



2024 Creighton University Research Week

St. Albert's Day

Phoenix Regional Campus Booklet

March 26, 2024

Creighton
UNIVERSITY

HISTORY OF ST. ALBERT'S DAY AT CREIGHTON UNIVERSITY

In 1997, faculty from the health science schools, as well as from the College of Arts and Sciences, expressed an interest in promoting the interaction between faculty scientists and students at Creighton University at both the undergraduate and graduate level. A series of discussions resulted in the first St. Albert's Day celebration, which was held on November 24, 1997. Since 1997, the St. Albert's Day poster session has been an annual event at Creighton University. In 2008, the event was expanded to include oral (platform) presentations as well as posters. Awards will be presented for the 'best poster' in three categories, as well as for the 'best presentation.'

St. Albert the Great was born in 1295 or 1296, and as a youth was sent to pursue his studies at the University of Padua. He joined the Order of St. Dominic in 1223. He completed a doctor's degree at the university in Paris, which was celebrated as a school of theology. In 1254 Albert was elected Provincial of his Order in Germany. He resigned this office in 1257 to devote himself to study and to teaching. He was canonized in 1311. He is the patron saint of scientists and was the mentor of St. Thomas Aquinas. He was called the "Doctor Universalis" (Universal Doctor), in recognition of his extraordinary genius and extensive knowledge. He composed a veritable encyclopedia that contained scientific treatises on almost every subject. He was proficient in every branch of learning cultivated in his day, including physics, mathematics and metaphysics, and his writings did not distinguish between the sciences and philosophy.



**2024 CREIGHTON UNIVERSITY RESEARCH WEEK-ST. ALBERT'S DAY
SCHEDULE OF EVENTS-(PHOENIX CAMPUS)
TUESDAY, MARCH 26, 2024
Doris S. Norton Ballroom**

9:00 AM-9:15 AM:

Welcome by Dr. Randy Richardson, Dean for the Phoenix Regional Campus

9:15 AM-11:00 AM:

Poster Presentations

11:15 AM-1:00 PM:

Medical Student Luncheon

**Abstract Award Presentations by Dr. Daniel Gridley,
Assistant Dean of Clinical Research,
Creighton University School of Medicine-Phoenix**

Oral Presentations by our Phoenix Abstract Winners:

Mitchell Christiansen: "R1rho Dispersion In Proteoglycan-Depleted Swine Spine Disc"

Sarah Fournier: "Rate, Timing, And Risk Factors Of Finger Replant Failure"

Thomas On: "Intraoperative In Vivo Confocal Endomicroscopy Of The Glioma Margin:
Performance Assessment Of Images By Neurosurgeon Users"

Thank you to all our poster judges!

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Participating Health Science Profession Posters:

Primary Presenter	Specialty	Panel Number	Title:
Reyna, Octavio	Physical Therapy	37 (Back Of 18)	"I'm Trying To Close That Gap A Little Bit": Impact Of Providing Untrained Language Services On Professional Development For Bilingual Physical Therapy Students.
Ruditser, Sharon	Pharmacy	*will not be submitting a poster	Error Reporting Perceptions And Behaviors By Arizona Pharmacists

MEDICAL STUDENT POSTER PRESENTATIONS:

9:15-11:00 AM
TUESDAY, MARCH 26, 2024
STUDENT ABSTRACTS
(Alphabetical Order by Last Name of Presenter, Presenter is in Bold)

Title:
Evaluating the risks of Hereditary Hemorrhagic Telangiectasia in Pregnancy
Authors:
Shadee Aghel B.S ; Sajithaa Varadarasa MD; Bimal Padaliya MD
Abstract:
<p>Intro: Hereditary Hemorrhagic Telangiectasia (HHT) is vascular disorder presenting as epistaxis, telangiectasias, and visceral arteriovenous malformations (AVMs). Physiologic changes in pregnancy lead to increased cardiac output and enlargement of visceral AVMs. Rarely, this can lead to high output heart failure (HOHF) in pregnancy.</p> <p>Case: This is a case of a 42-year-old G3 P1-0-1-1 female with a past medical history of HHT complicated by multiple visceral AVMs who presented with worsening shortness of breath at 25-weeks' gestation. Physical exam revealed significant jugular venous distension of 11 cm H2O, 3/6 systolic murmur and 3+ bilateral lower extremity edema. Work up included a right heart catheterization which showed elevated right and left sided filling pressures and a cardiac output of 15.9 L/min, confirming HOHF. With close monitoring and diuresis, the patient was able to return to an euvolemic state and undergo an uncomplicated vaginal delivery.</p> <p>Discussion: This case highlights a rare cause of HOHF in pregnancy. While usually caused by peripartum cardiomyopathy, pulmonary hypertension and spontaneous coronary artery dissection, HHT should not go unnoticed. Although many pregnant patients with HHT have uncomplicated deliveries, HHT related HOHF should be considered in pregnant patients presenting with heart failure symptoms due to the severe potential risks of stroke and hemorrhage. Prior to pregnancy, it may be of value for patients with HHT to be screened for pulmonary, cerebral, and uterine AVMs to help guide pregnancy management.</p> <p>Conclusion: The importance of managing physiological changes in pregnant patients with HHT cannot be understated. Previous studies have shown that awareness of the diagnosis of HHT is suggestive of improved survival and outcomes in pregnancy. Early screening of pregnant patients with HHT can help minimize pregnancy complications and prevent HOHF.</p>

Title:
A Case of Systemic Mastocytosis with atypical presentation
Authors:
Alshaka, Saif ; Dudic, Ahmed; Hassan, Yezan; Noory, Eliace; Hazin, Moustafa DO
Abstract:
<p>Introduction and importance: Although Mastocytosis is an incredibly rare disorder (<200,000 cases in the United States), it can be classified as either cutaneous or systemic. Systemic Mastocytosis (SM) ranges from</p>

an indolent form to a very aggressive subtype with associated malignancy and poor prognosis.

Case Presentation and Discussion:

Patient is a 60-year-old male with multiple comorbidities that presented to SVDP medical clinic for follow-up on his kidney stones. Labs were ordered revealing elevated leukocyte count at 11.8, low hemoglobin at 12.2, elevated LFTs, notable eosinophilia at 1.8. Patient was found positive for Strongyloides IgG antibody, tryptase was also found to be elevated at 19.2. To consider or rule out SM, serum tryptase is used as an important diagnostic factor as it is always released by Mast cells. Evaluation for SM begins with a comprehensive symptomatic assessment given the wide distribution of organ systems this disease can affect. Validated clinical and laboratory criteria known as "REMA score" have been defined that predict the presence of clonal mast cells in the bone marrow or SM. The patient we presented in our case had a score of +7 according to this criterion.

Conclusion:

In our case the patient initially presented with a clear parasitic infection. However, highly elevated serum tryptase did not fit the clinical picture seen and increased suspicion for SM. Further workup combined with detailed history taking led to Bone Marrow biopsy which confirmed the diagnosis of SM. Anaphylaxis is one of the most common presenting symptoms of SM, therefore workup must not be delayed when there is suspicion.

Title:

Successful Use of Targeted Radiation in the treatment of Hepatocellular carcinoma Metastasis

Authors:

Alsheikh, Jad; Noory, Eliace; Noory, Mukhtar; Alomar, Talal

Abstract:

Targeted radiation is a cancer therapy that uses high-energy rays to potentially reduce tumor size. By precisely targeting the tumor, damage to surrounding healthy tissues can be minimized.

In our case, we focus on a case of a 77-year-old male with hepatocellular carcinoma (HCC) with pulmonary metastases presenting with dysphagia due to a retropharyngeal necrotic mass.

Our aim is to highlight the therapy's effectiveness in treating tumor-induced obstructions, especially when surgery was not an option. In the presented case, the patient's advanced HCC with pulmonary metastases led to significant complications, including dysphagia from a retropharyngeal necrotic mass measuring 6.0 x 5.1 cm. Due to the condition and location, surgical intervention was ruled out as a treatment option. Therefore, targeted radiation therapy was chosen as the most viable strategy to address the mass causing the obstruction. The plan involved administering a total of 20 Gy over 5 fractions, attempting to reduce the size of the mass and to relieve the symptoms of dysphagia. The decision to use targeted radiation therapy indicates its role in situations where conventional treatments may not be suitable. By focusing the radiation onto the mass itself, we can potentially achieve symptom relief and control its size. This is especially important in complex cases such as this due to the involvement of critical anatomical structures. The patient's improvement in swallowing and the ability to progress to a minced food diet demonstrates how it can offer hope and improve quality of life to patients with advanced cancer.

Title:
Impact of COVID-19 Pandemic on Weight and HbA1c among Primary Care Patients
Authors:
Becker, Jason; Jones MD, Douglas; Curtis MD, MPH, Jeffrey
Abstract:
<p>Anecdotal reports suggest that the activity restrictions associated with the COVID-19 pandemic have resulted in more sedentary behaviors. This study investigates the impact of COVID-19-related restrictions on weight gain and blood sugar control in a large primary care population in Phoenix, Arizona. Utilizing data from Dignity Health and Valleywise Health systems, we compared the change in weight and HbA1c levels of 2,608 adults with type 2 diabetes and the change in weight in 5,060 without during the pre-pandemic period (December 2018 to December 2019) with the changes that occurred during the COVID-19 lockdown (December 2019 December 2020). Weight and HbA1c changes were assessed using Student's t-tests, factorial ANOVA, and multiple regression with Stata version 14.2.</p> <p>Results revealed no significant difference in weight change during the lockdown compared to the pre-pandemic period in the overall population with ($p = 0.58$) or without diabetes ($p = 0.60$). However, among individuals with type 2 diabetes, a significant increase in HbA1c was observed ($p = 0.02$) during the lockdown ($+0.12$, $SD = 1.4$) as compared to a decrease in the pre-pandemic period (-0.16, $SD = 1.6$). This change persisted after adjusting for age, time between measurements, and medication use. Sex information was unavailable, and BMI was not separately analyzed due to data limitations.</p> <p>Our study brings to light the impact of the COVID-19 lockdown restrictions on weight and blood sugar control, and thus the effect of lockdowns on the likelihood of future cardiovascular diseases. These findings contribute valuable information for healthcare practitioners aiming to address the long-term health implications of pandemic-related lifestyle changes.</p>

Title:
Clinical Implications Of Early Vs Late Development Of Donor-Specific Antibodies After Lung Transplant
Authors:
D. Sindu, N. Kohler, G. Bitar, B. Franz, C. Mitchell, C. Pham, K. Grief, R. Walia, S. Tokman
Abstract:
<p>Purpose Lung transplant recipients (LTRs) can develop donor specific antibodies (DSAs), which are associated with antibody-mediated rejection (AMR). LTRs at our center undergo regular DSA surveillance in the first year post-LT, and LTRs that develop DSAs are treated, even in the absence of allograft dysfunction. These treatments are burdensome to patients and carry a significant risk of adverse effects. Thus, we sought to compare the clinical outcomes of LTRs without DSAs to those that develop DSAs early post-LT (<math>\leq 3</math> months) and late post-LT (3-12 months).</p> <p>Methods We retrospectively analyzed 423 LTRs transplanted at our center between 02/2017 and 06/2022; 94 were included in the no DSA group (MFI <math>\leq 500</math>) and 157 in the DSA group</p>

(MFI ≥ 2000), with 131 in the early DSA group and 12 in the late DSA group. We compared the groups using Fisher's exact test and Kaplan-Meier survival analysis.

Results Baseline clinical characteristics are described in Table 1. There was no statistically significant difference in 1- and 3- year survival between the 3 groups; however, the 3-year survival in the late DSA group was 33%, with AMR as the cause of death in 2 of the 4 deceased LTRs. The DSAs resolved in the majority of patients in the early and late groups.

Conclusion LTRs with early DSAs have a good prognosis, with post-LT overall and CLAD-free survival comparable to LTRs with no DSAs. LTRs with late DSAs may have worse long-term survival, however, larger studies are needed.

Title:

A Case of Lemierre Syndrome

Authors:

Caroline Casper, Nadia Khan, Erin Honsa, Ana Moran

Abstract:

Lemierre syndrome is a rare disease characterized by infection of the carotid sheath vessels resulting from oropharyngeal infections often in healthy young adults. It is most commonly caused by oropharyngeal flora, specifically *Fusobacterium necrophorum*. We present the case of a 19-year-old man with no past medical history who presented to the emergency department with 1 week of sore throat. He endorsed a change in the quality of his voice, fever, fatigue, and cough. He denied shortness of breath and chest pain. Initial vitals were significant for fever, hypotension, and tachycardia. Physical exam demonstrated erythema of the posterior pharynx with the uvula midline. No neurologic deficits were observed. The patient was able to flex and extend his neck without difficulty. Initial labs were significant for leukocytosis and elevated ESR and CRP. Initial blood cultures were positive for *Fusobacterium necrophorum*. CT soft tissue of the neck with contrast demonstrated tonsillitis with a small phlegmon within the right palatine tonsil and small thrombus within the left internal jugular vein. The diagnosis of Lemierre syndrome was made. No surgical intervention was recommended due to the absence of drainable abscess. The patient was treated with ertapenem and anticoagulated with apixaban. Subsequent follow up confirmed clinical resolution. In conclusion, Lemierre syndrome should be considered in young adults with pharyngitis, fever, and neck swelling.

Title:

Pyoderma gangrenosum with splenic involvement: A systematic review

Authors:

Choe, Sharon; Ortega-Loayza, Alex

Abstract:

Pyoderma gangrenosum (PG) is a rare neutrophilic dermatosis that presents with rapidly progressive and exquisitely painful ulcers. Extracutaneous involvement is exceptionally rare but has been described to have a predilection for the lungs. Herein, we present a systematic review to further understanding of the clinical features and diagnostic workups of PG with splenic involvement.

A literature search of PubMed, Embase, and Scopus using terms “pyoderma gangrenosum” and “spleen” or “splenic” yielded 20 cases meeting inclusion criteria. Exclusion criteria included non-English language and cases with splenic manifestations attributed to causes other than PG.

The median age of patients was 39 ± 23 years, and the most common co-morbidities were hematological malignancy (10%) and IgA gammopathy (10%). Most (65%) patients did not have a prior diagnosis of PG. Interestingly, 45% of patients initially presented with splenic manifestations without cutaneous PG lesions. Half of patients presented with multiple ulcers, typically on the legs (70%). Nearly half (45%) of patients underwent splenic drainage or aspiration, yielding purulent fluid in 20% of cases despite all reported cultures remaining negative. Nearly all cases (95%) were treated with systemic corticosteroids, and cyclosporine (45%) was the second treatment of choice. Healing of associated ulcers was reported within 12 months in 55% of patients.

PG of the spleen can misleadingly present like an infectious abscess but is refractory to antibiotics. Many patients underwent multiple treatment adjustments and were hospitalized for long durations before final diagnosis. Further research should investigate for risk factors and genetic variations for extracutaneous involvement of PG.

Title:

The Impact of Manganese (Mn) Exposure on Welders: Assessing Regional Brain Volumes and Parkinsonian Symptoms through T1-Weighted Imaging and UPDRS3 Scores.

Authors:

Choi, Chelsea; Kasper, Michael; Criswell, Susan

Abstract:

Manganese (Mn) is a known neurotoxin and occupational hazard for welders. Excessive Mn exposure is often associated with parkinsonism. Parkinsonian symptoms have a known association with loss of brain volumes in the basal ganglia area. To find the association between Mn exposure in welders, brain volumes in 7 regions of interest (thalamus, caudate, putamen, pallidum, hippocampus, amygdala, nucleus accumbens, ventral diencephalon), and parkinsonism as measured, represented by Unified Parkinson's Disease Rating Scale part 3 (UPDRS3) scores. Based on the association, the goal is to construct an association model of each regional volumes, Mn exposure, and UPDRS3 scores. We utilized T1-weighted MRI and UPDRS3 scores collected from welders and non-exposed reference participants. Movement disorder specialists scored the UPDRS blinded to the status of the participant. We used FreeSurfer version 6.0 to identify regional brain volumes and measure T1 signal. We compared volumes and T1 signals between welders and non-exposed controls and examined the relationship between Mn exposure, T1 metrics, and UPDRS3 with linear regression adjusted for age. Welders demonstrated larger pallidal volume when compared to non-exposed participants. However, the volume increase was highly correlated with the pallidal T1 signal and was likely related to overprediction of FreeSurfer software. All other volumes examined showed no significant relationship between regional brain volume and Mn exposure. This study demonstrated that the FreeSurfer algorithm cannot be used in singularity to assess regional volumes due to Mn accumulation. In the future, T2-weighted imaging may be helpful to avoid overprediction of signals from Mn accumulation.

