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Hemodynamic Response of RSI Intubation with the Use of Push Dose Pressors

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University of Texas Austin - Dell Medical School

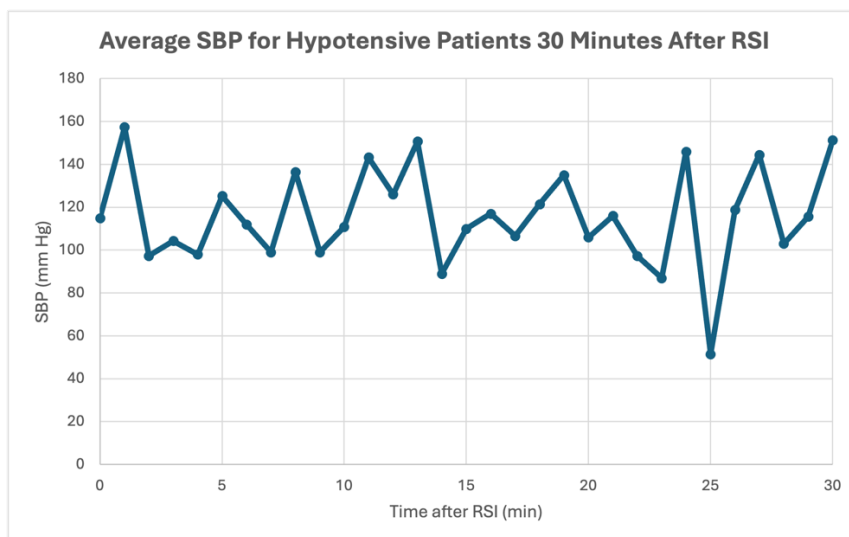
Background: Critically injured trauma patients can experience significant hypotension, and sometimes even cardiac arrest, during rapid sequence intubation (RSI) in the trauma bay. Push dose pressors (PDPs) have been used for many years by anesthesiologists in the operating room to treat hypotension. However, this approach has not been well established during emergency department (ED) RSI of trauma patients.

Objective: This case series investigates the utility of PDPs as a resuscitative adjunct for hemodynamically unstable trauma patients during ED RSI.

Method: We performed a retrospective study (2014-2022) of hemodynamically unstable (initial systolic blood pressure <90 mm Hg) trauma patients who underwent ED RSI and were treated with PDPs prior to intubation. Data collected included demographics, admission physiology, injury severity score (ISS), and interventions (chest tube, blood transfusion) during the primary survey before and after PDPs. The primary outcomes were systolic blood pressure and heart rate during the 30 minutes after RSI, while secondary outcome was ED mortality.

Results: There were 24 hemodynamically unstable patients who received PDPs prior to ED RSI. Patients were on average 47 years old, 75% male, 83% sustained blunt trauma, and ISS was 29. On arrival, average systolic blood pressure was 77 mm Hg, heart rate was 97, and patients had a GCS=7. Prior to RSI, 21% had a chest tube placed, and patients were transfused an average of 1.5 units of whole blood, 1.6 units of PRBC, and 1.0 units of plasma. All patients received epinephrine as a PDP and average blood pressure prior RSI was 108 mm Hg. RSI medications included etomidate (76%), ketamine (24%), and rocuronium (100%). After RSI, 17% of patients had a chest tube placed, patients were transfused an average of 0.3 units of whole blood, 2.0 units of PRBC, and 1.7 units of plasma, and 30% needed additional vasopressor support. Two patients (8%) had a cardiac arrest in the ED and underwent resuscitative thoracotomy, and one of those patients (4%) died in the ED. Average systolic blood pressure (SBP) in five minute increments after RSI is shown in figure.

Conclusion: PDPs can be used as a resuscitative adjunct to treat hypotension in hemodynamically unstable trauma who undergo RSI in the ED. Along with simultaneous resuscitation, PDPs help support blood pressure during the first 30 minutes after administration.



Prehospital Blood Transfusion Correlates with Angioembolization or Diagnostic Angiography and both Procedures Alone Correlate with Decreased Blood Transfusion Requirements Post Procedure

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Background: Traumatic pelvic fractures are associated with hemorrhage and need for angiographic intervention.

Objective: This study sought to compare blood transfusion as a predictor and compare outcomes of patients who met intervention criteria and received either angioembolization (AE) or diagnostic angiography (DA)

Method: We performed a retrospective chart review of adult patients with pelvic fractures presenting to our Level I Trauma Center, between January 2015 and March 2021. Clinical data and outcomes were recorded. Significant factors from univariate testing were fed into linear and logistic models to assess for independent predictive factors for DA or AE requirement, and for post procedural transfusion requirement.

Results: Two hundred twenty-seven patients with pelvic fractures were identified, 39 of whom underwent angiography. Univariate logistic regression found higher prehospital transfusion volume (mean 0.44 units vs 0.07, OR 2.03, 95% CI 1.14-3.62, $p < 0.001$) to predict need for angiography. This was not predictive of need for need of AE vs DA (OR 2.52, 95% CI 0.39-16.33, $p = 0.33$). Multiple linear regression found no difference in post procedural blood transfusion in between the AE or DA group, (range:0-125 and 0-17 respectively $p = 0.40$). Unstable pelvic fracture correlated with need for an interventional suite ($p = 0.035$).

