

AUGUSTA UNIVERSITY
MEDICAL
PARTNERSHIP
UNIVERSITY OF GEORGIA

*11th Annual
Medical Partnership
Student Research
Symposium*



September 15, 2021

George Hall

***Welcome to the eleventh annual
AU/UGA Medical Partnership Research Symposium!***

This event is an opportunity to showcase the activities of our students during the summer between the first and second years of their medical studies. Students were encouraged to engage in a scholarly activity which could include laboratory science, clinical, or other research. Students more interested in a participatory clinical experience were encouraged to also engage in “inquisitive observation and reflection” in order to derive a more complete understanding of the health problems within the context of the greater community.

The posters represent the results of the students’ endeavors. We are grateful to all of the faculty members at AU, UGA, and other institutions, who have mentored the students, and to the community clinicians, both in Athens and elsewhere, who have shared their expertise and provided the clinical settings to learn both the art and science of doctoring.

Michelle G. Nuss MD

Michelle A. Nuss, MD
Campus Dean

Research Poster Abstracts

Poster No.	Student	Poster No.	Student
1	Acree, Pascal	23	Mohiuddin, Tahmina
2	Albert, Mathew	24	Navarro, Yelissa
3	Babar, Rehmat	25	Parker, Laurel
4	Baker, Jordan	26	Parsons, Alexander
5	Bankey, Anastasia	27	Patel, Dimple
6	Brown, Alicia	28	Ribot, Max
7	Chavez, Frank	29	Ruppel, Alexis
8	Chesler, Kyle	30	Scher, Julia
9	Clark, Forrest	31	Schmitt, Kyli
10	Del Balzo, Luke	32	Schramski, Anna
11	Earnest, Houston	33	Shumaker, Kimberly
12	Ellis, Lauren	34	Singh, Ravot
13	Hulsey, Robert	35	Subu ,Rajeev
14	Ibnamasud, Shadman	36,37	Thawanyarat, Tony
15	Johnson, Chandler	38	Tomei, Amelia
16	Kim, Agnes	39	Turlej, Anna
17	Kim, Scarlett	40	Welch, Ethan
18	Krndzija, Harun	41	Wetterhall, Madeline
19	Manjunath, Rajashri	42	Wilson, Shane
20	Manning, Hunter	43	Yao, Amanda
21	McCarty, Artie	44	Ye, Kara
22	Mendoza, Alex	45	Ye, Sarah

Catheter-Directed Thrombolysis for Pediatric Patients with Deep Venous Thrombosis and Underlying May-Thurner Syndrome

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BACKGROUND: Some pediatric patients develop left lower extremity deep venous thrombosis (DVT) due to May-Thurner syndrome (MTS), an anatomical variant in which the right common iliac artery compresses the left common iliac vein against the lumbar spine. This case series seeks to document the use of catheter-directed thrombolysis (CDT) for this subpopulation, which is lacking in current literature.

METHODS: A retrospective review identified 32 patients who underwent CDT between 2011-2021 at our institution. Patient demographics, procedural technique, and clinical outcome metrics were assessed for each patient.

RESULTS: Fifteen of the 32 (46.9%) patients who underwent CDT were diagnosed with MTS based on cross sectional imaging studies and venography. Intravascular ultrasound (IVUS) was also used to confirm MTS diagnosis in 11 patients. MTS incidence was much higher ($p < 0.0001$) when compared to published MTS incidence in other pediatric cohorts (7%). All (15 of 15) patients received pharmacomechanical CDT and venoplasty. Complete (grade III) and partial (grade II) thrombolysis was achieved in 11 (73%) and 4 (27%) patients, respectively. Stent placement was performed in 13 of 15 (87%) patients, and inferior vena cava (IVC) filters were placed in 4 of 15 (27%) patients. Early (<30 days) and late (>30 days) DVT recurrence occurred in 1 (7%) and 3 (20%) of 15 patients, respectively. One (7%) of 15 patients presented with clinically significant postthrombotic syndrome.

CONCLUSIONS: While there are no published guidelines for MTS management in children and adolescents, we demonstrate CDT with adjunctive angioplasty and stent placement is effective in pediatrics with no associated bleeding risk. Our study is also the first to report on IVUS use in this subpopulation, which may help to explain the higher incidence of confirmed MTS in our cohort. A higher suspicion of MTS diagnosis is essential in determining effective adjunctive therapy for CDT in pediatric patients.

Airway Ultrasound in Pregnant and Non-Pregnant Populations

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BACKGROUND: The mean distance from the skin to the epiglottis (mDSE) measured at the level of the hyoid membrane has been measured with ultrasound as a way to identify patients with potential for difficult airway management. While preoperative measurements of mDSE have been performed in the sitting position, little is known about how it might change in different positions or during the course of the operation. Patients undergoing cardiac surgery with cardiopulmonary bypass (CPB) undergo significant fluid shifts and receive multiple blood products. We hypothesized that changes in mDSE would occur with patient position and correlate with time on CPB and the amount of blood products administered.

METHODS: Following informed consent of patients undergoing CPB-based procedures, the mDSE was measured using a 13MHz ultrasound transducer at 3 timepoints: 1) in the sitting position pre-operatively 2) in the supine position immediately following induction of anesthesia and intubation, and 3) at the conclusion of the operation in the supine position. Parameters including blood product use, time on CPB, and duration of post-operative ventilation were collected.

RESULTS: Complete measurements were obtained in 30 subjects. The mDSE for baseline, post-intubation, and post-surgery were 17.0 ± 2.9 mm, 15.8 ± 3.4 mm, and 18.9 ± 3.4 mm, respectively. There was moderate correlation between the change in mDSE from post-intubation to post-surgery and the time spent on CPB ($r=0.55$, $p=0.0015$), and a moderate correlation between the same mDSE change and the volume of blood products administered during the case ($r=0.52$, $p=0.0031$).

CONCLUSION: The mDSE measurement is positional and has variable changes following endotracheal intubation. It's also affected by tissue edema, directly correlating with increased fluid administration. Further studies are required to determine if the mDSE might serve as a marker for readiness for removal of the endotracheal tube in postoperatively ventilated patients.

Longitudinal Changes in Insulin Sensitivity and Secretion Associated with Prolonged Remission in Patients with Ketosis-Prone Diabetes

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BACKGROUND: About 50% of obese African Americans present with diabetic ketoacidosis (DKA) at new-onset of diabetes, also known as ketosis-prone diabetes (KPDM). With intensive insulin treatment, ~70% undergo diabetes remission (HbA1c < 7%, fasting glucose [BG]<130 mg/dl and off insulin treatment) due to increased insulin secretion and sensitivity. The remission period is variable, and we have shown that higher insulin secretion predicted time in remission. We hypothesized that higher insulin secretion at remission predicts sustained remission at 15 months.

METHODS: As part of 2 randomized controlled studies, 79 subjects with KPDM underwent a 75-gram, 6-sample, 120-minute oral glucose tolerance test (OGTT) at 0, 3, 9, and 15 months after initial remission from insulin or until hyperglycemia relapse (HbA1c>7%, fasting BG>130 mg/dl or random BG>180mg/dl). Insulin secretion was calculated as incremental area under the curve of insulin (AUCi) levels during OGTT and insulin sensitivity (Si) with the oral minimal model. Disposition index (insulin secretion accounting for insulin sensitivity) was calculated as AUCi x Si. Data were compared between subjects with relapse vs remission at 15 months.

RESULTS: There were no differences in baseline characteristics between subjects with relapse (n=44) vs remission (n=35). Multiple linear regression with adjustment for age, sex, BMI, medication, HbA1c, DKA diagnosis showed that DI at baseline ($\beta=0.37$, $p=0.04$) significantly predicts DI at 15 months. AUCi at 15 months was predicted by baseline AUCi ($\beta=0.34$, $p=0.005$). Si at 15 months was predicted by sex ($\beta=-1.9E-4$, $p=0.03$), HbA1c ($\beta=3.0E-5$, $p=0.02$), baseline Si ($\beta=0.29$, $p=0.005$).

CONCLUSIONS: Our data showed that insulin secretion at remission is a statistically significant predictor of sustained remission at 15 months. Sex, HbA1c% at remission, and baseline insulin sensitivity are statistically significant predictors of insulin sensitivity at 15 months.

Complication Rates in Proximal Humeral Fractures in Patients with Diabetes and Chronic Kidney Disease Treated Non-Surgically and by Open Reduction Internal Fixation

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BACKGROUND: The prevalence of diabetes and chronic kidney disease (CKD) has significantly risen over the past three decades. Patients with diabetes and CKD are at increased risk for infection, immune dysfunction, as well as bone and mineral disorders. Although we know that patients with diabetes and CKD have these risks, we do not know how these translate to proximal humeral fracture healing. We sought to analyze if these established comorbidities had increased rates of complications post proximal humeral fracture treatment.

METHODS: Using the PearlDiver database, 139,965 proximal humeral fracture patients were identified. These patients were split into four cohorts based on the presence or absence of diabetes and/or CKD. For our control cohort, patients did not have diabetes nor CKD. Analyzing non-surgical vs. ORIF treatment, complication rates were assessed looking specifically at non-union, nerve injury, post-operative infection, and all-cause reoperation. A logistic regression statistical analysis was also performed.

RESULTS: Overall, treatment via ORIF displayed higher rates of non-union and nerve injury in comparison to non-surgical treatment. When comparing the four cohorts, patients who had diabetes with CKD showed the highest rates in non-union, all-cause reoperation, and post-operative infection. Compared to the control cohort, all other diabetic and CKD groups had higher rates of non-union, regardless of treatment modality.

CONCLUSION: The management of proximal humeral fractures is a controversial topic particularly regarding degree of intervention and optimal treatment choice. Regardless, the data from the present study provides additional information for patients in high-risk populations, diabetic and CKD patients, and may prove beneficial when selecting a patient specific treatment plan. A follow-up of complication rates between different surgical interventions for proximal humeral fractures in diabetics and CKD patients would expand this knowledge.

