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INSIDE THIS ISSUE

HISTORY OF MEDICINE: Accidents Do Happen

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Internal Medicine

Not all medical discovery happens due to intense research, as part of a study, or even altogether intentionally. There has been a long history of accidents contributing to medical advancements that have changed the field of medicine. Had it not been for the keen observations of those scientists and doctors, fueled by their curiosity, we may not have some of the medical advancements we have today.

One of the most well-known of these accidents was the discovery of penicillin. In 1928, Sir Alexander Fleming went on a vacation with his family, leaving his staphylococci research unattended at home. When he returned, he noticed that mold had grown on some of his culture plates. What he found most interesting was that on some of the plates where the mold grew, the staphylococcus was not growing. This accident, combined with his curiosity, lead to the discovery of penicillin.

That discovery is one of the most well-known accidents that lead to major medical advances, but it is not the only medical breakthrough that occurred by accident. It is hard to imagine seeing most patients in the hospital without getting some sort of imaging on them. X-rays especially give physicians a quick, moderately safe way of looking inside a person to try and see disease. In 1895, Wilhelm Roentgen was exploring the path of electrical rays passing from an induction coil through a partially evacuated glass tube when he noticed in his dark room that a screen covered in fluorescent material was illuminated by the rays. After changing his current screen to a photographic screen, Roentgen captured the first x-ray -- an image of his wife's hand with her wedding ring still on. This new way of seeing into the body

quickly lead to new firsts in the field of medicine and other research fields, changing the way we practice medicine today.

Diabetes is one of the most prevalent diseases that we treat today, but it is one of the oldest diseases known to man. It was first described by Aretaeus, a Greek Physician who lived between 81-138AD. Over the next two thousand years, innumerable scientists worked on a treatment for the disease that was found to produce sugar tasting urine. It wasn't until Oscar Minkowski and Bernahard Nauyn removed the pancreas of a dog that the key to finding a cure for diabetes was discovered. After removal of the pancreas, it was noted that the dog's urine, lying, un-cleaned, on the floor, attracted flies, leading Minkowski to test it for glycosuria. He made the connection between the pancreas and the development of diabetes.

The stories on the discovery of penicillin, x-rays, and the connection between pancreas and diabetes, are just three of the many accidents that lead to major medical advances. There are legends and truths surrounding the discovery of the implantable pacemaker, electricity moving muscles, the anesthetic properties of nitrous oxide, and of the first heart angiogram. What all these legends or truths have in common, is a person with a curious mind and a good eye for observation.

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http://www.bl.uk/learning/artimages/bodies/xray/roentgen.html
http://www.jameslindlibrary.org/illustrating/articles/the-introduction-of-successful-treatment-of-diabetes-mellitus-wi

"Somewhere, something incredible is waiting to be known."

~Dr. Carl Sagan

HOW I DO IT: Cervical Cerclage Placement

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Cervical cerclage is a fairly common procedure used for prevention of miscarriage or preterm birth in patients with cervical insufficiency (formerly known as incompetent cervix). In a controlled and planned setting, it is a simple outpatient procedure that carries some risks but also provides great benefits to patients with second trimester miscarriages and early preterm deliveries with shortened cervix. A crucial component of the success of this procedure is the appropriate timing and selection of patients. When patient seeks prenatal care, a part of their initial assessment includes a careful history and physical examination. It is instrumental to illicit obstetric history in detail from patients, because their history often dictates outcomes of current pregnancy. Most patients refer to any fetal loss as a miscarriage. It is important to ask and carefully evaluate at exactly how many weeks the loss occurred, because 6 week spontaneous abortion usually has a different etiology than spontaneous abortion at 19 weeks, and even a preterm delivery at 23 weeks (which most patients erroneously would report as a miscarriage if the baby does not survive). Of equal importance is the history surrounding the delivery or miscarriage. Questions such as presence and duration of cramping and pain prior to the miscarriage or preterm delivery are very important to ask. Cervical insufficiency often results in painless dilation of the cervix, whereas preterm labor and spontaneous abortion usually start with cramping and pain, that eventually leads to passage of the conceptus. Other factors that may impact

decision of close observation and potential cerclage placement is history of cervical surgery or conization prior to pregnancy. With the rising rates of HPV infection among the reproductive age females and liberal use of cervical conization practiced by some gynecologists, the number of patients with obstetric complications due to cervical surgery is on a rise. Having had a LEEP (loop electrosurgical excisional procedure) or cold knife conization of the cervix is associated with increase rate of preterm delivery and preterm premature rupture of membranes. These patients must be followed closely and a decision to place a cerclage should be made taking into consideration other findings from patient's history, physical and imaging examinations.

Once the diagnosis of cervical insufficiency is established, the patient is counseled on placement of cerclage. Risks associated with the procedure include infection, bleeding, cervical scarring, pain and cramping post procedure, as well as possibility of rupture of membranes and fetal loss. These risks are minor, and the procedure is usually quite successful, especially if it is performed before significant shortening or dilation of cervix is observed (before it becomes a rescue cerclage). Prior to surgical planning, genetic screening should be offered to the patient, including serum analytes for first and second trimester screening as well as an ultrasound to exclude severe fetal anomalies. Wet mount when appropriate, cervical and urine cultures should be obtained to ensure that no inflammatory and infectious processes are present at the time of the procedure.

