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EPOSTER COMPETITION

REBOA Use and Complications in Geriatric Trauma Patients: Insights from a Multi-center Database

P Balamurugan, J Hunt, A Marr, P Greiffenstein, J Schoen, L Stuke, J Duchesne, A Smith

Introduction: Resuscitative Endovascular Balloon Occlusion of the Aorta (REBOA) is an adjunct treatment for trauma patients with noncompressible torso hemorrhage. Complications seen with REBOA utilization include ischemia caused by occlusion, limb amputations, post-operative thrombosis, rhabdomyolysis, and access site complications. The use of REBOA in the geriatric population has not been well-studied. This study aimed to define REBOA use and complications in the geriatric population. It was hypothesized that patients 65 or older may have greater rates of complications, compared to those under 65, due to geriatric patients having a greater likelihood of pre-existing co-morbidities.

Methods: Utilizing the AORTA database, which contains data from over 50 ACS Level 1 centers in the United States where REBOA is being used, we analyzed adult trauma patients stratified by age (18-64 versus ≥ 65). Collected data included vitals upon arrival to ED, GCS, mechanism of injury, placement, length of occlusion, development of acute kidney injury (AKI), and access site complications. Data were analyzed using Fisher's exact test and student's t-test with p value

Results: A total of 3,384 patients were analyzed and 311 patients or 9.2% were geriatric. There was no significant difference in injury severity score (33.1 ± 2.3 for geriatric patients and 33.8 ± 0.8 for non-geriatric, $p = 0.56$). The distribution of REBOA zone placement was similar for geriatric and non-geriatric patients. The length of REBOA occlusion for geriatric (32.3 ± 10.8 minutes) and non-geriatric patients (47.5 ± 7.4 minutes) was not significantly different ($p = 0.13$). There was not a significant difference in the development of AKI (11.0% for geriatric patients and 10.8% for non-geriatric, $p = 0.92$). Of the access site complications analyzed, there was a significant increase in access site pseudoaneurysms in geriatric patients (1.6%) compared to non-geriatric patients (0.4%) ($p = 0.019$). Interestingly, there was a decrease in the development of extremity ischemia in geriatric patients compared to non-geriatric patients (0.0 vs 1.3%, $p = 0.045$). There was not a significant difference between geriatric and non-geriatric patients in development of hematoma, arteriovenous fistula, stenosis, or distal embolism.

Conclusion: REBOA use was similar among geriatric and non-geriatric patients. Age greater than or equal to 65 was significantly associated with greater incidence of pseudoaneurysm and decreased incidence of extremity limb ischemia. This difference could be due to pre-existing peripheral vascular disease or anatomic differences in this patient population. Future directions include studies to understand the association of specific co-morbidities with REBOA complications among geriatric trauma patients.

ePoster #2 | Abstract | Trauma/Burn/Critical Care

Housing Instability's Association with Gun Violence in a Major Metropolitan City

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Introduction: Centers for Medicare and Medicaid Services will require hospitals to collect measures of housing instability in 2024. Stable housing is a vital social determinant of health. How housing influences gun violence in a major city in the United States (US) has not been examined. We hypothesized that housing instability (HI) in a major US city would be associated with firearm injuries (FI).

Methods: FI was collected from a single institution that serves as the only Level I trauma center in a major southern US city, with its catchment area spanning 9 county-equivalents, from 2017–2022. Point-in-time count of homelessness and housing unit density was obtained from US Housing and Urban Development (HUD). Foreclosure rate, percentage of vacancy, mobile homes, renter tenants, and long-term occupants obtained from the American Community Survey. Number of federally assisted housing (FAH) subsidies and percentage of FAH units (%FH) from the National Housing Preservation Database, and minimum/mean renter wage hours needed to afford basic housing as reported by the National Low Income Housing Coalition were also examined. Linear regression analysis was used to examine the relationship between HI proxies at the county-equivalent level and rates of overall FI and firearm deaths (FD) on univariate analysis.

Results: There was a total of 4173 FI across 9 county equivalents, with 527 (12.6%) FDs. The FI cohort was 85.9% male, 91.0% nonwhite, and of average age 29.8 years. On univariate analysis, homelessness count ($b=0.12$, $p=0.003$), unit density ($b=0.02$, $p=0.01$), percent vacancy ($b=2.34$, $p=0.04$), FAH subsidies ($b=1.84$, $p=0.004$) and %FH ($b=3.36$, $p=0.01$) were significantly associated with higher FI. Variables not associated with FI included foreclosure rate ($b=0.50$, $p=0.56$), work hours at minimum ($b=0.26$, $p=0.32$) and mean-renter wage ($b=0.68$, $p=0.23$) needed to afford housing, and percentage of renters ($b=72.35$, $p=0.06$), long-term tenants ($b=-0.56$, $p=0.34$), or mobile homes ($b=-0.83$, $p=0.06$). On multivariate analysis (Table), FAH subsidies and % vacancy were associated with incidence of FI. Each additional FAH subsidy per 100,000 correlated with 1.55 additional FI. Every 1% increase in vacancies was related to approximately 2.12 additional FI. Unit density was not associated with FI ($b=0.019$, $p=0.18$). On multivariate analysis, neither FAH subsidies ($b=0.01$, $p=0.25$), % vacancy ($b=0.009$, $p=0.17$), nor unit density ($b=0.0001$, $p=0.22$) were associated with FD.

Conclusion: Measures of housing instability are associated with increased rates of FI but not FD. Public health interventions targeting stable housing may help reduce gun violence and associated outcomes.

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Table: Firearm-related Injuries (FI) at a Level 1 Trauma Center (2017-2022) Compared to Housing Instability Markers in the Institution's Catchment Area

Housing Variable	<i>Linear Regression Examining Federal Housing Subsidies and FI</i>			Housing Variable	<i>Linear Regression Examining Percent Vacancy of Housing in County Equivalent and FI</i>		
	Beta Coefficient	95% Confidence Interval	p-value		Beta Coefficient	95% Confidence Interval	p-value
Federal Subsidies	1.55	0.50 - 2.60	0.01	Percent Vacancy	2.12	-0.04-4.28	0.05
Non-White Race	51.91	-4.66 - 108.47	0.06	Non-White Race	60.03	-14.25-134.32	0.09
Male Sex	-42.63	-129.29-44.04	0.24	Sex	-18.33	-147.00-110.33	0.71
Age	2.14	-0.27-4.54	0.07	Age	0.29	-3.38-3.96	0.84

Impact of Ethanol Intoxication on Adipose-Derived Stem Cell Paracrine Factors in Major Burn Patients

J Dennis, O Warren, C Fontenot, J Carter, H Phelan, J Schoen, R Siggins, P McTernan, A Smith

Introduction: The synergistic effects of acute ethanol intoxication on outcomes in patients with major burn injuries has been previously described. However, the molecular impacts of this phenomenon are less well understood. Adipose-derived stem cells (ADSCs) have an important role in the modulation of burned tissue repair through the release of paracrine factors that stimulate the wound healing response. In this pilot study, we tested the hypothesis that acute ethanol intoxication at the time of burn injury alters the profile of paracrine factors secreted from ADSCs isolated from adipose tissue at the site of burn injury.

Methods: Adipose tissue was collected from adult patients with severe burn injuries (>20% total body surface area) at the index operation with ethanol intoxication (N=4) and without ethanol intoxication (N=4). ADSCs were extracted and cultured in vitro. Supernatants were harvested 40 hours after plating, with a wash at 16 hours after plating, and used for cytokine profiling by Multiplex assay. Fluorescence activated single cell sorting (FACS) confirmed the ADSC phenotype with markers CD90, CD105, and CD73. Univariate analyses were performed to compare the two cohorts (ethanol intoxication vs no ethanol intoxication).

Results: Blood ethanol concentrations averaged 82.3 +/- 67.8 mg/dL. Higher amounts of anti-inflammatory cytokine IL-10 ($p<0.05$) and pro-inflammatory cytokine IL-8 ($p<0.05$) were detected in burn patients with ethanol intoxication. No significant differences in supernatant concentrations of IL-1 β , IL-6, IL-4, IL-17A, TGF α , TNF α , IFN γ , and IL-13 were observed ($p>0.05$).

Conclusion: The results from this study suggest the paracrine factors secreted from ADSCs may be altered when there is ethanol intoxication at the time of major burn injury. Future studies will include an increased sample size and a refined experimental approach. Furthermore, these results support the need for studies examining how ethanol intoxication at the time of injury impacts the wound healing of burn patients, and cytokine based therapeutic approaches to major burn injury wound healing

A Retrospective Analysis of Resuscitative endovascular balloon occlusion of the aorta (REBOA) Complications in Geriatric Trauma Patients

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Introduction: Resuscitative endovascular balloon occlusion of the aorta (REBOA) is a temporizing intervention in trauma. Complications may result from ischemia, reperfusion injury, and access site complications. The objective of this study was to analyze REBOA placement and associated complications in geriatric patients. It was hypothesized that geriatric patients may have higher complication rates compared to younger patients due to pre-existing conditions.

Methods: A retrospective review of adult patients stratified by age (65+ versus <65) to a Level 1 trauma center was performed. Collected data included vitals on arrival to the ED, GCS, mortality, type of trauma (blunt vs. penetrating), hospital length of stay, development of AKI, blood products given, and injury severity score. Data was analyzed using Fisher's exact test and student's t-test.

Results: Of 120 patients, injury severity score was similar between the groups ($p=1$). There was a significant difference for in-hospital mortality between the groups ($n=45/106$, 42.5% vs. $n=10/14$ 71.4%, $p=0.04$) and no significant difference hospital length-of-stay (20 ± 2.6 days vs. 10 ± 3.6 , $p=0.17$). There was no significant difference in development of acute kidney injury (AKI) between age groups ($n=19/106$, 9.4% for non-geriatric vs. $n=1/14$, 7.1% for geriatric, $p=1.0$).

Conclusion: Age greater than 65 was significantly associated with increased mortality, and not significantly associated with longer length of stay, or development of AKI following REBOA placement. Future directions for study will include a multi-center analysis of REBOA placement and complications in geriatric patients.

Blood Pressure Control and Neurologic Recovery in Traumatic Spinal Cord Injury

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Introduction: The early clinical management of traumatic spinal cord injury (TSCI) is critical for patient outcomes, especially to prevent secondary ischemic insult. As such, blood pressure augmentation has become common practice in the treatment of these patients. Current guidelines recommend maintaining mean arterial blood pressure (MAP) between 85-90 mmHg for seven days after TSCI. The objective of this study was to assess compliance with MAP guidelines (either with or without vasopressor use) and association with improved neurologic function in TSCI patients.

Methods: A retrospective chart review of adult patients with TSCI (blunt and penetrating) at an urban Level 1 Trauma Center from July 2012 to August 2021 was performed. Daily MAP was collected for seven days post-admission as well as the type of vasopressor utilized, if any. MAP compliance was quantified as the ability to maintain an average weekly MAP >85. The primary outcome measured was neurologic improvement quantified by American Spinal Injury Association (ASIA) scale from admission to post-MAP protocol (discharge and follow-up). Chi squared and Student's t-test were used to perform statistical analysis. A p value <0.05 was determined to be significant.

Results: A total of 96 patients were included. Majority of patients with SCI (77%) had an average MAP >85 mmHg. Vasopressors were used in 68% of the patients in the low average MAP (85) group (p=0.004). When stratified by MAP guideline compliance, no significant differences were observed between the two groups in regard to age (p=0.5), BMI (p=0.6), comorbidities (p>0.05), and spinal surgery (p=0.2). Patients in the non-compliance group were more likely to be female (p=0.001) and had a significantly longer ICU length of stay (p=0.01). There was no significant difference in ASIA score improvement at the time of discharge (p=0.7) and at initial clinic follow-up (p=0.9). Patients in the vasopressor group had significantly higher ventilator use (p=0.01) and ICU length of stay (p=0.005). ASIA score did not significantly improve in vasopressor group when compared to no vasopressor use at discharge (p=0.3) and initial follow-up (p=0.2).