Conclusion: Prehospital transfusion and unstable pelvic fractures predicted the need for intervention and that transfusion requirements after either AE or DA were comparable post procedure. We also found that DA alone may have therapeutic benefit which requires further research. Additional analysis and data collection are in process.

Figure 1: Transfusion Volume (Mann-Whitney U tests) and Mortality (Fisher Exact Tests Comparisons by Need for Intervention.

	Angiography (n = 39)	Non-angiography (n = 188)	p
Transfusion volume, relative to hospital arrival [units; median (range)]			
Prehospital	0 (0-6)	0 (0-3)	.003
0-4h from hospital arrival	1 (0-87)	0 (0-10)	< .001
4-24h from hospital arrival	0 (0-119)	0 (0-6)	< .001
Transfusion volume, relative to procedure [units; median (range)]			
Prehospital	0 (0-6)	0 (0-3)	.003
Mortality [No. (%)]	7/39 (17.9%)	14/188 (7.4%)	.06
CT Abdomen & Pelvis Performed [No. (%)]	38/39 (97.4%)	173/188 (92.0%)	.32
Contrast Blush/Extravasation	32/39 (82.1%)	11/188 (5.9%)	< .001

ePoster #3 | Clinical Science | Trauma/Burn/Critical Care

Code Status Discussions in Injured Older Adults: Are We Hitting The Mark?

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Background: Code status discussions (CSDs) with injured older adults are recommended by the American College of Surgeons at time of admission. However, data regarding the effectiveness of these conversations are limited.

Objective: We aimed to obtain baseline assessment of CSDs between injured older adults and the healthcare team.

Method: Injured older adults (≥ 65) or surrogate decision makers for those incapacitated were surveyed at time of discharge. The primary outcome was percentage of patients that received CSDs. Secondary outcomes included presence of prehospital advanced directive, knowledge of CPR and code status, and desire for more code status information.

Results: 76 patients and 16 separate surrogate decision makers were surveyed. Median age of patients was 83, with 55% (N=42) female, 68% (N=52) white and 59% (N=45) having a high school level of education. Median age for surrogates was 61, with 81% (N=13) female, 56% (N=9) white and 63% (N=10) having a bachelor's level of education. Approximately half, (51%, N=47) of all patients had a living will and 52% (N=48) had talked to family about their desire for CPR before hospitalization. A similar number of patients (74%, N=56) and surrogates (75%, N=12) over-estimated the successfulness of CPR ($P=0.91$). A majority of patients (84%, N=63) and surrogates (75%, N=12) reported not discussing CPR with a provider ($P=0.31$) while more patients (78%, N=59) than surrogates (25%, N=4) were unsure of code status ($P<0.01$).

Conclusion: In this population of injured older adults and surrogates, we identified poor understanding of code status and CPR. This highlights a need to improve CSDs.

ePoster #4| Education | Surgical Education

Defining the Starting Line: Evaluating Resident Robotic Exposure to Enhance Simulation Curriculum

R Wu, N Tapia, S Martinez
Houston Methodist Hospital

Background: Robotic-assisted general surgery procedures continue to increase over time. Achieving proficiency on the robotic surgical platform (RSP) has become a priority of graduating general surgery trainees in an already ambitious training model.

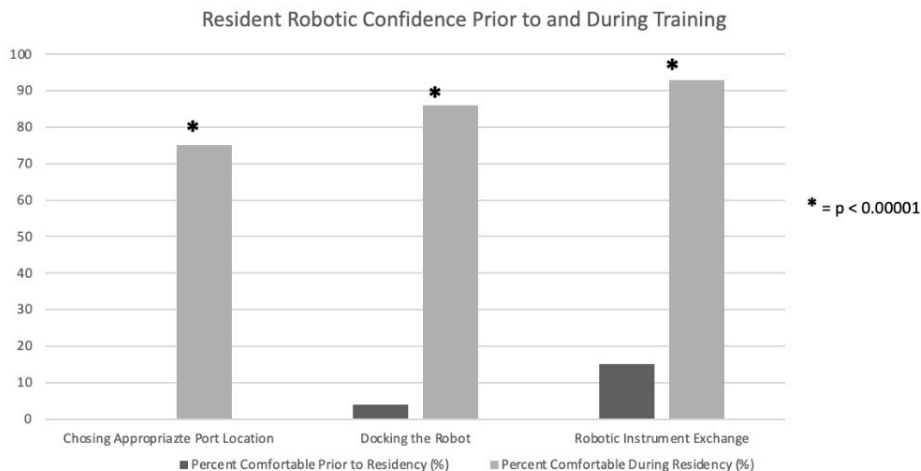
Objective: We evaluated the RSP exposure of our residents prior to training and during residency, and their future expectations of use post-graduation, to enhance our robotic simulation curriculum.

Method: Survey analysis was conducted at a single residency program composed of 30 general surgery residents. Survey administration was conducted in a de-identified manner with Likert scale and binary questions. Residents were asked about their skills and comfort level on the RSP prior to and during training.