The Changing Landscape of Second Primary Tumor Incidence in Human Papilloma Virus Associated First Primary Oropharyngeal Squamous Cell Carcinomas

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BACKGROUND: Oropharyngeal squamous cell carcinomas (OPSCC) are traditionally associated with risk factors such as smoking and tobacco use, however in the last two decades, human papilloma virus (HPV) has been established as a major risk factor for such malignancies^{1,3}. With the rise of HPV associated OPSCC, the typical patient profile has transitioned dramatically to a younger patient population as well as better outcomes¹. Despite the more favorable prognosis associated with HPV related tumors, second primary tumors (SPT) remain a major cause of death among patients^{2,4}. The purpose of our study is to determine if SPT incidence could be related to HPV status in index OPSCC tumors.

METHODS: A retrospective population-based cohort study of patients from 2010-2016 with OPSCC in the Surveillance, Epidemiology And End Results (SEER) program from 2010-2016 were studied. Primary sites included oropharynx and esophageal regions. Only local and regional malignancies were considered in this study. Lung, bronchus, and trachea were considered in addition to the above listed primary sites. A SPT was defined as a tumor that is diagnosed at least six months after index tumor but no more than two years. HPV status of the primary tumor was determined using the SEER database.

RESULTS & CONCLUSION: Because we are still waiting on the final data to be collected, we cannot definitively determine the results. The incidence of SPT related tumors in OPSCC has increased over the last few decades, so we expect our data related to HPV influence on SPT will follow a similar pattern.

Pilot Studies in Pupillometry in Suicidal and Non-Suicidal Patients

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BACKGROUND: The pupillary light reflex (PLR) shows promise as a measurement of dynamic responses within the autonomic nervous system (ANS). Average constriction velocity (ACV) and maximum constriction velocity (MCV) have been linked to parasympathetic activity. A fast MCV may indicate hyperarousal, with potential use as a biomarker for suicide risk. PLR assays via pupillometry could serve as an objective measurement to inform prognosis, with relatively low cost and training requirements. Practical implementation of PLR requires understanding of the measurement's stability at different time periods of dark adaptation, with early data finding instability after five and ten minutes. This pilot study assesses PLR in depressed patients with and without risk for suicide, compared to community volunteers, after 10 and 15 minutes of dark adaptation.

METHODS: Adult patients were recruited from MCG's psychiatry clinic. Controls were recruited from community volunteers. All participants were declared medication free before their visit. A sample of 11 was grouped into controls and patients, with patients further categorized by suicidal risk. PLR assays were obtained after 10 and 15 minutes of dark adaptation, followed by psychometric assessments. Two pertinent measurements, average constriction velocity (ACV) and maximum constriction velocity (MCV), were analyzed with paired t-tests and Pearson's r .

RESULTS: No significant difference was found for either ACV or MCV at 10 and 15 minutes ($p > 0.05$). Furthermore, there was a high degree of correlation for 10 and 15 minute values for ACV and MCV ($p < 0.05$). Pearson's r was 0.65 for MCV and 0.73 for ACV, with $p < 0.05$.

CONCLUSIONS: This study demonstrates sufficient dark adaptation at 10 and 15 minutes for stable measurement of ACV and MCV. Thus PLR assays could be conducted clinically within a relatively short period of time. This pilot study encourages pupillometry as an inexpensive and easy to use assessment, potentially for neuropsychiatric populations.

Impact of BMI on Post-surgical Outcomes and Follow-Up in Workers' Compensation Patients in MIS TLIF

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BACKGROUND: Few studies have investigated the relationship between body mass index (BMI) and patient-reported outcome measures (PROMs) and follow-up completion for minimally invasive transforaminal lumbar interbody fusion (MIS TLIF) in the WC population.

OBJECTIVE: To determine the influence of BMI on PROMs and follow-up completion for patients with WC undergoing MIS TLIF.

METHODS: Inclusion criteria were patients with WC who undergoing single-level MIS TLIF. Patients undergoing fusion for traumatic, infectious, or malignant indications were excluded. Participants were divided into groups based on BMI. Postoperative outcomes were measured by patient reported outcome measure (PROM) questionnaires. PROMs were collected from preoperative to 2 years. Post-hoc comparisons of adjusted means were used to compare PROMs between Obese I and Severe + Morbid groups. All data differences between groups were analyzed via statistical analysis.

RESULTS: The study included 247 patients. Demographics among groups significantly differed only in gender, hypertension, and ASA score. Only operative time differed between perioperative values among BMI grouping. Significant differences in mean PROMs at various timepoints among BMI cohorts were demonstrated for VAS-back, ODI, and PROMIS-PF. Mean PROMs between Obese I and Severe + Morbid cohorts differed in SF-12 PCS at 12-weeks only. BMI was not found to significantly predict follow-up completion. MCID achievement differed among BMI cohorts in ODI only.

CONCLUSIONS: WC patients with increased BMI presented with greater back pain and disability at numerous postoperative timepoints compared to non-obese individuals. MCID achievement rates for overall disability were inferior in obese cohorts. Sub-group analysis revealed few significant differences among mean PROMs in Obese I vs Severe + Morbid cohorts. Follow-up completion also did not significantly differ for any PROM among BMI groupings.

Are different aged youth skiers and snowboarders experiencing different injury patterns?

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BACKGROUND: Skiing and snowboarding have grown significantly in the past decades with millions of participants worldwide. With popularity increasing, specifically amongst youth athletes, so has the number of injuries and fatalities associated with these sports. In this study, we investigate age as a potential determinant for injury patterns for the growing population of youth skiers and snowboarders. The purpose of our study was to investigate the factors associated with different anatomical injury locations among youth skiers and snowboarders.

METHODS: This retrospective study was conducted from data acquired from the Winter Park Resort during the 2012/13–2016/17 ski seasons. The population includes youth patients injured at Winter Park Resort while skiing or snowboarding. Patients were sorted by sport and then into age bins 0-6, 7-14, and 15-17 years of age. The study population was described for gender breakdown, injury location, mechanism, anatomical location, and diagnosis. Logistic regression analysis was used to examine the association between age, sport, and other predictors of injury with different anatomical locations.

RESULTS: Skiers were more likely than snowboarders to sustain a head injury (OR=1.6, 95% CI=1.2, 2.2), while snowboarders were more likely to sustain upper extremity injuries (OR=5.9, 95% CI=4.6, 7.6). Skiers age 0-6 suffered more head/neck/face injuries (24.2% compared to 14.46% and 14.86% respectively in age bins 7-14 and 15-17). Skiers age 0-6 suffered more fractures (48.2% compared to 28.4% and 23.8% for ages 7-14 and 15-17, where strains/sprains were leading diagnoses).

CONCLUSIONS: Young skiers experienced more fractures, with head/neck/face injuries and collision-related trauma being more likely in skiers age 0-6. Skiing was associated with lower extremity injuries and snowboarding was associated with upper extremity injuries. Taken together, these data support age as a determinant of injury patterns among youth skiers and snowboarders.

Interaction of Injury Severity on ICU Course and Outcomes for Traumatically Injured Patients: A Retrospective Study

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BACKGROUND: Hospitals are constantly inundated with patients presenting with a variety of injuries and being able to predict patient course can help hospitals tailor care to these patients. The purpose of this study is to investigate the interaction of injury severity on ICU course and outcomes for injured patients.

METHODS: This study reviewed charts of patients admitted to the ICU at Piedmont Athens Regional (PAR) from January 2019 to December 2020. Patients were divided into two groups by injury severity: non-severely injured patients and severely injured patients. Injury severity was defined using the Injury Severity Scale (ISS) score, with an ISS score of ≤ 14 representing non-severely injured and an ISS score of >14 representing severely injured. To explore the relationship between injury severity and ICU course, data from PAR such as demographics, injury characteristics and severity scores, ICU stay, mortality, and complications were assessed using Chi-square analysis or t-test.

RESULTS: Severely injured patients were found to have significantly longer hospital stays (12.8 vs 6.2 days), ICU stays (6.4 vs 3.3 days), and days on ventilation (4.3 vs 1.1 days); and although injury severity did not impact physical therapy order, severely injured patients had significantly more days before being mobilized (5.8 vs 4.0 days). Further, severely injured patients were much more likely to expire in the ICU, comprising 85% of the deaths observed in the study.

Significant relationships were demonstrated between injury severity and age, complication of deep vein thrombosis, and Glasgow Coma Scale (GCS) score. Chief complaint, gender, ethnicity, race, and BMI were also evaluated but showed no significant relationship to injury severity.

CONCLUSION: Patients with an ISS score >14 and lower GCS scores are likely to have longer stays and a poorer prognosis in the ICU. These findings can help predict ICU course for incoming patients and enable hospitals to plan therapies accordingly.

Investigating the Efficacy of Stereotactic Radiosurgery in the Management of Renal Cell Carcinoma Brain Metastases

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BACKGROUND: Renal Cell Carcinoma (RCC) is the most common form of kidney cancer. It is highly aggressive, and approximately 10-15% of RCC patients will develop brain metastases (BM). With the advent of modern linear accelerators and developments in radiotherapy strategies, the intracranial disease is well-managed with stereotactic radiosurgery (SRS), boasting a 1-year local control (LC) rate of approximately 90%.

METHODS: An institutional review board-approved database of 104 patients with confirmed RCC BMs that were treated at Memorial Sloan Kettering (MSK) was created. Demographic information, histologic subtype, historic and current lines of systemic therapy, and clinical presentation at time of confirmed BM were collected. Additionally, initial radiographic lesion data, SRS parameters, and follow-up clinical and MRI data were gathered. MSK's integrated mutation profiling of actionable cancer targets (MSK-IMPACT) provided genomic sequencing oncopanels to be correlated with clinical, survival, radiographic lesion data. We plan to generate Kaplan-Meier survival curves on the basis of known prognostic factors (number of metastases, SRS dosage, systemic therapies), as well as explore new correlative factors. We also plan to analyze rates of LC and radionecrosis, and correlate these with genomic sequencing and systemic therapies.

RESULTS: We are awaiting the statistical analysis of the data collected in the study. We expect to find confirmatory characteristic results of previous studies, as well as new genomic and lesion-specific response data.

CONCLUSION: While we are awaiting the results of the project, we are optimistic as to the power of this study given the large cohort size and the wide breadth of clinical, radiographic, and genomic data collected for each patient. This study will help identify an optimal management strategy as well as patient-level genomic correlates of local control and progression free survival that may both be used when treating mRCC BMs.