Title:
R1rho Dispersion in Proteoglycan-depleted Swine Spine Disc
Authors:
Christiansen, Mitchell J; Preul, Mark; Turner, Jay D.; Uribe, Juan; Nadeem, Muhammad; Mufson, Elliott; Dortch, Richard D.; Gore, John C.; Wang, Ping
Abstract:
<p>Low back pain is often caused by degenerative disc disease (DDD) which is characterized by changes in the both the ligamentous and bony structures of the spine. It is known that biochemical changes such as dehydration of the nucleus pulposus of the intervertebral disc occur early in the disease course of DDD. Current MRI is unable to see this early change. R1rho dispersion, a novel MRI methodology, has the potential to assess the slow macromolecular changes associated with early DDD. Being able to recognize the early change could help development of therapies to halt progression early in the disease course. We investigated the R1rho dispersion in 16 fresh swine disc samples before and after treatment with Trypsin to induce proteoglycan loss with an aim to assess the sensitivity of using R1rho dispersion to detect low back pain. Treatment consisted of injecting 0.1mL Trypsin into the nucleus pulposus of each specimen using a 27G needle. Experiments were performed on a 3T Philips Ingenia scanner (Philips Healthcare, Best, The Netherlands) and results of R1rho(0)-R1rho(300) calculation represent the R1rho dispersion. The results showed decreased R1rho dispersion values in proteoglycan-depleted discs following treatment with Trypsin. Our findings indicate that R1rho dispersion values have the potential to reliably assess the proteoglycan content of intervertebral discs and identify DDD early in its disease course. A larger sample size of swine disc specimens is needed to fully characterize the association between R1rho dispersion and the physicochemical changes that occur in the disc during DDD.</p>

Title:
Geographical Differences in the Incidence of Alzheimer Disease among Medicare Beneficiaries in the United States
Authors:
Cogua Laura BS, Faust Irene MPH, Racette Brad MD
Abstract:
<p>Introduction: Alzheimer disease (AD) affects over 6 million Americans. Due to the aging U.S. population, understanding the public health impact of AD is critical. The primary purpose of this study was to explore geographical differences in the incidence of AD among Medicare recipients.</p> <p>Methods: We investigated a random sample of 50,000 Medicare beneficiaries with AD, mild cognitive impairment (MCI), and all-cause dementia from 2016-2018 and 28 million population controls. We geocoded their residences to the state and county level. We used Stata's spmap function to geographically display the age-adjusted standardized incidence ratio (SIR) multiplied by 100 of AD, MCI, and dementia in each US county. We performed logistic regression to examine the relationship between AD incidence and demographics including age, sex, and race.</p> <p>Results: We found significant geographic variation in the distribution of AD, MCI, and dementia in the US. Specifically, we found that regions in the "stroke belt" exhibited a higher incidence of AD cases. New Jersey, Georgia, Ohio, Rhode Island, New York, Arkansas, Louisiana, and</p>

Missouri had a higher SIR of AD compared to other states. For all cause dementia and MCI, Mississippi, Arkansas, Louisiana, Florida, Nebraska, Alabama, New Jersey, the District of Columbia, and Maryland had a higher SIR compared to other states. County-level data revealed the highest SIRs of AD, MCI, and dementia collectively in Coal, Oklahoma (SIR= 297.30, 95% CI: 169.57-460.82), Jefferson, Mississippi (SIR= 290.97, 95% CI: 165.86-451.01), and Perry, Mississippi (SIR= 285.96, 95% CI: 188.27-403.99). Women had a greater risk of AD than men (OR=1.08, 95% CI: 1.06-1.10). Beneficiaries of Black (OR=0.95, 95% CI: 0.92-0.99), Asian/Pacific Islander (OR=0.84, 95% CI: 0.79-0.89), and Native American (OR=0.83, 95% CI: 0.71-0.96) had a lower risk of AD compared to non-Hispanic Whites. Furthermore, we observed a greater risk of AD with increasing age (OR=1.08, 95% CI: 1.08-1.08).

Conclusion:

We found regional and demographic differences in the disease burden of MCI, AD, and dementia. Such insights are crucial for informing targeted interventions, healthcare resource allocation, and public health policies aimed at addressing the diverse needs of populations affected by AD across different demographic and geographic contexts in the US.

Title:

Is Physician Wellness Associated with Proactive Adolescent Sexual Health Discussions?

Authors:

Da Mota, Jessica; Curtis, Jeffrey

Abstract:

Sexual health is a critical component of adolescent healthcare due to the exploratory and vulnerable nature of this time. Proactive sexual health discussions prevent adverse outcomes, yet they are variably used. Burnout among primary care physicians may contribute to this variability, as sexual health discussions are both emotionally complex and physically time consuming. Additionally, many physicians report a lack of confidence in this topic, suggesting that a lack of training may also play a role. Through a secondary analysis of survey data from the 2021 CERA General Membership Survey, we analyzed the association between academic family physicians' wellness (lack of burnout) and their likelihood to proactively ask adolescents about their sexual health. We also analyzed the correlation between their amount of sexual health training and likeliness to bring up sexual health. There was a strong positive association between the extent of sexual health training received and their likelihood of having such discussions We found no association between physician wellness and proactive sexual health discussions. Our findings suggest that increasing training may have more influence than improving physician wellness on frequency of sexual health discussions with adolescents, but a prospective study would be necessary to confirm this conclusion.

Title:

Volume Status, Vasospasm, and Functional Outcome Following Aneurysmal Subarachnoid Hemorrhage

Authors:

Devine, Gregory; Catapano, Joshua; Jadhav, Ashutosh; Lawton, Michael; Albuquerque, Felipe; Ducruet, Andrew

Abstract:

Background:

Aneurysmal subarachnoid hemorrhage (aSAH) is a devastating clinical event that carries a high mortality rate. Current recommendations from the Neurocritical Care Society include the careful maintenance of euvolemia in aSAH to mitigate ischemic complications and avoid pulmonary edema; however, some studies have reported a benefit from inducing a hypervolemic state. Vasospasm is one of several factors contributing to delayed cerebral ischemia (DCI) and poor outcomes in this population, and the effect of volume status on vasospasm warrants further research. This study aims to elucidate the effect of volume status on vasospasm incidence, DCI, and functional outcome in patients admitted to the neurological ICU for aSAH.

Methods:

A retrospective analysis of a prospective, intention-to-treat trial for aneurysmal SAH with surveilling CT angiography (CTA) was performed. Measured input and output throughout the NICU course was obtained. Vasospasm and DCI were identified via routine CTA studies in days 5 - 7 post aneurysm rupture and additional studies as clinically indicated. Functional outcome was assessed using the modified Rankin scale (mRS) at 6 months following admission, with a score of ≥ 2 being deemed a poor functional outcome. Hypervolemic state was defined as a positive net fluid balance. Volume status throughout two time periods was assessed in this study: the entire NICU course and post-rupture days 5 - 10 to investigate a more focused vasospasm window.

Results:

A total of 106 patients admitted to the NICU for aSAH between 2014 and 2018 were included. 76% of patients had a positive fluid balance throughout the ICU course, while 58% had a positive fluid balance days 5 - 10 post-rupture. Vasospasm occurred in 50 patients and DCI in 26. There were 44 patients with a poor functional outcome. While hypervolemia throughout the ICU course was associated with increased odds of vasospasm (OR = 1.299, 95% CI [1.036, 1.628]), it did not significantly affect the odds of DCI (OR = 1.061, 95% CI [0.817, 1.377]) or poor functional outcome (OR = 0.981, 95% CI [0.793, 1.214]). Hypervolemia in days 5 - 10 post-rupture was not significantly associated with vasospasm, DCI, or functional outcome.

Conclusions:

Inducing a hypervolemic state in patients with aSAH does not show a significant benefit in functional outcome and may increase the risk of complications including vasospasm and pulmonary edema.

Title:

Lice Lurking in the Lashes: The Eye-Opening Intricacies of Phthiriasis Palpebrarum

Authors:

N. Dudeja, B.S., C. Cheng, O.D., D. Dudeja, M.D.

Abstract:

Phthiriasis Palpebrarum (PP) is a rare infestation of Phthiriasis pubis (crab louse) on the eyelid margins and eyelashes. Etiology is linked through infected hands touching face and eyes with 30% of lice infestation being associated with STDs. Most affected patients are those in lower socioeconomic groups, overcrowded living conditions, sexually active, or poor personal hygiene. When diagnosed, procedural and medical interventions are used.

Phthiriasis Palpebrarum is a rare ectoparasitosis characterized by infestation of crab lice and nits in the eyelashes and eyelid. The pathogenesis of phthiriasis palpebrarum remains incompletely understood, but the prevailing theory implicates infected areas being transferred to eyes through rubbing or facial touching.

Phthiriasis palpebrarum often manifests with itching, redness, and irritation of the eyes, symptoms that may be initially misattributed to more common ocular conditions. The distinctive presence of adult lice and their eggs (nits) attached to the eyelashes, however, serves as a diagnostic hallmark.

Differential diagnoses may include allergic conjunctivitis, blepharitis, or other infectious etiologies. Careful examination of the eyelashes using a magnifying lens or slit-lamp microscopy is crucial for identifying the characteristic crab-shaped lice and their eggs. Collaboration with dermatologists may be beneficial, as lice infestation can extend beyond the ocular region.

Topical pediculicides, such as 1% permethrin is often considered first-line treatments. Rigorous eyelid hygiene and procedural removal of nits are essential components of therapy. Additionally, educating patients on preventive measures, such as avoiding close personal contact with infested individuals, is crucial to prevent recurrence.

Herein, we present a case PP with unique treatment plans.

Title:

A Case of Asymptomatic Strongyloidiasis with Classical Risk Factors

Authors:

Dudic Ahmed, Alshaka Saif, Hassan Yezan, Noory Eliace, Moustafa Hazin DO

Abstract:

Strongyloidiasis infection is a common neglected tropical disease most often caused by the soil-transmitted helminth, *Strongyloides stercoralis*. The clinical presentation of strongyloidiasis can vary from asymptomatic to hyperinfection with multi-organ involvement which most commonly occurs in the setting of immunosuppression. In this report, we discuss the case of an Arizona resident with classical Strongyloidiasis risk factors whose diagnosis and treatment were delayed due to multiple comorbidities as well as socioeconomic limitations. The patient is a 60-year-old male with a past medical history including CVA, CKD, HTN, recurrent UTI, and kidney stones. He is an immigrant, a non-native English speaker, is uninsured and works as a landscaper. He was evaluated at St. Vincent De Paul's (SVDP) medical clinic in early 2023 for a follow-up of his kidney dysfunction following several consecutive hospital admissions, during this time the patient and his wife experienced significant financial hardships which caused them to seek temporary housing. Laboratory testing revealed notable eosinophilia along with elevated IgE levels. Positive Strongyloides IgG antibodies confirmed the patient's infection which was then treated with an ivermectin course. An analysis of the patient's previous labs showed several years of consistent eosinophilia. While this patient's strongyloidiasis infection presented asymptotically, his multiple comorbidities and sensitive socioeconomic status put him at risk for medical complications which could have resulted in strongyloidiasis hyperinfection if left untreated. This patient's case underscores the importance of recognizing and detecting chronic asymptomatic presentations of strongyloidiasis to prevent the development of life-threatening hyperinfection.

Title:
3D Printing Congenital and Acquired Tracheal Anomalies: Opportunities for Patient and Medical Education
Authors:
Dunning, Elise BS; Henriksen, Christian BS; Patel, Shiv BS; Kirsch, Jack BA
Abstract:
<p>This project delves into the domain of rare congenital airway anomalies. Our project sought to explore the plausibility of employing high-fidelity, cost-effective 3D printing approaches to create an assortment of models representing six unique tracheobronchial anomalies. The process began with 3D model rendering from CT scans, completed using GE Healthcare AW Volumeshare 7. The model was converted to an .stl file and uploaded to the software Meshmixer. The model was hollowed out, the top was removed, vents were placed, and a display stand was added. For the magnified models, the life-size models were sized up 2-3.65x from the original model. The model was transferred to the software Preform and was printed on a Form3 printer using white resin and 100 µm thick layers. The models were washed in an isopropyl alcohol tank and cured with UV light.</p> <p>Overall, seven unique models were printed, each with a life-size and magnified rendition. The printed models include normal, anomalous right upper bronchus, pig (tracheal) bronchus, left bronchial isomerism, right bronchial isomerism, tracheomalacia, and compression from a double aortic arch. The details of the soft tissue were preserved, and the proportions were maintained in the magnifying process.</p> <p>Our exploration into the realm of 3D printing in medicine underscores its pivotal role in addressing challenges posed by complex anatomy, and provides a cost-effective framework in doing so. The utilization of 3D-printed models not only enhances understanding for patients and their families, but also equips physicians with a profound grasp of intricate anatomical structures.</p>

Title:
Necrotizing fasciitis of the neck: an insidious diagnosis
Authors:
Eitan, Dana BS; Feng, Winnie DO; Reeson, Emily BS; Noss, Bryant BS; Kest, Daren DO
Abstract:
<p>Introduction:</p> <p>Necrotizing fasciitis (NF) is a rapidly progressive, potentially lethal infection of muscle, fascia, and subcutaneous tissues. NF of the head and neck is rare, with few case reports and case series currently reported in the literature. This report describes a rare case of a 61-year-old male with necrotizing fasciitis of the neck who initially presented with cervical neck cellulitis.</p> <p>Case Presentation:</p> <p>A 61-year-old otherwise healthy male presented to the ED with neck swelling and pain for 4 days. He was found to have left pharyngitis with left cervical neck cellulitis. Although he was hemodynamically stable and protecting his airway, he had an elevated ESR as well as subcutaneous emphysema in the left lateral neck soft tissue on CT, prompting concern for a necrotizing infection extending to the trapezius and anterior left chest. He was taken to the OR for multiple debridements of the left neck and anterior chest wall. The infection also extended posteriorly to the base of the skull, caused facial nerve palsy, and even created a</p>

significant defect in the left lateral oropharynx. After obtaining adequate source control, he underwent reconstruction with pectoralis major myocutaneous flap, tracheostomy, and left tarsorrhaphy. The remainder of his hospital course was unremarkable; the patient was discharged home in stable condition.

Conclusion:

The seemingly benign clinical presentation and uncommon location of necrotizing fasciitis draw attention to this case. Prompt treatment and multidisciplinary input ultimately led to our patient's timely diagnosis, which is imperative to minimize morbidity and mortality.

Title:

Pediatric Radiation-Induced Cerebral Vasculopathy

Authors:

Esteves, Sara; Rossi, Anthony; and Kuwabara, Michael

Abstract:

Introduction:

Radiation therapy is a widely used treatment for eradicating cancer cells and improving overall survival in cancers. While radiation has revolutionized treatment for children with brain tumors, it has significant late adverse effects, especially vasculopathy which can appear four months to 24 years following radiation.

Case Summary:

This report discusses a 10-year-old male who presented with dizziness for three weeks, lethargy, generalized weakness, and possible left arm weakness. His past medical history is significant for metastatic medulloblastoma at age five years, treated with chemotherapy followed by resection of the primary tumor and radiation with resultant GH deficiency and hypothyroidism. He has been in remission without treatment for the past four years. Extensive imaging was performed, confirming right ICA narrowing, additionally revealing similar but more subtle narrowing on the left ICA. MRI pre- and post-diamox were performed with findings suggestive of maximum flow compensation with bilateral decreased blood flow post-diamox administration. He was diagnosed with radiation-induced vasculopathy.

Discussion:

Clinical features of radiation-induced vasculopathy are not pathognomonic for radiation-induced vasculopathy but are shared among cerebral infarction, transient ischemic attack, and moyamoya disease, thus remaining a disease of occlusion. Image findings on angiography, CTA, and MRA are characterized by diffuse steno-occlusions involving the common and internal carotid arteries.

Conclusion:

Modern technological advances in radiation strive to minimize doses delivered to normal tissue to reduce complications, including radiation-induced vasculopathy. However, it is important to recognize the dangers of radiation and to keep these complications in mind when caring for patients who have undergone radiation.

Title:

Rate, Timing, and Risk Factors of Finger Replant Failure

Authors:

Sarah Fournier, BS; Anna Lee, BS; Lynn Orfahli, MD; Elliot Le, MD; Mark Greyson, MD

Abstract:

Background:

Replantation of amputated fingers is a technically challenging intervention with variable success rates. Many factors could significantly influence replant survival rates. We aimed to characterize outcomes following digit replantation and identify risk factors for requiring additional revision procedures.