Results: 93.3% of residents responded (n=28). Approximately half had no exposure to the RSP in medical school (43%). Those who did passively watched (56%) with some allowed to bedside assist (33%) or exposed via research (6%). Prior to residency, no residents were comfortable with port placement, compared to 75% during residency ($p < 0.00001$). Before residency, 4% of residents were comfortable docking the robot, compared to 86% during ($p < 0.00001$). Prior to residency, 15% of residents felt confident in robotic instrument exchanges, compared to 93% during ($p < 0.00001$). Regardless of future specialty, 100% of residents anticipated use of RSP after graduation.

Conclusion: This study showed residents had varied and limited robotic exposure prior to residency that increased significantly following robotic case exposure during training. Curriculum development should begin with foundational training on the RSP, followed by integration of skills in a graduated manner in simulated and clinical settings.

Figure 1:



ePoster #5| Education | Surgical Education

Improvement of Surgical Resident Trauma Documentation Via Timed Simulations

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Background: As is, documentation takes a significant portion of a physician's time. Trauma scenarios are fast-moving encounters where the opportunity to miss information is quite high. Furthermore, in these high-stakes scenarios, time spent documenting can impact clinical care. Little has been done to evaluate the limitations and how to improve trauma documentation.

Objective: This study evaluates a faculty-designed template's impact on trauma documentation accuracy and time among PGY-1 general surgery residents.

Method: Trauma documentation was assessed in 11 PGY-1 residents with limited experience via 2 simulated encounters. Documentation was compared via 2 templates: T1 (current department standard) and T2 (new template developed by faculty and senior residents), with template order switched for each scenario. Resident identities remained anonymous to graders. Notes were then assessed for inaccuracies, accuracies, and total time spent on history, physical exam, and assessment and planning sections. Incorrect documentation was defined as wrong or missing. Means were compared via unpaired T-test.

Results: The updated template demonstrated improved documentation timing and accuracy. This was most notable in a less complex trauma scenario where the total time spent between the old and new template was 8 minutes and 8 seconds versus 6 minutes and 23 seconds, respectively ($p < 0.0001$). The number of inaccuracies also improved between templates with an average of 4.444 versus 3.222 events of inaccurate documentation ($p = 0.042$).

Conclusion: The implementation of a new trauma template with more concise parameters for each section improved documentation accuracy and the total time spent per section. Further evaluation is needed to ensure widespread departmental implementation.

ePoster #6 | Education | Surgical Education

Simulating Success: The Role of Focused Trauma Simulation and Personalized Feedback in Enhancing Proficiency and Confidence Among General Surgery Residents

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University of Texas Medical Branch - Galveston

Background: General surgery residents are inadequately exposed to trauma patients during training, raising concerns for gaps in quality trauma care.

Objective: This project examines how focused trauma simulation with feedback enhances residents' proficiency and confidence in patient care.

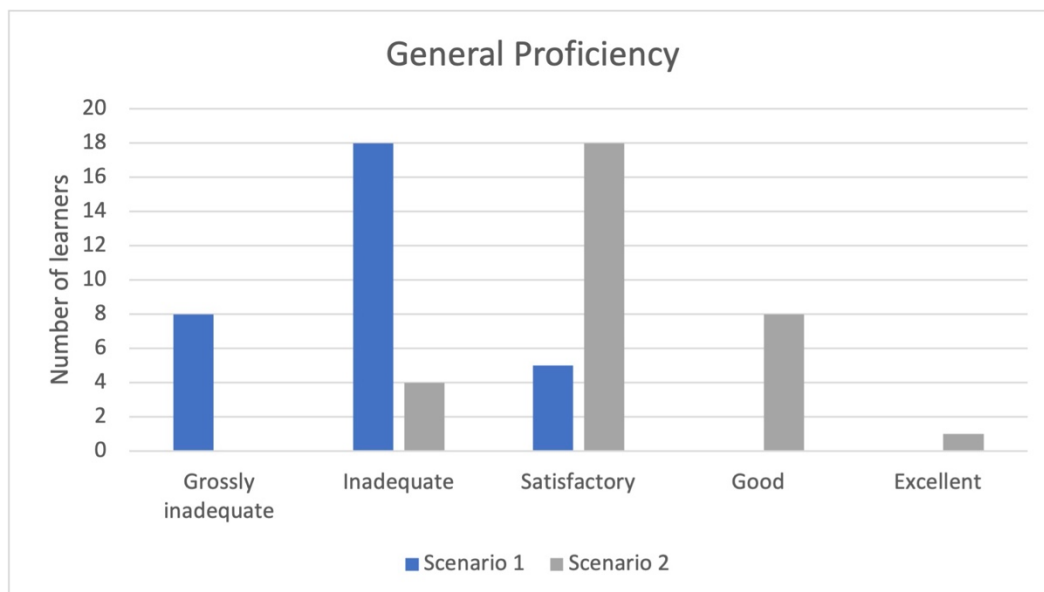
Method: Three PGY-1 general surgery cohorts with limited trauma experience were assessed on their evaluation and management skills through two simulated scenarios: moderate trauma and hypotensive polytrauma.