Longitudinal Cost Analysis of Heart Failure Care during the Covid-19 Pandemic

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BACKGROUND: The SARS-CoV-2 pandemic has brought on many new challenges in the diagnosis, management, and treatment of patients with heart failure. Factors include social isolation induced changes in dietary and lifestyle behaviors that may increase cardiovascular risk, and an inability of caregiver teams to see and manage patients. By evaluating the pandemic-related changes in cost and clinical outcomes of HF patients at Piedmont Athens Regional (PAR), the existing literature on pandemic response can be enhanced with recommendations for heart failure care before, during, and after an outbreak occurs.

METHODS: A pre-pandemic cohort of 100 patients with a primary final coded diagnosis of HF from July 2019 to January 2020 was randomly selected as well as a pandemic cohort of 100 patients from July 2020 to January 2021. An interrupted time series analysis was performed between the two cohorts comparing costs and clinical outcomes. Costs were estimated using length of stay. Clinical outcomes were measured using 30-day rehospitalization rate.

RESULTS: This study revealed an average length of stay (cost) of 4.42 days (\$30,816) and 3.72 days (\$25,936) in the pre-pandemic and pandemic period, respectively. The average rehospitalization rate was 0.28 and 0.34 in the pre-pandemic and pandemic period, respectively. Additionally, the total number of patients hospitalized with a primary final code diagnosis of HF in the pre-pandemic period was 785, which decreased to 651 in the pandemic period. Analysis showed no statistically significant results between cohorts.

CONCLUSION: This study contributes to the evolving literature on the effect of the SARS-CoV-2 pandemic on HF patients. The results show no significant difference between the cost or clinical outcomes between cohorts of HF patients in pre and post pandemic time. Notably, this study is centered around care provided by PAR and may not be applicable to the generalized HF population.

Prevalence and Treatment Trends of Clinician-Diagnosed Charcot Neuroarthropathy in the United States

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BACKGROUND: Charcot neuroarthropathy (CN) is a rare, progressive, and destructive joint condition, which occurs in the setting of neuropathy. Lack of sensory innervation and vigorous inflammatory responses lead to bony destruction and joint subluxation during routine weight-bearing activities. Currently, there are no true population-based epidemiological studies reported on CN. The purpose of the study will be to describe the prevalence and treatment trends of patients with clinician-diagnosed CN in the United States.

METHODS: In the retrospective study, the Truven Health MarketScan[®] Commercial Claims and Medicare Supplemental database will be searched via International Classification of Diseases, 10th Revision, Clinical Modification (ICD-10-CM) and Current Procedure Terminology, 4th edition codes (CPT-4) to identify patients who were treated for CN between January 1, 2009 through December 31, 2018. Prevalence parameters will include a one-year period of interest and lookback of all observable time with observable person-time designated as enrollment in the claims database. Calculations will include the numerator as a diagnosis anytime in the period of interest or lookback time and the denominator as patients who contribute more than two observable person-years. Patient demographics, comorbidities, treatments, and complications will be collected for each patient. Statistical analysis will include descriptive statistics.

RESULTS AND DISCUSSION: Data collection remains ongoing. Based on the available literature, prevalence estimations are predicted to be low, while surgical treatments are anticipated to be common management of patients with clinician-diagnosed CN in the United States.

Percutaneous Image-Guided Cryoablation for the Treatment of Refractory Pudendal Neuralgia: A Follow-Up Study

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BACKGROUND: Pudendal neuralgia, or pudendal nerve entrapment syndrome, is a debilitating condition in which the pudendal nerve (S2-S4) becomes damaged via mechanical compression, accidental injury, or iatrogenic trauma. Pain reduction via CT-guided cryoablation of the pudendal nerve has proven to be efficacious; this study seeks to obviate the gap in long-term pain management for this syndrome by examining patient satisfaction several years post-procedure.

METHODS: A cohort of 150 patients from 2014 to 2017 previously underwent CT-guided cryoablation of their pudendal nerves (unilaterally or bilaterally) at Emory Healthcare hospitals. Initial assessment of pain scores, remaining symptoms, and patient satisfaction occurred via a HIPAA-compliant online survey in 2017. Follow-up telehealth visits via video conferencing will occur in 2021, in which patients will be assessed on similar parameters.

RESULTS: Individuals that are lost to follow-up or deceased will be excluded from study results. Given prior studies on the efficacy of pain reduction after pudendal cryoablation, it is theorized that patients will continue to report moderated pain even several years after the procedure due to its induction of Wallerian degeneration and neural remodeling.

CONCLUSION: CT-guided cryoablation is a promising interventional approach to pain management in pudendal neuralgia and other neuropathic pain syndromes. Long-term continuity of pain mitigation from this procedure is still poorly understood; telehealth visits with patients several years post-op that gauge pain scores and satisfaction will serve as an indicator for viability of pudendal cryoablation.

High altitude as a Risk Factor for Venous Thromboembolism in Tibial Plateau Fractures

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BACKGROUND: Tibial plateau fractures require complex surgical intervention that is associated with an increased length of hospital stay, decreased mobility and heightened risk of venous thromboembolisms (VTEs). While studies have shown the rates and outcomes of VTEs following plateau fractures, none have looked at the effects of high altitude, a known factor that can result in more favorable conditions for developing VTEs in the postoperative setting. The purpose of this study was to investigate the relationship between tibial plateau fractures occurring at high altitudes and the development of postoperative VTEs.

METHODS: In this retrospective study, the Truven MarketScan® claims database was used to identify patients who underwent surgical fixation of unicondylar and bicondylar tibial plateau fractures using Current Procedural Terminology (CPT) codes. CPT codes were further used to exclude other injuries that can coincide with these high energy traumas. Patient characteristics, including comorbidities and VTE prophylaxis, were collected. The zip codes of the surgical locations were collected to separate the patient groups into high altitude (>4000 feet) or low altitude (<100 feet) cohorts. Chi-squared and multivariate regression was performed to investigate the odds ratios for developing VTEs postoperatively.

RESULTS: In total, 7,832 patients were included for analysis. At 30 days postoperatively, there was no statistical difference between the high-altitude and low-altitude groups in developing VTEs. At 90 days postoperatively, high altitudes were associated with increased odds of developing DVT (OR 1.21, $p = 0.043$) and PE (OR 1.27, $p = 0.037$).

CONCLUSIONS: Surgical fixation of both unicondylar and bicondylar tibial plateau fractures are associated with an increased risk of developing VTEs at high altitudes (>4000 ft) at 90 days postoperatively. Further studies are necessary to explore a causal relationship between altitude and VTE occurrence.

Characteristics of Traumatically Injured ICU Patients That Distinguish Between Those Who Receive a Physical Therapy Consultation and Those Who Do Not: A Retrospective Study

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BACKGROUND: Patients admitted to the intensive care unit (ICU) following traumatic injury are at risk for complications to interventional care and prolonged immobility. Marked reduction in trauma and mortality has been shown after implementation of ICU mobility protocol including physical therapy (PT). The purpose of this study is to determine the level of use of PT consultations in the ICU setting and if there is an association with characteristics of the patient population.

METHODS: Retrospective, chart review of patients admitted to Piedmont Athens Regional (PAR) from January 2019 to December 2020. Patients were divided into two groups: receiving PT and not receiving PT. De-identified data (patient demographics, injury characteristics, severity scores, comorbidities, complications, and ICU durations) was assessed using Chi-squared analysis or t-test (JMP Pro 16 Software). To determine the patient characteristics most predictive of whether a patient received PT or not, logistic regression analysis was used.

RESULTS: ICU and total hospital lengths of stay were longer for patients who received PT. Patients who received PT spent, on average, 1 more day in the ICU and 4 more days in the hospital. These characteristics were significant predictors of receiving PT: age, GCS and RTS severity scores. There were significant relationships between receiving PT and these characteristics: age, chief complaint, GCS and ISS severity scores. Ethnicity, race, and gender were not significant predictors.

CONCLUSIONS: Older patients, struck by an object or person as opposed to a fall or motor vehicle collision, with a higher GCS and RTS severity score were more likely to receive PT services. These findings have helped identify predictors and characteristics of patients receiving a PT consult in an ICU setting and have the potential to be applied when developing novel rehabilitation techniques following traumatic orthopedic injury in both civilian and military populations.

Sleep Deficiency and Chronic Pain Outcomes in Youth Receiving Psychological Treatment for Chronic Pain: Does Affect and Executive Functioning Mediate Relationship?

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BACKGROUND: Over 50% of youth who experience chronic pain also report comorbid sleep deficiency. Evidence suggests that sleep impacts processes critical for learning and implementing pain self-management skills (e.g., affect, higher-order executive functioning), but this has not been examined in youth with chronic pain. The objective of this study was to characterize the relationship between adolescent sleep deficiency, affect and executive functioning, and treatment outcomes.

METHODS: This single-arm trial included 85 youth with chronic pain, aged 12 to 17, and their caregivers. Participants were given access to an 8-week internet-based program (WebMAP) to learn pain self-management skills. They completed measures of pain-related outcomes, insomnia symptoms and sleep quality, and wore an Actiwatch to assess sleep patterns. Assessments were completed at baseline, 4 weeks (mid-treatment), 10-weeks (post-treatment), and 3-month follow up.

RESULTS: Greater insomnia symptoms were significantly associated with greater pain-related disability ($r = .23, p < .05$), fatigue ($r = -.40, p < .05$), and anxiety symptoms ($r = -.24, p < .05$) at post-treatment. Greater wake time after sleep onset (WASO) was also associated with greater pain-related disability ($r = .32, p < .05$) at post-treatment. Longitudinal mediation analyses indicated that negative affect mediated the pathway between greater insomnia symptoms and lower treatment response on pain-related disability, fatigue, and anxiety. Poorer executive functioning mediated the pathway between WASO and lower treatment response on pain-related disability.

CONCLUSION: Baseline sleep deficiency was associated with fewer improvements in pain-related outcomes that may be mediated by negative affect and executive function. Further research efforts will focus on determining whether interventions targeting insomnia symptoms and executive functioning could enhance the efficacy of pain self-management intervention for this population.