Methods:

Digital replantations (DR) were gathered from TriNetX, a global health research database. CPT codes identified patients who underwent DR between 1/1/90-12/26/23 and any subsequent amputations and secondary surgeries they underwent. Demographic information was collected. Amputation location, injury mechanism, and comorbidities were identified by ICD code. Risk percentages and odds ratios were calculated.

Results:

Of the 1,221 replants identified, 37% (456) required revision amputation (RA). 85% were male and 64% were white. More replants were attempted on amputations at the metacarpophalangeal level compared to transphalangeal. Thumbs were the most commonly replanted digits at both levels. 86% of RA occurred within 30 days post-op, with nearly half of those of those occurring within the first 7 days. Replant survival rate plateaued around 20 days post-op at about 70%. At 1 year, 63% of replants had survived. Replant survival had no association with mechanism of injury or any of the comorbidities identified. Patients who ultimately underwent RA were significantly more likely to undergo debridement (OR 1.8), nerve repair/graft/decompression (OR 2.9), and flexor tendon advancement repairs (OR 2.8).

Conclusions:

Digital replantation is an overall successful procedure with 70% survival at 3 weeks. Interestingly, survival was not associated with any comorbidities or mechanism of injury. Patients may be more likely to undergo subsequent amputation in the setting of wound healing problems, nerve dysfunction, or flexor tendon dysfunction.

Title:

Mucinous adenocarcinofibroma: an NCCDB study of demographic and socioeconomic factors

Authors:

Cheema, Simardeep. **Gill, Sukhmani.** Chin, Kat. Rafie, Susan. Iyer, Mahadevan. Silberstein MD, Peter

Abstract:

Background:

Mucinous adenocarcinofibroma (MAC) is a rare malignancy affecting epithelial tissue, characterized by excess mucus secretion. A variety of risk factors exist for developing MAC, concomitance of which reduced lifespan to below 5 years, after diagnosis. Given the significance of risk factors on prognosis, analyzing demographic data of patients with MAC would allow for formulation of treatment plans targeted toward improving survival rates.

Methods:

Utilizing data from the NCCDB on patients with a confirmed MAC diagnosis, a retrospective cohort analysis with regression was performed. Demographic factors such as age, sex, race, primary treatment, and primary site were quantified descriptively.

Results:

The NCCDB identified 82 patients with MAC between 2004 and 2020 ($R^2 = 0.0005$), primary tumor site being the ovary. Females were more likely to be diagnosed (89%) than males (11%). Most patients were White (87%) and non-Hispanic (89%). More patients were treated in an academic research program (37%) than in a comprehensive community cancer program

(28%). Privately insured patients accounted for 52%, while 32% of patients utilized Medicare. More patients (33%) were top quartile income earners.

Conclusions:

Our NCBDB analysis on MAC addresses an impactful knowledge disparity on the topic. Similar to previous studies, our analysis revealed MAC's aggressive nature and poor 5-year prognosis. Most patients were top quartile income earners, privately insured, and more likely to be treated at an academic/research facility. Further research should be aimed at better understanding the impact that demographic factors have on the diagnosis, treatment, and mortality rates of patients with MAC.

Title:

Delta Radiomic Features Predict Resection Margin Status And Overall Survival In Neoadjuvant-Treated Pancreatic Cancer Patients

Authors:

Goodman, Lily Catherine; Bifulco, Alessandro; Wang, Kai; Karalis, John D.; Elamir, Ahmed; Wachsmann, Megan B; Capretti, Giovanni; Spaggiari, Paola; Enrico, Sebastian; Balasubramanian, Kishore³; Fatimah, Nafeesah³; Pontecorvi, Giada³; Nebbia, Martina⁶; Polanco, Patricio Marcelo; Yopp, Adam; Kaza, Ravi; Pedrosa, Ivan; Zeh, Herbert J; Zerbi, Alessandro; Wang, Jing; Aguilera, Todd; Ligorio, Matteo

Abstract:

Neoadjuvant chemotherapy (NAT) is the standard of care for patients undergoing surgery for Pancreatic Ductal Adenocarcinoma (PDAC). Preoperative tools for predicting resection margin status (PRMC) and prognosis are necessary for this morbid surgery. Delta Radiomic Features (DRF) have shown promise in predicting prognosis compared to single-timepoint radiomics models. We have developed an externally-validated, novel DRF-based model to predict overall survival (OS), disease-free survival (DFS), and likelihood of achieving a negative (R0) resection margin in NAT-treated PDAC patients.

In this retrospective observational study, we collected pre/post-NAT contrast-enhanced CT scans and clinical, pathological, and surgical resectability data from patients with PDAC. Pre/post-NAT CT scans were analyzed and 3D-contoured to determine gross tumor volume, and 257 radiomics features were extracted from each scan. DRFs were calculated by direct subtraction of pre/post-NAT radiomic features. Cox proportional and binary prediction models, including/excluding clinical variables, were constructed to predict OS, DFS, and PRMS.

57 patients in the discovery cohort (UTSW) and 31 patients in the validation cohort (Humanitas) met inclusion criteria. Cohorts shared similar clinical characteristics, only differing in the NAT administered (FOLFIRINOX vs. Gemcitabine/nab-paclitaxel, $p < 0.05$) and in the surgical resection performed (pancreatoduodenectomy, distal or total pancreatectomy $p < 0.05$). The model that combined preoperative clinical variables (pre-NAT CA19-9, change in CA19-9 after NAT (Δ CA19-9)) and DRF outperformed all the other models (clinical feature-based models and other radiomics feature-based models) in predicting OS (UTSW: 0.73; Humanitas: 0.66), DFS (UTSW: 0.75; Humanitas: 0.64), and PRMS (UTSW 0.73; Humanitas: 0.69) in both cohorts, showing promise as a predictive pre-operative tool.

Title:
Idiopathic Granulomatous Mastitis
Authors:
Kelly Halderman; Christina Ferraro, MD
Abstract:
<p>Idiopathic granulomatous mastitis (IGM) is a benign, chronic, inflammatory breast pathology of unclear etiology. Its clinical presentation can mimic other breast pathologies, and the condition is commonly misdiagnosed using clinical presentation and diagnostic mammogram as breast carcinoma or tuberculous mastitis. There are several reported cases of biopsies consistent with malignancy and subsequent mastectomies, only for the final pathology to be consistent with IGM with no evidence of malignancy. The condition is rare, however due to its predilection for Hispanic women and the large Hispanic population in Arizona, it is relatively prevalent in the Phoenix area. Accepted treatment methods for IGM include incision and drainage, resection, and steroids, however some studies show that most cases self-resolve without treatment in anywhere from 0 to 20 months.</p> <p>Our patient is a 37-year-old Hispanic female who presented for evaluation of a right breast infection. One month prior, she had 99F-100F temperatures associated with redness, warmth, swelling, and extreme pain and hardening of the right breast. She was admitted to an outside hospital at that time for 10 days of IV antibiotics as well as incision and drainage with drain placement for assumed abscess. Her symptoms temporarily improved, and she was discharged. She presented to our ED with recurrence of symptoms and was found to have a 3.5 cm complex fluid collection in the left outer quadrant of her right breast. She was discharged with doxycycline and Celebrex, and biopsy confirmed a diagnosis of IGM. Her symptoms resolved with daily Celebrex in about 2 months.</p>

Title:
Incidence of tibial tubercle fractures in patients with and without Osgood-Schlatter disease
Authors:
Hall, Rigel BS, Milner, John MD, Albright, Alex BS, Callanan, Tucker MD, Cruz, Aristides MD MBA
Abstract:
<p>Background: Patients with Osgood-Schlatter disease (OSD) may be at increased risk of tibial tubercle fractures due to the underlying weakness of the tibial tubercle apophysis relative to the patellar tendon as a result of repetitive microtrauma.</p> <p>Methods: A retrospective cohort analysis of the PearlDiver (PearlDiver Technologies, Colorado Springs, CO) database was performed by querying all patients diagnosed with Osgood-Schlatter disease between January 1, 2010 and April 30, 2021. An experimental cohort of 4,222 patients was captured using International Classification of Diseases, Ninth Revision (ICD-9), Tenth Revision (ICD-10) billing codes, and age as inclusion/exclusion criteria. Student's t-test and chi-square analyses were used to compare the demographics and comorbidities between experimental and control cohorts. Multivariable logistic regressions, controlling for residual differences in age, sex, and obesity, were used to compare rates of tibial tubercle fractures.</p> <p>Results: Patients with a recent history of OSD were found to have higher rates of tibial tubercle</p>

fractures at all measured time points ($p < 0.001$). The incidence of tibial tubercle fractures in the OSD group was 852.7 cases per 100,000 person-years compared to 0.61 cases per 100,000 person-years in the control group ($p < 0.001$). Obesity was associated with an increased risk of sustaining a tibial tubercle fracture within these patient populations.

Conclusion:

We report a significantly higher incidence of tibial tubercle fractures among patients with OSD compared to controls. This increase was most significant at three months following OSD diagnosis. Additionally, patients with obesity were noted to have increased incidence of tibial tubercle fractures regardless of an OSD diagnosis.

Title:

In A New Light: A Multifaceted Characterization of Dog Bites at a Level 1 Pediatric Trauma Center

Authors:

Yezan "iPod" Hassan, Vignesh Viswanath, R Scott Eldredge, MD, & Lisa McMahon, MD

Abstract:

Background:

According to the Center for Disease Control, approximately 27,000 children suffer dog bite injuries (DBI) annually, resulting in a substantial financial burden to the healthcare system (1, 2). Prior studies have demonstrated several factors associated with a higher incidence of DBI including summer months, pandemics, younger school-aged males, head injuries among toddlers, upper extremity injuries among teens, and pitbulls (3, 4, 5). The aim of this study was to identify factors associated with DBI among children during the COVID pandemic including demographics data, social economic status, timing and setting of DBI, dog breed, and weather.

Methods:

A single center retrospective review was conducted among pediatric patients (<19 years) with DBI between January 2018 and July 2022. Demographic data, DBI characteristics, national climatology data, and area development index (ADI) were abstracted.

Results:

Of the 480 patients included the majority were male with a mean age of xxx. Overall we noted an increase the proportion of DBI cared for at are trauma center over the study duration(linear regression). Additionally, an increase in the proportion dog bites was found during the COVID pandemic. DBI were more likely to occur during the summer ($p < 0.01$), warmer days ($p < 0.01$), in household settings ($p < 0.05$), and neighborhood settings ($p < 0.05$). The dog bites were also reported proportionately less often among pitbulls ($p < 0.05$) and rottweilers ($p < 0.01$).

Conclusion:

We noted an increase in the proportion of DBI cared for at our pediatric trauma center among other relationships with socioeconomic status and weather.

Title:

Development of a Deep Learning Ensemble Model for Opportunistic Diagnosis of Osteoporosis and Osteopenia from Abdominal CT

Authors:

Henriksen, Christian; Dunning, Elise; Gridley, Daniel MD

Abstract:

The aim of this project is to develop a deep learning ensemble model to aid in the opportunistic diagnosis of osteoporosis and osteopenia via the prediction of lumbar vertebral bone mineral density (BMD) from abdominal computed tomography (CT) imaging. 206 patients were identified who had received an axial dual-energy X-ray absorptiometry (DXA) scan within 1 year of an unenhanced abdominal CT scan. Up to 5 axial CT images were collected of L1-L4 from each CT and were labelled with DXA-calculated BMD. The images were reconstructed into three datasets: the first and second contained single images that were cropped to 100x100 voxels and 120x120 voxels respectively, and the third contained images reconstructed from three axial images of a vertebra and cropped for a final voxel size of 100x100x3. 45 patients were chosen randomly as a validation set, while the remaining 181 patients were used for the training datasets. Each training dataset was augmented utilizing alternative crops, image rotations, Gaussian noise injection, and image mirroring. Three convolutional neural networks (CNNs) were trained to convergence (one on each training dataset) and combined into an ensemble model. The ensemble model predictions were significantly correlated with DXA-measured vertebral BMD ($r = 0.91$ [95% CI 0.88, 0.93], $p < 0.001$) and achieved a mean absolute error of 0.059 g/cm² in the prediction of the per-vertebra BMD of the validation data. The model was able to effectively discriminate on a per-patient basis between normal BMD and osteoporotic or osteopenic BMD (AUC = 0.958 [95% CI 0.898-1.0]).

Title:

A Retrospective Review of Fractional CO₂ Laser for the Treatment of Hypertrophic Burn Scars as a Function of Time

Authors:

Hintz, Madilynn

Abstract:

Background:

Fractional CO₂ laser is a useful treatment for improving post-burn hypertrophic scarring. Previous studies have compared the use of combination laser therapies and differences in energy level, yet there remains limited knowledge of the benefits of CO₂ laser therapy as a function of time. We seek to determine whether treatment duration has additional benefit in improving the mobility and appearance of hypertrophic scarring.

Methods:

The medical records of patients receiving CO₂ laser therapy for wound contracture and/or hypertrophic scar management were reviewed. Data collected included basic demographics, injury, and treatment data.

Discussion:

This analysis focused on the first 20 patients treated. A total of 16 adults and 4 children were treated, μ age=38 years (range 8 – 76). Burn injuries (n=18) accounted for the majority of patients, with a μ total body surface area of 22 % (\pm 23%). Of those who suffered a burn injury the majority (61%) were caused by flame. The μ number of treatments per patient was 1.66. Ten patients had only 1 treatment and eight patients received 2 treatments. For those patients who had more than one treatment, the mean length of time from first to last treatments was 7 months with a range of 2.5 – 13 months.

Conclusion:

Analysis of subjective patient outcomes demonstrated that most patients had improvement in

functionality and/or appearance as a function of time and number of treatments. These preliminary data suggest that CO2 laser therapy is a useful and effective modality for management of burn wound contractures and/or hypertrophic scarring.

Title:

Prediction of Optimal Treatment for Ruptured Intracranial Aneurysms Using Machine Learning Models

Authors:

Hoglund, Brandon; Koester, Stefan; Catapano, Joshua; Rhodenheiser, Emmajane; Hartke, Joelle; Rulney, Jarrod; Scherschinski, Lea; Winkler, Ethan; Jha, Ruchira; Jadhav, Ashutosh; Jadhav, Ashutosh; Ducruet, Andrew; Albuquerque, Felipe; Lawton, Michael

Abstract:

Introduction:

The management of ruptured intracranial aneurysms can be performed using endovascular coil embolization or surgical clip occlusion, depending on a variety of patient-specific factors. The present study describes the development of a machine learning algorithm to aid in treatment strategy selection for patients with ruptured intracranial aneurysms.

Methods:

All patients in the Post-Barrow Ruptured Aneurysm Trial treated for an aneurysmal subarachnoid hemorrhage between February 17, 2013 and December 17, 2020 were retrospectively analyzed. All available pre-operative variables from 689 patients were utilized to train multiple machine-learning algorithms, with the best chosen for accuracy and receiver operator area under the curve with respect to predicting a favorable outcome, defined as a modified Rankin Scale score less than 3 at final follow-up.

Results:

A total of 810 patients were included in the analysis, with data from 689 patients being used for training the various machine learning models that were evaluated and data from 121 patients being used to validate the final model. A support vector machine with a Gaussian kernel function had the best performance, with an AUC of 0.80, accuracy of 73.6%, sensitivity of 77.6%, and specificity of 68.5%. Age, race, hypertension, cardiovascular disease, diabetes, saccular aneurysm morphology, aneurysm size, Glasgow Coma Scale at admission, pre-operative interventricular hemorrhage, and endovascular versus surgical clipping-based management were included in the final model.

Conclusion:

An accurate proof-of-concept machine learning algorithm was developed to prospectively compare endovascular coil embolization and surgical clip occlusion for ruptured intracranial aneurysms.