Trauma faculty evaluated task performance using an Advanced Trauma Life Support (ATLS)-based rubric with three-point scoring from "not" to "satisfactorily" performed. General proficiency was rated on a five-point scale from "grossly inadequate" to "excellent." Residents' confidence, evaluation, and treatment skills were also rated pre- and post-simulation.

Results: Proficiency: Task performance improved between scenarios with tasks "not performed" being 41 vs. 3, "partially performed" being 174 vs. 109, and "satisfactorily performed" being 95 vs. 198. General proficiency levels also improved between scenarios from a majority of "inadequate" (n=18) to "satisfactory" (n=18).

Confidence: 23 of 31 residents' self-reported confidence improved post-simulation with the majority moving from "slightly confident" to "moderately confident." Self-reporting of trauma assessment skills improved in 15 of 31 residents with most going from "needs improvement" (n=22) to "satisfactory" (n=18). Self-reporting of trauma treatment skills improved in 12 of 31 residents with most remaining as "needs improvement" (n=26 vs. 18) and some increasing to "satisfactory" reporting (n=2 vs. 11).

Conclusion: Trauma simulation enhanced proficiency and confidence in evaluating and treating trauma patients. Expanding this with level-appropriate scenarios for each residency year could strengthen trauma care across training levels.



ePoster #7| Education | Education

Assessment of Confidence in Vascular Shunt Placement among General Surgery Residents: A Swine Model Study

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Background: Vascular injuries account for a majority of potentially survivable trauma-related wartime deaths. Surgical intervention to address hemorrhage before definitive vascular reconstruction in austere, forward-deployed surgical settings relies on the technical competence of general surgeons with limited exposure to shunt placement in residency.

Objective: This study sought to determine the baseline competence of general surgery senior residents in vascular shunting and to implement direct hands-on education to improve efficiency. They also completed subjective surveys to assess their confidence on a scale of 0-2 in the initial and retention periods. A secondary objective was to compare resident confidence during the initial and retention periods.

Method: Five general surgery residents were tested on Argyle and Sundt vascular shunt placement using a swine model (*Sus scrofa*). After baseline placement, residents had education with faculty and subsequent post-education shunts were placed to measure learning impact. Six months after the initial competency assessment, residents retested to evaluate for retention. They were also asked to complete a survey to gauge their confidence in different vascular exposures and procedures at both the initial testing and retention testing.

Results: Resident confidence in Argyle (0.4 vs 1.75, $p=0.01$) and Sundt (0 vs 1.5, $p=0.01$) shunt placement increased from the initial assessment to retention. Time to shunt placement also decreased from pre-education to retention (32:49 vs 25:01, $p=0.08$).

Conclusion: Resident confidence correlated with a decrease in shunt placement time. While not statistically significant, this study demonstrates that education is an important and effective tool to ensure general surgeons are facile with damage control vascular procedures.

Table 1. General Surgery Resident Confidence with Various Procedures

Procedure	Initial Testing (Mean, SD)	6-Month Retention Testing (Mean, SD)
Femoral artery exposure	1.6 ± 0.55	2 ± 0
Carotid artery exposure	1.6 ± 0.55	1.8 ± 0.45
Abdominal aortic exposure	1.4 ± 0.55	1.4 ± 0.55
Argyle shunt placement	0.4 ± 0.55	1.8 ± 0.45
Sundt shunt placement	0 ± 0	1.4 ± 0.55
REBOA placement	0.8 ± 0.84	1.4 ± 0.55

ePoster #8| Education | Plastic & Maxillofacial Surgery

Balancing Cost and Comprehensiveness: Optimizing Cadaveric Specimen Use in Reconstructive Surgery Education

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Background: The utilization of cadaveric specimens is crucial for mastering complex flap procedures in reconstructive surgery education. However, the financial burden associated with these studies varies significantly depending on the anatomical requirements of each flap. This analysis categorizes flaps based on their need for full-body or partial cadaver specimens, highlighting the cost implications and limitations on plastic reconstructive surgery residents.

Objective: We aimed to optimize the use of cadaveric specimens in reconstructive surgery education by examining the cost-effectiveness and educational value of full-body versus partial cadaver specimens.

Method: We categorized flaps based on their anatomical requirements for study, distinguishing between those needing full-body cadavers versus partial specimens. A cost analysis was performed for different types of cadaver studies, including full-body, torso, leg, head with full neck, arm, and hand specimens. Costs were retrieved from approved vendors at our institution or from researching vendors online.

Results: Flaps crossing multiple joints require full-body cadavers due to their broad anatomical reach. In contrast, flaps that do not require full-body perspectives, such as torso-based flaps, can be studied using partial specimens, significantly reducing costs. However, the limbs would have to be divided through the humerus and thigh to preserve trunk-based flaps.

Conclusion: This analysis underscores the significant cost disparity between full-body and partial cadaver studies. We propose shared cadaver labs where different specialties collaborate to share the cost of full-body cadavers. This approach could reduce costs and enhance interdepartmental collaboration across surgical disciplines, maximizing resource use without impeding on the specific educational needs of each specialty.