Predictors of Gross Total Resection for Atypical (WHO Grade II) Meningiomas

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BACKGROUND: Although meningiomas typically are benign (grade I) tumors, atypical (WHO grade II) are more aggressive and have higher recurrence rates. Atypical meningiomas have recurrence rates that range from 29%-52%.

The incidence of atypical meningiomas has increased, mainly due to shifts in the diagnostic criteria established by the 2007 WHO tumor classification. Currently, the variability of atypical meningiomas is met with unpredictability in terms of prognosis, treatment, and management such as follow up intervals.

METHODS: This study is a retrospective study of 271 adult (18 years or older) patients undergoing craniotomy for atypical meningioma resection at Emory University Hospital, Emory University Hospital Midtown, and Grady Memorial Hospital between January 1998 and December 2019.

Demographic, surgical, imaging, tumor classification data, and resection data was collected from the CTORE (CNS Tumor Outcome Registry at Emory) database through primary review of patient charts, procedure notes, and imaging in order to identify preoperative predictors of gross total resection (GTR).

RESULTS/DISCUSSION: Results are pending statistical analysis. We anticipate identifying predictors of GTR for atypical meningiomas and optimizing management throughout the disease course (both at presentation and any recurrence) will help contribute to understanding the variability of the tumor and improve patient outcomes.

Use of Interstitial Bleomycin for Treatment of High-Flow Digital Arteriovenous Malformation with Overgrowth

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BACKGROUND: Embolization of large arteriovenous malformation (AVM) is a difficult intervention due to recurrence rate and risk of pulmonary complication. AVMs involve recruitment of collateral vessels and present with pain, ulceration, and/or arterial steal symptoms. Intralesional bleomycin injection has been shown to be capable of treating high-flow AVMs with significant results and low complications. Here we tested the efficacy of bleomycin in treating terminal high-flow AVMs.

METHODS: Ultrasound guided access of the right femoral artery was obtained to perform catheterized angiography of the left forearm. Initial angiography revealed dual arterial blood supply to the left fourth digit with opacification of the soft-tissue and early washout of contrast consistent with high flow AVM. Under ultrasound guidance, a 22 gauge needle was used to distribute aliquots of reconstituted bleomycin (15u in 2.5 ml saline) throughout the soft tissue surrounding the vascular structures of the digit. This procedure was undertaken 3 times, 4-6 weeks apart.

RESULTS: Through six separate embolizations, documented by three separate diagnostic angiographies the patient found further functional and cosmetic relief. Pathologic symptoms of the skin showed marked reduction post-treatment. Additionally, the soft tissue overgrowth had involuted to near symmetric size with the right hand. Although function was initially limited by pain with flexion, improvement was seen after final procedure.

CONCLUSION: Based on the literature and the evidence that intralesional interstitial bleomycin injection was a viable treatment for high-flow AVMs, we postulated that terminal branch high-flow AVMs could be treated via this method. Following ultrasound guided injection of bleomycin in three separate treatment sessions 4-6 weeks apart, we demonstrated that intralesional interstitial bleomycin injection is a safe and effective intervention in addressing high-flow AVMs in terminal branch tissues.

Radiation Oncology Resident and Faculty Evaluations: Current State and Consensus

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BACKGROUND: Radiation Oncology (RO) programs incorporate the six ACGME Core Competencies to varying degrees in their resident evaluations. Resident evaluation forms from 13 RO residency programs were analyzed to determine which competencies are most or least represented. RO faculty evaluations were also analyzed.

METHODS: Resident evaluation form questions (FREs) were categorized based on the ACGME core competency assessed. Faculty evaluation form questions (RFEs) were sorted into 9 categories: teaching skills, patient care, personal qualities, result of rotations, knowledge, mentoring skills, learning climate, research, and communication. ANOVA was used for statistical analysis of differences between institutions or categories.

RESULTS: Across all institutions, FREs were based on the Six Core Competencies and averaged 19 questions (SD 11, range 5-47). Professionalism (PR) was most represented (mean 3.7, SD 2.9) followed by Patient Care (PC) (mean 3.3, SD 2.8). Systems Based Practice (SBP) and Practice Based Learning and Improvement (PBLI) were least represented. There was a significant difference in the mean number of questions used across institutions ($F=6.6$, $p<0.01$). RFEs varied in length, formatting, and content across institutions ($F=7.8$, $p<0.01$). Teaching and personal qualities were evaluated the most with 9/11 institutions posing ≥ 1 question about these factors. The mean \pm SD for RFE questions relating to teaching and personal qualities were 3.9 ± 2.0 and 4.3 ± 3.1 respectively.

CONCLUSION: SBP and PBLI evaluate a resident's ability to function as member of a multidisciplinary team and their dedication to life-long learning. The importance of these competencies prompts us to further investigate the outcomes of their limited representation in FRE.

Venous thrombo-embolic events in spine trauma patients: are there modifiable risk factors?

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BACKGROUND: Venous thromboembolism (VTE) is a serious disease with multiple complications including PE and DVT. Many hospitalized patients receive VTE anticoagulant prophylaxis. There is a lack of consensus regarding anticoagulant regimens, especially in patients at risk of hemorrhage, such as spinal epidural hematoma (SEH). Patients receiving VTE prophylaxis who develop SEH may be in critical condition with high risk of paralysis. A better understanding of VTE and VTE therapies are essential for balancing the risk of VTE and hemorrhage.

METHODS: Data was obtained from 68 trauma patients admitted to Grady Memorial Hospital for spine fracture from 2016 to 2019 who each subsequently suffered a VTE. Data was collected concerning patient demographics; mechanism and location of the spine injury; presence of spinal cord injury; presence of surgical intervention; use of VTE prophylaxis; time of VTE diagnosis; use of VTE treatment. Statistical analysis was performed to discover how the results might be applied clinically.

RESULTS: Of the 68 patients, 76% were male, and 24% were female. Age ranged 69 years (17 to 86), with an average of 45.1. 26% of patients suffered a spinal cord injury. 32% underwent spine surgery. 84% received VTE prophylaxis. The mean time from admission to VTE prophylaxis administration was 2.5 days (SD = 1.86). The mean time from admission to VTE diagnosis was 9.71 days (SD = 5.25). The mean time from VTE diagnosis to treatment was 0.96 days (SD = 2).

CONCLUSION: Physicians should have heightened awareness for the possibility of VTE in hospitalized spine patients between 4 and 15 days after admission as 68% of patients (1 SD from mean of 9.71 days) suffered a VTE between 4.46 and 14.96 days after admission. There is a need for further research into why VTE prophylaxis took an average of 2.5 days after admission to be administered. Given how quickly VTE can occur after admission, the decision whether to administer VTE prophylaxis should be made quickly.

Environmental scan work examining the role of peer navigators in supporting opioid use disorder patients and individuals experiencing nonfatal opioid overdose

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BACKGROUND: In the last decade, opioid overdose (OD) deaths have increased annually and present an urgent medical and public health crisis. Peer navigators, individuals with lived experiences of substance use, are increasingly being recognized as an effective intervention and/or resource in supporting individuals with opioid use disorder (OUD), especially those experiencing nonfatal OD.

METHODS: An environmental scan was utilized to investigate the current evidence, best practices, and prevalence of peer navigators in the management of OUD patients, particularly those experiencing a nonfatal opioid OD. This study focused on peer navigators in the emergency department and in-patient setting.

RESULTS: Findings from the environmental scan suggest that peer navigators play unique roles in supporting patients. They can provide OD education, reduce stigma, foster engagement and motivation, offer counseling, and connect participants to community resources including treatment. However, the current literature demonstrates that more high-quality studies, particularly randomized control studies, are needed.

CONCLUSION: Peer navigator interventions appear to be a well-accepted and effective response to OUD patients and nonfatal opioid overdoses, especially in the emergency department setting. Studies, such as the randomized control trial of Relay (NYC's nonfatal overdose response program), will fill a pivotal gap and demonstrate whether peer navigators could be a strong evidence-based response to the opioid OD crisis.

Serum and glucocorticoid-inducible kinase-1 (SGK-1) drives Interleukin- 6 (IL-6) expression in aortic vascular smooth muscle cells (VSMCs)

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BACKGROUND: Serum-glucocorticoid inducible kinase-1 (SGK-1) can be mechanosensitive and is implicated in vascular remodeling. Inflammatory cell infiltration is a major contributor to matrix degeneration, the link is unclear. We hypothesize SGK-1 activity is stimulated by elevated tension to alter expression of the pro-inflammatory cytokine Interleukin-6 (IL-6).

METHODS: Aortic VSMCs harvested from C57Bl/6 mice (wild-type, WT) and subjected to 3 hours (Hr) of 12% biaxial cyclic stretch +/- EMD638683 (EMD) (specific SGK-1 inhibitor; 10 μ M), +/- SGK-1 siRNA (2 μ g), and +/- neg siRNA (2 μ g). Aortic VSMCs harvested from floxSGK-1 mice wherein the transgene is expressed ubiquitously. Transfection with Cre-Adenovirus performed in a subset of VSMC cultures to knockout SGK-1 gene. Untreated FloxSGK-1 and TransFloxSGK-1 VSMCS subjected to 3-hr stretch +/- EMD. QPCR assessed IL-6 expression. Statistical analysis included two-way ANOVA across treatment groups, significance at $p < 0.05$.

RESULTS: WT VSMCs with 3hr Stretch had significantly increased IL-6 expression (2.1 +/- 0.4fold vs Static; $p < 0.05$) and inhibited by EMD ($p < 0.05$ vs Stretch). SGK-1 siRNA had no effect on Static cells but prevented IL-6 expression in Stretch. WT VSMCs were treated with siRNA +EMD, no additional effect observed. Stretched cells treated with neg siRNA again significantly increased IL-6 expression (2.1 +/- 0.2-fold vs Static; $p < 0.05$) which was effectively inhibited by treatment with EMD ($p < 0.05$ vs Stretch+neg siRNA). FloxSGK-1 VSMCs +Stretch, IL-6 expression was significantly elevated (2.1+0.2-fold vs Static, $p < 0.05$) this effect was abrogated in TransFloxSGK-1 cells. Data suggest a biomechanical link between aortic VSMC mechanotransduction and IL-6 production via SGK-1 activation.