Conclusion: This study is inconclusive regarding MAP compliance and its impact on neurologic outcome. However, assessing ASIA score at initial follow-up was variable, ranging from 1-2 months to a year, with many lost to follow up. TSCI patients managed with vasopressors had a longer ICU length of stay and higher incidence of ventilator use, potentially indicating a sicker population. Patients were not stratified based on polytrauma or injury severity score (ISS). Future directions for this research include the development of standardized guidelines to help physicians adhere to MAP goals of 85-90mmHg and the appropriate utilization of vasopressor therapy.

ePoster #6 | Abstract | Trauma/Burn/Critical Care

A Survey of Critical Care Provider Opinions on the Relationship Between the Brain Death Exam and Public Perceptions About Organ Donation

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Introduction: Brain death criteria established by the American Academy of Neurology (AAN) moved from requiring two brain death exams to one exam. As state laws and hospital policies vary throughout the nation, our focus was to assess critical care physician and surgeon opinions regarding the number of brain death exams used and how this may impact willingness towards organ donation.

Methods: This cross-sectional survey was conducted using REDCap and was approved by the IRB at LSUHSC-New Orleans. The survey was distributed by the American Association for the Surgery of Trauma (AAST). Questions primarily assessed demographic information and provider knowledge and opinions of brain death guidelines.

Results: Of 58 respondents, 88% (51) were Critical Care Specialists or Trauma Surgeons, 9% (5) were neuro-critical care specialists/neurosurgeons, and 3% (2) were surgical fellows. Regarding confidence in one brain death exam, 78% (45) were mostly or very confident, 10% (6) were neutral, and 12% (7) were not or slightly confident ($p<0.0001$). More respondents thought that using one brain death exam would not change (38, 66%) rather than decrease (11, 19%) family willingness towards organ donation if the patient was not a registered donor ($p<0.0001$).

Conclusion: The majority of respondents were very confident in the use of one exam and thought this practice would not change willingness towards organ donation. Future directions include increasing the sample size by distributing this survey to other national societies.

THE SAFETY OF REBOA USE WHEN COMPARING OBESE AND NON-OBESE TRAUMA PATIENTS

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Introduction: Resuscitative Endovascular Balloon Occlusion of the Aorta (REBOA) is an adjunct tool to achieve hemostasis in trauma patients with non-compressible torso hemorrhage. Prior research has shown that obese trauma patients have increased mortality and morbidity compared to their non-obese counterparts. The primary aim of this study was to compare the rates of survival and REBOA complications in obese and non-obese patients.

Methods: A retrospective chart review of adult trauma patients who underwent REBOA placement between September 2017 to July 2023 was performed. Baseline demographics, Body Mass Index (BMI), information of REBOA placement, and post procedure complications including Acute Kidney Injury (AKI), amputations, and mortality were recorded. Chi-squared analyses were performed with $p < 0.05$ considered to be significant.

Results: A total of 73 patients met inclusion criteria. Underweight patients made up 2.7% (BMI 30.0). The survival rate of obese patients was 68.6% compared to 65.8% of their non-obese counterparts ($p=0.8$). There was no significant difference between rates of AKI in obese and non-obese patients at 31.1% and 28.9% ($p=0.5$). The rate of dialysis was 8.6% for obese patients and 7.9% for non-obese patients ($p=0.9$). When comparing obese and non-obese patients' amputation rates were 8.5% and 10.5% respectively ($p>0.8$). One (2.8%) obese patient and four (10.5%) non-obese patients had rhabdomyolysis ($p>0.2$).

Conclusion: The results from this case series suggest that there is no increase in risk with REBOA use in obese hemorrhagic trauma patients. There were no significant differences in rates of survival, rhabdomyolysis, amputations, AKI, or dialysis when comparing obese and non-obese trauma patients. Future prospective studies are needed to further characterize the indication and optimal use for REBOA in obese patients.

Table 1. Rates of survival and REBOA complications in obese and non-obese patients

	Obese	Non-Obese	p-value
Survived, n (%)	24 (68.6)	25 (65.8)	0.8
AKI, n (%)	13 (31.1)	11 (28.9)	0.5
Dialysis, n (%)	3 (8.6)	3 (7.9)	0.9
Amputation, n (%)	3 (8.5)	4 (10.5)	0.8
Rhabdomyolysis, n (%)	1 (2.8)	4 (10.5)	0.2

The Consequences of a Career in Burn Surgery: An economic analysis to aid prospective clinicians

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Introduction: Many factors are assessed by prospective resident physicians and medical students when considering a career in healthcare. A rising awareness of educational costs, physician burnout, and well-being have many considering the economics of their decisions. Coupled with the projected physician shortage, burn surgeons are a vulnerable population consisting of less than 0.4% of all surgeons in the U.S. Our study examines the economic consequences of a career in burn surgery as compared to other surgical specialties.

Methods: Using AAMC benchmark salary data, we calculated a net present value (NPV) for 12 surgical specialties. NPV was selected as it incorporates revenue and liabilities over the career period with the time value of money. Conservative assumptions from established references were used to determine resident salary, medical school debt, interest, opportunity costs, federal income taxes, and career duration (retirement at age 65). The model also assumes no delays in education or training, practice at an academic institution, and evaluated 2-year vs 1-year burn fellowship pathway against 11 other surgical careers: general, neurosurgery, orthopedic, pediatric, plastic and reconstructive, surgical oncology, cardiothoracic, transplant, trauma, urology, and vascular surgery.

Results: Without loan forgiveness programs for medical school, physicians attending public institutions should expect to pay \$509,173 over the life of the loan. Each year off fellowship after general surgery results in \$257,641 of lost income after taxes. Neurosurgery, orthopedic, and cardiovascular performed >30% above the average NPV for all surgical specialties while surgical oncology and 2-year burn performed the worst at 28% and 23% below the average NPV. Selecting a 1-year burn fellowship improved performance to 11% below the average outperforming trauma.

Conclusion: The consequences of a career in healthcare are immense with few students or residents understanding the economic liabilities they assume because of historical perspectives that are unquestionably inaccurate in today's climate. A career in burn surgery is rewarding but the economic considerations must be accounted for especially in a climate with limited resources. Our model takes many assumptions into consideration but does not take into account the productivity of burn surgeons relative to other surgical specialties making the inequity even more concerning. Additional research is needed to discern the complexity and intensity of burn care to aid future advocacy efforts.

Resuscitative Endovascular Balloon Occlusion of the Aorta Impact on Adult Trauma Patients with Pelvic Fractures Requiring Embolization

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Introduction: Resuscitative Endovascular Balloon Occlusion of the Aorta (REBOA) is an emergent procedure for the treatment of non-compressible torso hemorrhages (NCTH). The REBOA device is intended to be used as an adjunct to achieve hemostasis, only temporarily controlling blood flow. An embolization procedure, typically using Gel-Foam or coils, provides more definitive cessation of blood loss in hemorrhagic patients. The primary objective of this study was to compare the outcomes of adult trauma patients presenting with pelvic fractures requiring embolization who were treated with (PER) or without REBOA (PE).

Methods: A retrospective chart review of adult patients presenting to a Level 1 trauma center with pelvic fractures and subsequent embolization over a six-year period was conducted. These patients were then grouped based on REBOA recipient status. Demographic data, injury mechanism, and Injury Severity Score (ISS) were recorded. ED presentation statistics, as well as exploratory laparotomy (ex-lap) and embolization procedure metrics were collected. Complications including acute kidney injury (AKI), ischemia, thrombus formation, amputation, and mortality were recorded. Univariate analyses of corresponding data between PER and PE was performed with significance determined by p

Results: One hundred twenty patients met study criteria for adult trauma patients with pelvic fractures and subsequent embolization. These patients were grouped into PER (21/120, 17.5%) and PE (99/120, 82.5%). The PER group presented to the ED with significantly higher ISS ($p=0.04$), lower SBP (p

Conclusion: This study demonstrated that REBOA may be a helpful adjunct for patients with hypotension and pelvic fractures. These patients presented with significantly higher ISS, requiring increased rates of ex-laps and embolization of large arteries perfusing the lower extremities. REBOA deployment served as a bridge to embolization by temporarily ceasing blood flow to these arteries while Trauma and IR mounted a rapid response, evident by lower DTC and DTE. Use of REBOA in patients with pelvic fractures and hemorrhage should be more widely considered given there is no significant change in mortality. Future studies should determine if the increase in AKI is due to hemorrhage severity or REBOA deployment in Zone 3.

Housing Instability and Income Inequality Affect Firearm Mortality in Major US Metropolitan Areas

M Loe, C Ghio, M Ghio, J Constans, J Fleckman, P McGrew, J Duchesne, KP Theall, S Taghavi

Introduction: Major metropolitan cities in the US suffer from disproportionate rates of firearm violence, however, the structural and social factors contributing to firearm-related homicides (FH) in these areas is poorly defined. How adequate housing supply and affordability in major US cities contribute to the current gun violence epidemic is not well understood. The goal of this study was to determine how measures of housing availability affect the incidence of FH. We hypothesized that measures of housing instability would be associated with higher rates of FH in major US metropolitan cities.

Methods: This cross-sectional analysis evaluated the largest 51 US metropolitan statistical areas (MSAs) using data from 2021. Measures of housing instability included affordable/available rental homes for 30% of the AMI was also obtained from NLIHC. Data providing a point-in-time estimate of homelessness was obtained from the Housing and Urban Development Continuum of Care Program. The National Housing Preservation Database provided the size, number, and funding for all current, federally subsidized housing projects. Firearm homicide mortality rates were obtained from the Centers for Disease Control. Spearman Rho, Pearson correlation, and linear regression were performed.

Results: On Spearman Rho, shortage of affordable/available rental homes for 30% of the AMI ($r=-0.28$, $p=0.03$) was associated with less FH. Number of government housing units ($r=0.31$, $p=0.04$) and federal housing subsidies ($r=0.36$, $p=0.01$) were associated with FH. Overall homelessness ($r=0.30$, $p=0.31$) was not associated with FH. Pearson correlation results are demonstrated in Figure 1. In a linear regression model, a shortage of affordable and available rental homes for < 50% average median incomes households ($b=0.61$, OR:1.84, 95%CI: 0.35–0.87, p

Conclusion: Housing instability contributes to FH in major US metropolitan cities. Income disparities also contribute to the firearm epidemic. Public health intervention aimed at mitigating structural factors such as housing instability and income inequality may help decrease the number of FH in major US cities.

Pearson Correlations: housing shortage, income, federally subsidized housing & Firearm Homicides

HI Measure	Coefficient	p-value
Population	-0.30	0.04
% Deficit <50% AMI	0.36	0.01
51-80% AMI	-0.25	0.08
81-100% AMI	-0.26	0.07
Above median income	-0.28	0.05
# Units	0.31	0.01
# Subsidies	0.36	0.04

AMI: average median income

ePoster #11 | Abstract | Trauma/Burn/Critical Care

Effects of vasopressor use to achieve mean arterial pressure goals in traumatic spinal cord injury

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Introduction: Current guidelines for acute spinal cord injury (SCI) management include maintaining mean arterial pressure (MAP) >85mmHg for 7 days to improve neurologic outcomes. We aimed to determine if outcomes in SCI patients are equivalent between those who require vasopressors versus those who are able to maintain MAP goals on their own.

Methods: A retrospective analysis of patients who obtained traumatic SCI and were admitted to University Medical Center New Orleans from 2020-2021. Patients were selected that required use of elevated MAP goals to assist with spinal perfusion and divided into two groups: those who required vasopressors and No Vasopressor (NV) group. Improvement in ASIA Impairment Scale (AIS) grade was the primary endpoint. Secondary endpoints evaluated average MAPs, MAP goal duration, hospital and intensive care unit (ICU) length of stay (LOS).

Results: Fifty patients were included; 17 in the NV group and 33 in the vasopressor group. Baseline characteristics were similar among the two groups with similar distribution of AIS grades between groups. Improvement in AIS grade in the vasopressor group compared to the NV group was found to be statistically significant at the end of MAP goal period (24.2% vs 0%; $p=0.0393$) and at discharge (30.3% vs 0%; $p=0.0103$). Hospital LOS was found to be higher in the vasopressor group (median 15 days; IQR11-20) vs NV group (median 9 days; IQR 6-12 days, $p=0.0054$).