A few techniques of cervical cerclage are available for the accomplishment of one task – helping the pregnancy continue past viability. The most common one of these procedures is the McDonald cerclage, or modified versions of the McDonald cerclage. Other methods used include the Shirodkar and transabdominal cerclage, both more involved than the former method. With the McDonald cerclage, neither an abdominal incision nor a submucosal dissection of the cervix is necessary. McDonald described the procedure recommending the passage of suture in the purse string fashion, taking 4-6 bites of the cervical stroma, avoiding the entry into the endocervical canal. Various suture materials have been used, including braided nylon, polyester, or a 5-mm mersilene tape, for McDonald cerclage procedure.

A modified version of the McDonald cerclage is usually performed under regional anesthesia. As with most procedures performed on obstetric patients, fetal heart tones are first obtained. After administration of spinal anesthesia, the patient is placed in dorsal lithotomy position, usually using the candy cane stirrups. Great caution is taken to prevent nerve injury during the positioning of the patient. Ideally the hips should not be flexed more than 90 degrees to prevent femoral nerve injury and the legs should not be in contact with the stirrups at any points other than the feet to prevent peroneal nerve injury. Perineum, lower abdomen, thighs and vagina are then thoroughly prepped and the patient is draped properly. A weighted speculum is inserted to retract the posterior vaginal wall. A right-angle retractor is then used to retract the lateral and anterior vaginal walls as needed throughout the procedure. Once the vesicovaginal junction is identified, the bladder is drained. The paracervical soft tissues are then identified and separated from the cervical stroma in order to optimize the placement of the sutures into the stroma and not the surrounding tissues. If desired, an allis clamp can be used to clamp the paracervical tissues away from the cervical

stroma. This step also moves the vasculature laterally, allowing for a safer placement of the sutures. The assistant uses a right angle retractor to protect the vaginal walls and to help in visualization of the structures. The cervix is grasped with ring forceps at the locations corresponding to the suture placement and a 5 ticron suture on a non-cutting needle is passed between 5 and 7, 8 and 10, 11 and 1, and 2 and 4 o'clock locations in a purse string fashion without entering the endocervical canal. The two ends of the suture are then tied, cinching the knot to allow for the cervix to be about 0.5cm dilated. After the first few ties, a 1 prolene suture is used to create a loop within the ticron tie. This loop allows for easier cerclage removal at term (tension is applied to prolene loop to cut the ticron suture at the time of cerclage removal). Pressure is applied to stop the slight oozing which is an expected part of the procedure. Once hemostasis is achieved, the patient is placed in supine position and fetal heart tones are obtained once again. The patient receives indomethacin for up to 48 hours for symptomatic relief of cramping and pain associated with the procedure. Patient is also advised to have complete pelvic rest for the remainder of pregnancy. Progesterone IM of PV can be used in any patient with a history of preterm delivery or a sonographically short cervix. Patients are followed closely throughout the pregnancy and urged to return with any signs of labor, bleeding, or rupture of membranes. Cerclage is removed at term in the clinic or in triage setting.

As we continue practicing medicine and realize the importance of emphasizing preventive care, this is a procedure that we should keep in mind. It is a short and simple step that may make the difference between delivering a full term neonate with excellent prognosis and a developmentally delayed infant with severe physical handicaps if cervical insufficiency is not properly identified and treated.

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Please join me in congratulating
AHMED DEHAL
For receiving *BEST POSTER* for
'A Rare Case of Ewing's Sarcoma of the Sternum'
At the 2nd International Conference on Surgery and Anesthesia
Sept 2013

SPOTLIGHT ON RESEARCH: Traditional Program

Comparative Cerebrovascular Disease Associated with Methamphetamine Abuse: A Population Based Study

Andrew Crouch D.O. ER PGY II, Dan Miulli D.O., Teckah Lawrence M. Ed, Saman Farr MS-III, Arielle Dennis Neuroscience '14, Kirill M Gelfenbeyn MS-III

Introduction

Methamphetamine abuse has been associated with the development of cerebrovascular complications such as subarachnoid hemorrhage, ischemic and hemorrhagic stroke in the past. It has also been identified as an independent risk factor for hemorrhagic strokes and increased instances of mortality. These potentially fatal complications are associated with severe morbidity and mortality. Although this relationship has

been assessed in prior literature many questions remaining regarding the pathogenesis of these complications and their effect on potential outcomes.

Objective

The purpose of this study is to evaluate the correlation between amphetamine abuse in acute onset hemorrhagic strokes on the age of onset, size, distribution and outcomes.

Methods

We conducted a retrospective chart review for patients admitted to the neurosurgical inpatient service at Arrowhead Regional Medical Center in Colton, California, with the diagnosis of new onset stroke and methamphetamine abuse from October 1, 2007 thru September 30, 2012.

Results

The overall prevalence of positive urinary drug screen for amphetamines was 9.62% for all diagnosis of acute stroke and 19.33% for intracerebral Hemorrhages. The age of presentation was significantly younger in all types of cerebral vascular events in the patients testing positive for amphetamines. This finding was significant for Ischemic Strokes, Transient Ischemic Attacks and Intracerebral Hemorrhages but not for Subarachnoid Hemorrhages. Intracerebral Hemorrhage was seen twice as frequently in the amphetamine positive patients presenting with stroke with Relative risk 2.011 and Odds Ratio 3.022 ($p < 0.0001$), implicating that the patients presenting with stroke that were amphetamine positive were three times more likely to have a hemorrhagic stroke in comparison to the control group. There was measurable variance in the distribution of thalamic and pontine hemorrhages but no discernable difference in prevalence in other locations. Size, NIH scale and death rates showed no significant variance between the two groups.