CONCLUSIONS: Mechanical stretch can activate SGK-1 to increase IL-6 production, suggesting SGK-1 may be a novel target for medical management of vascular inflammatory pathologies like, atherosclerosis, hypertension, or aortic aneurysms.

Healthcare Utilization of Pediatric Patients with Feeding Difficulties after Congenital Heart Surgery

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BACKGROUND: The incidence of post-operative feeding difficulties (FD) following congenital heart surgery (CHS) in the pediatric population indicates a significant health burden. However, there is a limited availability of associated data concerning their healthcare utilization and economic impact.

METHODS: We conducted a population level retrospective cohort study of the IBM MarketScan® Commercial Claims and Encounter Database (2009-2018), a nationwide claims database. Diagnoses and procedures were identified from inpatient and outpatient claims from privately insured patients using the *International Classification of Diseases* (ICD)-9, ICD-10, and Current Procedural Terminology-4 codes. The cohort was selected from patients aged 0-18 years who underwent congenital heart surgery with 1 year of follow-up within the enrollment period. Children with FD were identified by presence of enteral feeding tube or diagnosis of dysphagia or feeding-related difficulties. Data collected include patient demographics, primary procedure group, STAT mortality categories, length of stay, readmission rates, specialist visit rates, and complications such as necrotizing enterocolitis, alternative feeding tubes, pneumonia, etc.

RESULTS: We identified 10,849 children with CHS, of which 3,347 (30.85%) presented with feeding difficulties. Demographic variables significantly associated with FD include age at first surgery ($p < 0.05$). Significant outcomes associated with FD include hospital length of stay, inpatient readmissions, ED visits, outpatient visits (SLP, Dietitian, ENT, GI), swallow studies, and feeding-related or respiratory complications ($p < 0.05$). Additional statistical analysis, including generalized linear regression, is underway to identify variables that increased the risk of developing FD after CHS.

CONCLUSION: : Interventions and protocols should be implemented to reduce the utilization of healthcare and economic resources of feeding difficulties after congenital heart surgery.

Impact of the COVID-19 Pandemic on the Characteristics of Traumatically Injured Patients Admitted to the ICU: A Retrospective Analysis

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BACKGROUND: The COVID-19 pandemic has led to various changes affecting both standard of care in the Intensive Care Unit (ICU) as well as a shift in patient population seeking care. The purpose of this study is to determine the effects of the COVID-19 pandemic on trauma admission population and standard of care.

METHODS: A retrospective chart review of trauma patients admitted to the ICU at Piedmont Athens Regional (PAR) between January 2019 and December 2020 was performed. Patients were divided into two groups: those admitted before March 1, 2020 (pre-COVID) and after (post-COVID). Chi-squared and t-test analysis were used to compare factors including patient characteristics (demographics, comorbidities), injury type (blunt vs penetrating, mechanism of injury), injury severity (GCS, ISS, NISS, TRISS, RTS), and hospital course (ICU/hospital length of stay (LOS), ventilator days, physical therapy (PT) orders, time to mobilization (TTM), complications, and rate of mortality).

RESULTS: 598 trauma patients were admitted (pre-COVID=352, post-COVID=246). The post-COVID group saw a significant increase in injury severity determined by GCS ($P=0.0467$) and ISS ($P=0.00050$). Total amount of comorbidities in patients admitted was higher post-COVID ($P<0.0001$). Post-COVID group also spent 4 more days on ventilator ($P<0.0001$), had more total complications during their stay ($P<0.0001$), and increased mortality ($P=0.0047$). Gender, ethnicity, age, injury type, MOI, PT orders, and TTM were also evaluated but demonstrated no significant relationship to pre/post-COVID admission status.

CONCLUSION: Post-COVID admissions tended to have greater injury severity and a greater number of total comorbidities. During their hospital course, post-COVID admissions saw an increase in ventilator days, complications, and mortality that could be attributed to the increase in injury severity in the post-COVID group. However, PT mobilization orders and TTM remained relatively unchanged among the groups.

Head CTs in Adolescent Blunt Trauma Patients: Are They Being Overutilized?

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BACKGROUND: Trauma is the leading cause of death among adolescents, accounting for approximately 40% of all causes of mortality in this age group. Computed tomography (CT) is now considered the optimal imaging modality for assessing head trauma and is the most used imaging modality in the emergency department, its popularity owing to its high sensitivity and fast acquisition. There have been efforts to guide clinical decision-making when ordering head CTs, including guidelines by the Pediatric Emergency Care Applied Research Network (PECARN). Although such guidelines exist, head CTs are still overutilized. Current rates of head CT use at our institution are unknown and over-utilization may be occurring.

METHODS: Patients aged 11-21 evaluated for blunt trauma who underwent head CT scans from 2018-2019 at our urban level 1 adult trauma center were included in this study (N=124). Patient demographics, head CT data, and PECARN head CT guideline criteria were collected via electronic medical records and analyzed through retrospective chart review. Analysis with chi-square test was conducted in order to examine head CT overutilization.

RESULTS: Of the 124 patients, 90 required a head CT according to PECARN Criteria. Of this 90, 52 patients had their head CT results come back as negative. The other 38 had positive head CT results. 34 patients did not meet PECARN guidelines to receive a head CT and yet still had head CTs completed. Out of these 34 patients, none had a positive head CT. Chi square analysis yielded p value < .001.

CONCLUSION: The preliminary data suggest that the PECARN guidelines are dependable, with the patients that have positive findings on their head CT meeting the PECARN criteria to have a head CT. The patients that do not need head CTs according to the PECARN guidelines do not have any positive findings, thus supporting the reliability of the guidelines. It is likely there are similar trends at other institutions, giving the opportunity for improvements in head CT overutilization rates. Implementation and reinforcement of the PECARN guidelines should occur when ordering a head CT in the adolescent trauma patient population.

The Effect of the Severity of Preop Back Pain on Patient Reported Outcomes, Recovery Ratios, and Patient Satisfaction Following MIS-TLIF

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BACKGROUND: The aim of the study was to assess PROMs, recovery, and patient satisfaction in pts. undergoing MIS TLIF after stratifying pts. based on preop back pain.

OBJECTIVE: To compare PROs, RRs, and satisfaction following MIS TLIF in pts. stratified by preop back pain.

METHODS: A prospectively maintained surgical database was retrospectively reviewed for lumbar procedures. PROMs included PROMIS Physical Function, VAS for back/leg pain, ODI, SF-12M, and SF-12P with values collected at the preop to 2y follow-up time point. Satisfaction scores were collected for VAS back and leg pain and ODI at postop time points. dPROM scores were calculated as the difference between preop and each Postop value. A RR was defined as the proportion of Postop improvement to total potential improvement and was calculated for all PROMs at all timepoints.

RESULTS: A total of 740 pts. were eligible for this study with 359 in the VAS back Preop \leq 7 cohort and 381 in the VAS back Preop $>$ 7 cohort. The following significant difference in postop mean PROMs were demonstrated: PROMIS-PF at 2ys, VAS back at all Postop time points, SF-12 PCS at 12w and 1y, SF-12 MCS at 6w and 12w, VAS leg at 6w, 12w, 6m, and 2ys and ODI at all Postop timepoints. VAS back at all Postop time points and ODI at 6w, 12w, 6m, and 1y. Pts. in the VAS leg Preop $>$ 7 cohort demonstrated greater proportion achieving MCID for VAS back at all time points, ODI at 6w and 12w, PROMIS PF at 6w, and SF-12 MCS at 6w and 6m. Recovery ratio for VAS back preop $>$ 7 was significantly greater for VAS back at 6- months, and VAS leg at 6 months and 2ys. Postop satisfaction was greater in the VAS back preop \leq 7 cohort for the following PROMs at the following timepoints: VAS back at 12w, VAS leg at 12w and ODI at 6w and 12w ($p < 0.046$, all) (Table 5).

CONCLUSIONS: Patients with greater preop back pain demonstrated worse postop PROM scores for most PROMs and worse satisfaction for disability, back and leg pain.

Novel Pelvic and Retroperitoneal Anatomical Model for OBGYN Resident Education

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PURPOSE: To create an anatomically accurate benchtop, low-cost model to teach Obstetrics and Gynecology (OBGYN) residents pelvic and retroperitoneal anatomy.

BACKGROUND: Medical simulation is a useful tool to help healthcare providers practice procedures and identify anatomy. Our goal was to create a low-cost, anatomically accurate pelvic model with anatomical structures pertinent to gynecologic surgery.

METHODS: The custom pelvic anatomy model was developed as a clay moquette using anatomy textbooks for reference and included commonly encountered anatomical features during gynecologic surgery. Volumetric visualization of a pelvic CT was used to confirm anatomy. The final model was created using 3D design software and 3D printed without didactic color. The spaces, vessels, and nerves were tagged on the model for testing with residents. The model was used to teach and help visualize pelvic and retroperitoneal anatomy for OBGYN residents from PGY1 to PGY4. A survey was given to 13 OBGYN residents before and after anatomy didactic.

RESULTS: All residents (n=13) from PGY1 to PGY4 had zero to limited procedural experience identifying retroperitoneal anatomy as a primary surgeon. Residents' ability to identify pelvic anatomy on the model increased significantly post-lecture ($p < 0.001$). Additionally, the resident's confidence with retroperitoneal pelvic anatomy increased ($p = 0.005$). Residents strongly agreed the model was accurate for intraperitoneal (mean 4.769/5) and retroperitoneal anatomy (mean 4.769/5) and strongly agreed practice with the model could improve technique (mean 4.7/5).

DISCUSSION: The novel model shows promise in teaching residents to identify pelvic and retroperitoneal anatomy without the cues of didactic color.

Single Level MIS TLIF vs ALIF at L5/S1: A Comparison of Patient Reported Outcomes and Recovery Ratios

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BACKGROUND: 2 techniques utilized for lumbar arthrodesis are MIS-TLIF and ALIF. Prior studies comparing techniques focused on complications with outcome analysis not stratified by lumbar level. The aim of the present study was to assess PROMs and postop recovery in pts undergoing MIS-TLIF and ALIF at L5/S1.