Conclusion: The addition of vasopressors to achieve MAP goals for management of traumatic SCI is effective in improving AIS grade but with increased hospital and ICU length of stay.

Clinical Outcomes:			
	No Vasopressor Group (N=17)	Vasopressor Group (N=33)	P-value
AIS Improvement, <u>N</u> (%)			
- At MAP goal completion	0 (0)	8 (24.2)	0.0393
- At discharge (from admit)	0 (0)	10 (30.3)	0.0103
Duration of MAP goals (days) (mean, SD)	3.47 ± 2.07	5.67±1.78	0.0003
Hospital LOS (median, IQR)	9 (6-12)	15 (11-20)	0.0054
ICU LOS (median, IQR)	4 (3-5)	8 (6-10)	< .00001
Average MAP during MAP goal window (mean, SD)	100±12.0	88±5.1	0.0001

Statistics: For nominal data fisher's exact test was used to evaluate significance. Continuous variables were evaluated for normal distribution. Non-normally distributed data, median's were reported and Mann-Whitney U test was used to evaluate significance. If normally distributed mean and standard deviation reported and an unpaired t-test was used. $\alpha=0.05$

Influence of Co-morbid Modifiable Risk Factors on Adipose-Derived Stem Cell Paracrine Factors in Burn Patients: A Pilot Study

J Robinson, J Dennis, S Trinh, C Fontenot, H Phelan, J Carter, J Schoen, A Smith

Introduction: Delayed post-operative wound healing contributes to complications resulting in significant morbidity, mortality and healthcare costs. Co-morbid conditions can act as modifiable risk factors (MRFs) in post-operative wound healing, and their influence has previously been described. However, comparisons of subcellular impacts are less well understood. Adipose-derived stem cells (ADSCs) stimulate a repair response in burned tissue using paracrine signaling factors to alter the surrounding cellular environment. In this pilot study, we tested the hypothesis that the paracrine factor profiles secreted by ADSCs isolated from damaged adipose tissue at the time of burn injury would be altered with differing combinations of MRFs.

Methods: Adipose tissue was collected from adult patients (N=15) with severe burn injuries (>20% total body surface area) and non-severe burn injuries (N=2) at the index operation. ADSCs were extracted and cultured in vitro. Supernatants were harvested 30 hours after plating and used for cytokine determinations by Multiplex assay. Fluorescence activated single cell sorting (FACS) confirmed their phenotype with markers CD 90, CD 166, and CD 73. Analysis of variance (ANOVA) and Tukey's postestimation were performed to compare cohorts with and without comorbid substance use disorder (S-MRF), cardiovascular disease (V-MRF), nutritional deficiency (N-MRF), or a combination of concurrent MRFs (SVN-, SV-, SN-, and VN-MRF).

Results: Profiles from the VN-MRF cohort showed a significant difference ($p < 0.05$) in IL-6 concentrations from V-, N-, SVN-, and SV-MRF cohorts and IL-8 from S-, V-, N-, SV-, and SVN-MRF cohorts. Profiles from the SV-MRF cohort showed a significant difference ($p < 0.05$) in IFN- γ concentrations from S-, V-, and N-MRF cohorts and IL-17 from V-MRF cohorts. No significant differences in supernatant concentrations of IL-1 beta, IL-4, IL-10, IL-13, TGF- α , TNF- α , FGF-2, MCP-1, VEGF, or MRF were observed ($p > 0.05$).

Conclusion: This study suggests ADSC paracrine factor expression at the time of a burn injury may vary with different combinations of comorbidities and potentially in demographics with a higher burden of chronic illness. Future studies are needed to examine how modifiable risk factors impact wound healing and post-operative outcomes in burn patients.

ePoster #13 | Abstract | Trauma/Burn/Critical Care

More Than Just a Number? Patient Age in the Age of the Open Abdomen.

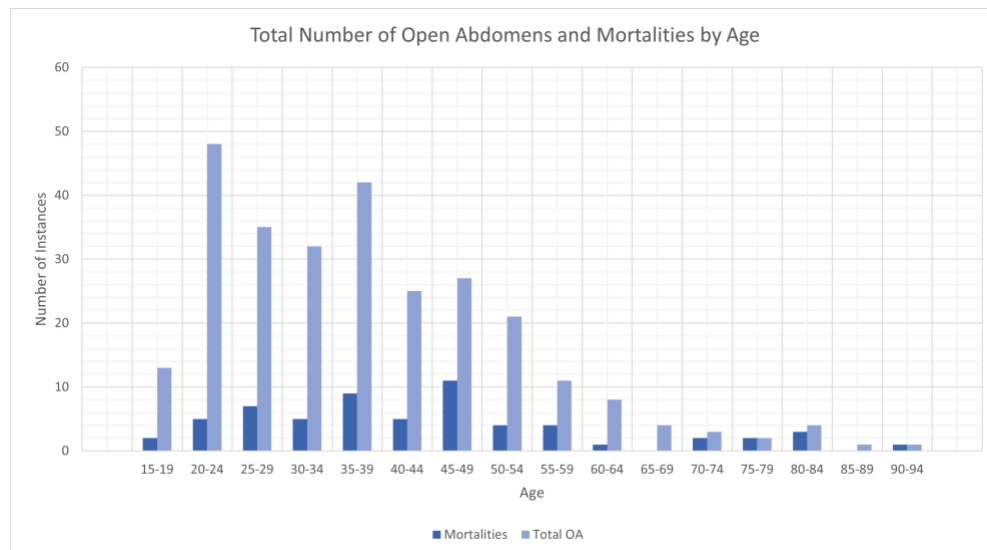
J Stover, S Knowles, P Deville, K Conrad, A Marr, J Schoen, J Hunt, L Stuke, P Greiffenstein, MD, A Smith

Introduction: Even though it is known that age is a risk factor for worse clinical outcomes in trauma, there is a paucity of information on age and the open abdomen, a staple of modern trauma surgery. The objective of this study was to evaluate outcomes in trauma patients with open abdomens based on patient age.

Methods: A retrospective review of all adult trauma patients who presented to a Level 1 trauma center from 2012 through 2021 was performed. Any patient who required an open abdomen was included. Patients were grouped based on age: Either less than 55 years old or 55 and older. Univariate analysis was performed using Fisher's exact and Student's t-test. A p-value ≤ 0.05 was considered significant.

Results: 272 patients met inclusion criteria and 32 patients (11.76%) were age 55 or older. The older cohort had significantly greater mortality at 35.3% versus 20% ($p=0.047$). In penetrating trauma, no older patients died compared to 27 deaths in the younger cohort ($p=0.59$). There was no significant difference between age group mortality in blunt trauma at 31.3% versus 52% ($p=0.09$). Patients who had fascial closure had a significantly lower mortality rate compared to those who were not 3.8% ($p>0.0001$), but mortality was 31.58% even with closure in the older group.

Conclusion: Our study demonstrated an overall significant difference in mortality between the two age groups, regardless of mechanism. The difference in mortality after fascial closure suggests there are factors associated with age which were not seen in our analysis. Further studies should seek to both expand the total number of patients and seek out other variables to find an explanation for this difference in mortality.



No difference in mitochondrial respiration in patients with major burns and abnormal blood alcohol concentration

S Trinh, J Dennis, O Warren, P Deville, C Fontenot, J Hobden, J Carter, P Molina, E Kovacs, H Phelan, A Smith

Introduction: Patients with major burn injuries (>20% total body surface area, TBSA) undergo a profound proinflammatory response leading to impaired wound healing. Adipose derived stem cells (ADSCs) are a multipotent stem cell that play a major role in wound healing. Studies have shown alteration in ADSC mitochondrial metabolism in patients with major burns. Additionally, there is mitochondrial dysfunction in patients with alcohol induced pancreatitis. We hypothesize that there is an alteration in mitochondrial respiration in patients with major burns and an abnormal blood alcohol concentration (BAC).

Methods: Adipose tissue was collected from patients with major burn injuries at the time of initial excision. ADSCs were extracted and grown under standard tissue culture techniques. Cellular bioenergetics including glycolysis and mitochondrial respiration were determined using a Seahorse XFe24 Analyzer. Results from subjects with an abnormal BAC (>15 mg/dL, ABAC) were compared to those without a normal BAC (NBAC).

Results: Four patients were enrolled in the study, all male. Two had ABAC (average=121 mg/dL). The two groups differed in race (ABAC=100% Caucasian, NBAC=100% African American) but did not differ significantly in age, gender, BMI, or TBSA. When comparing ABAC and NBAC, there was no significant difference in the maximal respiration, proton leak, ATP production rate, spare respiratory capacity, or non-glycolytic acidification.

Conclusion: Although it is known that alcohol causes mitochondrial dysfunction, our experiment showed no difference in ADSC mitochondrial metabolism in major burn patients with an ABAC. Additional samples will need to be collected in the future for further investigation of this finding.

A Comparative Analysis of Zip Code Discordance in Pediatric and Adult Gunshot Wounds

S White, R Moreci, M Vasterling, A Smith, J Zagory

Introduction: Home zip codes have been used as a proxy for injury location in traumas, however this relationship is understudied for patients with gunshot wounds (GSWs). We aimed to evaluate relationships between zip codes of injury and residence in adult and pediatric patients with GSWs.

Methods: A retrospective review was performed from January 2016-April 2023 on adult and pediatric (<15 years) GSWs using trauma registry data from two hospitals, respectively. Zip code discordance (ZCD) was defined as the zip code of injury differing from the zip code of residence. Comparisons between groups were performed using Chi-squared tests of independence.

Results: Of the 5,763 patients, 6.2% were pediatric and 21.7% were excluded (missing zip codes). ZCD occurred in 52.3% (n= 2,359) of patients. Pediatric patients had significantly less ZCD than adult patients (43.9% vs 52.9%, $p<0.01$). Pediatric patients with ZCD were more likely to be Black ($p<0.01$), have a more severe injury severity score ($p=0.05$), have ground transportation ($p=0.01$), and have a fatal injury ($p=0.02$). Similarly, adult patients with ZCD were more likely to be Black ($p<0.01$) and be transported by ground ($p<0.01$), though with no differences in injury severity score ($p=0.52$) or fatalities ($p=0.87$).

Conclusion: Our study highlights ZCD may be a significant determinant of health and patient safety for gun violence. Recognizing geographic relationships can enable communities to develop more targeted interventions.

Wernicke's Encephalopathy Following Sleeve Gastrectomy- A Case Report

A Bardarson, S Jacques, J Boudreaux, R Thiagarajan, M Maluccio

Introduction: Sleeve gastrectomy has become one of the most popular bariatric surgeries in both the US and worldwide. Its restrictive mechanism of weight loss makes development of nutrient deficiencies less likely compared to gastric bypass surgery. Wernicke's Encephalopathy (WE) is a feared complication of vitamin B1 deficiency presenting with confusion, nystagmus, and ataxia. WE in bariatric surgery occurs secondary to decreased oral intake and prolonged vomiting. A 2023 literature review found 29 reported cases of WE after sleeve gastrectomy.

Methods: We present a case of a 44 y.o. female who received a sleeve gastrectomy for morbid obesity.

Results: 10 days after her procedure, she presented to the emergency department for persistent nausea and vomiting. Endoscopy, colonoscopy, and abdominal CT demonstrated gastritis and an incidental neuroendocrine tumor at the ileocecal valve but were otherwise unremarkable and she was discharged. Her symptoms persisted and resulted in several subsequent ED admissions. 4 weeks post-op she first reported generalized weakness. 8 weeks post-op she presented to the ED for dizziness, weakness, and continued vomiting. 9 weeks post-op she presented to the ED for altered mental status, vision changes, and limited mobility. Thiamine supplementation was started, and MRI of her brain was consistent with Wernicke's encephalopathy. To date, her altered mental status has persisted.

Conclusion: There are few recorded instances of WE from sleeve gastrectomy, which likely lead to low clinical suspicion. The use of prophylactic thiamine during early post-op presentations for vomiting may have avoided her progression to WE and should be utilized in all bariatric surgery patients.