Title:

Managing electrolyte imbalance in SIADH patients prior to colonoscopy: a case study

Authors:

Iyer, Srivatsan S; Alomar, Talal

Abstract:

Case Presentation:

Here, we present a case of a 79 year-old female with SIADH treated with salt tabs 4 times/day who presented to the Emergency Department with dizziness, nausea, leg weakness, and cramps for 1 day. The patient reported that she had consumed GoLyteLy bowel prep for her upcoming esophagogastroduodenoscopy (EGD) and colonoscopy. Upon workup, the patient's sodium level was 118 mmol/L (her baseline sodium was 130 mmol/L), serum osmolality was 254 mmol/L, urine sodium was 71 mmol/L. Her ketones were elevated to 21 mg/dL and her glucose was 168 mg/dL. The patient was initially given a bolus of 2 L normal saline (NS) along with maintenance NS at 100 cc/hr. The patient was euvolemic by day 3, and consequently her sodium levels had further decreased to 122 mmol/L while on the NS drip. She was fluid-restricted and started on sodium tablets 4 times daily. The patient was then given 15 mg oral urea 3 times/day to raise her sodium levels to 135 mmol/L. She was then able to tolerate the bowel prep whilst on oral urea, sodium tablets, and water restriction. The patient's colonoscopy proceeded without complications. She was taken off oral urea upon discharge as her sodium level was stable.

Conclusion:

Low sodium levels can lead to seizures and can be fatal. Therefore, patients with SIADH need medication adjustments prior to colonoscopies due to electrolyte loss. It can be beneficial to give patients sodium tablets, oral urea, and/or demeclocycline to stabilise sodium levels prior to the procedure.

Title:

Image-guided treatment in conjunction with Denosumab in the management of complex aneurysmal bone cysts in pediatric patients

Authors:

Evan Jacobs, Alok Kothari, Sudhen Desai

Abstract:

Many treatment strategies for aneurysmal bone cysts (ABCs) have been proposed, including surgery, sclerotherapy, radiotherapy, selective arterial embolization, cryotherapy, and others. However, a definitive, reliable treatment paradigm has not yet been established. The presence of ABCs in surgically challenging areas, with high rates of recurrence and complications related to surgical morbidity and pain, has prompted the development of other therapeutic alternatives. We increasingly employ percutaneous therapy, combining sclerotherapy and bone void filler with concomitant use of Denosumab at our institution. The purpose of this case series is to evaluate the efficacy of this method in the care of four pediatric patients treated with Denosumab and combination sclerotherapy with bone void filler for nonresectable ABCs. All presented with significant pain. In all four patients, the interventions yielded pain reduction and an enhancement in their overall quality of life with few identified side effects.

Title:

Exacerbation of Congestive Heart Failure due to Medicine adherence secondary to Pyelonephritis Infection

Authors:

Jahan, Israa; Noory, Eliace; Alomar, Talal; Dudic, Ahmed

Abstract:

Congestive heart failure is a condition that causes issues with the filling and ejection of blood from the heart with common causes including ischemic heart disease and uncontrolled hypertension. Patients typically present with shortness of breath and chest pain. Here, we report a case of exacerbated congestive heart failure symptoms in a 75 year old patient due to symptoms of her concurrent pyelonephritis causing her to forget taking her GDMT medication. CHF is a chronic disorder that can be exacerbated by unhealthy diets with excess sodium, cholesterol and alcohol, uncontrolled hyperthyroidism and anemia, as well as discontinuation of previously prescribed heart failure medication. In regards to our case, our patient suffered from a concurrent pyelonephritis infection that caused her to forget to take her daily GDMT medication. In this case, the patient had a past medical history of HFrEF, which led to the initial prescription of guideline-directed medical therapy (GDMT) for HFrEF consisting of beta-blockers, sodium glucose cotransporter 2 (SGLT2) inhibitors, mineralocorticoid inhibitors, and renin-angiotensin system inhibitors (ACEI). Beta blockers and ACEI are useful for lowering blood pressure to reduce stiffness of arteries and heart, while mineralocorticoid and SGLT2 inhibitors act as diuretics to rid excess fluids. The actions of these drugs combine to prevent serious flare-ups of congestive heart failure, which is why discontinuing them will bring back severe and acute symptoms such as kidney infections, shortness of breath, and chest pain as was the case with this patient after she had ceased taking her medications.

Title:

Insights into Giant Intracranial Aneurysms: An Institutional Experience

Authors:

Jensen, Kate; Chang, Christopher; Eberle, Adam; Ji, Brian; Scherschinski, Lea; Rahmani, Redi; Lawton, Michael

Abstract:

Background:

Giant intracranial aneurysms, defined as arterial dilations with a diameter greater than 25 mm, are a challenging entity in the neurosurgical field. They are associated with an difficult natural history due to symptoms of mass effect and a higher propensity to hemorrhage.

Methods:

This study details a retrospective analysis of 65 patients with giant aneurysms greater than 25 mm treated at the Barrow Neurological Institute in Phoenix, Arizona from 1989 to 2018.

Demographics, presenting symptoms, operative approach, procedural information, outcomes, and complications were analyzed.

Results:

Of the 65 patients, 11 presented on admission with ruptured giant aneurysms, 54 were unruptured. The average modified Rankin Scale prior to treatment was 2.41 with an average aneurysm size of 32 mm. Common comorbidities included hypertension (49%), smoking (38%) and hyperlipidemia (23%). The most common location of the aneurysm was the Internal Carotid Artery (31%), followed by the Middle Cerebral Artery (23%). Of these patients, 62 underwent open surgical treatment, while only 3 underwent endovascular coiling. The orbitozygomatic craniotomy (55%) was most frequently used in the open procedures along with clip reconstruction (48%) and bypass (29%) as the surgical techniques. In analysis of the differing decades people underwent treatment, neurological deficits following treatment decreased in the more recent years; however, overall outcomes did not change. As advancements in neurosurgical techniques continue, a better understanding of the trends and

outcomes identified in this study may guide future trends in the management of giant intracranial aneurysms.

Title:

Unraveling Diagnostic Complexity: A Case of Testicular Myeloid Sarcoma Following Stem Cell Transplant for Acute Myeloid Leukemia

Authors:

Johnson, Justin Ayyad, Hashem

Abstract:

Myeloid sarcoma is a rare malignancy that represents extramedullary presentation of acute myeloid leukemia (AML). It is often present in association of acute myeloid leukemia even though isolated myeloid sarcomas do happen. We present a case of a young man, status post allogeneic stem cell transplant for acute myeloid leukemia 10 years ago, who presented with a testicular mass. Subsequently, he underwent a radical orchiectomy at an outside institution and was diagnosed with a testicular seminoma. The patient presented to St Joseph's hospital medical center (SJHMC) where he was treated with chemotherapy for seminoma. After finishing three rounds of chemotherapy the patient underwent restaging scans which identified an inguinal mass. Subsequent biopsy at SJHMC showed myeloid sarcoma. Upon re-review of the orchiectomy specimen by the original pathologist at the outside institution, the diagnosis was revised from seminoma to myeloid sarcoma. We present the salient histologic and genetic features of myeloid sarcoma, its pathological mimics, and the diagnostic challenges it presents form the practicing oncologist and pathologist.

Title:

An Uncommon Presentation of Lichen Sclerosus in a Pediatric Female

Authors:

Johnston, Eleanor, BA; Parks, Melissa, DO

Abstract:

Background:

Lichen sclerosus is a chronic auto-inflammatory condition that commonly presents in the anogenital area with intractable itching and soreness. It is most prevalent in Caucasian adult women, specifically postmenopausal females, but may also present in men and children of all races.

Case:

A 12-year-old female with a past medical history of mosaic Turner Syndrome, primary ovarian insufficiency, mild aortic dilation, short stature, and vitiligo presented for vulvovaginal itching. Clinical examination and discussion with dermatology finalized a diagnosis of hyperkeratotic/hypertrophic lichen sclerosus, an unusual variant for a pediatric patient. The patient was treated with topical steroids. Significant improvement was seen at one-month follow-up, including the disappearance of thickened plaques and vulvar pruritis.

Summary & Conclusion:

This case highlights a rare presentation of hypertrophic lichen sclerosus in the pediatric population. Classical lichen sclerosus presents with atrophic epithelium and shiny, brittle, "cigarette paper-like" vulvar skin. This patient presented with hypertrophic epithelium giving rise to a thickened vulvar surface. Despite variance in presentation, treatment is consistent and includes topical steroids and/or topical calcineurin inhibitors. Highlighting the various

presentations of lichen sclerosis in the pediatric population is essential to preventing the already high misdiagnosis of lichen sclerosis in this population and preventing permanent loss of vulvar architecture.

Additionally, this case exemplifies several conditions associated with pediatric vulvar lichen sclerosis. Turner's syndrome increases risk for autoimmune conditions, including vitiligo and lichen sclerosis, and is associated with premature ovarian failure. Correspondingly, it is proposed that low estrogen levels further contribute to lichen sclerosis development.

Title:

Vaginal Preparation, Vaginitis and UTIs: The effects of Vaginal Prep on Rates of Vaginitis and Urinary Tract Infection

Authors:

Jordan, Gianna. Dr. Wiley, Alicia. Kump, Dorothy. Sinai, Erin. Dinh, Samantha

Abstract:

Introduction:

While only povidone-iodine (PI) is approved by the FDA for vaginal preparation use, 4% chlorhexidine gluconate (CHG) has been shown to be a safe and effective option. Studies performed thus far have demonstrated conflicting data on how type of preparation may affect post-operative infection rates. In this study, we seek to further characterize post-operative infection rates of various vaginal preparations.

Methods:

This is a retrospective, IRB-approved chart review of patients meeting inclusion criteria via a review of patients with benign gynecology surgery performed between 2017 – 2023 at Valleywise Health Medical Center (VHMC). VHMC recently transitioned from PI to CHG 4% vaginal preparation, which allowed us to analyze how the type of vaginal preparation used affected rates of post-operative infection. The use of a single hospital allowed us to control surgeons, residents, faculty and facilities.

Results:

A total of 824 benign gynecologic surgeries were found to meet inclusion criteria. Of the data analyzed, it was found that rates of vaginitis between PI, CHG, and no preparation groups were 0.07, 0.04, and 0.09, respectively ($p=0.95$) and the rates of UTI were 0.04, 0.05, and 0.00, respectively ($p=0.98$).

Conclusion/Implications:

The number of patients with vaginitis or UTI were not significantly different between the CHG, PI, and no vaginal preparation groups. This study suggests that CHG is an effective vaginal preparation and that it does not lead to an increase in post-operative vaginitis or UTI.

Title:

Exploring the mutual impact of diabetes mellitus and eating disorders in diabetic adolescents and young adults: A systematized review of literature

Authors:

Khan, Nadia

Abstract:

Context:

Disordered eating behaviors like insulin omission and binge eating in adolescents and young adults with diabetes mellitus predispose to complications such as retinopathy, neuropathy,

nephropathy, and diabetic ketoacidosis which leads to higher rates of hospital admission, as well as decreased life expectancy and quality of life.

Aims:

The specific aims of this review are: studying the impact of diabetes mellitus on the occurrence of eating disorders, exploring management challenges, and mutual effects on treatment outcomes in patients with a co-diagnosis of diabetes and eating disorder.

Settings and Design: Systematized review of existing literature

Methods and Material: A detailed electronic literature search without time limits was conducted on PubMed and OVID Medline to screen and select articles which satisfied the predefined inclusion and exclusion criteria. 14 of the 395 articles screened were then subjected to data extraction. Rest all were excluded either in the first or second stage of the screening process.

Statistical Analysis used: Not applicable

Results: A co-diagnosis of an eating disorder and diabetes is associated with higher hemoglobin A1C level, less frequent glycemic monitoring, poor treatment adherence, and retinopathy. These patients were also found to have poor nutritional intake, increased familial conflict, self-esteem issues, and body dissatisfaction.

Conclusion: This study supports a higher occurrence of eating disorders in diabetic teens and young adults leading to poor glycemic control. Development of multidisciplinary management facilities is pivotal to better care for these patients with co-diagnosis to avoid subsequent physical and mental health outcomes thus improving their quality of life.

Title:

Overlap Syndrome: Systemic Lupus Erythematosus and Autoimmune Hepatitis

Authors:

Khatib, Rawaan ; Jahan, Israa ; Diagne, Yaye Fatou; Eldosougi, Isra

Abstract:

Introduction:

Autoimmune hepatitis (AIH) is a secondary effect of systemic lupus erythematosus (SLE). SLE is an autoimmune condition that presents with a broad-spectrum of clinical manifestations and attacks multiple organs within the body system. SLE has a higher incidence in females aged 15-40 years old. In this presentation, we report a resident of Arizona with a past medical history of SLE presenting to the clinic with elevated liver function enzymes.

Case Presentation:

Patient is a 23-year-old female, with a past medical history of SLE presenting with elevated liver function enzymes (LTFs). At the age of 16, she was diagnosed with SLE when she presented to the clinic with a 3-month history of fatigue, hair loss, and arthralgia. Social history included local residence in Phoenix and no tobacco use. Family history included a grandmother with rheumatoid arthritis and essential hypertension. At the time, a CBC, CMP, and anti-dsDNA were ordered. It was noted the patient had elevated anti-dsDNA and protein/creatinine ration. The patient was diagnosed with SLE and was prescribed

hydroxychloroquine 200mg which alleviated the symptoms.

More recently, it was noted the patient had elevated LFTs (AST: 57) and (ALT: 80). Additional lab work was ordered showing normal mitochondrial antibodies, normal liver-kidney microsomal antibody, normal ANA by IFA, and elevated actin smooth muscle antibodies.

Discussion:

AIH is a condition characterized by liver inflammation linked to SLE. The etiology is rooted in the complicated pathology of SLE, where autoantibodies, immune complexes, and pro-inflammatory cytokines cause cellular dysfunction and tissue damage to multiple organs within the body. This tissue damage directed against the liver, leads to the clinical syndrome of AIH. Females between the ages of 15 and 40 years old have an increased incidence of SLE. Symptoms include but are not limited to arthritis, malar rash, fever, photosensitivity, nephropathy, hair loss, and serositis. Notable in the patient, she presented as a 16-year-old female with several common symptoms of SLE including hair loss, arthralgia, and fatigue. Upon bloodwork, the patient had elevated anti-dsDNA and protein/creatinine ratio which led to the conclusion of SLE. Around 7 years after the diagnosis, the patient presented with elevated LFTs and lab values showed elevated actin smooth muscle antibodies indicating the patient's SLE has been targeting the liver causing hepatic inflammation. Treatment for AIH typically involves managing SLE with medications such as corticosteroids and immunosuppressants. For the patient discussed, treatment included hydroxychloroquine 200 mg.

In addition to AIH, SLE has been linked to other autoimmune conditions known as "autoimmune overlap syndrome" or "multiple autoimmune syndrome". It has been reported that around 6.5-19% of individuals with SLE develop Sjogren's Syndrome, 0.01-2% of SLE patients also have rheumatoid arthritis, 6.8% of patients with systemic sclerosis have SLE, and 4-16% of people with SLE have inflammatory myositis.

Title:

Exploring the Recent Evolutionary Patterns of B/Victoria

Authors:

Lach, Izabella

Abstract:

Influenza viruses are responsible for a significant portion of respiratory disease burden every year. Influenza B viruses (IBV) constitute a fourth of all influenza infections every flu season and have the capacity to cause severe illness in children and the elderly. Historically, IBV has been subdivided into two lineages: B/Yamagata and B/Victoria. However, B/Yamagata has not been in circulation since the start of the COVID-19 pandemic. The changes in IBV population dynamics since B/Yamagata's apparent extinction have not yet been established. Using publicly available data from the Global Initiative on Sharing All Influenza Data (GISAID) and the Nextstrain Augur bioinformatics toolkit for phylogenetic analysis, we have looked at the evolutionary change of the Neuraminidase (NA) and Hemagglutinin (HA) surface glycoproteins of B/Victoria over the last three years. Prior to analysis, we stratified the data by climate zone, patient age range, and gender to observe any relationships between these three variables. We have not yet established any clear evolutionary patterns of B/Victoria, but we hope to continue our analysis using Nextstrain and other analytical tools such as Bayesian Evolutionary Analysis Sampling Trees (BEAST).