OBJECTIVE: Compare MIS-TLIF and ALIF at L5/S1 using PROMs and RRs

METHODS: Retrospective reviews of procedures performed between November 2005 and March 2021 were conducted with a prospectively maintained surgical database. Patient demographics, perioperative characteristics, and PROMs were collected at the preop to 2y time points. Pts were in 2 cohorts, MIS-TLIF or ALIF. All group differences were calculated via statistical analysis.

RESULTS: Eligible study cohort included 462 pts, 346 pts in TLIF cohort and 116 pts in ALIF cohort. Mean op time and EBL was significantly greater for pts in the ALIF cohort. Postop narcotic consumption on day 1 was significantly greater for pts in MIS-TLIF cohort. Preop PROM scores did not significantly differ between cohorts, except for SF-12 MCS and ODI. Significant difference in mean PROMs were demonstrated: SF-12 PCS at 6w and 12w, SF-12 MHS at 6m, and ODI at 6w and 12w, with ALIF cohort having significantly improved SF-12 PCS, MCS, and ODI compared to MIS-TLIF. SF-12 PCS at 6 weeks ALIF cohort demonstrated significantly improved recovery ratio for VAS back at 1 year.

CONCLUSION: For pts undergoing single level fusion at L5/S1, those who underwent ALIF demonstrated significantly greater operative times and EBL, significantly reduced postop narcotic consumption on day 0 and significantly improved SF-12 PCS at 6w and 12w, SF-12 MHS at 6m, and ODI at 6w and 12-weeks versus pts undergoing MIS-TLIF. While 2y PROMs and majority of RRs did not significantly differ between procedures, our findings may suggest improved midterm follow-up physical function, disability, and mental health scores for ALIF pts.

Enhanced Recovery After Surgery Pathway in DIEP Autologous Breast Reconstructions Reduces Likelihood of Post-Operative Surgical Complications and Patient Reported Pain: The Compliancy Plague

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BACKGROUND: The enhanced recovery after surgery (ERAS) multimodal approach continues to grab the attention of plastic surgeons, making compliancy in practice an important topic. Studies on ERAS pathways for autologous reconstructions, specifically deep inferior epigastric perforator (DIEP) flaps show ERAS reduces LOS and opioid use – but one must be using the pathway in its entirety (or most of) to reach these desired results. We were curious of the compliancy rate of the ERAS pathway at Johns Hopkins Hospital and whether rate of compliancy results in a difference of patient outcomes post-operatively.

METHODS: A retrospective chart-review was completed on patients who received a DIEP flap reconstruction over a two-year period (2018 to 2019) at Johns Hopkins Hospital in Baltimore, MD. A total of 57 patients fit this criterion.

RESULTS: Age, race, and BMI were not significantly different across ERAS compliancy rate, presence of complications, or self-reported pain. The mean ERAS compliancy rate was 0.8029. A chi-squared test showed a significant relationship between ERAS compliancy rate and both self-reported pain score ($p = 0.004$) and presence of complication ($p = 0.005$).

CONCLUSION: Compliancy of the ERAS pathway has a substantial impact on its potential value. Increasing compliance through surgical team education, more user-friendly electronic healthcare record pathway coordination, and generating overall awareness of the benefits to all parties involved could result in continued improvement of patient success.

Testing Three Technology Options for Remote Administration of Drawing Tests for Dementia

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BACKGROUND: Virtual visits are being increasingly used for assessing older adults with possible dementia. Consequently, this pilot study examined older adults' ability to use a computer-based system to complete three drawing tasks common to most office-based dementia screening instruments.

METHODS: A convenience sample of 12 adult volunteers, at least 60 years old and without a diagnosis of dementia, was recruited from a local senior service center. During a virtual visit with a geriatrician, participants were asked to complete three drawing tasks: the modified TRAILS-B test, copying a cube, and clock drawing. Three methods were assessed: 1) drawing directly on the tablet screen ("stylus"), 2) drawing on a trackpad attached to the tablet ("trackpad") and 3) using paper and pencil ("paper"). The following domains were assessed: a) general comfort with technology, b) number of times in-person help was required, c) preferences regarding the drawing methods, and d) time taken to set up the tablet, start the video call, and complete each drawing task.

RESULTS: In-person assistance was required on average 2-3 times per participant to set up the call and drawing software. 67% of participants required in-person help for the trackpad as compared to 8% for the stylus and none for the paper. Participants' self-reported comfort with technology was not correlated with their comfort with the stylus or trackpad but was positively correlated with preference to have the testing done remotely rather than in person ($r^2=0.53$). The participants' preference for which method to use was divided between paper and stylus for the tasks assessed, and no participant preferred to use the trackpad.

CONCLUSION: Using a tablet-based computer system to complete the three drawing tasks during a virtual visit can be accomplished. However, an in-person helper is necessary for many patients to efficiently use the technology. Overall, participants preferred either the stylus or paper and pencil.

Utilization of Novel Pharmacologic Heart Failure Therapies in a Community Advanced Heart Failure Clinic

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BACKGROUND: Over the last decade, several novel pharmacologic therapies have been shown to decrease morbidity and mortality in patients with heart failure with preserved ejection fraction (HF_rEF): mineralocorticoid receptor antagonists (MRA), neprilysin inhibitors, and sodium-glucose transport protein 2 (SGLT-2) inhibitors. While these pharmaceuticals have been shown to improve outcomes, the extent of their utilization is unclear.

HYPOTHESIS: We hypothesized that patients attending an Advanced Heart Failure Clinic (HFC) would have increased utilization of novel pharmacologic therapies.

METHODS: Retrospective chart review of 610 patients with an Implantable Cardiac Defibrillator (ICD) who were enrolled in the Athens Piedmont Heart Institute device clinic April 2020 and June 2021. The prescription date and status of MRA, neprilysin inhibitors, and SGLT-2 inhibitors was determined for each patient. Prescription of each of these medications was plotted as a function of time and stratified by both HFC/non-HFC and type of cardiac device (e.g., ICD versus CRT-D). Cumulative annual prescription levels of each medication for patients in HFC were compared to non-HFC patients.

RESULTS: Cumulative prescription levels in HFC patients (68.47%) were significantly higher than in non-HFC patients (22.66%) for MRAs (odds ratio [OR]= 7.413; 95% confidence interval [CI] 5.060-10.76; $P < 0.0001$), neprilysin inhibitors (50.15% vs 7.81%) (OR=11.87; 95% CI 7.246-19.61; $P < 0.0001$), and SGLT-2 inhibitors (33.03% vs 4.30%) (OR=10.99; 95% CI 5.734-20.28; $P < 0.0001$). Prescription levels within HFC were significantly higher in ICD patients (78.64%) than in CRT-D patients (65.94%) for MRAs (OR=1.902; 95% CI 1.110-3.313; $P = 0.0196$), neprilysin inhibitors (59.22% vs 46.29%) (OR=1.685; 95% CI 1.040-2.709; $P = .0292$) and SGLT2 inhibitors (51.46% vs 26.64%) (OR=2.919; 95% CI 1.796-4.671; $P < 0.0001$).

CONCLUSIONS: When compared to non-HFC, patients enrolled in the HFC had improved utilization of novel heart failure therapies. There was improved utilization of neprilysin inhibitors and SGLT-2 inhibitors when CRT-D were compared to ICD patients.

Patterns of Care and Outcomes in Pediatric High Grade Glioma Patients Enrolled in the Pediatric Proton/Photon Consortium Registry

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BACKGROUND: Pediatric high-grade gliomas (pHGG) are aggressive cancers with dismal prognosis. Radiation is a standard treatment for pHGG. Proton therapy (PRT) is increasingly utilized for pediatric brain tumors to reduce radiation associated treatment effects, but there is a lack of data for PRT in pHGG. The purpose of this analysis is to report patterns of care and clinical outcomes for pHGG patients treated with PRT and registered in the Pediatric Proton/Photon Consortium Registry (PPCR).

METHODS: 55 pHGG participants treated with PRT were enrolled in the PPCR. 6 patients were excluded from analysis due to incomplete data. Progression free (PFS) and overall survival (OS) rates were calculated according to the Kaplan-Meier method. Univariate and multivariate analyses were performed using Firth's penalized ML estimation.

RESULTS: Among 49 patients, the median age was 12. 43 patients were newly diagnosed and 6 patients were treated at relapse after prior RT. 37 patients were histologic grade IV, 10 grade III and 8 not specified. Resection was gross-total in 24, near-total in 4, or sub-total/biopsy in 17. 39 patients received chemotherapy. The median RT dose was 57.6 Gy. Median follow-up was 3.14 years (95% CI 1.62-3.97). At 3 years, PFS was 35.5% (95% CI 20.8-50.6%) and OS was 55.6% (95% CI 38-70%). Median (95% CI) PFS and OS are 1.6 (1.2-3.1) and 3.6 (1.6-NA) years. High radiation dose was significantly associated with greater OS on univariate analysis ((HR 0.95, 95% CI 0.93-0.99, p value = 0.006).

CONCLUSION: These are the first published data with PRT for pHGG. Clinical outcomes are comparable to historical data with photon therapy. Additional analysis of treatment associated toxicity and patient quality-of-life are warranted.

A closer look at emotional processing during dreaming vs. wake

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BACKGROUND: Research suggests that there is a connection between emotional processing in dreaming and in wake. In this study, we were interested in exploring this phenomenon further by performing a secondary analysis on data available to us from a past study. In addition, a literature review brought two prominent dream theories to our attention which we incorporated into our analysis. The threat simulation theory (TST) says that simulation of threatening events during dreaming prepare us for threatening events during wakefulness while the continuity hypothesis of dreaming is more general in its approach and says that dreams are continuous with waking life.

METHODS: Data used was obtained from large study in which one hundred and seventy-eight individuals (81 males, 97 females, age = 45 ± 13 (mean \pm SD), range 25–66) participated. Serial awakening data provided us with information about emotion during dreaming which we compared to emotion during wake with experience sampling data. Participants were divided into two groups: fear versus no fear in dreams. We compared brain activity between the two groups using fMRI data collected during an emotional anticipation task (EAT) involving electrical stimulation.