Type of Study	Cost per Specimen	Relative Difference in Cost
60-Body Cadaver Studies	\$5,000	0.00%
Two Cadaver Studies	\$2,000	-60.00%
Log Cadaver Studies	\$1,600	-68.00%
Hand with Full Neck Cadaver Studies	\$350	-93.00%
Arm Cadaver Studies	\$450	-91.40%
Hand Cadaver Studies	\$300	-94.00%

Flap name	Flap origin point	Flap insertion point	Joint crossed (if applicable)	Pedicle Joint crossed (if applicable)
Lattissimus Dorsi Flap	Spirator processes of T7-L5, thoracoacromial fascia, iliac crest, and lower ribs	Anteromedial groove of the humerus	Shoulder joint	Shoulder
TRAM Flap	Pubic symphysis and pubic crest	Nymphal process and costal cartilages of ribs 5-7	None	None
DEEP Flap	Deep anterior epigastric vessels	Not applicable (skin and fat only)	None	None
Radial Forearm Flap	Radial artery and fascia of the forearm	Not applicable	None	Wrist
Anterolateral Thigh Flap	Descending branch of the lateral circumflex femoral artery	Not applicable	None	Knee

Gastroc Muscle Flap	Inferior margin of the pubis and ischial spines	Medial surface of the proximal tibia (gastrocnemius)	Hip joint, Knee joint	Knee
Rectus Abdominis Flap	Pubic symphysis and pubic crest	Nymphal process and costal cartilages of ribs 5-7	None	None
Soleus Muscle Flap	Posterior aspect of the tibia and fibula	Calcaneus via the Achilles tendon	Ankle joint	Ankle
Pectoralis Major Muscle Flap	Clavicle, sternum, and costal cartilages of the first six ribs	Lateral lip of the sternoclavicular groove of the humerus	Shoulder joint	Sternoclavicular joint
Tensor Fasciae Latae Flap	Anterior iliac crest and anterior superior iliac spine	Iliotibial tract	Hip joint, Knee joint	Hip
Free Fibula Flap	Peroneal artery and vein supplying the fibula	Not applicable	None	None
Rectus Abdominis Flap	Pubic symphysis and pubic crest	Nymphal process and costal cartilages of ribs 5-7	None	None
Soleus Muscle Flap	Posterior aspect of the tibia and fibula	Calcaneus via the Achilles tendon	Ankle joint	Ankle
Pectoralis Major Muscle Flap	Clavicle, sternum, and costal cartilages of the first six ribs	Lateral lip of the sternoclavicular groove of the humerus	Shoulder joint	Sternoclavicular joint
Tensor Fasciae Latae Flap	Anterior iliac crest and anterior superior iliac spine	Iliotibial tract	Hip joint, Knee joint	Hip
Free Fibula Flap	Peroneal artery and vein supplying the fibula	Not applicable (bone transfer)	None	None
Transversemuscle Flap	Medial and lateral condyles of the femur	Calcaneus via the Achilles tendon	Knee joint, Ankle joint	Knee and Ankle

Medial Sural Artery Perforator Flap	Medial sural artery	Not applicable	None	None
Scapular Flap	Cervicofascial, scapular artery	Not applicable	None	None
Temporoparietal Muscle Flap	Temporal fossa	Coronoid process of the mandible	Temporomandibular joint (TMJ)	Temporomandibular joint
Lateral Arm Flap	Proximal radial collateral artery	Not applicable	None	Elbow
Parascapular Flap	Parascapular artery	Not applicable	None	None
Abductor (Halteris) Muscle Flap	Medial process of the acromion, tuberosity of the greater tuberosity	Medial side of the proximal glenoid of the great toe	None	None
Blue Cross Flap	Deep circumflex iliac artery	Not applicable	None	None
Subclavian artery via thoracoacromial artery	Subclavian artery via thoracoacromial artery	Not applicable	None	None
Superficial Inferior Epigastric Artery Flap	Superficial inferior epigastric artery	Not applicable	None	None
Superficial Circumflex Iliac Artery Perforator Flap	Superficial circumflex iliac artery	Not applicable	None	None
Reverse Sural Artery Flap	Sural artery	Not applicable	None	Ankle
Popliteal Perforator Island Flap	Any local perforating artery	Not applicable	None	None
Fasciocutaneous Flap	Vastus fasciocutaneous	Not applicable	None	None
Grain Flap	Superficial circumflex iliac artery	Not applicable	None	Hip joint
Perforator Artery Flap	Perforator artery	Not applicable	None	Knee

Gluteal Artery Perforator Flap	Superior or inferior gluteal artery	Not applicable	None	Sacrospinous joint
Trapezius Muscle Flap	Cervical occipital, paraspinal, trapezius, and spinous processes of C7-T12	Lateral third of the clavicle, sternum, and spine of the scapula	Shoulder girdle	None
Gluteus Maxima Muscle Flap	Ilium, sacrum, and ischiospinous vessels	Gluteal tuberosity	Hip joint	Hip
Overhead Flap	Dorsal pedis artery	Not applicable	None	None
Peroneal Island Artery Perforator Flap	Inferior gluteal artery	Not applicable	None	None
Lateral Intercostal Artery Perforator Flap	Lateral intercostal artery	Not applicable	None	None
Medial Intercostal Artery Perforator Flap	Medial intercostal artery	Not applicable	None	None
Rectus Abdominis Muscle Flap	Upper eight or lower ribs	Medial border of the axilla	Shoulder girdle	None
Extensor Digitorum Brevis Muscle Flap	Anterior part of the calcaneus	Extensor digitorum of toes 2-4	None	Transmetatarsal

ePoster #9| Education | Education

Beyond the Books: Feasibility of Training Medical Students to Pass the FLS Exam

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Background: For decades, surgical simulation training has been an essential element of surgical residency programs. Advancements in laparoscopic techniques and scope have expanded the need for further improving resident laparoscopic skills sets. While other scholars have explored how preparing for and passing the fundamentals of laparoscopic surgery (FLS) exam improves resident operative performance, autonomy, and confidence, there is less focus on how early laparoscopic training may improve proficiency among medical students.