Title:
Post-Cholecystectomy Choledocholithiasis: A Case Highlighting the Diagnostic Importance of Intraoperative Cholangiography and the Challenge of Stone Detection
Authors:
Lee, Tecjoon ; Alomar, Talal; Bodduppali, Deepti, MD
Abstract:
<p>We present a case of a 34 year old female presenting with choledocholithiasis post cholecystectomy.</p> <p>Patient presented on 12/2, citing recurrent intractable epigastric and right upper quadrant pain, accompanied by severe nausea. 1 week prior, the patient had a laparoscopic cholecystectomy. Intraoperative cholangiogram was not performed, though saline flush through the cystic duct returned no stones. On this admission, the patient's transaminitis had markedly worsened since the days prior during discharge (ALT 815, AST 762, ALP 226, Total-bilirubin 1.1). Despite this, repeat abdominal US as well as a followup CT Abd/Pelvis with IV contrast demonstrated continued common bile duct (CBD) dilatation of 12 cm with no findings of choledocholithiasis. Given patient's noted daily use of marijuana and sudden cessation in the past few weeks, a differential of cannabinoid hyperemesis syndrome was considered, though no symptomatic improvement was achieved with topical capsaicin cream and hot shower. GI was consulted, and an MRCP was scheduled. The following day, 12/3, the MRCP was completed, revealing a 2 cm gallstone in the distal CBD, which had increased in size to 16mm. ERCP was completed 12/5 with removal of stone from the CBD. Patient's labs improved with noted symptomatic improvement of pain and nausea.</p> <p>This case demonstrates the importance of the use of the intraoperative cholangiogram in the diagnosis and treatment of choledocholithiasis. Although saline flush returned clean with no stones and labs initially improved following cholecystectomy, it may not preclude the existence of a stone in the distal common bile duct, or the presence of a stone that may demonstrate the "ball valve" effect with transient blockage.</p>

Title:
Unraveling COVID-19's Impact: Symptom Screening and Seclusion Practices in Psychiatric Care
Authors:
Liong, Katerina ; Wang, Michael; Le, Angela; Lowry, Adam; Sood, Shabnam
Abstract:
<p>The COVID-19 pandemic presented unique challenges for psychiatric hospitals. Our hospital's protocol designates individuals "Persons Under Investigation" (PUI) after endorsing 1+ COVID-19 symptoms. This study explored the prevalence and predictive value of COVID-19 symptoms across three variant-predominant time periods [alpha/delta/omicron] and determine policy impacts on agitation via seclusion and restraint (S&R) usage in an involuntary psychiatric hospital. This was a retrospective chart review. Symptom prevalence and S&Rs (48 hours before/after being made PUI) were tabulated. 193 of 238 adults met criteria; only 15 of the 193 individuals had a positive lab result (11 COVID, 3 Influenza A, 1</p>

RSV) after being made PUI. Covid positive symptoms were nasal congestion (5), body aches (4), sore throat (4), headache (3), cough (3), nausea/vomiting (2), fatigue (2), and loss of taste or smell (1). There were 3/1/8 COVID positives during periods 1(alpha)/2(delta)/3(omicron) respectively. Due to such few COVID positive patients, predictive values for variant-specific symptomatology were inconclusive. S&R event frequency did not significantly change before vs. after PUI ($p > 0.999$). Based on our findings, current symptom-based quarantine measures are sensitive for symptomatic COVID infections, but minimally specific due to both infectious (i.e. Flu, RSV) and non-infectious (i.e. medication adverse effects) confounders. PUI-type policies require significant resource allocation, increase staff burnout, and lead to false positive screens with consequences that merit further investigation (for example, effects on length-of-stay). Given the fewer-than-expected COVID-positive cases, the findings presented may help guide future COVID-19 psychiatric hospital policies to improve the balance between policy burden and positive patient outcomes.

Title:

Efficacy and Medical Student Perception of the Learning Environment with Peer versus Physician led Ultrasound Instruction

Authors:

Lovich, Rowan; Malan, Augustus

Abstract:

Background and Purpose:

With correct use ultrasound (US) is a rapid and low-cost diagnostic tool, leading many medical schools to incorporate it into their preclinical curriculum. This study's purpose was to investigate trained peer versus physician led instruction of head and neck US. Outcomes of interest included instructor effectiveness and participant perception of the learning environment.

Methods:

First and second year medical students were randomly assigned to the peer (n=10) or physician led (n=12) group. Participants completed a post-workshop survey with five multiple choice questions reflecting instructor effectiveness by assessing US knowledge, and five questions evaluating the learning environment using a five-point Likert scale. An unpaired t-test was used to analyze instructor effectiveness questions, and a top two box analysis was performed on the participant perception results.

Results:

The multiple choice questions had no significant difference in percent correct between the peer (mean 0.80 ± 0.16) and faculty led groups (mean 0.92 ± 0.10); $t(20) = 0.054$, ($p = 0.05$). The top two score average of the Likert scale responses was higher in the peer-led group (100%) than faculty-led (91.67%) indicating a more favorable, though not significant, response towards the learning environment; z-score = 0.93, $p = 0.35$, significance $p < 0.05$.

Conclusions:

Both groups performed well on the questions assessing instructor effectiveness indicating that peer-led US teaching is a viable method. The slightly more positive response toward the peer-led learning environment suggests a benefit of peer-led teaching in medical education.

Title:
The Microsurgical Treatment of Brainstem Cavernous Malformations in the Pediatric Population: Case Series and Review of the Literature
Authors:
John K. Mailolo, BS; Stefan W. Koester, MSc; Emmajane G. Rhodenhiser, BS; Brandon Hoglund, BS; Joelle N. Hartke, MD; Redi Rahmani, MD ; Lea Scherschinski, MD; Joshua S. Catapano, MD; Michael T. Lawton, MD
Abstract:
<p>Brainstem cavernous malformations (BSCMs) are rare cerebral malformations that pose surgical challenges tailored to individual patient presentation and anatomy. Pediatric BSCMs treatment guidelines are lacking, which is crucial due to impairment in longevity and quality of life. Our aim is to assess and characterize our single-institution cohort in the microsurgical treatment of pediatric BSCMs.</p> <p>Patients undergoing resection of BSCM were assessed. Criteria included functional status at follow-up. Primary outcomes included poor functional status defined as modified Rankin Scale (mRS) \geq2. Secondary outcomes included mortality and re-operation.</p> <p>A total of 15 patients were included with a median age of 14.2, 8 were female. Pre-operative hemorrhage was experienced in 14 patients, 4 had multiple hemorrhages. Median time from bleed to surgery was 36 days. BSCMs location included the midbrain (3), pons (8), and medulla (4). Median pre-operative mRS was 2 while final post-operative mRS was 1. An mRS greater than 4 was not observed at follow-up. Functional status improved in 5 (33%) patients, remained stable in 6 (40%), and worsened in 4 (27%). 1 person experienced an intra-operative complication, and 4 were re-operated. The final review included 21 additional studies that reported outcomes for a total of 225 patients. 128 (56.9%) patients underwent conservative management, 94 (41.8%) underwent surgical resection, 2 (0.8%) underwent radiosurgery, and 1 (0.4%) underwent hematoma evacuation without resection.</p> <p>Given the life expectancy and associated morbidity of ruptured BSCMs, microsurgical treatment should be considered an effective treatment option for improving or stabilizing neurological deficits in children suffering from BSCMs.</p>

Title:
Thoracic Outlet Syndrome as a Cause of Arm Swelling in Hemodialysis Patients: A Case Report
Authors:
Mayekawa, Kimberly Yang, Michael Comp, Geoff
Abstract:
<p>Introduction: Arm swelling in hemodialysis (HD) dependent patients is a serious complication associated with arterio-venous fistula (AVF) creation that is not often seen in the emergency department. We present a case of arm swelling due to thoracic outlet syndrome (TOS), resulting in AVF vascular access for hemodialysis.</p> <p>Case Presentation: A 60-year-old male with a history of ESRD on HD presented with right upper extremity (RUE) swelling for one month. Initial vital signs were notable for blood pressure 168/98 mmHg. He had a mature arterio-venous fistula in the right arm and was sent to the ED from the dialysis center for increased arm swelling and unwillingness to access the fistula in fear of worsening a possible AVF complication. Prior US in two other emergency</p>

departments and in our ED again revealed no abnormality within the RUE or fistula. Due to the patient's increasing swelling, progressive severe pain, and +2 pitting edema involving the digits up to the axilla, CT Chest with IV contrast was ordered. Imaging showed "venous narrowing and stent impingement in the area of the first rib" that were previously undisclosed by the patient. The patient was admitted and received HD. Initial stent revision was done by interventional radiology. The patient was given aspirin and clopidogrel and transferred for rib resection with cardiothoracic surgery for definitive treatment of TOS.

Discussion: This case demonstrates the importance of broadening our differentials in the Emergency department to include TOS in the setting of arm swelling in a patient with AVF for HD.

Title:

Ultrasound Assisted Spinal Anesthesia for Obstetric Patient with Anatomical Complication

Authors:

Ngo, Vinh , Nguyen, Austin MD

Abstract:

We explore a case of a 39-year-old G3P1, with one previous cesarean section, scheduled for another cesarean delivery. In her past cesarean delivery, attempts to administer spinal anesthesia were unsuccessful, necessitating the use of general anesthesia instead. During the procedure, multiple healthcare providers made several attempts at both spinal and epidural administration at different spinal levels, but ultimately, general anesthesia was required. For her subsequent cesarean section, prior to administering spinal anesthesia, an ultrasound examination was conducted to map out the anatomy. This examination revealed a significant leftward deviation of the curvature of the spine, indicating scoliosis. Despite this anatomical challenge, spinal anesthesia was successfully administered in a single attempt. The repeat cesarean section proceeded without any complications. The patient reported having higher satisfaction with this attempt compared to her last.

Title:

An Evaluation of Risk Factors for Intracranial Metastases of Sarcomas: A Systematic Review and Meta-Analysis

Authors:

Alexander Nguyen BS, Andrew Nguyen BS, Chance Fleeting BS, Grace Hey BS, Aashay Patel BS, Akhil Mandavali BS, Nicholas Bazett BS, Nolan Brown BS MBA, Maxwell Woolridge BS, Marco Foreman BS, Brandon Lucke-Wold MD PhD

Abstract:

Introduction:

Sarcomas, a group of neoplasms comprising both tissue and bone soft tissue tumors, has an increasing prevalence in recent years. Prognosis hinges on early detection and if not detected early may metastasize. This review will be the first systematic review and meta-analysis characterizing the presentation and progression of brain metastases from bone and soft tissue cancers.

Methods:

The PubMed, Scopus, and Web of Science databases were queried to identify studies reporting the incidence of intracranial brain metastases from primary sarcoma to the present. Abstract and full-text screening of 1822 initial articles returned by preliminary

search yielded 28 studies for inclusion and data extraction.

Results:

The odds ratio for living status (dead/alive) were calculated for several risk factors - male/female [OR 1.14, 95% CI 0.62, 2.07], single/multiple metastases [OR 0.67, 95% CI 0.35, 1.28], lung metastases/not [OR 1.63, 95% CI 0.85, 3.13], surgery/no surgery [OR 0.49, 95% CI 0.20, 1.21]. The standardized mean differences for duration from diagnoses to metastases were likewise analyzed - male/female [SMD 0.13, 95% CI -0.15, 0.42], single/multiple metastases [SMD 0.11, 95% CI -0.20, 0.42], lung metastases/not [SMD -0.03, 95% CI -0.38, 0.32], surgery/no surgery [SMD 0.45, 95% CI -0.18, 1.09]. The standardized mean differences for duration from metastases to death were analyzed - lung metastases/not [SMD 0.43, 95% CI -0.08, 0.95]

Conclusion:

Our study observed no statistically significant differences in mortality rate among several risk factors. Consequentially, there lacks a clear answer as to whether or not an association between mortality rates exists with these factors.

Title:

Analyzing the relationship between student factors, self-perception of confidence, and connection to the anatomical donor in medical students' gross anatomy laboratory experiences

Authors:

Nguyen, Cynthia; Eno, Cassie; Chrisman, Leah

Abstract:

Gross anatomy lab experiences can greatly differ depending on student's preparedness and student's perceptions of their ability to confidently identify structures. This study also examined student's connectedness with the anatomical donor as a possible representation of students' first patient experience. This study surveyed first and second year medical students to examine the relationships between preparation, confidence, and connectedness. Follow up interviews were held for students to expand on their survey responses.

Students who had previous experience in anatomy lab were more likely to have a higher level of respect for their donor, a closer connection to their anatomical donor, and were more likely to view their donor as their first patient experience in medical school. Students who completed the anatomy lab pre-work and did well on required TBLs had a higher level of respect for their donors. Students who had a higher level of respect for their donor also had greater confident identifying structures in clinical scenarios, surgical cases, and in other anatomical donors.

However, the study acknowledged the need for further investigation into the mechanisms linking prior experience and donor connectedness. The study suggested that prior knowledge might boost confidence facilitating connection with the donor, while students without a foundational anatomy background might struggle to engage fully in the lab process. Future research will explore the direction and potential mediating factors of this relationship, emphasizing the importance of considering students' experiences and factors influencing their connection with donors when designing anatomy lab curriculum.

Title:
Incidence of New Onset Autoimmune Disease in Patients Who Developed Pelvic Pain Following Implantation of Polypropylene Pelvic Mesh
Authors:
Nguyen, Daniel , Block, Maya, Stiller, Alison, Theut, Lindsey, Stewart, Chelsea, Doehrman, Pooja.
Abstract:
<p>Polypropylene based mesh has been widely utilized for sudden urinary incontinence and pelvic organ prolapse repair due to its dependability and mechanical strength. However, mesh placement is frequently associated with adverse effects including chronic pelvic pain. This study explores the correlation between new onset autoimmune disease in a cohort of women who had pelvic mesh removed secondary to chronic pain. We hoped to identify factors related to chronic pelvic pain to assist in risk stratifying patients prior to mesh placement. Pelvic pain is a legitimate and debilitating complication of mesh placement. Providers should inquire about pelvic pain following mesh placement and take steps to manage it effectively, as it has historically been dismissed as a psychological process. We performed a retrospective chart review of patients with a past surgical history of pelvic mesh placement who presented for mesh removal in the setting of pelvic pain. Of these patients, 76 (35.8%) had a postoperative diagnosis of autoimmune disease, following the placement of mesh in the pelvis. We propose that susceptibility to chronic inflammation secondary to autoimmune disease or obesity may be a risk factor for pelvic pain following placement and lead to the need for future removal.</p>

Title:
A 7-year Analysis of Flow Diverter Device Placement of Intracranial Aneurysms: Radial Artery Access and Shield Technology
Authors:
Nidamanuri, Sreecharita ; Rulney, Jarrod; Catapano, Joshua; Meyer, Benjamin; Koester, Stefan; Devine, Gregory; Hartke, Joelle; Naik, Anant; Nguyen, Daniel; Yu, Tim; Jadhav, Ashutosh; Ducret, Andrew; Albuquerque, Felipe
Abstract:
<p>The purpose of this study is to describe the use of Flow Diverter Devices (FDDs), including Pipeline Embolization Device (PED)-Shield, for the management of intracranial aneurysms and discuss the associated complications. Primary and secondary outcomes analyzed included 6-month aneurysmal occlusion (via Raymond-Roy), device and/or parent artery stenosis (including trace, moderate, and severe), and strokes. Multivariable logistic regression analysis was performed for outcomes with variables with p-value ≤ 0.2 on univariate analysis. Threshold analysis utilized Euclidean distancing to determine a cutpoint for continuous variables onto 6-month stenosis. All analysis was conducted using R version 4.0.1 (The R Group, 2013). During the study period, 426 patients were treated with a FDD for an intracranial aneurysm. Of those patients, 60% were found to have a Raymond-Roy of one, 1.4% with a stroke, 20% with any stenosis, and no aneurysmal ruptures following treatment. Radial artery access was performed in 26% of patients and 9% treated with PED-Shield. In univariate analysis, PED-Shield (OR 2.33, 95%CI 1.07-4.86, p=0.027), radial artery access (OR 2.72, 95%CI 1.54-4.76, p<0.001), larger maximum diameter (>9mm) and neck size (>4.7 mm) were found to be significant for 6-month stenosis. On multivariable regression analysis, only a diameter greater than 9 mm (OR 23.6 95%, CI 1.83-750, p = 0.031) was</p>

found to be significant for 6-month stenosis. No variables were significant for stroke and/or aneurysm occlusion. Placement of FDD was found to be safe and an effective treatment option for the management of intracranial aneurysms.