RESULTS: Overall, there is more positive emotion than negative emotion in both NREM and REM dreams and there are more dreams involving fear in REM than in NREM sleep. Emotion during dreaming correlates with emotion during wakefulness ($p < 0.05$). Using a nonparametric permutation test, no significant difference in activation was found during an EAT in any brain region-of-interest between groups.

CONCLUSION: Our analyses suggest that there is a positive correlation between emotion during dreaming versus wake and that fear experienced during dreaming does not affect responses to threatening events during wakefulness.

Investigation of Consensus Across Different Data-driven Functional and Structural Parcellations of the Striatum

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ABSTRACT: Understanding the delineations of the brain gives direct insight into how certain regions pertain to function. For example, the striatum is involved in the motor, motivational and executive function, and is strongly connected with the prefrontal cortex. A multitude of studies in recent years have used various methods to create parcellations of the striatum to define distinct subregions within the structure, but it is yet to be determined what level of consensus exists between these studies. By collecting data from multiple striatal parcellation studies, the aim of this study is to determine whether there is consistency among the different methods and whether the region itself is as distinctly partitioned as currently understood. Studies were chosen on the basis of them including the striatum or a portion of the striatum, and employed structural or functional imaging modalities registered to MNI space. We have sought to collect these parcellations to create a database (currently n=32). The overall aim of the work is to determine the level of agreement across different parcellations of the striatum, and the level of heterogeneity across studies. Looking to the future, studies can be conducted to look into whether existing regions may have a gradient pattern of functionality as compared to a more homogeneous action.

HoLEP Morcellation Optimization: Impact of Medication and Device Alteration

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BACKGROUND: Benign prostate hyperplasia (BPH) is one of the most common urologic pathologies, affecting millions of men worldwide. Holmium Enucleation of the Prostate (HoLEP) is an alternative to Transurethral Resection of the Prostate (TURP) that can be used as endoscopic treatment for even the largest of prostates. Studies have shown adoption of HoLEP is limited by its treatment time and learning curve. We hypothesized that the morcellation efficiency of HoLEP would be improved with the use of a novel suction container and in patients treated with a 5 α -reductase inhibitor (5ARI) to reduce treatment time.

METHODS: This is a prospective evaluation of HoLEP procedures beginning September 2020. Time measurements for morcellation were collected, including total time, active morcellation time, and engaged morcellator time, as well as prostate specimen weight. Morcellator Efficiency (ME) was calculated as engaged time divided by active morcellator time. ME was compared for patients treated with a 5ARI inhibitor for at least one month prior to surgery (N=4) compared with those who did not receive the medication (N=9). Starting June 2021, the suction canister on the morcellator was adapted to allow continuous suction without emptying the canister. Total morcellation time per gram specimen was compared between the new set up (N=7) and the previous set up (N=6).

RESULTS: The mean ME in the 5ARI group was 0.22, while that of the non-5ARI group was 0.17 (p=0.08). The mean morcellation time per gram for the new suction container was 8.4g/min, while that of the original suction container set up was 5.5g/min (p=0.10).

CONCLUSION: The data showed that ME is not significantly improved in patients taking a 5ARI. However, preliminary data suggests that ME can be improved in patients taking a 5ARI for at least one month before the procedure. The new suction container improved time per gram; however, more samples will be collected to determine the effectiveness of this change.

The Zoom Effect: A Google Trends Analysis

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BACKGROUND: In this study, we aim to delineate public interest in aesthetic procedures before and after the COVID-19 pandemic via Google Trends (GT). We hypothesize that as a result of the pandemic, there is an increase in the public interest in plastic surgery procedures, especially those of the head and neck.

METHODS: Trends in the US for given search terms and volumes were gathered via Google Trends between January 2015 to March 2021. The search volumes were normalized, and a bivariate regression analysis of panel data was then applied to the aggregate trendlines to determine if a statistically significant change in search volume occurred following the stay-at-home orders.

RESULTS: Blepharoplasty ($p < 0.000$), Botox ($p < 0.000$), brachioplasty ($p < 0.000$), breast implant removal ($p < 0.018$), breast reduction ($p < 0.000$), brow lift ($p < 0.000$), buccal fat removal ($p < 0.000$), hair transplantation ($p < 0.000$), lip augmentation ($p < 0.000$), mentoplasty ($p < 0.000$), otoplasty ($p < 0.000$), platysmaplasty ($p < 0.000$), rhinoplasty ($p < 0.000$), and thighplasty ($p < 0.000$) had statistically significant increases in search volume after February 2020. Chi-squared analysis demonstrated a statistically significant association (Chi-squared=4.812, $p = 0.028$) between increases in search volume and above the shoulder procedures.

CONCLUSIONS: Our findings demonstrate a statistically significant increase in public interest related to above the shoulder surgical procedures following the designated inflection point of February 2020 as compared to below the shoulder procedures. Moving forward, continued examination of the trends for specific procedures, as well as determining correlations with more accurate procedural data sets will provide increased insight into the consumer mindset as it relates to aesthetic surgery and what effect, if any, video conferencing may play on the public's interest in pursuing these procedures.

Dress to Impress: Public Perception of Plastic Surgeon Attire

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BACKGROUND: Physician attire has been shown to impact patients' perceptions of their provider with regards to professionalism, competency, and trustworthiness in other surgical subspecialties. However, there are no studies in the literature that have explored the impact that physician attire may have on patient perceptions in the field of plastic and reconstructive surgery. Our study aims to address this knowledge gap and obtain objective information regarding patients' preferences.

METHODS: A survey was distributed to adult, English-speaking participants in the United States using Amazon Mechanical Turk platform from February 2020 to December 2020. Participants were asked to evaluate 6 attires (scrubs, scrubs w/ white coat, formal attire, formal attire w/ white coat, casual, casual w/ white coat) in terms of professionalism, competency, and trustworthiness for male and female plastic surgeons during their first encounter in clinic using a 5-point Likert scale.

RESULTS: A total of 316 responses were obtained from participants in the United States, which consists of 43.4% men and 56.6% women. Mean age of participants was 53.2 years. The highest scores across all metrics were given to the group wearing formal attire and a white coat with average scores of 4.85, 4.71, 4.69, 4.73, 4.79, 4.72, respectively. The lowest scores across all metrics belonged to the casual attire group with scores of 3.36, 3.29, 3.31, 3.39, 3.29, 3.20, respectively. Patients preferred formal attires for young plastic surgeons ($p=0.039$). There was no statistically significant difference in terms of patients' preferences for the attire of male and female surgeons ($p>0.05$).

CONCLUSIONS: Our study suggests that physician attire impacts patients' perception of plastic and reconstructive surgeons with regards to their professionalism, competency, and trustworthiness. White coats continue to remain a powerful entity in clinical settings given that attires with white coats were consistently ranked higher.

Analyzing pediatric head movement during task-based functional MRI

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BACKGROUND: Functional magnetic resonance imaging (fMRI) data can be particularly susceptible to noise from head motion in pediatric groups. Despite the abundance of methods to reduce head motion in pediatric populations, there has been little work on characterizing head motion in children during different task fMRI conditions.

METHODS: This study utilizes a large public dataset (N=652, age 5-22y, The Lifespan Human Connectome Project Development Study) to compare head motion across age groups and four different scan conditions (Rest, Inhibitory Control task, Guessing task, and Emotion task). Head motion was quantified by calculating framewise displacement (fd) for each subject and condition from the motion parameter files generated by the study's preprocessing pipeline.

RESULTS: As expected, fd decreased as age increased, with those 13 and younger exhibiting the most motion. Participants tended to exhibit the most head motion on the Inhibitory Control task, and the least on the Emotion task. This difference in head motion across scan conditions was most pronounced for the younger age groups. There was also a significant negative correlation between the mean fd and task performance on the Inhibitory Control task, indicating that those who moved more also exhibited worse response inhibition.

CONCLUSIONS: These data demonstrate that different scan conditions lead to differences in head motion among pediatric participants. A more cognitively engaging, but relatively simple task (i.e., the Emotion task) led to less head motion than an equally engaging, but more difficult task (i.e., the Inhibitory Control task). While individual differences exist, age plays the largest role in determining head motion. Older individuals that have less difficulty performing a task also tended to move less. While pediatric participants exhibit more head motion than adults, future investigators may increase their success by using task components associated with less head motion.

Antibiotic Impregnated Nails for Fracture-Related Infections at the Grady Health System

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BACKGROUND: Open fractures and orthopedic fixation procedures can be complicated by fracture-related infections (FRIs). Antibiotic cement impregnated intramedullary nails (ACIINs) are often used to treat FRI. However, there is limited data regarding ACIIN usage and outcomes. We aimed to characterize ACIIN usage and outcomes at Grady Health.

METHODS: Patients having received antibiotic cement implants between 2017-2021 at Grady were identified using CPT codes. Among 280 patients with CPT codes of interest, 225 were excluded due to prosthetic joint infection treatment or different type of implant (beads or spacers). Fifty-five met inclusion criteria and 25 reviewed charts are reported. Data collection and descriptive analyses were performed in REDCAP database.

RESULTS: Of 25 included patients, 76% were male and median age was 39. Most (80%) fractures were documented as open (GA grades I-IIIc), and all underwent open reduction internal fixation. FRIs presented a median of 74 days after internal fixation (range 15-602 days). Eighty-eight percent of patients met ≥ 1 confirmatory FRI criteria and all met ≥ 1 suggestive criteria. Cultures taken upon 1st ACIIN placement were positive for pathogenic organisms in 72% of patients, 10 (55.6%) growing *S. aureus* including 3 with methicillin resistant *S. aureus*. All ACIINs were made of vancomycin and tobramycin mixed with PMMA. The final ACIIN was explanted in 23 (92%) patients, and cultures taken during removal were positive for pathogenic organism in 2 (8%) patients (14 were missing cultures). Median follow up was 296 days after initial ACIIN placement. As determined by orthopedic surgeon, 23 (92%) fully or partially healed, 16 of which required an additional procedure. Of the 2 patients without healing, 1 received amputation and 1 has ongoing osteomyelitis.