Discussion

Although no significant difference was noted in the outcomes of the study group and the cohort when comparing the groups as a whole, there was significant differences seen in terms of age at presentation, types of stroke and stroke location. Further research will be conducted into the variation of stroke size and outcomes based on stroke location. Some locations such as the pons are associated with significantly higher levels of morbidity and mortality. Additionally these have different vascular supplies. The difference of hemorrhagic stroke distribution and variation of size may have implications as to the pathophysiologic mechanisms underlying the associated between methamphetamines and stroke.

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FASCINATING CASE: Carotid Body Tumors

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Introduction

Carotid body tumors arise from the paraganglion system that provides catecholamines during fetal development. Normal ganglia is comprised of two cells type: type 1, chief cells and type 2, supporting cells. Carotid body tumors contain both cell types. Carotid body tumors are also referred to as carotid paragangliomas and chemodectoma because of cell origin or physiological function. The majority, 90%, of tumors of the paraganglion system are pheochromocytoma, arising from the adrenal gland. Less than 3% arise from the head and neck; the most common of these is the carotid body tumor.

The carotid body is located in the adventitial plane along the bifurcation of the common carotid artery. The carotid body, innervated by the glossopharyngeal nerve, has an important role as a chemoreceptor to change respiratory and cardiovascular activity based on pH, oxygen, and carbon dioxide tension. Of note, the oxygen consumption of the carotid body exceeds both the brain and thyroid.

Multiple hereditary disorders carry increased risk of development of paragangliomas including multiple endocrine neoplasia type 2, neurofibromatosis, von Hippel-Lindau, and a familial paraganglioma syndrome. Multiple specific gene mutations responsible for succinate-dehydrogenase have been characterized. Initially the hereditary component was thought to be rare but may represent as much as 17-40% of patients.

Carotid body tumors most commonly present as a lateral cervical mass. A positive Fontaine sign is described as a mass that is mobile only laterally. The tumors can be pulsatile secondary to transmission or by their own inherent vascularity. As the tumors enlarge, patients can develop symptoms of adjacent cranial nerve deficits such as hoarseness or can develop carotid sinus syncope. Unlike, adrenal paraganglioma, these tumors are rarely functional. However, all patients with planned surgery should be interviewed for catecholamine-secreting symptoms.

Bilateral carotid body tumors are the most common type of multiple paragangliomas. The overall incidence is 10% and with a familial pattern the incidence is between 30-50%. Malignancy in paragangliomas is

reported in only 6% of carotid body tumors and there is no established cellular criteria or staging system for malignancy. The risk of malignancy is highest in young patients with family history. Distal metastatic spread is most common in the lung, liver, bone, and skin.

Diagnostic studies for workup of a carotid body tumor include duplex ultrasonography, computed tomography with intravenous contrast, computed tomography angiography, magnetic resonance imaging (MRI) with gadolinium, and metaiodobenzylguanidine (MIBG) nuclear medicine scanning. Of these modalities, MRI is superior in terms of characterizing the tumors. Preoperative embolization of these tumors is controversial but may be useful for large tumors to decrease blood loss or for malignant carotid body tumors. It is also possible that preoperative embolization can lead to an inflammatory reaction which leads to a more difficult dissection.

Treatment for carotid body tumors is surgical excision. It is not clear if radiation therapy improves survival for malignant tumors. Difficulty of surgical excision has been stratified by the Mayo Clinic group based on the classification of tumor, as described by Shamblin. Group I tumors are localized and small, while Group II tumors are adherent to vessels or partially surrounding. Group III describes tumors encasing the vessels.

Case Report

We present the case of a 58-year-old female, with a past medical history of hypertension and arthritis, with recurrence of a right carotid body tumor first resected over 30 years prior, and development of a new left carotid body tumor. Patient has had multiple tumor excisions from breast, abdomen, and wrist as well over the last thirty years with unknown pathology. Of significance, multiple first and second degree family members of the patient have undergone carotid body tumor resection; specifically six siblings and mother have had carotid body tumors. Patient presented with bilateral numbness from the base of the neck radiating to the ears; symptoms greater on the right. Patient did not have any focal cranial nerve deficits. On physical exam, patient's blood pressure was consistently within normal limits. There were palpable bilateral non-pulsatile masses of the neck with mild tenderness to palpation. Computed tomography with contrast confirmed bilateral carotid body tumors. The right carotid body tumor is Shamblin Grade III, completely encasing the external carotid artery, measuring 2.6 x 2.2 cm. Magnetic resonance angiography, as seen in Figure 1, further characterized the tumors and illustrates the classic splaying of the internal and external carotid arteries referred to as the Lyre sign. The left tumor is Shamblin Grade II, measuring 2.9 cm x 2.0 cm, Figure 2.

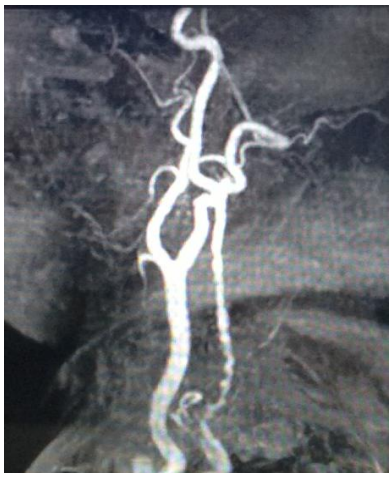


Figure 1 Right: Magnetic Resonance Angiogram demonstrating the left carotid body tumor classically splaying the internal and external carotid artery (Lyre Sign).