Title:

Presentation of Cotard's Syndrome in an elderly patient

Authors:

Noory, Eliace; Noory, Mukhtar; Ponce, Esai; Alomar, Talal

Abstract:

Cotard's syndrome, also known as Cotard's delusion or walking corpse syndrome, is a rare and severe mental health disorder characterized by the delusional belief that one is dead, does not exist, or has lost organs or blood. The syndrome typically manifests in individuals with underlying psychiatric conditions such as depression. In our case, we present a 81 year old patient who was admitted to a psychiatric facility due to her belief that she had no abdominal organs (stomach or intestines) and no need to eat. Cotard's syndrome poses significant challenges in diagnosis and treatment. Its rarity and complex presentation require careful assessment and tailored interventions. Treatment for Cotard's syndrome typically involves treating the underlying medical or neuropsychiatric illness, which may be composed by a combination of psychotherapy, medication and ECT. Case studies have reported on ECT to be an effective treatment option due to the success of treating the underlying depression¹. However, the effectiveness of treatment can vary depending on the individual and the severity of their symptoms. In our case, our patient was treated with medications such as Zyprexa, Lexapro, and Remeron while also working with behavioral therapy and physical therapy. Through intervention, the patient began to eat more food and was successfully discharged from the facility with improvement in her delusions. Early intervention and ongoing support from mental health professionals are crucial in managing this rare and challenging disorder.

Title:

Nasopharyngoplasty for the management of substance induced nasopharyngeal stenosis: A unique case and promising technique

Authors:

Noss, Bryant (BS); Eitan, Dana (BS); Reeson, Emily (BS); Montminy, Tess (MD); Kest, Daren (DO)

Abstract:

Objective: Management of nasopharyngeal stenosis is challenging due to high frequency of recurrence following surgical correction. No gold standard surgical approach exists, and few case reports describe attempted treatments. We present a unique case of nasopharyngeal stenosis acquired by illicit substance-use and corrected by nasopharyngoplasty.

Case presentation: A 43-year-old male with history of cocaine and fentanyl abuse presented with inability to breathe nasally for five months. Laryngoscopy exhibited a subtotal nasal septal perforation with complete obstruction of the nasal airway caused by grade 4 stenosis and adherence of the soft palate to the posterior pharyngeal wall. These conditions were attributed to his history of substance use. Patient underwent nasal pharyngoplasty with stenting.

Surgical approach involved a horizontal incision made between anterior tonsillar pillars.

Vertical splitting of the nasopharynx yielded right and left palatal mucosal flaps. The nasopharyngeal mucosa was flapped anteriorly to the oropharyngeal mucosa of the soft palate, and the lateral pharyngeal flaps were sewn in place, closing all mucosal surfaces. A nasal trumpet was inserted to restore communication between the nasopharynx and oropharynx. Patient's self premature stent removal resulted in restenosis following initial surgery, requiring a revision pharyngoplasty. His stent was removed two weeks postoperatively, with a patent communication from the oropharynx to nasopharynx.

Conclusion: Here we present a promising nasopharyngoplasty technique with stenting that ultimately achieved continuous communication between the oro- and nasopharynx. Additional studies comparing techniques with larger cohorts and longer follow-up periods are necessary to determine the efficacy of the proposed method.

Title:

Intraoperative in vivo confocal endomicroscopy of the glioma margin: Performance assessment of images by neurosurgeon users

Authors:

On, Thomas J., BS; Xu, Yuan, MD; Abramov, Irakliy, MD, PhD; Kupanoff, Kristina M., PhD; Mathis, Andrea M., MSc; Belykh, Evgenii, MD, PhD; Restelli, Francesco, MD; Acerbi, Francesco, MD; Schlegel, Jürgen, MD; Hewer, Ekkehard, MD; Pollo, Bianca, MD; Maragkou, Theoni, MD; Quint, Karl, MD, PhD; Porter, Randall W., MD; Smith, Kris A., MD; Preul, Mark C., MD

Abstract:

Objectives

Confocal laser endomicroscopy (CLE) is an intraoperative real-time cellular resolution imaging technology that images brain tumor histoarchitecture. Previously, we demonstrated that CLE images may be interpreted by neuropathologists to determine the presence of tumor infiltration at glioma margins. The neurosurgeons' capability to interpret CLE images from glioma margins was assessed and compared to the neuropathologists.

Methods

In vivo CLE images acquired at glioma margins were interpreted by four CLE-experienced neurosurgeons based on pathologic features, with numerical (0-5) and dichotomous scoring systems. H&E and CLE scores by neuropathologists from a previous study were used for comparison. The interrater agreement and diagnostic performance based on neurosurgeons' scores were calculated. The neurosurgeons' concordance between dichotomous and numerical scores was determined.

Results

Fifty-six glioma margin ROIs were included in the analysis. Interrater agreement for the neurosurgeons' interpretation of CLE images with the numerical scoring system was 61%. The interrater agreement when using the dichotomous scoring system was 83%. The concordance between the numerical and dichotomous scoring systems was 93%. The overall sensitivity, specificity, PPV, and NPV were 78%, 32%, 62%, and 50%.

Conclusions

The neurosurgeons' performance in interpreting CLE images from glioma margins was comparable to that of the neuropathologists. These results suggest that CLE may potentially be used as an intraoperative guidance tool with neurosurgeons interpreting the images with

or without assistance of the neuropathologists. The dichotomous scoring system is robust yet simpler and may streamline rapid, simultaneous interpretation of CLE images during imaging.

Title:

Butterflying the brainstem: Fetal MRI characteristics of Diencephalic-mesencephalic junction dysplasia

Authors:

Parikh, Rajan; Juang, Eric; Cornejo, Patricia

Abstract:

Purpose

To outline the imaging features and clinical associations of diencephalic-mesencephalic junction dysplasia (DMJD).

Methods

Fetal MRI studies were taken with 3.0T scanners on fetuses containing concerning findings visualized on second trimester fetal ultrasonography. Two experienced pediatric neuroradiologists reviewed the axial, sagittal, and coronal views of the Balanced Turbo Field Echo (BTFE) series.

Case Reports and Discussions

DMJD is a rare congenital brainstem malformation defined by the rostral midbrain partially or completely merging with the thalamus or hypothalamus. Three MRI-based DMJD classifications have been described.

Type A is distinguished by axial plane hypothalamic-mesencephalic fusion and a ventral cleft (“the butterfly sign”). Our patient is a 36 year old G2P0 female L1CAM mutation carrier at 23 weeks 1/7 day gestation with a fetus who exhibited hypothalamus-midbrain union, severe bilateral ventriculomegaly, indiscernible cerebral aqueduct, and anomalies consistent with L1 syndrome.

Type B is defined by incomplete midbrain and thalamus cleavage in the sagittal plane. Our patient is a 23-year-old G3P2 female at 23 weeks 1/7 day with a fetus who exhibited partial thalamic-midbrain conjoinment, ventral anterior cleft, severe bilateral ventriculomegaly, rhombencephalosynapsis, cerebral atrophy, and retrognathia.

Type C is demonstrated by complete or near-complete thalamic-midbrain fusion in the sagittal plane.

Conclusions

DMJD is a collection of rare brainstem malformation defined by abnormal diencephalon-mesencephalon cleavage and sporadically seen with other brain malformations including callosal dysgenesis and hydrocephalus. While the formational physiology of DMJ is still under research, it has been reported alongside L1CAM mutations and pathogenic variants of PCDH-12 and VRK-1.

Title:

First Report of Nocardia beijingensis Pericarditis in the United States

Authors:

(Park, Connor) (Honsa, Erin PhD) (Moran, Ana MD) (Schroeder, Laura MD)

Abstract:

Here we document the first instance of Nocardia beijingensis pericarditis in an immunocompetent patient in the United States. The species N. beijingensis was only recently separated from the N. asteroides complex and was initially isolated in Asia in 2001. This rare species has been documented as the cause of pericarditis in one other individual who had HIV and was treated in Thailand. Our 72-year-old patient had a history of rheumatoid arthritis but had not received immunomodulatory therapy for three years at the time of infection. She presented with shortness of breath and left sided chest pain. Chest CT scan and transthoracic echocardiogram (TTE) revealed a moderate to large pericardial effusion and pericardial window was performed. Gram staining revealed gram-positive branching filamentous organisms and culture from pericardial purulent material grew N. beijingensis. Brain MRI did not show brain involvement. The patient was treated with trimethoprim-sulfamethoxazole and ceftriaxone combination. Clinical and radiographic short-term follow up showed symptom improvement and decreased pericardial effusion. The rarity of this case presentation in an individual with no obvious immunosuppression emphasizes the necessity for ongoing documentation to characterize this new species' infectious profile.

Title:

A Triad Case of SLE, APS, and Pleural Effusion

Authors:

M. Paternoster, T. Alomar, N. Dudeja, S. Alomar, E. Noory

Abstract:

Systemic Lupus Erythematosus (SLE) is a type III hypersensitivity reaction and chronic autoimmune disease producing autoantibody deposition in tissues. Immunological deposits lead to inflammation with a wide variety of disease symptoms. Laboratory findings are vast and clinical presentation varies heavily. Those between 16-55 are mostly affected, with females being more impacted than males at a 15:1 ratio. Underrepresented minorities are more likely to be affected than Caucasians. Presentation of SLE varies widely and its pathogenesis is not completely understood. Literature suggests there is a genetic predisposition with multiple genetic factors like HLA, complement deficiencies, and other loci contributing to the disease.

There are several presentations of lupus, with the most common being multi-organ dissemination. However, Subacute Cutaneous Lupus Erythematosus (SCLE), Discoid Lupus, Drug-induced Lupus, and Neonatal Lupus are other forms. Environmental factors including smoking, EBV/CMV infections, UV exposure, and drugs may lead to triggers of SLE. Clinical manifestations of SLE vary greatly and can affect the mucocutaneous, musculoskeletal, serous tissue, renal, neurological, and hematologic systems. The SLICC criteria is used for diagnosis, and requires both clinical and immunological/laboratory criteria. Laboratory findings vary, but ANA, Anti-dsDNA, and Anti-Smith are some of the more common results. Other autoimmune diseases like Sjogren's, infections, and malignancies must be ruled out before diagnosis. Treatment includes risk reduction, monitoring, and tailored medications. The gold standard is steroids and hydroxychloroquine.

A patient who had SLE, Antiphospholipid syndrome (APS), along with a pleural effusion

presented to St. Joseph's Hospital. Treatment included warfarin for APS, hydroxychloroquine for SLE, and colchicine/steroids for the pericarditis. Patient made a recovery and will be monitored for future recurrences on an outpatient basis. Herein, we present a rare case of SLE Antiphospholipid syndrome with a pleural effusion.

Title:

Empowering Young Minds with Aquatic Skills at Lake Bunyonyi

Authors:

Dorina Pinkhasova, Shervin Harirchian

Abstract:

Living on Lake Bunyonyi, where water is an integral part of daily life, mastering the art of swimming is not just a skill but a life saving endeavor. Knowing how to swim ensures the safety of children as they navigate the water-centric environment. It's a life-saving ability that guards against accidental drownings, which are unfortunately common in such regions. Locals in the area traditionally travel by canoe boat. This is how children would get to school across the lake. These canoe boats would sometimes flip and the children would drown. This phenomenon is not only a threat to the children's lives but a barrier to receiving an education. In an effort to prevent drownings at Lake Bunyonyi, Global Livingston Institute has started offering swimming lessons to kids from local villages each Saturday. As a result the local children experienced an increase in swimming proficiency, a reduction in drowning incidents, and an increase in community engagement. Global Livingston Institute also began providing large motor boats to take children from their villages to school and back home at the end of the day. Data shows a marked increase in school attendance among children using the motor boat program.

Title:

Functional and Psychosocial Outcomes of a Medically-Supported Summer Camp for Children with Spina Bifida

Authors:

Pisani, Lauren, Majhail, Kajol, Fern-Buneo, Anna, Boles, Kristi, and Belthur, Mohan

Abstract:

Background: Summer camps offer a unique space for the development of relationships, interpersonal skills, and social confidence. Building and strengthening these skills is critical for children with medical complexity or disability, such as those with spina bifida. Children with spina bifida face chronic health concerns that require lifelong care, which may contribute to observed social difficulties. This project aims to explore the functional and psychosocial benefits of a medically-supported summer camp.

Methods: Participants included 20 children with spina bifida (7 males; age $M=14.1\pm3.5$) who attended Camp Patrick 2023, an overnight camp in Arizona designed for children with spina bifida. Participants completed the Pediatric Camp Outcome Measure (PCOM), a validated self-report questionnaire that evaluates overall functioning and perceptions of camp experience.

Results: Children with spina bifida were found to have positive PCOM scores (total score $M=118.5\pm14.7$) comparable to scores for children with other chronic conditions attending their respective summer camps (e.g., sickle cell disease, cancer, congenital heart disease, and

cancer). The individual items with the most positive scores demonstrated high reported levels of self-esteem and social and emotional functioning while at camp. Additionally, 90% reported they would tell others camp was “very good” (highest rating) and all respondents said they would return to camp next year.

Conclusions: Attending Camp Patrick had a positive impact on the emotional and social function, self-esteem, and physical activity of children with spina bifida. Understanding the positive experiences of camp provides insight into opportunities for recommendation for improving functionality and quality of life in this population.

Title:

A Retrospective Comparison of Radiological Imaging of Disseminated Coccidioidomycosis in Multiple High-Risk Groups

Authors:

Potlapalli, Sindhu, BS; Kang, Paul, MS MPH; Gridley, Dan, MD; Roh, Albert, MD

Abstract:

Multiple risk factors for disseminated coccidioidomycosis have been identified by previous literature, but there is little research discerning how they correlate with the diverse radiological presentations of disseminated disease, which is what this investigation aims to do.

Data was collected and analyzed from 128 adult patients with serologically confirmed coccidioidomycosis on demographics, radiographic imaging, and the presence of disseminated disease risk factors such as immunocompromised and pregnancy statuses. Radiological presentations were grouped into four imaging categories: pulmonary, neurological, body, and musculoskeletal.

Patients with non-pulmonary manifestations (n=29) demonstrated disseminated coccidioidomycosis and were compared to patients with only pulmonary (non-disseminated) imaging (n=99). A higher percentage of African Americans were represented in the disseminated categories (37.9%) than in the pulmonary category (11.1%). Men were more likely to exhibit disseminated categories (75.9%) than they did non-disseminated imaging (49.5%). Interestingly, mean age decreases as the number of disseminated categories increase, with □ age = 55.1 for pulmonary only imaging, 48.0 for 2 categories, 47.6 for 3 categories, and 31.0 for 4 categories. Moreover, patients with normal (41.4%) and underweight BMI (6.9%) presented with an increased number of imaging categories compared to those with pulmonary only imaging (24.2% and 2.02% respectively).

This analysis concurs with other studies that male gender and African American race correlate with increasing dissemination of coccidioidomycosis. However, leaner and younger patients are more likely to have varied radiographic dissemination. These findings are unexpected and require additional investigation, as they may have been skewed by a smaller sample of patients with disseminated imaging.

Title:
Super Refractory Status Epilepticus in a Patient with Stroke-like Migraine Attacks after Radiation Therapy (SMART) syndrome
Authors:
Read Pablo MS3, Kaneko Kyle DO, Hoskin Justin MD, Umemura Yoshie MD
Abstract:
<p>Background: Stroke-like migraine attacks after radiation therapy (SMART) syndrome is a rare delayed complication of cranial radiation presenting with headaches, seizures, and neurological deficits. Super refractory status epilepticus (SRSE) associated with SMART syndrome is very uncommon. We present a case of SRSE in SMART syndrome refractory to multiple anti-seizure medications that responded to a ketamine infusion.</p> <p>Case Presentation: A 36-year-old male with a history of an oligodendroglioma status post resection, chemotherapy, and radiation therapy presented with worsening headaches and visual disturbances concerning for seizure activity. Electroencephalogram (EEG) confirmed focal seizures arising from the left posterior quadrant. Despite treatment with five anti-seizure medications and steroids, his seizures persisted at a rate of 3-6 per hour for over a day meeting criteria for SRSE. After transfer to the intensive care unit, a ketamine infusion led to seizure improvement seen on EEG.</p> <p>Discussion: SRSE in SMART syndrome poses a therapeutic challenge given limited evidence. Our patient's refractory focal seizures responded to a carefully titrated ketamine infusion, allowing him to avoid sedation, intubation, and potential neurological morbidity. Further research is needed, but ketamine may be an option for focal SRSE in SMART syndrome. Although SMART syndrome often ameliorates over time, recurrence is possible emphasizing the need for close follow-up and management.</p>

Title:
Comparative Analysis of Operative Outcomes of Laparoscopic and Robotic Cholecystectomies: A 5-year Single Center Study
Authors:
Riley, Dylan; Cogua, Laura; Gulati MD, Snigdha; Salevitz MD, Nicole; Wee, Shirline; Gillespie MD, Thomas; Deka MD, Vikram; Soe-Lin MD, Hahn; Low, Trevor; Bogert MD, James; Ballecer MD, Conrad
Abstract:
<p>Introduction:</p> <p>Despite improvements from the SAGES Safe Cholecystectomy Program, bile duct injuries persist in laparoscopic cholecystectomies. In our study within a resident training program, we expected similar rates of bile duct injuries, salvage procedures, and conversion to open surgery when comparing laparoscopic and robotic approaches.</p> <p>Methods and Procedures:</p> <p>A 5-year review of 1,690 cholecystectomies at an academic hospital (Jan 2018-2023) examined patient demographics, diagnoses, comorbidities, surgical approach, and complications. We compared Strasberg A-E bile duct injuries, salvage procedures, and conversion to open surgery between laparoscopic and robotic groups.</p>

Results:

Among 1,690 cholecystectomies, 613 were robotic and 1,070 were laparoscopic, with seven open cases excluded. Demographics were similar, except for more prior surgeries and adhesions in laparoscopic cases ($p=0.009$).