Supercharged and Delayed Thoracodorsal and Dorsal Intercostal Artery Perforator Flaps For Autologous Breast Reconstruction: A Case Report

M Rais, A Nachabe, M Maier, H St. Hilaire, R Allen

Introduction: In patients seeking autologous breast reconstruction when the abdomen is not a suitable donor site, the pedicled thoracodorsal artery perforator flap (TDAP) is a viable alternative. However, distal flap viability remains a cause for concern when utilizing TDAP flaps for autologous breast reconstruction, particularly when a lengthy skin paddle is required. The delay phenomenon and supercharging of tissue flaps have independently been described to enhance flap perfusion, thus mitigating the risk of flap complications such as flap loss and fat necrosis.

Methods: We present a case of a 42-year-old woman that underwent unilateral autologous breast reconstruction using the surgically delayed TDAP flap with concurrent supercharging by anastomosing the dorsal intercostal artery (and vein) perforator (DICAP) to the internal mammary artery and vein (IMA/V).

Results: We successfully inset a 26 cm x 14 cm pedicled TDAP flap with no complications present at follow up day 250.

Conclusion: The pairing of the delay phenomenon and supercharging of flaps pose as a viable option to increase flap perfusion and reduce risk of flap loss, leading to reduction of complications and better patient outcomes.

ePoster #19 | Abstract | Colon and Rectal Surgery

Sorry We Missed You: A System for Missed Surveillance Intervals in Watch and Wait for Rectal Cancer

C Becnel, H Green, W Kethman, D Kay, W Johnston, D Vargas, B Kann, C Whitlow, J Paruch, M Fakler

Introduction: As the central member in the multidisciplinary management team, surgeons possess unique responsibilities in the surveillance of rectal cancer patients entered into a Watch and Wait program. The goals of this study were to assess regional practice patterns of surveillance, characterize missed surveillance intervals within our system, and design a system to improve surveillance completeness.

Methods: We surveyed colorectal surgeons at a regional conference to assess practice strategies for tracking patients enrolled in Watch and Wait. We then performed a retrospective review of a prospectively maintained database at our institution. The RedCap database is maintained by a clinical research coordinator (CRC). An active-monitoring intervention was designed to address missed intervals by conducting a monthly audit.

Results: In the survey, 45% (11 of 24) of colorectal surgeons reported heterogeneity within their practice for how Watch and Wait patients were tracked. Within our institution's Watch and Wait program, 8 (21.1%) patients had local regrowth and 30 (78.9%) are currently under active surveillance. The rates of missing an endoscopy or imaging interval was 19.6% (Table 1). A total of 20 patients (52.6%) missed at least one surveillance interval, and 8 (21.1%) missed two or more sequential intervals.

Conclusion: This study revealed variation in practice among colorectal surgeons offering a Watch and Wait program for patients with rectal cancer. We also found a high rate of patients with missed intervals in surveillance. This highlights the need to examine and improve systems to assist patients and their health care teams in adhering to surveillance protocols.

Characteristics of Watch and Wait Surveillance Completeness								
Patients with Any Missed Intervals								
	Total Patients in Watch and Wait Database	Patients With Any Missed Interval						
Total	38	20 (52.6%)						
Overall Rate of Completeness								
	Total Number of Intervals	Number of Missed Intervals						
Endoscopy Intervals	152	34 (22.4%)						
Imaging Intervals	149	25 (16.8%)						
Total Intervals	301	59 (19.6%)						
Patients with Sequential Missed Intervals								
	Patients with Two or Three Sequential Missed Intervals	Patients with One Missed Interval						
Endoscopy Intervals	6 (15.8%)	11 (28.9%)						
Imaging Intervals	2 (5.3%)	11 (28.9%)						
Surveillance Intervals and Associated Completeness								
Month	3	6	9	12	15	18	21	24
Flex/DRE	89.5%	77.8%	84.2%	73.7%	35.3%	92.9%	84.6%	100.0%
MRI	81.6%		78.9%		82.4%		84.6%	
CT		85.2%		89.5%		78.6%		100.0%
Colonoscopy				21.1%				
n#	38	27	19	19	17	14	13	6
Key: MRI: Magnetic Resonance Imaging; CT: Computed Tomography; Flex: Flexible Sigmoidoscopy; DRE: Digital Rectal Exam								
	0 - 20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%			

Salvage Maneuvers Following Left-Sided Colorectal Resection: Derotation of the Right Colon

A Broussard, A Berenson, H Alani, W Kethman, J Paruch, D Vargas

Introduction: Derotation of the right colon (Deloyer's procedure - DRC) is a salvage maneuver in the setting of insufficient length after left-sided colorectal resection. The aim of this study was to identify the indications for salvage maneuvers and to assess feasibility and patient outcomes.

Methods: A single institution, retrospective review identifying all patients undergoing colorectal resection performed between January 1, 2012 and August 31, 2022. Patients requiring DRC were identified. Exclusion criteria included those patients without 90 days of follow-up.

Results: We identified 2,368 patients that underwent left-sided colorectal resection between 2012 and 2022. Of those, 23 patients (1%) underwent DRC. The median age was 59-years-old (38 to 78 years old) for our population. Median BMI was 29.4 kg/m² (17 to 49 kg/m²). Table 1 demonstrates the indications for surgery, operative details and post-operative outcomes. DRC was often planned pre-operatively based upon the location of pathology. The indications included colon adenocarcinoma, colonic inertia, Crohn's colitis with stricture, diverticular disease, as well as for gastrointestinal bleeding with the intention of preserving the ileocecal valve. We identified two anastomotic complications (9%). The patient who underwent a DRC for inertia developed obstipation and anastomotic dehiscence and returned to OR for completion colectomy and end ileostomy. The enterocutaneous fistula patient developed an intra-abdominal fluid collection at her anastomosis requiring IR drainage and, ultimately, a diverting loop ileostomy with subsequent reversal. Planned diverting ileostomy occurred in 4 (17%) of DRC patients, and 75% (3/4) had reversal. The one patients without reversal expired at 6 months post-operatively from causes unrelated to their operation. The 90-day mortality rate was 0%.

Conclusion: DRC represents a salvage maneuver for anastomotic construction. At our institution, such maneuvers were necessary in 1% of colorectal resections. Anastomotic complications were rare and only one resulted in end stoma creation (4%). This technique enabled anastomotic construction with proximal colon and spared our patients from end stoma or, alternatively, completion colectomy and ileorectal anastomosis. This series is the second largest cohort, to date, among current published literature. Stoma creation is not necessary in the majority of cases and anastomotic complications occur at rates similar to other colorectal anastomoses. This report demonstrates that derotation of the right colon, though uncommon, offers a salvage technical maneuver in patients undergoing left-sided colorectal resection when reach proves difficult.

Table on next page

	Derotation of the Right Colon (DRC) n=23
Indication	
Colon Cancer	8
Rectal Cancer	0
Chronic Diverticular Disease	3
Chronic Constipation	7
Crohn's Colitis	2
Enterocutaneous Fistula	1
Gastrointestinal Bleeding	2
Surgical Approach	
Laparoscopic with hand-assist	12
Laparoscopic converted to open	5
Open	6
Level of Anastomosis	
Descending	2
Sigmoid	5
Upper Rectum	12
Mid Rectum	4
Anastomotic Technique	
Handsewn End-to-End	4
Stapled End-to-End	19
Clavian-Dindo Complication	
None	9
I	3
II	3
IIIa	3
IIIb	3
IVa	1
IVb	1
Unplanned IR Procedures	1
Unplanned Re-operations	4
Postoperative Leak	2
Planned Diverting Ileostomy	4
Ostomy Reversal	3

ePoster #21 | Abstract | Colon and Rectal Surgery

Organ dysfunction predicts poor outcomes after surgery for patients with *Clostridium difficile* infection

C Lawton, P Somaiah, E Kraetzel, N Schneider, E Biggs, G Fuhrman

Introduction: Ileostomy with colonic washout or resection serves as salvage treatment for patients that have failed management of *Clostridium difficile* (CD) infection. Surgical management of CD is uncommonly employed and associated with uncertain results. We performed this study to identify predictors of outcome after surgical management of *Clostridium difficile*.

Methods: A database of patients that underwent ileostomy between April 2012 and April 2023 was queried to identify patients with documented CD as the indication for their ileostomy. Participants were categorized based on their outcomes as either favorable or poor. A favorable outcome was defined by survival and the ability to live independently one year after ileostomy surgery. Pre-operative clinical and laboratory parameters were recorded and compared between the two groups.

Results: 28 patients were included, and the table below summarizes our observations between the favorable and poor outcome groups. Ostomy reversal was performed in six patients with five of the six recovering uneventfully from surgery.

Conclusion: This study demonstrates that about half of patients considering surgery for CD will suffer a poor outcome. Good outcomes are more likely in patients without preoperative organ dysfunction. This study adds to the limited information in the literature about the surgical management of patients with CD refractory to medical management.

	Favorable Outcome n = 15	Poor Outcome n = 13	p-value
Age (mean, SD)	64.0 ± 16.3	73.6 ± 8.4	.091
Preoperative Labs			
Creatinine (mean, SD)	1.3 ± 0.7	2.8 ± 2.5	.042
Lactate (mean, SD)	2.0 ± 1.9	2.8 ± 2.0	.070
ASA Score			
I, II, III (n, %)	9 (81)	2 (18)	.006
IV, V (n, %)	6 (35)	11 (65)	
Preoperative Ventilation (n, %)	2 (29)	5 (71)	.200

Impact on Medical Knowledge After an Immersive Pathway Program for the Underrepresented Community

X Luo, J Ritondale, K Walter, B Gray, J Turner

Introduction: Many post-graduate masters' programs have been shown to benefit pre-medical students upon entering medical school, but there haven't been any investigations into the improvement of medical knowledge with shorter, more concise programs tailored to the expectations and responsibilities of a medical student. A common trend in today's medical school application process is first to obtain a master's degree. Although this displays to medical programs the dedication, knowledge, and academic maturity of the applicant, these programs have narrow scopes of learning and have become a financial burden. The goal of the IMPRESS (Introduction to the Medical Profession: a Rotation to Empower Students) program was to expose pre-medical students to the academic and professional life of medical students, teaching both skills and knowledge to help increase their understanding of medicine.

Objective: We collected data from 11 underrepresented undergraduate students from the inaugural class of the IMPRESS program. These students were exposed to a 4-week long course that involved clinical skills, research, and didactics. Prior to the start of the program, each student completed a pre-test, which assessed their level of clinical and medical knowledge. They were not given the answers and they didn't have access to the questions after taking the pre-test. They subsequently completed the same test at the end of the program.

Methods: The median pre-test score was 54.5% (IQR 15.9%) and the median post-test score was 63.6% (IQR 6.8%), the p-value is calculated to be 0.01 using the Wilcoxon signed rank test. The median score increased by 9.1% following the four-week program.

Results: Our findings show that exposing a student to a wide variety of medical school-based learning opportunities increases their medical knowledge in a short period of time. The benefit of the program is not limited to medical knowledge, but also exposes the students to clinical, practical, and research experience.

Conclusion: Our findings show that exposing a student to a wide variety of medical school-based learning opportunities increases their medical knowledge in a short period of time. The benefit of the program is not limited to medical knowledge, but also exposes the students to clinical, practical, and research experience.

Self-reported confidence in proficiency on MCAT after an immersive pathway program for the underrepresented community

Luo, Xinyi, MD; Gray, Blake, MD; Walter, Korey; Ritondale, Joseph, Turner, Jacquelyn, MD

Introduction: To diversify the future of medicine, the IMPRESS (Introduction to the Medical Profession: a Rotation to Empower StudentS) program was created to provide mentorship and exposure for underrepresented undergraduate minority students with interest in medicine. The purpose of this study is to evaluate the impact of the program on self-confidence as a factor in taking the MCAT.

Objective: Participating students were rising sophomores and juniors enrolled at an accredited college or university. Students completed a 4-week program with exposure to clinical, research, simulation, mock MCAT, and didactic experiences. During the program the students were given pre and post self-efficacy tests to assess how confident the students felt about the MCAT from the start to the finish of the program.