Objective: To investigate how self-directed learning through the development of laparoscopic skills teams may improve self-efficacy and laparoscopic proficiency among medical students and the feasibility of passing the FLS exam.

Method: Minimally Invasive Skill Teams (MIST) will be formed at Baylor College of Medicine (BCM) and McGovern Medical School (MMS), each recruiting 20 medical students. Participants will undergo a 12-week training course focused on the five FLS skills required to pass the FLS exam: peg transfer, precision cutting, ligating loop, suture with extracorporeal knot, and suture with intracorporeal knot. As participants achieve proficiency in each skill, they will progress to the next skill. Pre- and post-intervention surveys will be administered to measure learner self-efficacy. Following the course, the participants will attempt the FLS exam.

Results: We anticipate that consistent and structured training will prepare students to successfully complete the FLS exam at the end of 12 weeks.

Conclusion: This study will provide insight into the feasibility of training medical students to achieve FLS certification-level proficiency, highlighting the potential role of early, structured laparoscopic training in undergraduate medical education.

ePoster #10| Clinical Science | Neurosurgery

The Impact of Geographic Location on Neurosurgical Care Access in Texas

Z Mendoza, A Eshareturi, R Carpenter MD

Houston Methodist Hospital

Background: Rural Texas faces significant disparities in access to specialized neurosurgical care. Many neurosurgical procedures in rural settings involve trauma mechanisms but communities in rural Texas lack the infrastructure, healthcare investment, and specialized training required to provide emergent surgical care. As a result, time to care/surgery remains a major contributor to mortality and poor outcomes.

Objective: This literature review aims to examine disparities in access to elective and urgent/emergent neurosurgical care in rural Texas compared to urban areas.

Method: Physician data was collected from the Texas Medical Board. Literature review was conducted using “rural Texas,” “disparities,” “neurosurgery,” and “access to care”.

Results: In 2018, Texas was among the states with the lowest density of neurosurgeons, with fewer than seven per 100,000 people—similar to states with limited access to specialized care, such as Mississippi and Arkansas. This shortage disproportionately affects rural Texans, with approximately 6.8 million residents living in counties without neurosurgical services. This lack of access spans a significant portion of the state, covering roughly 220,000 out of the total 260,000 square miles.

Conclusion: Rural Texas faces critical disparities in neurosurgical care due to limited infrastructure and workforce shortages, resulting in delayed treatment and poor outcomes, particularly in trauma cases. Covering approximately 220,000 square miles, these underserved areas impact 6.8 million residents, highlighting an urgent need for targeted healthcare support to improve access and reduce mortality

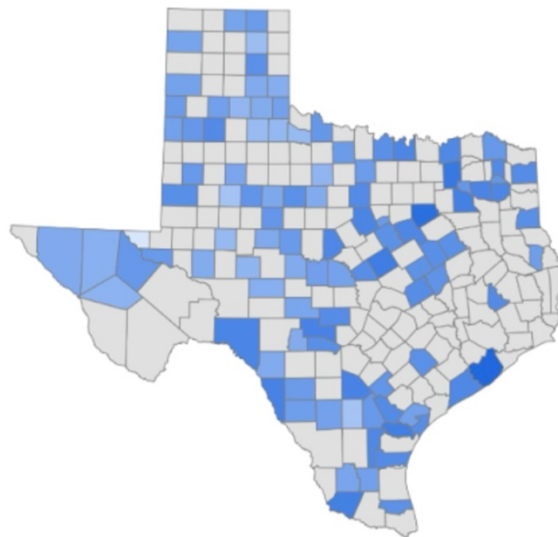


Figure 1. Counties in TX with neurosurgeons (gray) and ones without (color)

ePoster #11 | Clinical Science | Orthopedic Surgery

Addressing Orthopedic Disparities: A Focus on Rural Texas

A Eshareturi, R Puppala, W Fettig, R Carpenter MD
Houston Methodist Hospital

Background: The number of patients older than 65 is currently projected to increase by 25% by 2060, which poses an upcoming challenge for orthopedic healthcare, especially in rural Texas. Many of the health problems in this population tend to be musculoskeletal, as well as the concern for injuries of a mechanical nature that may warrant emergent or urgent surgical intervention. Rural parts of the state are especially vulnerable given the preexisting shortages of healthcare, particularly in the surgical specialties.

Objective: This literature review aims to examine disparities in access to elective and urgent/emergent orthopedic care in rural Texas compared to urban areas.