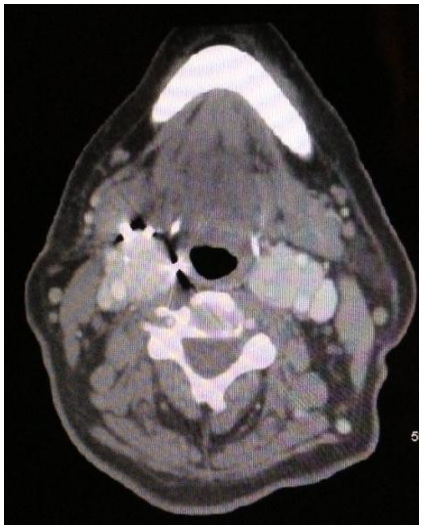
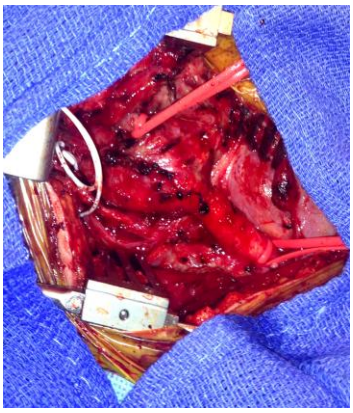
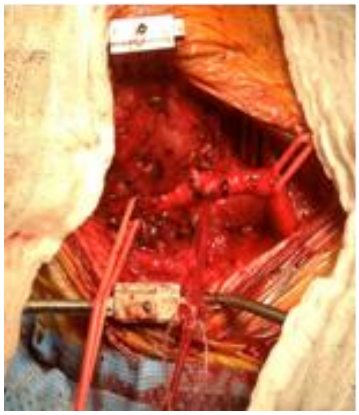


Figure 2: Left Computed tomography with contrast, axial view, demonstrating bilateral carotid body tumors. Previous surgical clips are seen around the right tumor.

After work-up, patient first underwent resection of right carotid body tumor given its more prevalent symptomatology and relatively smaller size. To allow improved exposure, oromaxillofacial surgeons repositioned the maxillo-mandibular joint. Because of the neovascularity of the tumor, carotid shunting was performed to allow controlled resection. The vagus nerve was clearly identified and protected. The hypoglossal nerve was not discretely identified. The tumor was completely encasing the right external carotid artery and was excised as seen below.





Patient recovered well post-operatively without any cranial nerve deficit. However patient did develop a partial Horner's syndrome post-operatively with symptoms of right miosis and partial ptsosis but absence of anihdrosis. This is suggestive of a third order, postganglionic, sympathetic neuron injury. Eventual resection of the left tumor is planned after sufficient recovery from the right tumor resection.

Discussion

Carotid body tumors are remarkable tumors of the paraganglion system that occur in the high risk area of the bifurcation of the carotid arteries. They generally present as painless neck masses and the genetic component is underestimated. Diagnostic work-up with computed tomography angiography or magnetic resonance angiography is essential for diagnosis and the characteristic Lyre sign is essentially pathognomonic. Treatment is surgical resection with or without preoperative embolization and with great attention to avoid injury to many high risk structures. Radiation as a treatment modality is currently only considered as an adjunct and it is not clear if it improves survival.

There is a 20% risk of injury to cranial nerves reported in the literature. The most common nerves sacrificed are the vagus or hypoglossal nerve. First bite syndrome is an interesting complication that results from cervical sympathetic chain injury to the parotid gland, resulting in cramping during the first bites of food or with tart and bitter foods. Injury to the sympathetic chain may also produce partial Horner's syndrome as seen in our patient.

Additional complications arise from injury to adjacent vasculature causing central nervous system injury. External carotid artery can generally be ligated without neurological

sequelae. Anand and colleagues described 89 cases of internal carotid artery ligation in a 1181 case report review. Of these 89 cases, the CNS complication rate was 66% and mortality was 46%.

There are special complications unique to bilateral carotid tumor resections. With bilateral tumors, the smaller tumor should be resected first so that the vagus and hypoglossal nerve can be preserved. If the tumor is causing unilateral deficits, the unaffected side should not be operated on unless growth is observed. A final unique complication is baroreflex failure syndrome. As discussed previously, the carotid sinus plays the crucial role as a baroreceptor to modulate blood pressure. If there is bilateral dysfunction, unstable blood pressure fluctuations can occur and lifelong therapy may be necessary.

In conclusion, this interesting case of a bilateral carotid body tumor with right sided recurrence emphasizes clinical characteristics, diagnostic work-up, successful treatment plan, and also highlights the genetic component of paragangliomas.

NEW INNOVATIONS IN MEDICINE- Virtual Reality Augmenting Neurosurgical Education

Quang Ma, D.O PGY V
Neurosurgery

Training of future neurosurgical leaders continues to be characterized by intense long hours. Work restrictions are in the best interest of both patients and trainees. However, there is no replacement for hands-on operative training which is affected by current regulations. All surgical trainees must follow work hour limitations, but at the same time master the skills necessary in neurosurgery. Imagine surgical training that allows residents to experience visual, haptic and multi-modality sensory feedback without harm to patients during episodes of technical errors associated with learning curves. In the age of technology, innovative virtual reality is already being used to bridge education gaps by creating completely immersed operative environments. Several academic centers have initiated real time simulators to develop skills crucial in neurosurgery to offset missed experiences due to reduced duty hours. Achieving proficiency in multiple neurosurgical procedures can be learned from virtual reality simulated tasks such bone drilling, ventriculostomy, spinal instrumentation, and brain tumor resections. Researchers have shown that these simulation exercises directly correlate with procedures performed by residents in the real patient setting[2-4]. With work reductions and the emphasis on patient outcomes, use of simulators will continue to grow and prove to be an invaluable tool to augment neurosurgical training.