Methods: 11 students were enrolled in the program. The median MCAT self-efficacy score before the program was 34 out of 55 (IQR 28-44); median score at the end was 44 (IQR 36-49); the p-value is calculated to be 0.09 using the Wilcoxon signed rank test. Interestingly, 6 out of the 11 students' confidence score increased, 4 decreased, and 1 stayed the same. The median of the increased score changed from 33 (IQR 26-37) to 47 (IQR 35-53) ($p=0.03$) and the median decreased score changed from 43 (IQR 30-47) to 42 (IQR 27-45) ($p=0.09$). The scores showed no correlation with their mock MCAT score, gender, or year in school.

Results: Our results from the self-efficacy test indicated that by the end of the program there was some improvement in self-confidence regarding the MCAT among the students who initially rated themselves lower; however, it had the opposite, although not statistically significant, effect among the students who initially scored their confidence higher. Our findings suggest that the program promotes encouragement and wellness to allow some students to manifest their own potential but also exposes some students to the reality of the rigor in pursuing medicine.

Conclusion: Our results from the self-efficacy test indicated that by the end of the program there was some improvement in self-confidence regarding the MCAT among the students who initially rated themselves lower; however, it had the opposite, although not statistically significant, effect among the students who initially scored their confidence higher. Our findings suggest that the program promotes encouragement and wellness to allow some students to manifest their own potential but also exposes some students to the reality of the rigor in pursuing medicine.

ePoster #24 | Abstract | Surgical Education

Efficiency of Surgical Skills of Undergraduate Students from Underrepresented Communities

B Gray, X Luo, K Walter, J Ritondale, J Turner

Introduction: Today's lack of diversity in physicians that may be contributed to the lack of underrepresented medical school and resident applicants. Introduction to the Medical Profession: A Rotation to Empower Students (IMPRESS) was created to provide equity in medical education. This four-week program reflects the experiences that residents are faced with, including exposure to the Fundamentals of Laparoscopic Surgery (FLS).

The timing the undergraduate students achieved with minimal attempts compared to surgical residents with over 20 attempts draws a connection to performance and stress levels. The purpose of this study is to evaluate students' ability to perform when doing so for the sake of learning versus the pressure of striving for a specific score.

Objective: The students were introduced to the following aspects of FLS: PEG Transfer and Circle Cutting. After watching demonstrations, the students were given three attempts. They were unaware that the sessions were being timed.

Methods: Sample size is ten. For PEG transfer, the students achieved an average of 97.8 seconds (s). The FLS max time allowed is 300s and the proficiency level after an average of 57 attempts is 48s. For Circle cutting, the students achieved an average of 219.3s. The FLS max time allowed is 300s and the proficiency level after an average of 18 attempts is 98s.

Results: Given that the minimally trained undergraduate students averaged within passing range for both PEG transfer and Circle cutting it can be concluded that difficult tasks can be successfully completed in environments where learning is the goal, not a test score.

Conclusion: Given that the minimally trained undergraduate students averaged within passing range for both PEG transfer and Circle cutting it can be concluded that difficult tasks can be successfully completed in environments where learning is the goal, not a test score.

Blood Pressure Control and Neurologic Recovery in Traumatic Spinal Cord Injury

Y Bashumeel , E Kandil

Introduction: Objective This study investigates the prevalence and risk of thyroid disturbances in pregnant women with pre-existing diabetes mellitus (DM) or gestational diabetes mellitus (GDM) in a tertiary hospital setting in Riyadh, SA. This research's findings may help identify potential risk factors associated with thyroid disturbances during pregnancy and facilitate early diagnosis for at-risk pregnant women.

Methods: Subjects and methods A retrospective cross-sectional study was conducted at an endocrinology clinic between October 2018 and December 2021 to evaluate the electronic records of pregnant women with DM or GDM who had documented normal thyroid function before pregnancy.

Results: Results Three hundred ninety-six files that met the selection criteria were deeply investigated and analyzed. The analysis showed that 378 (95.5%) patients were of Saudi nationality, and the mean age in years \pm SD for the selected patients was 34.23 ± 5.468 . The prevalence of obesity was 63.7%, with a mean body mass index (BMI) of 32.78 ± 6.78 kg/m². The patients in this study were categorized into three groups based on their type of DM: 57 were diagnosed with type 1 DM (14.4%), 120 with type 2 DM (30.3%), and 219 with GDM (55.3%). The study identified 43 patients (10.85%) with subclinical hypothyroidism and 74 (18.69%) with hypothyroidism. Among the remaining patients, thyroid function was within the normal range for 264 (66.67%). The study also identified eight patients (2.02%) with subclinical hyperthyroidism and seven (1.77%) with hyperthyroidism. The prevalence of thyroid dysfunction was reported at 33.4%, with most of the dysfunction observed in the GDM group (20.7%). By comparison, the type 1 DM and type 2 DM groups presented a lower prevalence of thyroid dysfunction, accounting for only 4.1% and 8.6%, respectively.

Conclusion: Conclusions Hypothyroidism, both clinical and subclinical, is more prevalent among patients with GDM than individuals with type 1 and type 2 DM. Research suggests a greater risk of developing hypothyroidism in patients with an increased BMI and among those older during pregnancy.

Navigating Choices: Determinants and Outcomes of Surgery Refusal in Thyroid Cancer Patients Using SEER Data

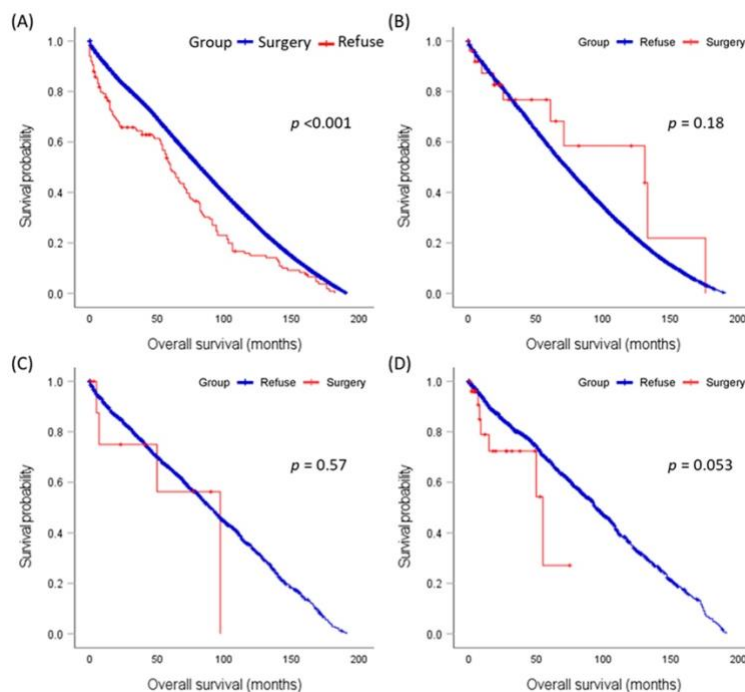
M Hussein, E Toraih, I Ohiomah, N Siddeeqe, M Comeaux, M Landau, A Anker, J Jishu, M Fawzy, E Kandil

Introduction: With thyroid cancer being a prevalent endocrine cancer, timely management is essential to prevent malignancy and detrimental outcomes. Surgical intervention is a popular component of the treatment plan, yet patients often refuse to undergo such procedures even if clinicians explicitly recommend them.

Methods: This study gathers data from the Surveillance, Epidemiology, and End Results database (2000-2019) to learn more about the sociodemographic factors that predict the likelihood of surgical intervention. A total of 176,472 patients diagnosed with either papillary or follicular thyroid cancer were recommended surgery, of which 470 were refused. Cancer-specific mortality and overall mortality were determined with the Kaplan-Meier method and univariate and multivariate Cox proportional hazards regression model. Mortality rates for patients who delayed surgery (≥ 4 months vs.

Results: The findings reveal that surgical delay or refusal increased overall mortality. The surgical refusal was associated with increased thyroid cancer-specific mortality. However, the impact on thyroid cancer-specific mortality for those who delay surgery was not as pronounced. Significant sociodemographic determinants of surgical refusal included age greater than or equal to 55 years, male sex, being unmarried, race of Asian and Pacific Islander, and advanced tumor staging.

Conclusion: The results underscore the importance of patient education, shared decision-making, and access to surgical interventions to optimize outcomes in thyroid cancer management.



Leukemia Threats Following Radioactive Ablation Iodine for Thyroid Cancer

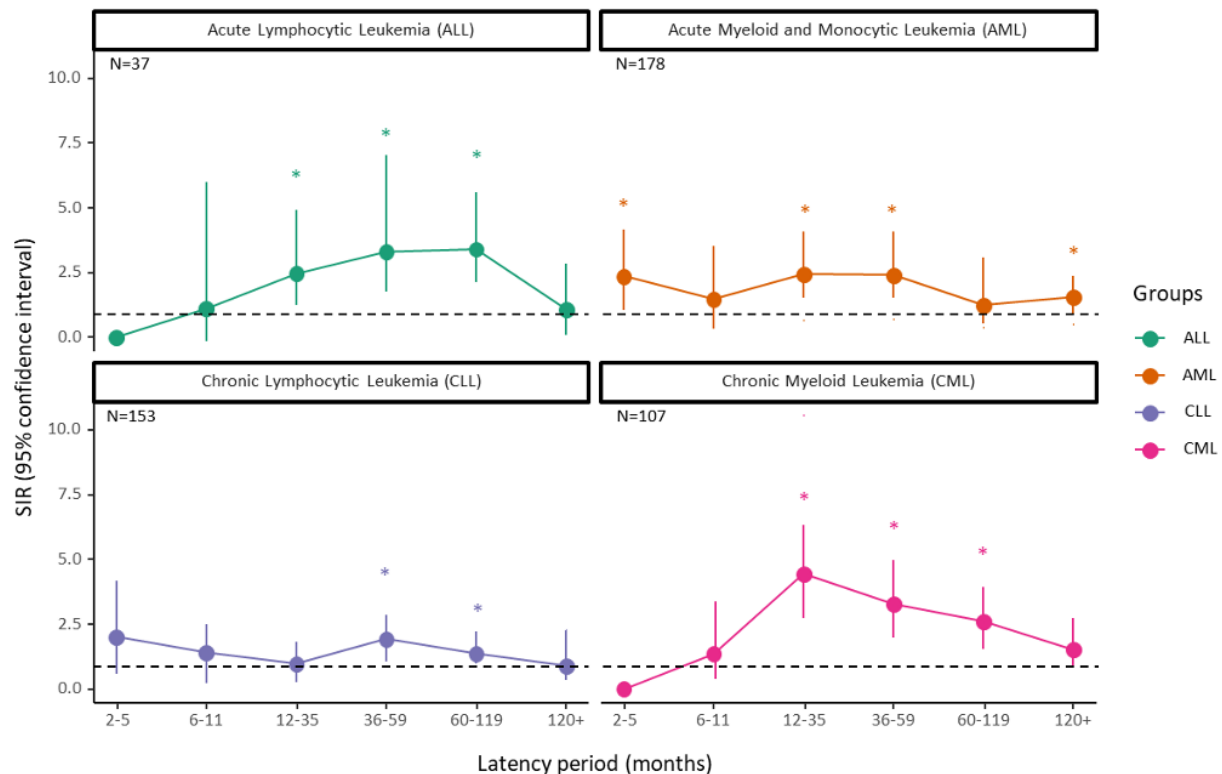
M Hussein, E Toraih, J Jishu, T Lavorgna, R Craig, K Moroz, E Kandil

Introduction: Radioiodine ablation (RAI) is a common treatment for differentiated thyroid cancer (DTC). The association between RAI and leukemia risk remains understudied.

Methods: Patients with DTC were identified from the SEER registry (2000-2019). Standardized incidence ratios (SIRs) and excess risk (ER) of leukemia compared to the general population were calculated.