Method: Physician data was collected from the Texas Medical Board. Literature review was conducted using “rural orthopedics,” “rural health,” “disparities,” “Texas,” and “access to care”.

Results: In 2018, Texas had the 2nd lowest density of orthopedic surgeons (7.14 per 100,000 population). Currently, almost 3.5 million Texans live in a county without an orthopedic surgeon of any subspecialty (Figure 1). This issue in access spans across approximately 66% of the state. The highest landmass uncovered by an orthopedic surgeon was in West Texas, with large gaps seen in the Panhandle and in the Rio Grande Valley.

Conclusion: Rural Texans face significant orthopedic care disparities due to a shortage of surgeons and limited access in many counties. This can lead to delayed care, complications, and poorer outcomes. Intervention to address these disparities can include increasing orthopedic residencies in rural areas, incentivizing practice in a rural area, and improving rural infrastructure.

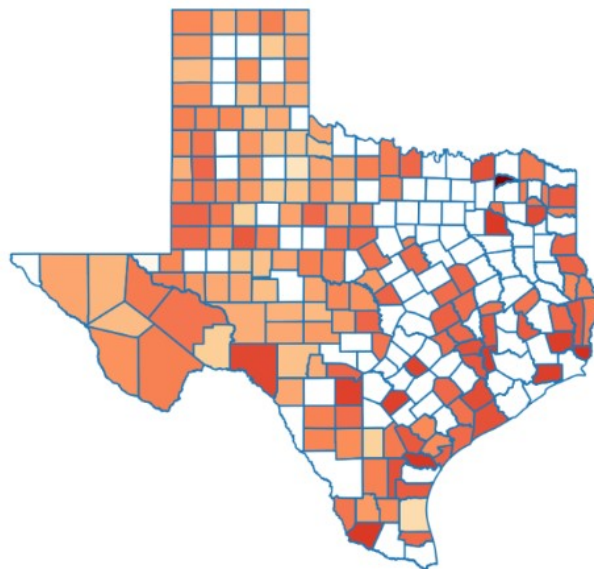


Figure 1. Counties in TX with orthopedic surgeons (white) and ones without (color)

Rural Texas and the Urology Care Crisis: A Comparative Analysis with Urban Areas

R Nanda, Z Mendoza, R Carpenter
Houston Methodist Hospital

Background: A significant portion of the population lack the necessary urological care especially in rural settings, with studies noting 62% of counties in the US lacking a urologist. Rural residents are 10%-20% less likely than urban residents to receive regular care and preventive screenings, including fewer overall visits, reduced physician choice, and poorer health outcomes. Many factors in rural health disparities have been discussed in literature, including limited resources, geographic isolation, and socioeconomic disadvantages.

Objective: This literature review aims to examine disparities in access to elective and urgent/emergent urological care in rural Texas compared to urban areas.

Method: Physician data was collected from the Texas Medical Board. Literature review was conducted using “rural urology,” “rural health,” “disparities,” “Texas,” and “access to care”.

Results: In 2022, Texas was noted to have the 9th lowest density of urologists (3.22 per 100,000 population). Currently, approximately 5 million Texans live in counties without urologists, with 190 counties out of 254 lacking urological care (Figure 1). The largest areas without urologists include counties in West Texas and the Panhandle.

Conclusion: Rural Texans face significant urological care disparities due to a shortage of physicians and limited access in many counties. Studies have shown that the presence of a urologist is associated with lower mortality for urologic cancers in that county, and can result in earlier diagnosis and treatment for urologic pathologies. Interventions to address these disparities include increasing opportunities for trainees in rural settings, improving rural infrastructure, and increasing affiliations of rural hospital systems with urban systems.

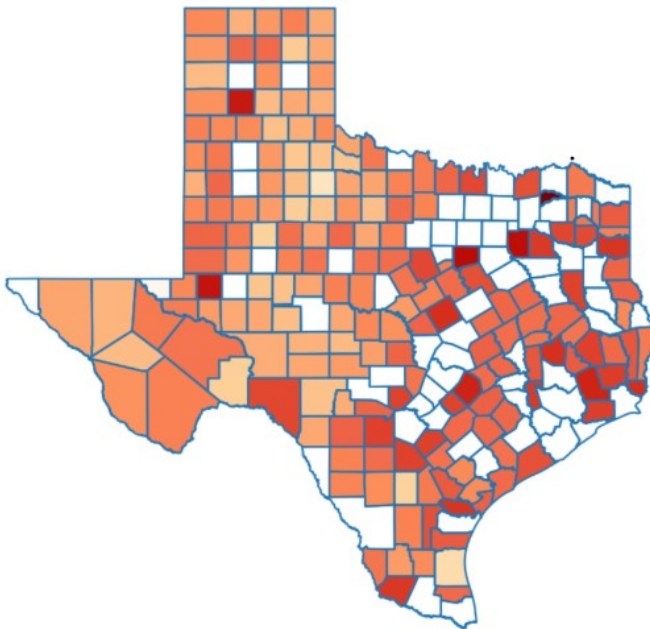


Figure 1. Counties in TX with urologists (white) and ones without (color)

Venous Thromboembolism in Retromuscular Ventral Hernia Repair: An Abdominal Core Health Quality Collaborative Analysis

S Piperno, V Yang, A Schaffer, R Lu

University of Texas Medical Branch - Galveston

Background: Retromuscular ventral hernia repair (RVHR) is a common operation used to repair ventral hernias by placing a mesh in-between muscle layers in the abdominal wall. Venous thromboembolism (VTE) is a post-operative complication including deep vein thrombosis (DVT) and pulmonary embolism (PE), two dangerous conditions. Previous studies have identified factors linked to VTE after hernia repair, but little is known about the factors that contribute to VTE in RVHR.