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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.

Emergency Medicine 909-580-6370	
Alconcel, Franklin D.O PGY III MacNeil, Colin D.O PGY III Yuen, Ho-Wang M.D Kwong, Eugene M.D	Estimated time of arrival of EMS for trauma alerts and activations.
Batt, Joshua D.O PGY II Piibe, Remy M.D	
Begnoche, Amy D.O PGY IV Widenski, Amber D.O PGY III Minahan, Thomas D.O	Tpa in Ischemic Stroke: The difference between 3 and 4.5 hours
Clark, Carrie PGY Yuen, Ho-Wang M.D	Methamphetamine and Congestive Heart Failure in Young Adults
Crouch, Andrew D.O PGY II Miulli, Dan D.O Lawrence, Teckah M.Ed Neeki, Michael D.O	Comparative Cerebrovascular Disease and Methamphetamine abuse: A Population Based Study
Fenati, Greg D.O PGY II Mamic, Marko D.O PGY II Piibe, Remy M.D	Link between allergies and psych disorder
Lee, David D.O PGY II Nguyen, Anh M.D	Hypotension after Therapeutic Paracentesis in the Emergency Department: Myth or Reality?
Horan, Jennifer H D.O PGY II Lux, Pamela D.O	Minor burn care in the Emergency Department
Johnson, Joshua D.O PGY III Mittal, Geetanjli D.O PGY III	Appropriate Itilization of EMS Transport to the Emergency Department
Johnson, Joshua D.O PGYIII Sin, Arnold M.D	1.What items on the ERAS application correlate most closely with matching to an AOA-approved Emergency Medicine residency 2. Survey: Patient preference regarding electronic communication
Kulczycki, Michael D.O PGY III Nguyen, Ang M.D	Gender Differences in the Association of Methamphetamine Abuse and Congestive Heart Failure
Mamic, Marko D.O PGY II	Testicular Torsion Study
Minera, Gabi D.O PGY IV Welch, Mary D.O PGY IV	Progressive lifestyle changes of Emergency Medicine Residents
O'Kelley, Timothy D.O PGY III Neeki, Michael D.O	A ten-year retrospective review of survival outcomes in patients undergoing emergency thoracotomy at a level II trauma center
Orchard, Derek D.O PGY IV Kwong, Eugene M.D	Survey International Medicine and the Obstacles Involved
Rundio, Jeffrey D.O PGY IV Lee, Carol M.D	Survey of Training Practices Regarding the Use of CT Scans in the ED
Family Medicine 909-580-6236	
Anand, Sumeet D.O. Whitson, Denise FNP	Smoking Cessation:Questionnaire Regarding the Self-Efficacy of Smokers
Elkarra, Manal M.D PGY III Lanum, David M.D	The Effect of Three Years of Arrowhead Regional Medical Center Health Fair Screening on Breast Cancer Incidence
Hammes, Jillian, D.O PGY III Brown, Joachim, D.O	Locked-In Syndrome Secondary to Cerebral Infarction Involving the Cervical Spine, Pons and Medulla
Khajehgian, Sara, D.O PGY III Brown, Joachim D.O	Hemihypertrophy with a Ret Oncogene Negative Bilarteral Pheochromocytoma, Thyroid Papillary Carcinoma, C-Cell Hyperplasia, Intratechal Nucleus Pulposus, and Breast Fibroadenoma: A Case Report
Knotts, Nicole, M.D Balinos, Febbis M.D	A Retrospective Analysis of Prostate Cancer Screening Conducted at Arrowhead Regional Medical Center Cancers Fairs
Nyirenda, Ndeka, M.D PGY III Ebert, Emily M.D	Formalizing a Pathway for Non-Urgent Psychiatric Referrals Between Mckee Family Medicine Clinic and Phoenix Behavioral Health Clinic
Prasad Chandarana, Aarthi, D.O PGY III Brown, Joachim D.O	Implementation of a Patient Centered Medical Home at Fontana Health Center: Identifying Obstacles and Exploring Solutions
Ramirez, Milton M.D, PGY III Balinos, Febbis, M.D	Incidence of Cervical Cancer at Arrowhead Regional Medical Center Cancer Screening Events