Results: Among 196,569 DTC patients, 0.7% developed hematologic malignancies. Leukemia demonstrated the highest risk (SIR 1.74, 95% CI 1.59-1.90). The RAI group had a higher leukemia SIR of 2.12 (95% CI 1.87-2.39) versus 1.45 (95% CI 1.37-1.52) for non-RAI patients ($p < 0.001$). Patients diagnosed before age 55 years had an elevated risk (SIR 2.74) compared to age ≥ 55 years (SIR 1.53). American Indian/Alaska Natives had a pronounced leukemia risk (SIR 7.63, 95% CI 2.46-17.8). White, Black, and Asian/Pacific Islander patients had SIRs of 1.70 (95% CI 1.54-1.86), 2.04 (95% CI 1.36-2.93), and 2.17 (95% CI 1.48-3.06), respectively.

Conclusion: RAI treatment in DTC patients is significantly associated with increased leukemia risk, modulated by age, race, and other factors. This study reinforces the need for awareness of leukemia as a potential long-term complication of RAI ablation for DTC.



Comparative Survival Outcomes of Total Thyroidectomy vs. Lobectomy/Subtotal in T1 Medullary Thyroid Cancer

J Jishu, E Toraih, S Sadakkadulla, S Baah, Y Bashumeel, M Hussein, E Kandil

Introduction: There are no definitive guidelines for the optimal surgical management of small, localized medullary thyroid cancer (MTC) tumors. At total thyroidectomy is the standard surgical treatment plan, but a lobectomy may provide comparable oncologic control with less morbidity for small lesions. We aimed to compare survival outcomes for total thyroidectomy versus lobectomy/subtotal thyroidectomy for early-stage T1 MTC using a national cohort.

Methods: We identified 398 patients with T1N0/1M0 MTC in the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) registry from 2010-2019 who underwent total thyroidectomy or lobectomy. Thyroid cancer mortality and overall survival were compared between surgical groups using multivariable Cox models.

Results: Thyroid cancer mortality was 5.7% for total thyroidectomy and 8.1% for lesser surgery ($p=0.47$). Overall survival was similar between total thyroidectomy and lobectomy groups (86.8% vs. 87.2%, $p=0.95$). On multivariable analysis, there was no significant difference in thyroid cancer mortality ($HR=0.44$, $p=0.23$) or overall mortality ($HR=0.77$, $p=0.60$) between surgical groups. In subgroup analysis, survival was similar between total thyroidectomy and lobectomy, regardless of neck dissection and age groups. Delayed surgery >1 month after diagnosis was associated with worse overall survival ($p=0.012$). External beam radiation was linked to higher mortality on univariate analysis ($p=0.005$) but not after multivariate adjustment.

Conclusion: For localized T1N0/1M0 MTC, lobectomy/subtotal thyroidectomy achieved similar long-term overall and thyroid cancer-specific survival compared to total thyroidectomy in this large population-based analysis. These findings support consideration of less extensive surgery for select low-risk early-stage medullary cancers to potentially minimize surgical morbidity.

The Prevalence and Prognostic Implications of BRAF K601E Mutations in Thyroid Cancer

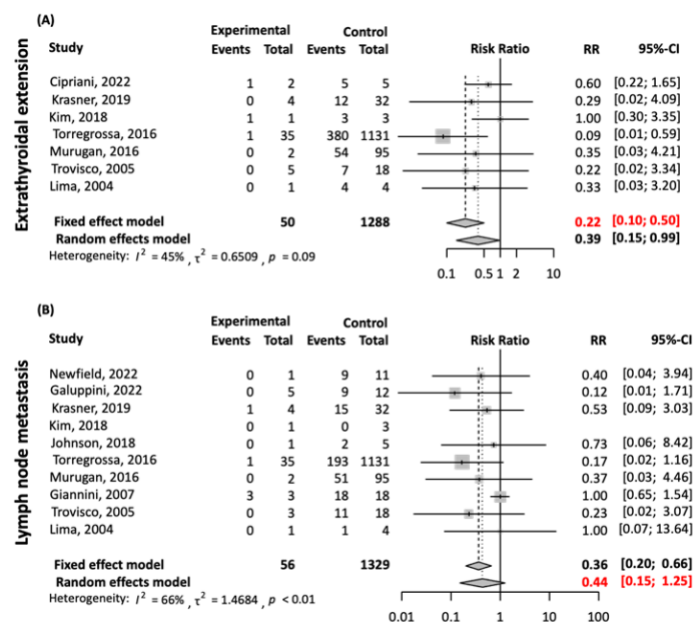
D Pinion, E Toraih, A Webster, R Clark, R Elshazli, P Issa, M Hussein, R Craig, M Fawzy, E Kandil

Introduction: BRAF is the most commonly mutated oncogene in papillary thyroid cancer. Previous studies have focused on V600E, the most common mutant, concluding it is associated with poor prognosis. The second most common BRAF mutation, K601E, has not been studied as extensively, though recent studies suggest its association with a more indolent course. This study aims to characterize BRAF K601E mutant thyroid cancers by comparing prevalence, histopathology, and clinical outcomes with V600E mutants.

Methods: A systematic literature search was conducted to identify studies reporting BRAF mutational status in PTC. Pooled prevalence, histopathological subtype distribution, extrathyroidal extension, lymph node metastasis, recurrence, and survival were extracted and analyzed from 32 included studies between the years 2003 and 2023 (n=13,191 patients).

Results: BRAF mutations were present in 33% of samples, with 22% positive for V600E and 3% positive for K601E. K601E mutants were predominantly found in follicular subtypes of TC, including NIFTP/EFVPTC (11%), follicular thyroid carcinoma (7%), and follicular adenoma (3%). V600E was more prevalent in non-follicular subtypes, most commonly classic variant PTC (41%) and PDTC (24%). K601E-mutated cases were associated with significantly lower risk of extrathyroidal extension (RR=0.22, CI=0.10-0.50, $p = 0.0003$), as well as a trend towards lower lymph node metastasis, although these findings were not significant (RR=0.43, CI=0.15-1.25, $p=0.12$).

Conclusion: Our results suggest that K601E represents a unique, lower-risk histology and reduced extrathyroidal extension, consistent with a more indolent course when compared to V600E. These findings suggest that detecting K601E may guide conservative management, though more data is needed to make clinical recommendations.



Bilateral Nodule Radiofrequency Ablation in a Single Setting: First Reported Case Series

Peter P. Issa

Introduction: Background: Radiofrequency ablation (RFA) is a minimally-invasive ablative technique with an impressive safety profile used to manage thyroid nodules. Current reports with RFA describe the treatment of a single nodule in a single-setting. We describe the first series of bilateral nodule RFA in a single-setting.

Methods: Methods: RFA was performed on patients with bilateral thyroid nodules in a single-setting. A cohort of randomly selected patients undergoing RFA for bilateral thyroid nodules in a separate setting was reported as a control cohort.

Results: Results: A total of 12 patients were included in our series, included 6 patients in the single-setting ablation cohort. For patients with bilateral nodules treated by RFA in separate settings, the mean volume reduction rate (VRR) at 6 months of $70.22\% \pm 18.86\%$. There were no reports of complications in separate setting cohort. For patients with bilateral nodules treated by RFA in a single-setting, the mean VRR at 6 months was $69.56\% \pm 18.97\%$. There were no reports of complications in the single-setting cohort.

Conclusion: Conclusions: Our work describes a novel use of RFA, providing preliminary insight into its use for appropriately selected patients with bilateral thyroid nodules. Future studies with larger sample sizes are warranted to corroborate and expand on our findings.

Cystic Duct Remnant Syndrome – A Postoperative Diagnosis

A Hernandez, C David, B Lowrey, M Sicard

Introduction: Cystic duct remnant syndrome is a situation in which gallstones are retained in a remnant of the cystic duct. This is a postoperative diagnosis presenting anywhere between days, months, or years post-partial cholecystectomy. We present the cases of two patients who presented post-partial cholecystectomy with unresolved symptoms of cholecystitis who were subsequently diagnosed with cystic duct remnant syndrome.

Methods: We present the cases of two individuals who presented with symptoms of abdominal pain, nausea, vomiting and jaundice due to a remnant cystic duct. Both patients were morbidly obese individuals with recurrent bouts of gallstone pancreatitis post-partial cholecystectomy. Imaging revealed multiple stones lodged in a remnant gallbladder. Initial intervention included endoscopic retrograde cholangiopancreatography for stone visualization and dislodgment as well as temporary stent placement. The patients were then taken for a second cholecystectomy for removal of the remnant cystic duct. Lastly, the patients were brought in for removal of the previously placed stent.

Our second patient presented with cholangitis-like symptoms. This patient also presented post-partial cholecystectomy with primary complaints of fever and abdominal pain. Imaging revealed a remnant gallbladder with stone impaction at the cystic duct and bile duct junction. For treatment we opted for initial ERCP during which the remnant cystic duct was cannulated. Then the impacted stone was dislodged along with a wide sphincterotomy to allow for adequate drainage, at which time a stent was also placed. The patient was brought back for a second operation for removal of the remnant gallbladder and was scheduled for removal of the previously placed stent.

Results: The two patients with this remnant gallbladder syndrome underwent similar interventions including ERCP, stent placement, cystic duct remnant removal, and stent removal as a final step. Both patients had complete resolution of their presenting symptoms.

Conclusion: Cystic duct remnant syndrome is a rare occurrence with increasing incidence post-partial cholecystectomy. The reported cases discuss laparoscopic versus robotic versus endoscopic approaches for resolution of patients' symptoms. With that, there are currently no clear guidelines for this post-operative diagnosis. Our presented cases demonstrate the efficacy of a combination of endoscopic and laparoscopic approaches for cystic duct remnant syndrome symptom resolution.



The Retention of Significant Vaginal Lengthening with a Novel Vaginal Expansion Device

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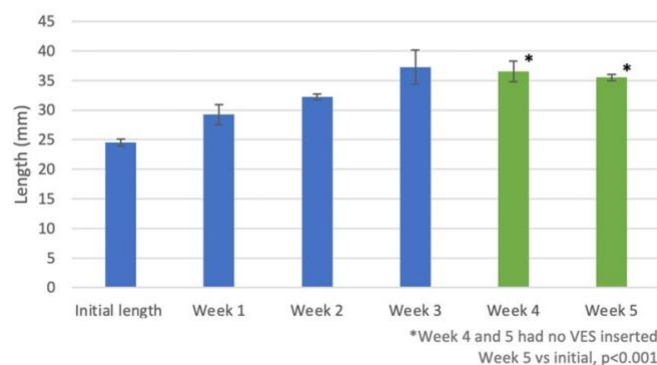
Introduction: Vaginal atresia is commonly seen in Mullerian agenesis and is primarily treated by vaginal dilation therapy or surgical vaginoplasty. Our vaginal expansion sleeve (VES) is a novel device that has shown significant lengthening of vaginal tissue over time. This study aims to show that the achieved vaginal length is retained after the treatment period ends.

Methods: The VES device is a spring-like woven cylinder with biocompatible flat resin caps. Initial vaginal lengths were measured by a graduated sound, and the VES were cut to 1.3x the length of the measured vaginal canal. Once inserted, the VES was allowed one week to stretch the tissue before removal. Three serial weekly expansions were performed with each VES measuring 1.3x of the elongated vaginal canal length. Following the 3 serial expansions, 2 weeks of recovery were provided to assess any tissue contraction before final measurements. Vaginal tissue was harvested and stained for histologic analysis.

Results: Mean vaginal canal length increased overall from 24.5 ± 0.577 mm to a retained 35.5 ± 0.577 mm after 2 weeks post-removal of the three serial expansion VESs ($n=4$, $p < 0.001$), showing a 45% increase in vaginal length. Histologic examination of lengthened vaginal tissue showed minimal submucosal chronic inflammation, impaired squamous maturation/regenerative change, and muscularis disruption with interspersed fibrosis.

Conclusion: The 3-series VES expansion showed significant lengthening that was retained 2 weeks post-removal of VES. Overall, the histologic changes were minimal and suggest an appropriate reparative/regenerative response. Future studies evaluating the durability of vaginal expansion as well as using drug-eluted sleeves to minimize inflammation and fibrosis are warranted.

Figure 1: Vaginal Length Pre and Post Expansion



ePoster #34 | Abstract | Pediatric Surgery

Assessing Gunshot Wound Patient Outcomes Following Early Implementation of a Pediatric Trauma Center

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Introduction: Efficiently managing pediatric gunshot wound (GSW) patients is a critical concern for healthcare resource utilization. This study aims to evaluate differences in care of pediatric GSW patients following implementation of a pediatric trauma center (PTC).