CONCLUSIONS: This retrospective non-comparative data suggests ACIIN usage is associated with high healing rates although additional procedures are often needed.

Evaluation of Cortical Bone Metabolism and Hemodynamics using Near-Infrared Spectroscopy in Healthy Adults

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BACKGROUND: Bone density measurements are commonly utilized as an indicator of bone health, but bone vascular health is less commonly assessed. Near-infrared spectroscopy (NIRS) offers an inexpensive and non-invasive means for analyzing blood flow and metabolism in bone. The purpose of this study was to compare metabolism and blood flow kinetics in two cortical locations on the tibia.

METHODS: NIRS measures relative changes in oxygenated (HbO₂) and deoxygenated (HHb) hemoglobin. A rapid inflation cuff was used to occlude blood flow to the non-dominant leg while the NIRS device was placed at the 38% and then 50% site on the tibia. Metabolic rate of oxygen consumption during occlusion and magnitude of blood flow and half-time recovery (t_{1/2}) post-occlusion were measured. Analysis was performed using a mixed ANOVA with location as the within groups factor and signal (HbO₂ or HHb) as the between groups factor for both magnitude of change and t_{1/2}.

RESULTS: The 38% site was found to have a higher resting metabolic rate than the 50% site (p=0.019). The main effect for location was not significant in HbO₂ or HHb magnitude (p=0.379) or in HbO₂ or HHb t_{1/2} (p=0.621) during the post-occlusion recovery period.

CONCLUSIONS: The thicker cortical shell at the 38% site may contribute to the greater metabolic rate that was measured. The differences in metabolism should be noted in future NIRS studies when deciding what anatomical location to measure, despite no differences in recovery hemodynamics.

Food Insecurity in Orthopedic Trauma

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BACKGROUND: Food insecurity, the lack of access to affordable and nutritious food, in the literature has been associated with adverse health outcomes. Using survey data from patients hospitalized for orthopedic trauma, we investigated food insecurity for (a) prevalence; (b) relationship with comorbidities; and (c) associations with hospital utilization and medical complications. Identifying these associations provides better understanding to develop strategies and interventions to address food insecurity in hopes of preventing adverse health outcomes.

METHODS: Data for this study were collected via a comprehensive social determinants of health (SDOH) survey of orthopedic trauma patients admitted to an urban, Level 1 trauma center (2019 to 2020). Trauma registry information was accessed. Food insecurity was determined using the Hunger Vital Signs. Bivariate analysis and logistic regression were performed to examine associations between food insecurity, demographics, comorbidities, adverse outcomes, and hospital utilization.

RESULTS: The prevalence of food insecurity was 21%. Age, gender, race, education, comorbidities, in-hospital complications, and hospital utilization were not significantly different across food insecurity status. Patients who lived in other than private residences (homeless, hotel, assisted living, other group setting, temporary) were at significantly higher risk for being food insecure.

CONCLUSIONS: Patients hospitalized for orthopedic trauma represent an at-risk population for food insecurity. The prevalence of food insecurity in the inpatient orthopedic trauma population (21%) is two times higher than the rate that is found nationally (10%) and is associated with housing instability. Future research is needed to more closely examine the impact that this has on longer-term outcomes, including complications, hospital readmission and emergency room utilization, to streamline care coordination and optimize outcomes in the at-risk trauma population.

Risk Factors Associated With Venous Thromboembolism Following Surgical Fixation of Acetabular Fracture

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BACKGROUND: Venous thromboembolism (VTE) is a significant cause of in-hospital mortality in trauma patients, and patients requiring surgery for pelvic and acetabular fractures are at an increased risk for VTE. This study identified risk factors associated with developing VTE that could influence clinical decision-making for thromboprophylaxis treatment.

METHODS: We examined the Truven claims database to identify patients who received treatment between 2009 and 2016 for surgical fixation of acetabular fractures. Variables including age, sex, comorbidities, associated fractures, surgical complications, and medical complications were collected using ICD-9, ICD-10, and CPT codes. Patients were classified into two groups: VTE and no VTE. Odds ratios were calculated using chi squared analysis, while multiple binomial logistic regressions were used to identify significant risk factors.

RESULTS: Among the 4,047 patients included, the odds of developing VTE significantly increased between age groups 35-49 (OR = 1.56, $p = 0.006$), 50-59 (OR = 1.58, $p = 0.005$), and 60+ (OR = 1.69, $p = 0.004$), and with associated femur fractures (OR = 1.52, $p = 0.046$). Surgical complications were surgical site infection (OR = 2.01, $p < 0.001$), hardware complication (OR = 1.72, $p = 0.020$), and wound complication (OR = 1.52, $p = 0.024$). Medical complications were pneumonia (OR = 1.74, $p = 0.041$) and stroke (OR = 2.15, $p < 0.001$).

CONCLUSIONS: This study identifies risk factors associated with increased risk of developing VTE in patients undergoing surgical fixation of acetabular fractures. The use of thromboprophylaxis treatment should be influenced by the presence of these risk factors.

Assessing Health-related Quality of Life in the Emergency-Only Hemodialysis Population at Grady Health System

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BACKGROUND: Grady Health System (GHS) is a safety-net hospital with a large group of Emergency-only Hemodialysis (EoHD) patients who must present in critical condition to receive hemodialysis in the emergency department. This project aims to assess the EoHD patients' perceived health-related quality of life (HRQoL) using a survey that includes the Kidney Disease Quality of Life Instrument (KDQOL-36). KDQOL-36 is a validated tool for assessing HRQoL for ESRD patients nationwide.

METHODS: A 76-item survey including the KDQOL-36 was offered to 90 EoHD patients from 6/17/21 to 7/22/21 via paper surveys or in-person interviews with translator services. Additional questions included but were not limited to immigration status, educational background, wait time to receive treatment, and satisfaction with care. Surveys were scored according to standardized procedures, and results were compared to a national cohort of U.S In-center Hemodialysis (ICHHD) patients.

RESULTS: 50 patients completed surveys, 90% of whom were Hispanic with a mean age of 45 years at the start of dialysis compared to 64 years for U.S. Citizens. Scored KDQOL-36 sections show a higher physical health composite for GHS EoHD patients compared to U.S. ICHHD (38.8 vs 36.3). However, GHS EoHD patients scored lower on mental health composite (47.8 vs. 49.0), burden of kidney disease (37.0 vs. 50.7), symptoms/problem list (69.8 vs. 77.9), and effects of kidney disease (62.4 vs. 72.6), reflecting a higher disease burden and lower HRQoL.

CONCLUSIONS: The disparity in perceived HRQoL could be explained by multiple barriers to care including inadequate dialysis contributing to ESRD complications, long and unpredictable wait times, language barriers for a predominantly Hispanic population, and higher stress levels associated with inability to work in a younger patient population.

Long-term Outcomes of Cataract Surgery in Uveitis Patients

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BACKGROUND: Cataracts are one of the most common complications of uveitis. Its management in uveitis patients has historically been challenging with high rates of complications following cataract surgery. Our current data under review indicate that children on biologics and antimetabolites for treatment of underlying inflammation have more favorable postoperative outcomes, however studies investigating these treatments in adult uveitis patients is lacking. The purpose of this study is to determine the effects of biologics and antimetabolites on post-operative visual outcomes in adult uveitis patient following cataract surgery.

METHODS: A retrospective chart review was conducted for patients with uveitis that had undergone cataract surgery at the Emory Eye Center between January 2008 and June 2020. Data points collected included: age at surgery, gender, uveitis type, pre-operative visual impairments, visual acuity and inflammation, post-operative visual acuity and inflammation and complications, and perioperative immunosuppressive regimen. Patients were excluded if they were under 18 years old, had inadequate post-operative follow-up, developed uveitis following surgery, underwent a combined procedure, or had a traumatic cataract. Pre and post-operative characteristics were tested by time and treatment group using a mixed model to control for the correlation between subject and time. Alpha was set at 0.05.

RESULTS: A total of 152 eye of 119 patients met inclusion criteria. Data analysis is still underway.

CONCLUSIONS: We anticipate patients on biologics and antimetabolites will have better visual acuity and lower complication rates compared to patients not on systemic treatment.

Characterization of Fluorescein Angiography Features in Pediatric Patients with Uveitis

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BACKGROUND: Fluorescein angiography (FA) has become a valuable routine diagnostic tool in the management of adult uveitis cases. However, its use is still limited in the pediatric population. This project aims to characterize features from a variety of pediatric uveitis cases while utilizing a quantitative FA scoring system.

METHODS: A retrospective, cross-sectional chart review was conducted of pediatric uveitis patients from the Emory Eye Center and Children's Hospital of Atlanta. Topcon TRC-50DX, Optos, and RetCam 3 images obtained between May 2009 and August 2020 were reviewed and scored from 0-40 based on nine angiographic signs. FA scores per uveitis location, clinical activity, visual acuity, etiology, and treatment were then evaluated.

RESULTS: A total of 137 eyes of 88 patients were evaluated. The mean FA scores in eyes with anterior, intermediate, posterior, and panuveitis were 4.8 ± 6.7 , 9.6 ± 5.6 , 6.0 ± 6.4 , and 11.0 ± 6.3 , respectively. The mean FA scores for clinically active vs. inactive uveitis was 9.8 ± 6.5 and 5.8 ± 6.3 . Eyes with a visual acuity of 20/40 or better, 20/50-20/150, and 20/200 or worse had mean FA scores of 7.3 ± 6.4 , 9.7 ± 6.2 , and 10.5 ± 7.6 , respectively. The mean FA scores for non-infectious uveitis (NIU) vs. infectious uveitis (IU) was 8.6 ± 6.7 and 5.8 ± 6.0 . The mean FA scores for NIU on no immunomodulatory therapy (IMT) vs. NIU on IMT was 9.0 ± 6.9 and 7.0 ± 5.7 , respectively.

CONCLUSIONS: FA in pediatric uveitis revealed pathology beyond that of clinical examination alone. Using a standardized quantitative FA scoring system can lead to a better understanding of disease activity, assist in disease staging, and evaluate responses to therapy. The additional information gathered with FA can aid in developing a more tailored management of uveitis in pediatric patients leading to improved patient outcomes.

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