Thomas, Scott, D.O PGY III	Hypertrophic Cardiomyopathy
Tompkins, Michael, D.O PGY III **Raval, Niren D.O**	Group-Based Lectures for the Patient: An assessment of Utility and Efficacy
Truong, My-Linh, D.O PGY III **Brown, Joachim D.O**	Sarcoidosis: A Diagnostic and Therapeutic Challenge
Welch, Patrick D.O PGY III **Diep, David D.O PGY II** **Mowjood, Siraj D.O** **Gemmell, Eda RN**	Evaluating ARMC Mobile Clinic's Effectiveness in Helping to Lower the Rate of Medically Uninusred in the San Bernardino County through Arrowcare
Internal Medicine 909-580-6266	
Khackekian,Arsineh D.O PGYIII **Shargh, Sean D.O PGY II** **Arabian, Sarkis D.O**	Pulmonary Lymphangitic Carcinomatosis from Metastatic Gastric Adenocarcinoma: A Case Report
Khackekian,Arsineh D.O PGYIII **Zall, Mona D.O PGY III** **Chequer, Rosemary M.D**	A Likely Case of Anti-NMDA-Receptor Encephalitis in a Young female with Psychiatric Symptoms: A Case Report
Khackekian,Arsineh D.O PGYIII **Nowroozi,Michelle D.O PGY III** **Horns, Richard M.D**	The Timely Usage of Neulasta/Neupogen in Prevention of Febrile Neutropenia, in Decreasing Rate of Hospital Admissions, and in Decreasing Length of Hospital Stays for Patients Receiving Chemotherapy
Richardson, Laura D.O PGY III **Sanchez, Gabriel D.O PGY III** **Sorto, Fernardo D.O**	A Retrospective Study Evaluating Improved Sensitivity and Specificity in Detecting C. Difficle Infection with Multiple Stool Assays, and a Cost Comparison with PCR for Stool C. Difficle in Adults Admitted to ARMC.
Neurosurgery 909-580-1366	
Huynh, Katie D.O PGY IV **Miulli, Dan D.O**	Does dihydropyrideine calcium channel blockers lower serum sodium:amlodipine vs nifedipine on sodium levels.
Huynh, Katie D.O, PGY IV **Duong, Jason D.O. PGY I** **Miulli, Dan D.O.**	Validation of the spinal instability neoplastic score (SINS) grading criteria: a retrospective chart review.
Noel, Jerry DO PGY IV **Siddiqi, Javed M.D.** **Miulli, Dan D.O.** **Andros, Fadi M.D**	Investigating Treatments for the Prevention of Secondary Injury and Disability Following Traumatic Brain Injury (TBI), INTREPID.
Miulli Dan D.O **Lawrence, Teckah M. Ed** **Hariri, Omid D.O PGY II** **Farr, Saman MS-III** **Dennis, Arielle** **Gelfenbeyn, Kirill MS-III**	Optimal Range for Total Cholesterol in Patients with a Risk of Intracerebral Hemorrhage
Miulli, Dan D.O **Dahlin, Robert D.O PGY I** **Lawrence, Teckah M.Ed.**	Developing a comprehensive stroke system of care
Siddiqi, Javed M.D **Ramakrishnan, Vivek D.O PGY IV**	Anti-Epileptic Prophylaxis in Traumatic Brain Injury (TBI) Patients undergoing Craniotomy vs Decompressive Craniectomy Operations
Siddiqi, Javed M.D **Minasian, Tanya D.O PGY III**	An analysis of neuron specific enolase (NSE) in traumatic brain injury (TBI) patients
Ophthalmology 909-583-3419	
Johl, Jaskarn D.O PGY III **Storkensen Kris M.D** **Suthar, Mukesh M.D** **Tokuhara, Keith M.D**	Macular Atrophy Associated with Neonatal Alloimmune Thrombocytopenia
Johl, Jaskarn D.O PGY III **Storkensen Kris M.D** **Suthar, Mukesh M.D** **Tokuhara, Keith M.D**	Macular Ischemia Associated with Beurgers Syndrome
Kim, Sarah D.O PGY I **Storkensen Kris M.D** **Tokuhara, Keith M.D**	Epidemiology of Corneal Ulcers seen at ARMC
Pharmacy 909-580-0016	
Lowe, Andrew PharmD	Effect of Ketorolac Tromethamine (Toradol) on Pain Perception and Narcotic Use
Lowe, Andrew PharmD **Maciol, Angelika**	Evaluation of Insulin Infusion Protocol in the Intensive Care Units
Lowe, Andrew PharmD **Wong, Alison**	Evaluation of High Risk Medication Use in the Elderly
Lowe, Andrew PharmD **Nguyen, Frederick**	Effect of Pharmacist Intervention on Post-Discharge Medication Compliance and Incidence of Re-Admission