Methods: We conducted a retrospective review of trauma registries from the adult trauma center (ATC) and PTC in an urban metropolitan area. All pediatric patients (<14 years old) with a GSW were included. The cohort was divided into pre-implementation (March 2020 - March 2021), mid-implementation (April 2021 - April 2022), and post-implementation (May 2022 - April 2023). Data collected included demographics, trauma registry type, injury severity score (ISS), transport mode, and mortality. Comparisons between groups were performed using Chi-squared tests of independence.

Results: The study included 214 patients with 33.6% in the pre-implementation group, 37.9% in the mid-implementation group, and 28.5% in the post-implementation group. The majority of injuries were in Black (87.9%), non-Hispanic (97.2%) males (79.0%) with a median age of 12 years. Post-implementation, significantly more patients were registered in the pediatric trauma registry ($p < 0.01$). There were no significant differences in transport mode ($p = 0.34$), ISS ($p = 0.06$), length of stay ($p = 0.28$), or mortality ($p = 0.78$) between the three groups.

Conclusion: We observed the expected trend toward increasing patients at the PTC following implementation. This phase is critical in assessing the impact of the new trauma system on healthcare resources. As this system matures, continued monitoring should assess for any developing disparities.

Complex Abdominal Wall Reconstruction Involving Tissue Expansion and Large Bridging Mesh at Liver Transplant Incision Site

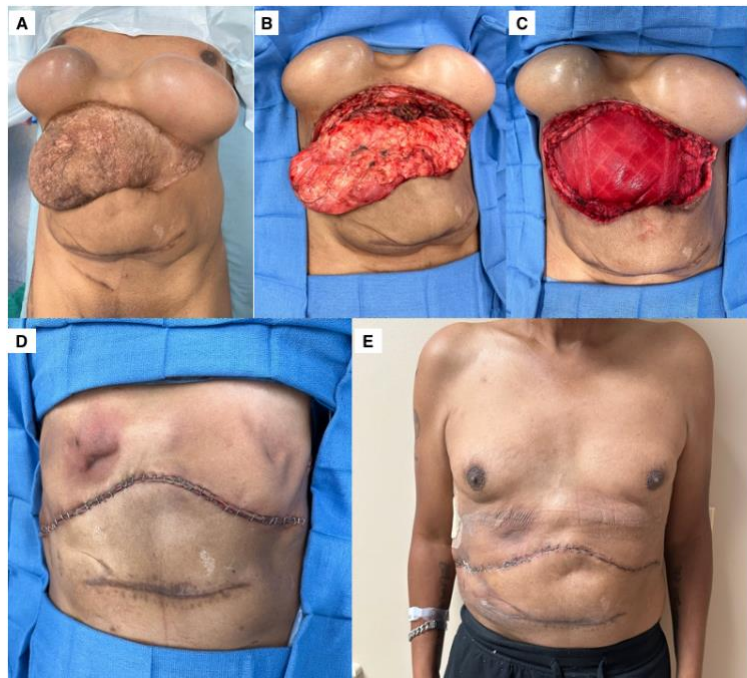
M Landau, C Fligor, A Chaffin, W Aukerman, H Jeon

Introduction: Large-sized recurrent abdominal wall hernias are commonly repaired via component separation, involving the release of lateral abdominal wall muscles to facilitate defect closure. However, in settings without viable abdominal wall muscles or superficial soft tissue coverage, alternative methods must be considered. We describe a hernia repair technique using large bridging mesh and tissue expansion for treatment of a large-sized recurrent incisional hernia. This hernia followed orthotopic liver transplant that was complicated by organ size mismatch and delayed abdominal coverage with split-thickness skin graft three years prior.

Methods: A 58-year-old male with incisional hernia at previous chevron incision measuring 15x35cm underwent repair as a joint case with transplant and plastic surgery teams. He had previous placement of bilateral tissue expanders superior to the defect in preparation for hernia repair. The repair involved excision of previous skin graft over bowel, dissection of fascial edges and costal margin, and placement of interpositioned reinforced ovine rumen measuring 25x40cm. Coverage of the mesh was completed by removing tissue expanders and utilizing local fasciocutaneous advancement flaps.

Results: The patient was admitted post-operatively and discharged home on day 4. He developed a small non-infected seroma at his incision site requiring later percutaneous drainage. No other complications or hernia recurrence have been noted. The surgery and post-operative care required no significant alteration of immunosuppression.

Conclusion: Large bridging mesh combined with tissue expansion may be combined as an effective technique for treatment of large abdominal wall hernias in patients with large losses of abdominal fascia who are not candidates for component separation.



Disparities in access to care in the multimodality treatment of primary liver cancers and their impact on patient outcomes in the state of Louisiana

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Introduction: Liver cancer incidence and mortality have been shown to differ by race, ethnicity, and geography. Louisiana rates in the 3rd quartile for liver cancer incidence but is among the states with the highest liver cancer mortality. This study analyzes disparities in the multimodal treatment and outcomes of liver cancer patients in Louisiana.

Methods: Cases of primary liver cancer in Louisiana from 2010-2020 were obtained from the Louisiana Tumor Registry. Nonsurgical therapy was defined as receiving radiation, chemotherapy, or immunotherapy using the NAACCR treatment summary variables. Generalized linear mixed models were used and overall survival was analyzed.

Results: Of the patients meeting inclusion criteria, 23.7% received surgical therapy, 56% received nonsurgical therapy, and 30.5% received no therapy. Risk factors for no treatment include older patients (OR:1.65; 95%CI:1.27-2.14), no domestic partner (OR:1.41; 95%CI:1.18-1.69), uninsured (OR:4.13; 95%CI:2.79-6.22), high poverty (OR:1.24; 95%CI:1.03-1.49), and rural residence (OR:1.36; 95%CI:1.07-1.74). Non-surgical therapy accounted for 53.7% of patients' first course of treatment, but the median time to treatment was longer for patients with non-surgical therapy as the first treatment compared to surgery (41 days vs. 33 days, $p<.0001$). The addition of non-surgical therapy was associated with improved overall survival for patients who did not undergo surgical interventions (HR:0.42; 95%CI:0.38-0.46).

Conclusion: Available therapeutic modalities are underutilized in LA. Older age, no domestic partner or insurance, rural residence, and poverty are risk factors for not receiving treatment for nonmetastatic liver cancer. Identifying patients with these risk factors and allocating resources accordingly is important in reversing inequities in access to care and improving outcomes.

Table 1. Adjusted odds ratios and 95% confidence intervals for logistic regression models of receiving no therapy for cases of local and locally advanced liver cancer in Louisiana, 2010-2020.

	OR (95% CI)
Age (ref=18-59)	
60-69	1.07 (0.87,1.32)
70 and older	1.65 (1.27,2.14)
Race/Ethnicity (ref=White)	
Black	1.12 (0.92,1.37)
Hispanic	1.10 (0.68,1.77)
Domestic Partner (ref=Yes)	
No	1.41 (1.18,1.69)
Insurance (ref=Private)	
Not Insured	4.13 (2.79,6.11)
Medicaid	1.41 (1.05,1.91)
Medicare	1.56 (1.19,2.04)
Rural (ref=No)	
Yes	1.36 (1.07,1.74)
High Poverty (ref=No)	
Yes	1.24 (1.03,1.49)

Navigating Diabetes in Endocrine Surgeries: Outcomes and Economic Implications

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Introduction: Diabetes mellitus is a common comorbidity among surgical patients, often leading to poor outcomes due to the physiological impact of chronic hyperglycemia. Even elective endocrine surgeries like thyroid and parathyroid procedures can pose significant challenges for diabetic individuals. This study examines the relationship between diabetes and outcomes in endocrine surgeries, with a focus on complications, hospital stays, and associated costs.

Methods: Data from the Nationwide Readmissions Database for 2010–2014 were analyzed, including 114,345 adult patients who underwent thyroid or parathyroid surgeries. Various patient and hospital factors were considered, such as age, income, insurance type, and comorbidities. Study outcomes included length of stay, postoperative complications, mortality, readmission rates at 30 and 90 days, and hospital costs. Statistical analysis included stratification by diabetes type, control status, and the presence of diabetic complications.

Results: Diabetic patients represented a significant portion of those undergoing thyroid, parathyroid, and adrenal surgeries. They exhibited higher rates of postoperative complications, longer hospital stays, increased readmission rates, and higher hospital costs compared to non-diabetic patients. These trends were consistent across all endocrine surgeries. Importantly, there were no significant associations between diabetes and 30- or 90-day mortality rates.

Conclusion: Diabetic patients undergoing endocrine surgeries face significantly increased risks of complications, readmissions, extended hospital stays, and higher costs. Healthcare providers should prioritize interventions to mitigate surgical complications in diabetic patients to enhance outcomes and reduce healthcare expenditure.

The Prognostic Value of RAS Mutations in Thyroid Cancer: A Meta-Analysis

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Introduction: Mutational testing provides insights into malignancy risk in thyroid cancer (TC). We aimed to evaluate RAS mutations as predictors of metastatic potential and prognosis in TC.

Methods: A systematic meta-analysis was conducted, comparing postoperative outcomes between RAS mutation-positive and -negative cohorts. Outcomes included distant metastasis, lymph node involvement, extrathyroidal extension, recurrence, and mortality.

Results: The meta-analysis included 17 articles and 2,552 patients. RAS mutations were detected in 36% of TC patients. RAS-positive patients showed significantly higher distant metastasis (25% vs 11%, $p < 0.001$) compared to RAS-negative patients. RAS positivity was an independent risk factor for distant metastasis (RR 3.23, $p < 0.001$), lymph node metastasis (RR 1.93, $p < 0.001$), extrathyroidal extension (RR 1.69, $p < 0.001$), recurrence (RR 1.78, $p < 0.001$), and mortality (RR 4.36, $p < 0.001$).

Conclusion: RAS mutation positivity in TC patients confers a significantly increased risk of aggressive disease and adverse postoperative outcomes. RAS testing provides clinically valuable prognostic information to guide personalized treatment decisions and follow-up strategies.

Surgical cytoreduction of metastatic grade 3 well-differentiated gastroenteropancreatic neuroendocrine neoplasms: a single institution experience

Sugumar K, Skill NJ, Maluccio MA, Limbach KE

Introduction: Grade 3 well-differentiated gastroenteropancreatic neuroendocrine neoplasms (GEPNENs) have recently been identified as a separate entity from poorly differentiated neuroendocrine carcinomas with unique behavior and characteristics. Optimal management of these neoplasms remains unclear, particularly for metastatic cases, and it is not well known if surgical cytoreduction is safe and confers acceptable oncologic outcomes. The aim of this study is to determine surgical and oncologic outcomes of liver cytoreduction for grade 3 well-differentiated GEPNENs.

Methods: Adult patients with grade 3 well-differentiated GEPNENs metastatic to the liver were identified from the electronic medical record of a single institution. Retrospective review of patient demographics, clinicopathologic features, and surgical and oncologic outcomes was conducted.

Results: Thirteen patients were identified. Median age at diagnosis was 56 (range 28-73). 53.8% were female, and 15.4% were African American. 69.2% of primary tumors originated in the pancreas, 23.1% in the small bowel, and 7.7% in the rectum. Mean Ki-67 was 28.8%. Eleven patients (84.6%) were able to achieve at least 70% liver cytoreduction. Major complications occurred in 41.7% of cases. All patients developed progression with median PFS 21.3 months (95% CI 13.3-29.3 months). Median OS was 117 months (95% CI 3.4-230 months).

Conclusion: The majority of metastatic grade 3 well-differentiated GEPNENs in this series originated in the pancreas. Operative cytoreduction is complex with a high rate of complications but may confer a prolonged progression free survival.

Decision to Operate on Hepatocellular Cancer Patients is Not Driven by Comorbidities in Louisiana

A Talbot, D Danos, Y Yi, L Maniscalco, X Wu, M Al Efishat, J Watson, O Moaven, M Maluccio, V Nfonsam, J Lyons

Introduction: Louisiana ranks second in mortality from hepatocellular cancer (HCC) in the United States. This has previously been linked to an underutilization of hepatic surgery (HS), and use of HS to treat HCC is considerably lower in Louisiana than in the rest of the US. This study aimed to identify risk factors associated with HS underutilization in Louisiana.