Bile duct injuries occurred in 21 patients (1.25%), significantly lower in the robotic group (Robotic: 2 [0.32%] vs. Laparoscopic: 19 [1.77%]; $p=0.009$). Among laparoscopic patients, 3 of 19 had common bile duct injuries necessitating hepato-jejunostomy, while the rest had cystic duct leaks managed with drains or endoscopic stenting; no robotic patients had CBD injuries.

Laparoscopic procedures had higher rates of conversion to open surgery (Laparoscopic: 39 [3.64%], Robotic: 3 [0.32%]; $p<0.001$) and salvage procedures (Laparoscopic: 16 [1.56%], Robotic: 8 [1.33%]; $p<0.001$). Robotic cholecystectomies had lower postoperative pain scores ($p<0.001$).

Conclusion:

Robotic cholecystectomy demonstrates fewer bile duct injuries compared to laparoscopic approaches, with none in the robotic group. Patients undergoing robotic-assisted cholecystectomy experienced less postoperative pain, lower conversion rates, and fewer salvage procedures. Robotic cholecystectomy remains safe in academic training programs and may offer advantages over laparoscopic techniques, including lower bile duct injury and salvage procedure rates.

Title:

Cultivating Professional Identity: A Medical Student-Led Movement

Authors:

Rizk, Elizabeth; Jones, Rachel

Abstract:

Cultivating Professional Identity: A Medical Student-Led Movement

The process of professional identity formation is critical in the education of medical students. Professional identity formation is an active process that requires the integration of an individual's core values with personal development that, ultimately, will translate into patient care. Consequently, medical educators are challenged to fashion a curriculum that empowers medical students to be active stakeholders in their professional identity formation. To facilitate this vital process on our own campus, we designed and assessed an intervention titled "The Leadership and Professionalism Summit" at Creighton University School of Medicine. Through this program, we engaged our Student Leaders, Faculty, Deans, Residents, and Attendings through small group discussion, case studies, and a panel that aimed to create a standardized language for various aspects of professional identity formation. In addition, the summit delved into professional identity as a core competency for future physicians and discussed how it is a critical tool in intentionally and thoughtfully engaging with colleagues and patients. In the closing session, we explored concrete initiatives that could collaboratively be implemented both in curricular and extracurricular opportunities that facilitate a culture of leadership and professionalism among medical students on our campus. Pre and post

surveys of the Summit demonstrated participants development an increased appreciation for the need for medical students to be invested in professional identity formation initiatives and values beginning day one of their medical education.

Key Words: Professional Identity Formation, Core Values, professionalism, Leadership and Professionalism Summit

Title:

An Unexpected Variation of Occipital and Ascending Pharyngeal Arteries: Clinical Implications

Authors:

Roofeh, Gabriella. Matthees, Nicholas. Cevallos, Manuel

Abstract:

Introduction

The eight classical External Carotid Artery (ECA) branches are the superior thyroid artery, ascending pharyngeal artery, lingual artery, facial artery, occipital artery, posterior auricular artery, maxillary artery, and superficial temporal artery. The Internal Carotid Artery (ICA) has no branches in the cervical portion before entering the carotid canal. We identify a variant of the Occipital Artery (OA) and Ascending Pharyngeal Artery (APA) originating in the Cervical portion of the ICA.

Material Methods

Between August and December 2023, 28 formaldehyde donors were dissected in the anatomy course for first-year medical and PA students at the Creighton University School of Medicine, Phoenix campus.

Results

Dissection of the right common carotid artery (CCA) revealed a variation of the ECA branches. On this side, two branches were found on the proximal portion of the ICA. After tracing the branches cranially, we identified these as the OA and APA [Figure 1]. These are two arteries typically found originating from the ECA. With the ECA traveling anteromedially and the ICA traveling posterolaterally, the OA is seen branching from the lateral aspect of the proximal ICA, and the APA originates on the medial aspect of the proximal ICA. This variation was only observed on the right side. The left CCA bifurcated as expected to become the ICA and ECA, with each branch of the ECA being identified.

Conclusion

The prevalence of the OA arising from the ICA is 0.2%. This variation occurring in combination with the APA originating on the ICA is even more uncommon. Studying these anatomical variations and understanding their paths bears great clinical significance.

Significance/Implication

Knowledge of the OA variants greatly supports surgeons and interventional radiologists in performing procedures such as posterior fossa revascularization to treat tumors, temporoparietal fascia flap, OA aneurysms, and OA embolization. Also, the APA variant has clinical associations, such as epistaxis, meningiomas, vascular lesions, and others.

Title:
A Descriptive Study of the Relationship Between Civil Commitment and the Maricopa County Jails
Authors:
Shabani, Julia; Sood, Shabnam; Kirkosky, Scott; Bloom, Joseph; Haerter, Sonal; Ramos, Gilbert; Bhattarai, Bikash
Abstract:
<p>Background: Severely mentally ill inmates experiencing mental health crises that require court ordered evaluation (COE) for civil (involuntary) treatment and are sent to Valleywise (VW) include:</p> <ol style="list-style-type: none"> 1) Individuals whose criminal charges are dismissed without prejudice due to being declared not competent and not restorable (NCNR). 2) Incarcerated individuals who are conditionally released to VW for COE, treated, and returned to jail. <p>Aims: This study's goal is to identify court outcomes for patients sent from incarceration to VW for civil commitment.</p> <p>Methods: A retrospective chart review of all patients referred from Maricopa County jail system for 2 years was conducted. Data collected included age, sex, psychiatric diagnosis, booking date, crimes charged, details of the restoration for competency program, NCNR designation date, court ordered treatment (COT) outcomes, and discharge disposition.</p> <p>Results: There were 278 patients, largely schizophrenic or bipolar males. 73.85% were placed on COT. Of the 128 inpatient NCNR subjects, 84.3% were placed on COT. Of the 13 outpatient NCNR subjects, none were granted COT. For the NCNR population, average stay length at VW was 33.6 days. The average detention length was 270.3 days, average Rule 11 process length was 192.92 days, and average restoration program length was 117.1 days. Of the conditional release patients, 93% of inpatients and 64.3% of outpatients were placed on COT. The most common legal charges were assault, drug charges, and trespassing.</p> <p>Conclusion: This study assesses outcomes of civil commitment of incarcerated patients and reveals significant disparities for the inpatient and outpatient population.</p>

Title:
Clinical Agreement Between a New Retinal Imaging Device and Visual Field Loss in Glaucoma Patients
Authors:
Sinai Erin, Shacker Mark, Salazar Patricia, Speilburg Ashley, Rozwat Anne, Chaglasian Michael, Sinai Michael
Abstract:
<p>Purpose: To investigate the agreement between retinal nerve fiber layer (RNFL) loss and visual field loss in glaucoma patients based on defects detected by a spectral domain optical coherence tomography (SD-OCT) device and a Humphrey Visual Field Analyzer (HFA).</p> <p>Methods: Thirty-three patients with glaucoma underwent examination consisting of visual field testing with the HFA (Zeiss) and retinal imaging with the Monaco, which combines SD-OCT with ultra-widefield fundus imaging. Subjects were divided into three groups according to the</p>

pattern of visual field loss: defects localized to the superior visual field (SVF), inferior visual field (IVF), or both (diffuse loss). The agreement was assessed between eyes that had: 1) only SVF defects against inferior RNFL defects, 2) only IVF defects against superior RNFL defects, and 3) diffuse visual field defects against total average RNFL defects.

Results: 42% of glaucoma patients had visual field loss confined to the SVF, 21% had visual field loss confined to the IVF, and 37% had diffuse visual field loss. 93% of subjects with only SVF loss also had inferior RNFL defects, whereas 100% of subjects with only IVF loss also had superior RNFL defects. 75% of subjects with diffuse visual field loss also had RNFL defects.

Conclusions: Agreement between functional and structural loss in glaucoma patients was very high.

The area of structural loss corresponded to the region of visual field loss with substantial concordance, 89% of the time. The overall agreement found suggests structural measurements from Monaco can effectively assist clinicians in the detection of glaucoma.

Title:

Outpatient versus Inpatient Induction of Labor

Authors:

Smesik, Ava, Villa MD, Danielle, Doehrman MD MPH, Pooja

Abstract:

In the United States labor induction rates have nearly doubled within the past two decades (Swift et al., 2022). Induction of labor is associated with an increased length of hospital stay (LOS) relative to spontaneous labor. Outpatient induction techniques for low-risk pregnancies have been utilized for decreasing length of hospitalization. This study investigates inpatient and outpatient labor induction strategies and their association with length of hospitalization, while comparing maternal and neonatal outcomes and adverse events. Retrospective chart review between January 2016 to August of 2022 was completed on 68 patients undergoing induction of labor at three institutions. Wilcoxon Rank Sum assessed total admission and labor duration and univariate multivariable regression was used to analyze Bishop scores' influence on obstetric and neonatal outcomes. The inpatient labor induction group (N=29) had a longer total duration of labor compared to outpatient induction (N= 39, 18.9 hours vs 13.9 hours, $p=0.044$) but no significant difference in total length of stay. Pre-labor and admission Bishop scores were associated with total LOS with likelihood ratios of $p = 0.032$ and $p = 0.001$, respectively. There were no significant differences between the two groups for maternal and neonatal outcomes, emphasizing the safety of outpatient induction.

Title:

Systemic Dosing of Virus-derived Serpin Improves Survival and Immunothrombotic Damage in Murine Colitis

Authors:

Spaccarelli, L., Zhang, L., Turk, J., Monder, H., Woodrow, C., Garg, A., Schlievert, J., Elmadbouly, N., Dupati, A., Aliskevich, E., Saju, R., Kilbourne, J., Lowe, K., Hamada, M., Pinteric, A., Zapatti, I.R., Enow, J., Florsheim, E., Rahman, M., Irving, J., McFadden, G., Kong, W., Lucas, A.R.

Abstract:

Inflammatory bowel disease (IBD) is potentially life-threatening, with risk of bleeding, clotting, infection, sepsis, cancer and toxic megacolon. Systemic and local immune and coagulation dysfunction increase IBD severity. Current treatments are partially effective, but there is no definitive cure. Serine protease cascades activate thrombotic, thrombolytic and complement pathways and are regulated by inhibitors, serpins. Viruses encode proteins evolved from endogenous central regulatory pathways. A purified secreted Myxomavirus-derived serpin, Serp-1, dosed as a systemic anti-inflammatory drug, has proven efficacy in vascular and inflammatory disorders. PEGylated Serp-1 protein (PEGSerp-1) has improved efficacy in lupus and SARS-CoV-2 models. We examined PEGSerp-1 treatment in a mouse Dextran Sodium Sulfate (DSS) colitis model. Prophylactic PEGSerp-1 significantly improved survival in acute severe 4-5% DSS colitis, reducing inflammation and crypt damage in acute 4-5% DSS induced colitis and when dosed as a chronic delayed treatment for recurrent 2% DSS colitis. PEGSerp-1 reduced iNOS+ M1 macrophage invasion, damage to crypt architecture and vascular inflammation with decreased uPAR, fXa, fibrinogen and complement activation. This work supports PEGSerp-1 as a tissue targeting serpin therapeutic.

Title:

Assessing Initial Attitudes Toward Adoption of New Triton Technology - Quantitative Blood Loss Assessment Tool

Authors:

Stiller, Alison & Block, Maya

Abstract:

Postpartum hemorrhage (PPH) is a leading and often preventable cause of maternal mortality and morbidity. The incidence of PPH is increasing in the United States. Inaccurate estimation of peripartum and ongoing post-delivery blood loss may contribute to delayed recognition and treatment of PPH. Quantitative blood loss (QBL) provides an objective measurement that is more accurate than visual estimation of blood loss (EBL). We recognize that implementation science is important in adapting new technologies into clinical practice. Additionally, it imparts how teams and individual behaviors and attitudes influence a safety culture and the clinical adoption of a new process measure. This study aims to explore provider feedback on adopting the Triton Technology Quantitative Blood Loss Assessment Tool through surveys distributed to St. Joseph's Hospital employees involved in its implementation.

The survey highlighted obstacles to adopting new technologies, including concerns about the Triton Tool's cost-effectiveness, staffing requirements, and extended operating room time. Providers also expressed worries about time efficiency, inadequate training, and low confidence in operating the device, fearing potential inaccuracies. Many disagreed on the necessity of implementing the Triton Tool, citing comparable accuracy between QBL and EBL methods and questioning the justification for additional resources. The study underscores the need for improved training, evidence-based support, and transparent cost analysis to overcome barriers to technology adoption in clinical settings.

Title:

Snap, Crackle, Heal: The Dance of Closed Reduction in Salter Harris Type 2 Fractures

Authors:

Taddeini, Mateo; Alomar, Talal; Alomar, Sammy; Boddupalli, Deepti

Abstract:

This case study focuses on a 16-year-old male presenting with right arm pain. The patient was playing soccer when he fell backwards landed on his right wrist about 1 hour prior to presentation. In the emergency department, X-ray showed acute dorsally displaced extra-articular distal radial fracture with dorsal and superior displacement of the distal fragment and minimally displaced comminuted fracture of the ulnar styloid. This was diagnosed as a Salter-Harris type II fracture (above the growth plate) and treated with a closed reduction as opposed to surgical intervention. Fluoroscopy showed closed reduction treatment was successful with no evidence of epiphyseal growth arrest.

It is important for physicians to properly diagnose and begin the proper treatment/management of these fractures as soon as they enter the emergency department since it can lead to complications including, but not limited to, compartment syndrome, growth arrest, cubitus, and premature epiphyseal closure (PCC). Compartment syndrome can lead to compression and vascular damage to distal structures, while growth arrest can result in the complete lack of bone growth and physical developmental delays. Cubitus can lead to crooked growth of the bone, which can lead to physical additional stress and challenges. PCC is a common complication of Salter-Harris type II fractures that is the result of damage to the germinal layer of the physis and causes a shortened bone. The case presented above provides an ideal framework in which a Salter-Harris type II fracture is properly diagnosed and treated in an appropriate timeframe to prevent complications.

Title:

“Unmasking Adrenal Insufficiency: Decoding Hypotension in a Woman with a Puzzling Presentation”

Authors:

Taghizadeh, Catherine; Alomar, Talal; Noory, Eliace

Abstract:

A 65-year-old female patient presented in the emergency department with acute worsening abdominal pain and generalized weakness. The patient was tachycardic and had hypotension refractory to fluids. Potassium levels were low on admission at 3.1 and sodium levels were normal. Epinephrine was administered, and upon transfer to the Intensive Care Unit (ICU) the patient was administered vasopressor Levophed. Random blood cortisol levels were low at 6.7. Blood cultures, urinalysis, and stool PCR were negative for infectious causes. The patient was then started on stress dose hydrocortisone (100 Mg BID) and transferred to the floor. Prior to being tested for adrenal sufficiency using the cosyntropin stimulation test, the patient was switched from hydrocortisone to dexamethasone. Peak cortisol was 12.8, indicating primary adrenal insufficiency. A brain MRI showed no pituitary lesions. The patient was then started on hydrocortisone (15 – 5 – 5 mg TID), and her blood pressure was stable on discharge.

This case highlights the importance of the assessment and treatment of a patient presenting with atypical symptoms of adrenal insufficiency. It is crucial to realize electrolyte levels can vary from the typical deviations seen in primary adrenal insufficiency. In a 2017 study including 272 autoimmune Addison’s disease patients, it is reported that only 34% had the expected high potassium levels, while 66% had normal levels of potassium. If a patient presents with decreased cortisol and there are no other underlying causes, it is pertinent to consider an autoimmune disorder, even with atypical ion levels. Additionally, the cosyntropin stimulation test is instrumental in the proper diagnosis of adrenal insufficiency. For this test to

present accurate results, it is critical to transition the patient from hydrocortisone to a non-cortisol-based alternative such as dexamethasone.