Surgery 909-580-3362	
Choi, Mark M.D PGY III **Narayanan, Rag M.D PGY IV** **Tang, Taylor M.D PGY V**	Use of Seamguard to prevent anastomotic leak in colorectal surgery
Choi, Mark M.D PGY III **Culhane, John M.D**	ERCP at Kaiser vs. ARMC
Dehal Ahmed M.D PGY III	Preoperative Biliary drainage In Patients with Obstructive Jaundice due to Pancreatic Head Cancer.
Dehal Ahmed M.D PGY III **Bae Esther D.O PGY II**	Antibiotics Use and Incidence of Pelvic Abscess after Laparoscopical Appendectomy
Dehal Ahmed M.D PGY III **Bae Esther D.O PGY II**	Prophylactic Cholecystectomy In Patients with Isolated Choledocholethiasis.
McCague, Andrew D.O **Aguiluz, Cesar D.O PGY III** **Davis, Vivian D.O**	Osteopathic manipulation on trauma patients
McCague, Andrew D.O **Wong, David M.D**	Percutaneous dilational tracheostomies in the emergent setting
Narayanan, Rag M.D PGY IV **Tessier, Dr. M.D**	Outpatient lap chole
Narayanan, Rag M.D PGY IV **Samir Johna, M.D.**	Use of narratives in resident education
Narayanan, Rag M.D PGY IV **Tessier, Dr. M.D**	Case report: permachol mesh use in recurrent ventral hernia
Patel, Sunal M.D PGY II **Saidy, Maryam M.D PGY IV**	A retrospective study comparing single incision lap choles to standard four port lap choles
Patel, Sunal M.D PGY II **Saidy, Maryam M.D PGY IV**	A retrospective clinical study comparing EUS, CT scan and transabdominal u/s and the common bile duct diameter findings
Patel, Sunal M.D PGY II **Tumbaga, Gloria M.D PGY III** **Woodward, Brandon M.D PGY II**	A retrospective chart review looking at elective lap choles and what factors led to a failure in same day discharge after the procedure.
Shulz, Katharine D.O PGY II **Khan, Sadia D.O PGY V** **Quigley, Jeff D.O PGY III**	Birads Three Gail Model for Early Breast Cancer Detection
Tang, Taylor M.D PGY V **Aguiluz, Dr. D.O**	Case report on lap choledochoscopy, common bile duct exploration and retrieval of stones in pregnant patient.
Tumbaga,Gloria M.D PGY III **Vo. Dr. M.D**	AVF and aneurysm.
Traditional Year 909-580-1369	
Barahona. Juan D.O. PGY I **Miulli, Dan D.O** **Lawrence, Teckah M.Ed.**	The Incidence, Prevalence and Demographics of Stroke in Patients with Traumatic Fractures at Arrowhead Regional Medical Center.
Briden, Danielle DO PGY I **Miulli, Dan D.O** **Lawrence, Teckah M.Ed.**	Utilization of the Emergency Department for the Enhancement of Prenatal Care: Defining the ER Physicians Role
Goodman, Seth D.O PGY I **Miulli, Dan D.O** **Lawrence, Teckah M.Ed.**	Prevalence of Cellulitis among Known Illicit Drug Users
Le, Triet D.O PGY I **Miulli, Dan D.O** **Lawrence, Teckah M.Ed.**	The Use of Insulin Glargine vs. Neutral Protamine Hagedorn for Hyperglycemic Control in Insulin-Dependent Diabetic Woman during Pregnancy
Villegas, Ryan D.O PGY I **Miulli, Dan D.O** **Lawrence, Teckah M.Ed.**	Differentiating Strokes From Stroke Mimics: Defining the Role of the Chief Complaint
Transitional Year 909-580-3367	
Eaton, Philip D.O PGY I **Craig, Debra M.D**	Diffuse Hepatic Infiltration by Small Cell Carcinoma of the Lung Mimicking Alcoholic Cirrhosis
Green, Christopher M.D PGY I **Nguyen T.H** **Jalili M.**	The Use of Polyvinyl Alcohol Copolymer in the Setting of Gastro-Intestinal Bleeding
Hadduck, Tyson M.D PGY I **Raoufi, Kambiz M.D**	An African American Woman with Behcet's Disease Complicated by Superficial Abscesses.
Jones, Jeffrey M.D **Craig, Debra M.D**	Multicentric Pllasmacytic Castleman's Disease: A Case Report

Khadem, Nasim M.D PGY I et al.	Characterizing Hypervascular and Hypovascular Metastases and Normal Bone Marrow of the Spine using Dynamic Contrast-Enhanced MRI
Littell, Kyle M.D PGY I Velasquez, Juan M.D	An Analysis of Anti-Septic Techniques Prior to Intra-Articular Knee Injections
Mahdavi, Paymohn M.D PGY I Raoufi, Kambiz M.D	ARMC MICU Re-Admission Rates
Nguyen, Bac M.D PGY I Craig, Debra M.D	Methicillin-Resistant Staphylococcus Aureus Orbital Cellulitis: A Case Presentation
Panther, David M.D PGY I et al.	Eruptive Keratoacanthoma as a Complication of Fractionated CO2 Laser Resurfacing, and Combination Therapy with Imiquimod and Intralesional Methotrexate.
Patel, Amy M.D PGY I Dr. Melendez	Resident Survey - Use of Electronic Devices in the Hospital for Patient Care.
Craig, Debra M.D Ross, Phillip M.D PGY I Tam, Tiffanie BS	Case Report: Hemoglobin of 1.7G/DL in an Adult with Vague Flue Like Symptoms
Womans Health 909-580-3470	
Stepanyan, Gohar Roloff, Kristy Valenzuela G. M.D	Umbilical Cord C-Peptide in the Euglycemic Patient Points to Alternative Etiology of Macrosomia in the Non-Diabetic Patient
Valenzuela, G M.D Carter, Michael D.O PGY IV	Incidence of Blood Transfusion During or Immediately After Cesarean Section
Valenzeula, G. M.D Roloff, Kristy D.O	To Decrease the Cesarean Section Rate, We Need to Focus on Avoiding the First One- A Review of Oxytocin Use at a County Hospital
Kim, Jun DO PGY IV Valenzeula, G. M.D	Methamphetamine Abuse and Incidents of Pre-Clampsia
Brunnabend, Michelle D.O PGY IV Valenzuela, G M.D	ACOG VBAC Recommendations: Have They Influenced Physician Practices?
Valenzuela, G M.D Roloff, Kristy D.O	Pitocin Augmentation
Valenzuela, G M.D Roloff, Kristy D.O	IADPSG GDM Guidelines: Does Changing the Diagnostic Criteria for Gestational Diabetes Affect Incidence of GDM or Birth Weight in a County Institution
Roloff, Kristy D.O	Methamphetamine Abuse and Hypertensive Disorders of Pregnancy

This year's 8th Annual ARMC Resident Research Day had a record number of submissions, and superb contributions from each of the residents who participated. Please congratulate the winners of this year's Resident Research Day

1st Place – *Manal Elkarra, MD* (Family Medicine)
"The Effect of Three Years of Arrowhead Regional Medical Center Heath Fair Screening on Breast Cancer Incidence"

2nd Place – *Timothy O'Kelley, DO & Nojan Toomari, DO* (Emergency Medicine/GenSurgery)
"A Ten-year Retrospective Review of Resuscitative Thoracotomy at a Level-Two Trauma Center"

3rd Place – *Patrick Welch DO & David Diep, DO* (Family Medicine)
"Evaluating ARMC Mobile Clinic's Effectiveness in Helping to Lower the Rate of Medically Uninsured in the San Bernardino County through Arrowcare."