Methods: Patients with AJCC T1 HCC diagnosed from 2010–2020 were identified from the Louisiana Tumor Registry (LTR). Patients who underwent HS (including ablation, resection, and transplantation) were compared to those who did not undergo HS. Coordinate variables were analyzed using Fisher's exact test. The probability of receiving HS was modeled with logistic regression and results reported as adjusted odds ratios.

Results: 1391 patients with T1 HCC were analyzed. 75.4% were male; 60.2% were white. 524 (37.7%) patients underwent HS (33.2% ablation; 40.8% resection; 26.0% transplantation). There were no significant differences observed in age, race, BMI, poverty, rurality, or comorbidity index between HS and non-HS patients. A similar percentage of patients with cirrhosis was seen among HS and non-HS patients (7.4% versus 6.9%, NS). A higher percentage of no insurance and Medicaid patients had no HS (22% versus 17%, $p=0.017$). A higher percentage of patients with low SES had no HS (68% versus 59%, $p=0.0029$). Patients with non-commercial insurance and low SES were less likely to receive HS.

Conclusion: Cirrhosis status, poverty, and rurality do not influence the receipt of HS for early-stage HCC in Louisiana. Instead, utilization of HS is driven by insurance type and socioeconomic status.

Factors Associated with Hepatic Surgery Treatment for T1 HCC in Louisiana Logistic Regression Model (n = 1,391)			
Variables	Odds Ratio	95% Confidence Limits	
		Lower Bound	Upper Bound
No insurance (v. private/commercial)	0.41*	0.19	0.9
Medicaid (v. private/commercial)	0.47*	0.31	0.70
Medicare (v. private/commercial)	0.56*	0.40	0.81
Cirrhosis (v. no cirrhosis)	0.80	0.49	1.30
High poverty (v. not high poverty)	1.17	0.84	1.64
Low SES (v. not low SES)	0.71*	0.51	0.99

Models control for age, sex, race, comorbidity index, obesity, rurality, and facility type. * $p < 0.05$.

Comparison of uretero-neocystostomy and uretero-ureterostomy in kidney transplants

M Di Napoli, R Magliulo, H Patel, G Zibari, R McMillan, T Siskron, H Shokouh-Amiri

Introduction: Uretero-neocystostomy (U-N) is the most common technique for ureteral anastomosis in renal transplants and is typically favored over uretero-ureterostomy (U-U). The U-U technique has the potential to decrease the number of donor organs discarded when the ureter is inadvertently cut short during organ procurement, as ureter length has no relevance with this technique. The aim of this study is to compare the incidence of urologic complications, and graft and patient survival.

Methods: 430 kidney transplants completed at our center from January 2016 to March 2023 were retrospectively reviewed. Multi-organ transplants, en-bloc kidney transplants, and graft loss

Results: 312 patients were included in the study (U-N n=120 and U-U n=192). There was no statistically significant difference in the overall incidence of urologic complications ($p=0.92$). Foley catheter duration ($p<0.001$) and operative time ($p<0.001$) was shorter in the U-U group. There was no statistically significant difference in graft ($p=0.80$) or patient survival ($p=0.51$) at 5 years.

Conclusion: Uretero-ureterostomy is a safe technique for ureteral anastomosis in kidney transplant with a similar complication rate as uretero-neocystostomy. Based on this, the U-U technique is a feasible option to decrease organ discard due to an extremely short ureter.

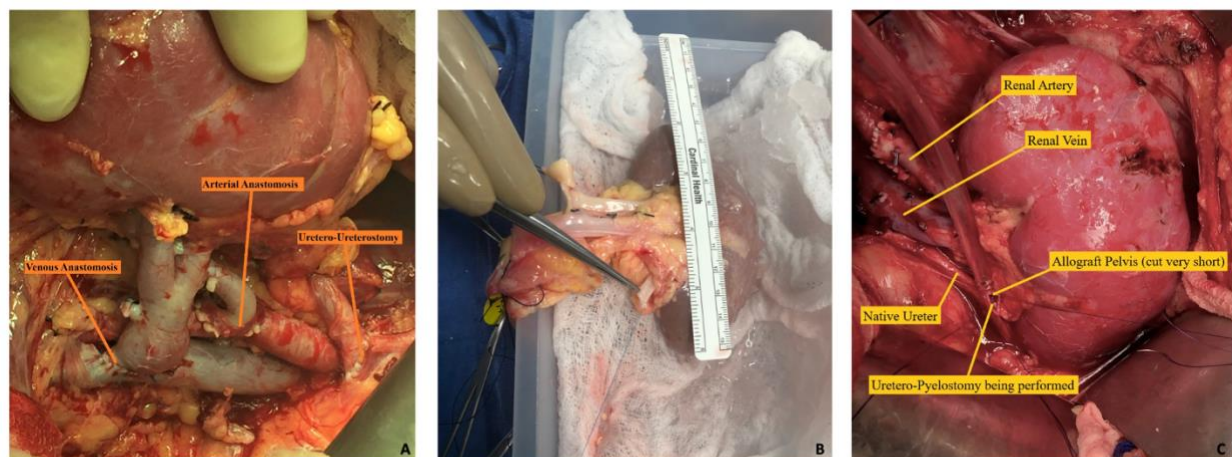


Figure 1. A. Completed arterial and venous anastomosis with donor renal artery connected to recipient external iliac artery and donor renal vein connected to recipient external iliac vein. Completed ureteral anastomosis with donor ureter sewn directly to the recipient's native ureter. B. Cadaveric renal allograft with extremely short ureter secondary to being unintentionally cut during organ procurement. C. Native ureter sewn directly to the renal pelvis of the allograft.

MIDFOOT AMPUTATION AS AN ADJUNCT FOR LIMB SALVAGE IN SELECT PATIENTS WITH PERIPHERAL ARTERY DISEASE WITH CRITICAL LIMB ISCHEMIA

G Lambert, C Song, K Delgado, C Virk, P Perkowski

Introduction: Patients with peripheral artery disease with critical limb ischemia often require minor amputations in concert with revascularization procedures in order to affect limb salvage. Transmetatarsal amputation is a common adjunct to save the limb, but less commonly a more proximal partial foot amputation may be required. Midfoot amputation is typically reserved for trauma patients with normal perfusion. We present a series of patients who underwent midfoot amputations as part of limb salvage procedures.

Methods: Retrospective review of five patients who underwent partial or total midfoot amputation (Lisfranc or Chopart level) before or after lower extremity revascularization for critical limb ischemia. Demographic data were recorded, limb salvage rates were calculated, along with time to healing, and ambulatory status at follow up.

Results: There were three females, and four African Americans. Four patients had diabetes and one had end stage renal disease. Three patients had a Chopart amputation and two patients had a Lisfranc amputation. Three patients had limb salvage while two had below knee amputation (BKA). Average time to healing was 145 days. The two healed patients are ambulatory, while the third is non-weight bearing while wound closes. One patient had BKA due to inadequate perfusion and one required BKA due to multi-drug resistant infection.

Conclusion: In this small series, midfoot amputation has shown to be a useful adjunct for limb salvage in a select group of patients with critical limb ischemia. Revascularization is essential, and multiple procedures are usually necessary to effect healing. Limb loss can be affected by infection and comorbidities. Patient selection and post-operative aggressive wound care is paramount.

Open Versus Endovascular Repair of Traumatic Subclavian Arterial Injuries

S Trinh, C Leonardi, C Sheahan, M Sheahan

Introduction: Traumatic subclavian arterial injuries are relatively uncommon. Traditionally, these injuries were repaired with an open surgical approach. In recent years, endovascular repair has become more common. The goal of this study was to compare open and endovascular repair of traumatic subclavian artery injuries.

Methods: Charts were analyzed for a ten year period (July 2012 to July 2022) at a level I trauma center. All patients with documented traumatic subclavian arterial injuries were included. Data points were gathered including age, gender, mechanism of injury, injury severity score, new injury severity score, blood transfusions given within 24 hours, management of injury, hospital and intensive care unit length of stay. Outcomes were compared between the two groups.

Results: In the study period, 45 patients had a documented traumatic subclavian artery injury. A majority were males (84.4%, n=28). A majority were penetrating (62%, n=28). Two patients expired in the emergency department. Seven patients were managed nonoperatively. Thirty six patients were managed operatively. Open repair comprised the majority (61%, n=22). Comparing open and endovascular repair, there was no significant difference in postoperative complications or amputation rates. There was significantly higher mortality rates in the open repair group ($p<0.05$).

Conclusion: In the past decade, endovascular repair of subclavian arterial injuries has become more common. Compared with open techniques, endovascular repair is associated with similar outcomes but without the morbidity of open repairs. Additional investigation will need to be performed on the utility of endovascular repair in the unstable trauma patient population.

ePoster #44 | Abstract | Vascular Surgery

Led By Vascular Surgery, Vascular Interventions Are Increasingly Performed By Women

S Trinh, C Sheahan, A Tullos, D Danos, M Sheahan

Introduction: Historically, the medical profession has been a male dominated field. Although the number of women entering surgical specialties is rising, this increase is not proportionate to the composition of medical school graduates, which are now 50% female. This study aimed to investigate the specialty and gender of practitioners performing common vascular procedures.

Methods: Medical claims data was obtained from the Center for Medicare and Medicaid Services. Claims were linked to provider characteristics in the National Plan and Provider Enumeration System (NPPES) using national physician identifier. The study included final billing records from inpatient claims 2017-2021. Procedures of interest were identified by the primary ICD 10 procedure codes. Provider taxonomy, gender, and tenure were derived from NPPES.

Results: Board certified vascular surgeons performed the highest percentage of open infrarenal aortic interventions (70.5%), endovascular aorta repairs (67.4%), carotid endarterectomies (60.7%), endovascular carotid interventions (33.4%), open arteriovenous fistulas (61.3%), open infrainguinal interventions (73.6%), and endovascular infrainguinal interventions (47.1%). Analyzing by gender, the majority of all procedures were performed by male physicians. During the five years, all specialties had a significant increase in the percentage of procedures performed by females (P

Conclusion: While the majority of vascular interventions are still performed by male practitioners, the proportion performed by females is increasing. Among all specialties, vascular surgery has both the highest proportion and greatest absolute increase of vascular procedures performed by women. Future recruitment efforts should focus on continuing to reduce this disparity.

ePoster #45 | Abstract | Wound healing and regeneration

Digit amputation level influences macrophage polarization

John Carleton, Sarah G McMahon, Robert Tower, Mimi C. Sammarco, Jennifer Simkin

Introduction: Macrophages are crucial in post-injury healing, initially transforming into an inflammatory form (M1) to eliminate pathogens and then shifting to a non-inflammatory form (M2) that aids tissue repair. Previous research on mouse distal digit tip amputations has indicated the predominance of M1 in regenerative wounds. Our paper suggests that proximal scar-forming wounds are primarily associated with M2. Additionally, we propose that the wound tissue's microenvironment influences macrophage polarization.

Methods: Amputations at the second (P2) and third (P3) phalanx were conducted on 2 hindlimb digits from 8 mice per group, resulting in 16 digits per injury type. Wound tissue was collected after a 10-day healing period. Additionally, bone marrow from 3 separate mice was cultured on L929 media infused with macrophage colony-stimulating factor, fostering the growth of naive macrophages (M0). Filtered tissue homogenate was introduced to the M0 plate for 24 hours, and the Seahorse XF96 measured the plates' metabolic capacity, illustrating the dominant macrophage type, with M1 relying on glycolysis and M2 on fatty acid oxidation, both quantifiable.

Results: Macrophages exposed to P3 homogenate demonstrated metabolic qualities of M2 whereas those exposed to P2 homogenate demonstrated qualities of M1.

Conclusion: Since the macrophages polarized only when exposed to tissue homogenate, we validated the influence of an element within the microenvironment on their differentiation. We additionally reaffirmed the prevalence of M1 in P2 wounds and supported earlier evidence of M2 predominance in P3.

