*. J Bone Joint Surg Br, 1990. 72(4): p. 679-81.
4. Biffl, W.L., et al., *The devastating potential of blunt vertebral arterial injuries*. Ann Surg, 2000. 231(5): p. 672-81.
5. Parbhoo, A.H., S. Govender, and P. Corr, *Vertebral artery injury in cervical spine trauma*. Injury, 2001. 32(7): p. 565-8.
6. Mueller, C.A., et al., *Vertebral artery injuries following cervical spine trauma: a prospective observational study*. Eur Spine J, 2011.

7th Annual Research Paper Competition

Presented by the Osteopathic Physicians and Surgeons of California (OPSC)

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Winners receive \$250 cash prize, one night's hotel stay, and an invitation to present the paper at the OPSC 21st Annual Fall Conference on September 14-16, 2012 in Monterey, CA.

Please submit entries to Erica Cyr.

Email: CyrErica@armc.sbcounty.gov

Phone: (909)580-1369

Innovations in Medicine

Propranolol: Erasing Bad Memories

Lindy Lay, DO
Psychiatry PGY I

Suppose you could erase the trauma from your brain with a pill. Sounds science fiction but real world scientists are working on just that.

Research has shown that bad memories stick better than good ones. Scientists believe this happens with traumatic experiences because the brain releases stress hormones like adrenaline that help store these memories in a different way than those preserved normally. They theorize that dampening these hormones may blunt the formation of bad memories and thus disrupt the biomechanical way a memory is recalled.

Fortunately, memories can be changed when recalled in a process known as reconsolidation. During this phase, the memories become vulnerable to outside influences, such as medication.

Scientists are working on using propranolol to curb bad memories. Propranolol, a beta-blocker most able to cross the blood brain barrier is currently already used off label for stage fright and performance anxiety. The medication is able to reach nerve receptors in the amygdala, the area of the brain responsible for fear and memory consolidation.

At the University of Amsterdam, researchers exposed 60 subjects to mild shocks after showing them pictures of spiders, creating a fearful memory. The group was then given the beta-blocker or a placebo. The propranolol group was found to have a greatly decreased fear response 24 hours

later, which did not return a day after; suggesting the fear memory was erased.

Researchers are also using this medication to possibly treat PTSD and various anxiety problems related to bad memories. During a pilot study by Dr. Roger Pitman, a psychiatrist at Harvard University gave 10 days of either propranolol or dummy pills to victims of rape and accidents who came to their ED. After 3 months, the subjects were asked to listen to recordings describing their traumatic events while their vitals were measured along with palm sweating and forehead muscle tension. Those who had taken the medication were found to have fewer stress symptoms compared to those taking the dummy pills. Although the study was too small to prove major significance, the preliminary results show some promise.

This type of research cannot come soon enough. 1 in 6 American troops coming back from Iraq and Afghanistan show sign of mental stress and symptoms of PTSD characterized by flashbacks, hypervigilance, and hyperarousal to stimuli. Disability provided by the government for these issues nearly reaches \$4 billion a year. Bioethicists fear that using medication in this way may change the nature of being human. They argue experiences, good or bad, are what make us who we are. Perhaps the medication could make us “better” forms of ourselves? It is truly something to think about.

REFERENCES

1. Britt, Robert (2009 February 16) *Pills Could Erase Bad Memories*. [LiveScience.com](http://www.livescience.com)
2. Christensen, Bill (2007 July) *New Drug Deletes Bad Memories*. [LiveScience.com](http://www.livescience.com)
3. Marchione, Marilyn (2012 May) *Scientist Work on ‘Trauma Pill’ to Erase Bad Memories*. Associated Press
4. *Reuters* (2009 Feb) *Bad Memories Erased with a Pill*. [ABC Science.com](http://www.abc-science.com)

AT YOUR LIBRARY

ARMC supports an environment of learning through multiple endeavors including continuous purchasing of books and databases for library users. Since the April issue of JARMC, we have not purchased any new books for the library; therefore in this issue we will introduce the various online resources.

Currently, we have 25 Online Library Resources that you can access through the Online Public Access Catalogue (OPAC), the IntraNet, and Citrix Portal Remote Access.

- **Citrix Portal** provides access to ARMC Intranet, which in turn provides you access to **Library Links**, which has the Online Resources. Citrix Portal is only available to attendings and residents.
- **The IntraNet** can be accessed by going to **ARMC Tools**, then click on **ARMC IntraNet**.
- **The OPAC** is the Library's webpage. There you can access some of the Library Resources under **Useful Links**, find a book, or run a Google search.

The list of our Online Resources is divided into four categories:

➤ **eBooks/eSurgery**

Access Medicine, MD Consult, OR Live and Websurg

➤ **Graduate Medical Education**

ACGME, AOA, Freida Online, and New Innovations

➤ **Databases**

Essential Evidence +, Health Management,

Lexi-Comp, Medline +, Ovid, ProQuest, Hospital Collection, ProQuest Nursing, PubMed@ARMC, Toxnet, and UpToDate

➤ **Educational Aids**

AAFP, AHRQ guidelines, ARMC Jrnl AtoZ, Cancer Net, Cochrane Lib EBM, E-Medicine, Medscape

Where do I start?

This is the most frequently asked question in our Library. The answer is always the same, start with **PubMed@ARMC**. Even though Google may retrieve a few perfect articles, you have to consider the searching parameters that Google utilizes. Google and Google Scholar:

The Bad

- huge retrieval for almost any topic
- built on relevancy rankings based on times-cited; this may result in a bias toward older literature
- searches more full-text than PubMed; but PubMed is more precise with the most recent citations first
- many relevant citations, but also many that were not appropriate
- many articles are consumer oriented and not limited to health sciences content

The Good

- able to identify information that is hard to find in smaller databases such as PubMed
- phrase searching reduces the retrieval in some cases

People's choices of databases often depend on what they know best, which is the reason that many use Google. Google should be used when appropriate, as long as searchers understand their limitations.

Physicians in training learn and practice research, “To formulate, ingrain, and measure, a method of thought, investigation, and evaluation necessary for physicians to have multi-lateral information exchange and communication with experts in areas of scientific and medical discovery, knowledge, and analysis, in order to continuously and efficiently improve human health and patient care.”

Important Numbers

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The schedules for the following issues are:

September 2012

History of Medicine	Family Medicine
How I do it	Internal Medicine
Spotlight on Research	OB/GYN
Case of the Month	Surgery
Innovations in Medicine	Neurosurgery

December 2012

History of Medicine	ER
How I do it	Psychiatry
Spotlight on Research	Family Medicine
Case of the Month	Internal Medicine
Innovations in Medicine	OB/GYN

Research Dates

Dates to remember...

- ✚ Deadline for submissions to the next issue Journal of ARMC: **August 15th, 2012**
- ✚ The 6th Annual Western University – ARMC Research Symposium will be **Wednesday August 22nd** in the Oak Room. It is intended for faculty, residents, students and staff. The national speakers will discuss means to initiate, continue, fund, and publish medical research.
- ✚ 2012-2013 dates for **Management and Leadership Experience for Residents:**
August 29, 2012
October 24, 2012
December 12, 2012
February 20, 2013
April 24, 2013
May 22, 2013