How to Select a Research Topic?

- Personal interest
- Social problem
- Testing Theory
- Prior Research
- Select something that will enable you to expand your skills
- Select something you can build on
- Program evaluation, find out if something works
- Improve your own or others practice
- Minorities in Research

Having trouble coming up with a question??

- Think of the situation in which you are working or the subject you are studying
- Ask a colleague, friend or relative who works in the field about a particular issue or problem in their working day.
- Think of a story in the media about healthcare
- Look on the Internet for what's new in healthcare
- Brainstorming
- Doing A to Z topics

Common problems with research questions

- They are too broad
- There is no clear way to answer them
- You can't get the information you need

AT YOUR LIBRARY

New books in the library

Biochemistry
Author: Champe, Pamela C.
Call Number: QU 18.2 C451 2008

Blueprints Obstetrics & Gynecology
Author: Callahan, Tamara L.
Call Number: WQ 18.2 B6585 2009

Blueprints Surgery
Author: Karp, Seth J.
Call Number: WO 18.2 K18b 2009

A Brief Atlas of the Human Body
Author: Hutchinson, Matt.
Call Number: QS 17 B853 2007

Cardiovascular Nursing: Scope and Standards of Practice
Author: ANA.
Call Number: WY 152.5 C26795 2008

Contraceptive Technology
Author: Hatcher, Robert A.
Call Number: WP 630 C764 2011

Designing Clinical Research
Author: Hulley, Stephen B.
Call Number: WA 950 D457 2013

Desk reference to the Diagnostic Criteria from DSM-5. (3 Copies)
Author: American Psychiatric Association.
Call Number: WM 141 D459 2013

Diagnostic and Statistical Manual of Mental Disorders: DSM-5
Author: American Psychiatric Association.
Call Number: REF WM 15 D536 2013

Drug information and literature evaluation.
Author: Abate, Marie A.
Call Number: QV 26.5 A119 2013

Epidemiology.
Author: Gordis, Leon.
Call Number: WA 105 G661 2004

Forensic Nursing: Scope and Standards of Practice
Author: ANA.
Call Number: WY 170 I61f 2009

Gerontological Nursing: Scope and Standards of Practice
Author: ANA.
Call Number: WY 152 G377 2010

Health Insurance Marketplace
Author: ACA - HealthCare.gov
Call Number: ACA Insurance

Histology & Cell Biology: Examination & Board Review. ONLY----[AVAILABLE Online]
Author: Paulsen, Douglas F.

Holistic Nursing: Scope and Standards of Practice
Author: ANA.
Call Number: WY 86.5 H7327 2007

Katzung & Trevor's Pharmacology: Examination & Board Review
Author: Trevor, Anthony J.
Call Number: QV 18.2 T815k 2008

Medical Microbiology: A Guide to Microbial Infections
Author: Greenwood, David.
Call Number: QW 4 M487 2007

Molecular Cell Biology
Author: Lodish, Harvey F.
Call Number: QH 581.2 D223 2004

Neonatal Nursing: Scope and Standards of Practice
Author: ANA.
Call Number: WY 157.3 N438 2013

Neuroanatomy through Clinical Cases
Author: Blumenfeld, Hal.
Call Number: WL 141 B658n 2010

Neuroscience Nursing: Scope and Standards of Practice
Author: ANA.
Call Number: WY 160.5 A512 2013

Nursing Administration: Scope and Standards of Practice
Author: ANA.
Call Number: WY 105 N97419 2009

Nursing Informatics: Scope and Standards of Practice
Author: ANA.
Call Number: WY 26.5 N9739 2008

Oxorn-Foote Human Labor & Birth
Author: Posner, Glenn D.
Call Number: WQ 300 O98 2013

A Study Guide to Epidemiology and Biostatistics
Author: Hebel, J. Richard.
Call Number: WA 18.2 H443s 2012

The Washington Manual of Medical Therapeutics
Author: Godara, Hemant.
Call Number: REF WB 300 W31 2014

Please Note:

MD Consult will phase out by December, 2013. It will be migrated to a more robust database called ClinicalKey. ARMC Library is currently doing a "Trial Period." Use this URL if you would like to try it out https://www.clinicalkey.com/ OR, go the IntraNet, click on Library, click on ClinicalKey.

	ClinicalKey	MD Consult
Books	1,000+	50
Journals	500+	54
Clinics	53	31
Procedures Consult	312	- -
Clinical Trials	135,000	- -
First Consult Monographs	800+	800+

Important Numbers

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The schedules for the following issues are:

4th Issue 2013

History of Medicine	ER
How I do it	Psychiatry
Spotlight on Research	Family Medicine
Fascinating Case	Ophthalmology
Innovations in Medicine	Internal Medicine

1st Issue 2014

History of Medicine	OB
How I do it	Traditional
Spotlight on Research	Surgery
Fascinating Case	Neurosurgery
Innovations in Medicine	ER

Dates to remember…

- **Office of Graduate Medical Education Faculty Development Lecture: Preparing Non D.O. Faculty to Teach and Evaluate Osteopathic Students and Residents**
  Friday September 27th, 2013. 12:30 p.m.
  Sierra Conference room (Lunch provided)

- **Deadline for submissions to the next issue of JARMC: November 20th, 2013**