Title:

Dissociative Symptoms in Dialysis: A Presentation of Suspected Dialysis Disequilibrium Syndrome/Delirium

Authors:

Tran, Danielle BS; Pradhan, Amit MD; Kowalik, Joanna MD

Abstract:

Dialysis disequilibrium syndrome (DDS) is a rare complication during or following dialysis due to fluid shifts, causing cerebral edema and a variety of neurological symptoms, including headache, restlessness, confusion, seizure, coma, or death. We discuss a patient presenting with episodic behavioral changes after dialysis sessions, concerning for dialysis disequilibrium syndrome/delirium. A 43-year-old man with ESRD on dialysis was evaluated by the psychiatry team for intermittent behavioral disturbances during dialysis sessions over the past year. The dialysis staff reported his agitation and combative behaviors, including spitting, screaming, and pulling out his lines. He reported "blacking out" during these episodes but remembered his actions afterwards and was apologetic. His wife reported occasional episodes lasting about 30 minutes after dialysis where he was confused and could not recognize her. An EEG and MRI were ordered and were unremarkable. Dialysis disequilibrium syndrome/delirium was suspected. His dialysis sessions were reduced from 4 to 3 hours with improvement in his symptoms. However, after 3 months, he had two more incidents at the end of dialysis sessions, where he was restless and had an episode of attempted theft in the parking lot outside the dialysis center. He was then started on Haldol prior to dialysis and has continued his 3-hour sessions with behavior improvement thus far. DDS is important to consider in patients who present with confusion and other neurological symptoms on dialysis. Physicians should maintain a high degree of suspicion for DDS, although rare, as early recognition and implementation of prevention strategies can improve outcomes.

Title:

MALS Marvel: The Mystery of Abdominal Anguish

Authors:

T. Alomar, R. Uddin, S. Alomar, E. Noory

Abstract:

Introduction:

Median arcuate ligament syndrome (MALS) is a rare, poorly understood condition caused by compression of the celiac artery and surrounding nerves by the median arcuate ligament. MALS may result in mesenteric ischemia, leading to nonspecific abdominal pain and gastrointestinal symptoms, particularly post-prandial. Challenges persist in proper diagnosis and treatment of MALS.

Case presentation:

An 87-year-old male with PMH of severe mitral valve stenosis, chronic kidney disease, and coronary artery disease presented with complaints of abdominal pain. Patient reported having postprandial abdominal pain and 25lbs weight loss in the past 3 months, N&V in the past 2 months, and occasional shortness of breath and chest pain. Abdominal and pelvic CTA

showed focal narrowing of the celiac trunk with hooked appearance compatible with MALS. Endoscopy excluded other gastrointestinal causes of symptoms. Patient was not a candidate for surgery due to preexisting cardiac conditions. Patient underwent celiac nerve block with full resolution of abdominal pain, which should last 2-6 months. Definitive treatment is median arcuate ligament release.

Discussion:

Keeping MALS on a list of differential diagnoses may limit any potential misdiagnosis and delayed treatment in symptomatic individuals. Abdominal ultrasound, EGD, and gastric emptying studies are usually performed to exclude other sources of abdominal pain. Abdominal duplex ultrasound and abdominal angiographic imaging may be required for definitive diagnosis. Treatment may include celiac plexus block to relieve pain, and/or surgical median arcuate ligament release to restore blood flow. Delayed treatment can result in chronic abdominal pain, severe malnutrition, and irreversible organ damage.

Title:

12-month Outcomes of Combined Phacoemulsification and Kahook Dual Blade Surgical System in Primary Open-Angle Glaucoma

Authors:

Vasu, Pranav; Harnoor, Vishal; Nguyen, Alex; Wagner, Isabella

Abstract:

Purpose: Kahook Dual Blade is a popular minimally invasive procedure known for its ability to significantly reduce intraocular pressure (IOP) by promoting aqueous outflow through Schlemm's canal. Our aim was to compare the efficacy of this procedure combined with phacoemulsification in patients diagnosed with primary open angle glaucoma (POAG) 12-months postoperative as indicated by IOP and number of glaucoma medications.

Methods: This was a retrospective review of 29 eyes diagnosed with mild to severe POAG that were treated with Kahook and combined phacoemulsification between 2017 and 2023. Statistical analysis involved paired sample t-tests. Reductions in mean IOP and glaucoma medication reductions were assessed. Reductions in IOP greater than 20% and decreased glaucoma medication dependency were deemed successful

Results: Baseline IOP (17.7 mmHg) and number of glaucoma medications (1.33) were established. Paired samples t-test yielded a statistically significant reduction in IOP (13.52, -26.80%, $p < .001$). The medication burden for Kahook Dual Blade (0.74, $p < .001$) was also determined. 27 eyes did not require surgical reintervention and yielded a mean decrease in glaucoma medication dependency. 2 eyes required surgical reintervention, which resolved thereafter. No vision-threatening complications were observed in any group.

Conclusions: Kahook Dual Blade combined with phacoemulsification appeared safe and effective with significant reduction in IOP and medications in a wide range of patients diagnosed with POAG 12-months postoperative. Future studies may assess the safety profile and efficacy of Kahook Dual Blade in patients who do not require phacoemulsification for cataract correction.

Title:

Impact of an Immersive Volunteer Experience at a Service-Focused Medical School

Authors:

Koe, Emily, Lin, Stacey, Mailolo, John, Nguyen, Jacqueline, Pisani, Lauren, **Venvertloh, Olivia**

Abstract:

Background: Participation in an immersive community service experience at a medically complex summer camp early in medical education has a positive impact on the development of compassion, empathy, and the professional identity of medical students (Beck 2015). Service-learning activities in medical education offer opportunities for students to enhance their professional development, social development, and social responsibility beyond the classroom setting (Stewart 2014).

Hypothesis: Engaging in an immersive volunteer experience after establishing an educational foundation in spina bifida enhances medical students' holistic understanding of treating and interacting with this patient demographic.

Objective: Assess the impact of a volunteer experience at a medically complex summer camp on medical education at a school with a service-based learning curriculum.

Methods: Six rising second-year medical students from Creighton University School of Medicine Phoenix Regional Campus engaged in a week-long immersive service experience as camp counselors at Camp Patrick—a medically complex summer camp for children and teens with spina bifida. The subjective experience of medical students and the impact of service learning on Jesuit medical education was assessed via the medical students' narrative reflections. This reflection was based on the seven Jesuit core values of Creighton University: 1) magis; 2) women and men for and with others; 3) cura personalis; 4) unity of heart, mind, and soul; 5) Ad majorem Dei gloriam (AMDG) ; 6) finding God in all things; and 7) forming and educating agents of change.

Results: We found that students developed a greater understanding of holistic care for patients with spina bifida that influence the wellbeing of this demographic. Close engagement with this demographic allowed students to develop empathy and compassion for those they care for and their loved ones through reflection of the Jesuit core values:

Magis: Students experienced and contributed to planning and executing camp.

Women and men for and with others: Students worked with a diverse group of volunteer staff in pursuit of service for the campers and camper families.

Cura personalis: Students learned about campers' stories and struggles to develop a holistic approach to care.

Unity of heart, mind, and soul: Students reflected on the unity of emotionally connecting with campers, understanding the medical intricacies of spina bifida, and developing compassion for this population.

AMDG: Students served to empower children with spina bifida.

Finding God in all things: Students recognized the value and sanctity of each human life.

Forming and educating agents of change: Students became active participants in the community as future physicians who focus on care for the whole person.

Conclusion: Common themes that emerged include a better understanding of social determinants of health, an increased capacity for empathy and compassion for those living with medically complex health care needs, and experience working with children. Offering experiential service learning opportunities may enhance medical students' education beyond classroom lessons allowing them to develop professionally and personally.

Title:
Use of MRI for Pediatric Appendicitis at a Children's Hospital: A Review
Authors:
Wang, Lucas; Szymanski, Kathryn; Arnold, Cerys; Pfeifer, Cory
Abstract:
<p>Purpose or Case Report: Appendicitis is a common cause of acute abdominal pain requiring surgery in the pediatric population. For this reason, urgent and accurate diagnosis is critical. While ultrasound is the first line diagnostic modality, MRI has emerged as an important adjunct. The purpose of this presentation is to review the use of MRI for appendicitis in Children's hospitals from the perspectives of both the radiology departments and ordering providers using existing literature.</p> <p>Methods & Materials: A PubMed search utilizing the terms (MRI) AND (appendicitis) AND ("children's hospitals") was performed. Results were reviewed with specific attention to the use of MRI for appendicitis in children and variable inter-facility use.</p> <p>Results: The diagnosis of appendicitis can be made on MRI using 5 or fewer sequences, often without sedation or intravenous contrast. One survey showed that only approximately half of children's hospitals perform MRI for acute appendicitis. The use of CT for suspected appendicitis decreased in the prior decade.</p> <p>MRI for appendicitis increased over 20-fold from 2004 to 2018. The Pediatric Surgery Quality Collaborative found that consistent availability of MRI, appropriately trained sonographers, and pediatric radiologists, adherence to protocols, culture of inter-departmental collaboration, and presence of a radiation reduction champion were factors that favored reduction of CT.</p> <p>Conclusions: MRI for appendicitis remains institution-specific with access to emergent MRI as an important discriminator of use, and there is a demand for this service according to ordering providers. A likely barrier among radiology departments is the practice of maximizing outpatient studies at children's hospitals.</p>

Title:
Case Study of Catamenial Pneumothorax with Surgical and Medical Treatment
Authors:
B. Weinstock, T. Alomar, N. Dudeja, S. Alomar, E. Hatem
Abstract:
<p>Catamenial Pneumothorax (CP) is a rare and spontaneous accumulation of air or fluid in the pleural cavity occurring during the onset of menstruation. Though specific etiology is unknown, a high percentage of cases occur with ectopic migration of endometrial tissue from the uterus and implantation in the thorax. Most affected patients are females of reproductive ages. Despite its infrequency, the impact of catamenial pneumothorax on affected women is substantial, often resulting in recurrent hospitalizations and compromised quality of life. When diagnosed, surgical and medical interventions are used.</p> <p>The pathogenesis of catamenial pneumothorax remains incompletely understood, but the prevailing theory implicates endometrial tissue migration into the pleural space. Hormonal triggers, particularly estrogen, are thought to play a central role in the development of catamenial pneumothorax, given the condition's strong association with the menstrual cycle.</p> <p>Radiological investigations, including CT and X-ray, along with thoracoscopy, remain crucial in establishing a definitive diagnosis. The management of catamenial pneumothorax requires a multidisciplinary approach, integrating gynecological and thoracic expertise. Surgical</p>

interventions, such as video-assisted thoracoscopic surgery (VATS) aim to resect endometrial implants and prevent recurrence. Hormonal therapies have shown promise in reducing the frequency of pneumothorax episodes by suppressing the hormonal fluctuations that trigger the condition.

Ongoing research is needed to enhance the quality of life for women affected by this rare but impactful disorder. Herein, we present a case CP with interdisciplinary treatment plans.

Title:

Physician Lifestyle Advice for Prediabetics and Strategies for Risk Identification: The Impact of Research Familiarity

Authors:

Whooley, Maximillian. Curtis, Jeffrey

Abstract:

Variability in physician familiarity with research linking added dietary sugar to the development of chronic metabolic diseases is a potential barrier to appropriate identification and management of diabetes. Using data from the Council of Academic Family Medicine Educational Research Alliance (CERA) 2016 General Membership Survey, we investigated the influence of self-reported familiarity with this research on preferred diabetes risk identification and prevention strategies. No statistically significant association between familiarity with this research and preferred identification or prevention strategies was found. However, a sex-dependent bias impacting preferred prevention strategies was identified. Female physicians were more likely to recommend dietary changes (59 vs 48%, $p=0.002$), while male physicians were more likely to recommend weight loss (59 vs 41%, $p=0.023$). Overall, these findings demonstrate widespread physician adherence to diabetes clinical practice guidelines, but alert to the influence of sex among physicians diverging from clinical recommendations for prevention strategy.

Title:

Association between prenatal ozone exposure in large regional epidemiologic study of tertiary hospital center in the Phoenix Metropolitan area.

Authors:

Witsoe, Megan; Doehrman, Pooja; Krzyzanowski, Brittany; Mickelson, Kristin

Abstract:

Background:

Elevated prenatal exposure to ozone is linked to various unfavorable birth outcomes. The ozone levels across zip codes, influenced by diverse terrains and proximity to local freeways, creates scenarios where pregnant women face outcome disparities based on their residential location.

Objective:

This study examines the effect of ozone pollution on birth weight within Arizona due to the state's high ozone pollution levels according to the American Lung Association's State of the Air 2022.

Study Design:

This is a retrospective cohort study of deliveries at St. Joseph's Hospital between October 2018 and December 2020. Ozone data was collected from the Arizona Department of Environmental Quality which measures daily ozone concentration. The space-time ordinary kriging interpolation was used to estimate average monthly ozone exposure. Initial analysis using linear regression was used to explore the relationship between average birthweight and ozone exposure by zip codes.

Results:

Ozone levels by zip code were obtained, with the lowest ozone level (0.011) occurring in January 2020 in zip code 85281, while the highest (0.0548) was recorded in August 2020 in zip code 85173. Linear regression was performed on the ozone level in the third trimester in zip codes with 10 or more entries relative to birth weight (N=11,505), and no significant correlation was found ($R^2 = 0.002$).

Conclusion: The effect of ozone on birth weight did not show a significant correlation. Further analysis with a multivariable model may identify interactions between ozone and other factors of environmental discrimination that affect birth weight.

PARTICIPATING HEALTH SCIENCE PROFESSION ABSTRACTS:

Title:

"I'm trying to close that gap a little bit": Impact of providing untrained language services on professional development for bilingual physical therapy students.

Authors:

Reyna, Octavio; Sutton, Kathleen; Goodman, Jessica

Abstract:

In the United States, over 67 million people speak a language other than English at home. More than 25 million of those individuals have limited English proficiency. This has far-reaching impacts, including the accessibility and quality of healthcare services. For individuals who act as untrained ad hoc interpreters, they can experience poor mental health, fear about making costly mistakes, strain on familial relationships, and a loss of autonomy and free time. The majority of current research regarding the impact of using untrained language services in healthcare settings is conducted outside of the United States. Furthermore, the impact of these experiences on influencing the decision to enter a health profession is unknown. The purpose of this study was to explore the experiences of physical therapy students with providing untrained interpretation services during healthcare encounters for family members or other patients. A total of 8 participants completed semi-structured individual interviews. Thematic analysis using a phenomenological approach was completed and themes emerged to describe how participants dealt with the pressure and anxiety of being asked to interpret as children, the conflicting feelings they had about interpreting as physical therapy aides, and how these experiences shaped their professional development as future physical therapists. Despite federal laws regarding language access, participants reported limited use of trained interpreters in their healthcare encounters. They see the positive impact of having health providers that understand the culture and values of their patients and hope to provide culturally responsive care and equitable language access for their future patients.

Title:

Error Reporting Perceptions and Behaviors by Arizona Pharmacists

Authors:

Ruditser, Sharon and Fuji, Kevin

Abstract:

Objective: To explore the behaviors and perceptions of Arizona pharmacists toward error reporting, understand the processes in place, identify potential barriers to reporting, and explore opportunities for improvement. Medication errors are a leading cause of preventable adverse drug reactions and significantly contribute to patient safety concerns. Reporting such errors allows for the evaluation and improvement of systematic failures and other contributory factors. Unfortunately, the severe underreporting of medication errors which exists in current practice settings compromises these efforts. Pharmacists are highly trained medication experts that use their clinical knowledge and experience to ensure proper medication use and mitigate adverse outcomes. Improving their medication error reporting rates would significantly contribute to advancing patient safety.

Methods: Data was collected through a cross-sectional survey study. A hybrid survey was created on the Qualtrics platform by a third-year pharmacy student, using expert feedback and literature review. Survey face and content validity were established through pilot testing by four pharmacists and a patient safety science expert. Participant information was obtained from the Arizona State Board of Pharmacy. This information was used to administer the survey to Arizona licensed pharmacists via e-mail invitation. The data was analyzed using descriptive statistics, and participant identity was kept confidential.

Results: This study is currently in process and outcomes have not yet been determined.

Conclusions: This study is currently in process and conclusions have not yet been determined.

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