Objective: The objective of this study was to identify patient and operative factors that increase the likelihood of VTE after RVHR.

Method: Patients ages 18 and older who underwent RVHR for a midline ventral hernia with 30-day follow-up in the Abdominal Core Health Quality Collaborative (ACHQC) database were included. Those below 18, who had incomplete 30-day follow-up, who lacked operative details, and who had inguinal or lateral abdominal wall hernia repair were excluded. A variety of patient demographic and operative factors were collected. Chi-squared tests were used to evaluate significance. 0.05 was used as the level of statistical significance.

Results: 7422 patients were included in the final study. The following variables (p-values) were significantly associated with VTE: BMI>30 (0.0061), age>60 (<0.0001), median hernia length, width, and size (<0.0001), ASA class (0.0013), prior mesh (0.0003), and hernia recurrence (0.0043). The following variables (p-values) were not significantly associated with VTE: operation approach (0.562), OR time>2 hours (0.0708), gender (0.9924), diabetes (0.4256), history of abdominal wall SSI (0.3793), and any intraoperative complication (0.3277).

Conclusion: Certain patient demographic details and operative variables were significantly associated with higher VTE risk.

ePoster #14 | Clinical Science | General Surgery

Ventral Hernia Recurrence by Location: A Retrospective Review

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Background: Hernia recurrence is a common complication following ventral hernia repair. Many studies have evaluated risk factors for hernia recurrence, but data describing the location for hernia recurrence are lacking.

Objective: In this study, we assess the location of hernia recurrence in patients with a prior ventral hernia repair using computed tomography (CT).

Method: We conducted a retrospective study of patients with a history of midline hernia repair who presented with a recurrence between 2021-2024. The location of hernia recurrence was identified on CT scan and classified using the European Hernia Society classification. Hernia recurrence location in relation to the mesh was recorded when mesh was visible on CT or described in the operative report.

Results: 67 patients with a recurrent ventral hernia were included. Nearly all recurrent hernias had a midline component (97%), and 9% had a lateral component. For recurrent hernias with data available from before and after repair, all hernias recurred in the midline. Two hernias had a lateral component on recurrence. Of these, one had a lateral component initially and one did not. Mesh was visible on CT in 27 (44%) patients. The most common recurrence location was caudal to the mesh (67%). Other recurrence locations relative to prior mesh included cranial (19%), middle (through) (4%), and lateral (22%).

Conclusion: Midline ventral hernias usually recur in the midline. When mesh is visible, recurrence most frequently occurs caudal to prior mesh. Further study is necessary to determine if operative techniques along the cranial and caudal midline can mitigate the risk of recurrence.

ePoster #15 | Clinical Science | Abdominal/Laparoscopy

Abdominal Fascial Closure with Mesh Suture: Our Institutional Experience

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Background: Mesh suture is intended to distribute tension evenly across fascia, reducing suture pull-through and the risk of hernia occurrence/recurrence. Mesh suture may be used for primary hernia repair when permanent mesh is not desirable or alongside mesh in high-risk repairs. Mesh suture can be prefabricated (Duramesh®) or created by cutting mesh into strips.

Objective: This study reviews our institutional experience with mesh suture.

Method: A retrospective study was conducted of patients who underwent abdominal fascial closure using mesh suture from 2021-2024. Patient demographics, clinical history, operative details, and outcomes were collected from an institutional quality improvement hernia registry. Summary statistics were utilized.

Results: Thirty-three patients (15 female) underwent 35 procedures. Twenty-five (76%) patients had incisional hernias, 3 (9%) parastomal hernias, and 2 (6%) lumbar hernias. Permanent mesh was placed in 8 (23%) cases, which were categorized as wound class I (clean, n=7) or II (clean-contaminated, n=1). Of 27 cases (77%) in which absorbable mesh or no mesh was utilized, 17 (63%) were wound class III (contaminated, n=6) or IV (dirty, n=11). Hernia recurrence occurred in 3 (9%), surgical site infection in 2 (6%), and reoperation in 5 (14%). None of the patients who received permanent mesh with mesh suture experienced hernia recurrence.

Conclusion: Mesh suture can be used for several indications—usually to reduce the risk of infection in contaminated or dirty cases or to reduce hernia recurrence alongside permanent mesh in high-risk repairs. Further study on mesh suture in hernia repair is warranted.

Oncologic and Treatment Related Risk Factors for Post Mastectomy Lymphedema:

Indications for Prophylactic Lymphatic Surgery

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Background: Preventative lymphovenous anastomosis is an emerging treatment that has shown promise in reducing breast cancer-related lymphedema (BCRL) rates. The surgery requires specialist skills and equipment and adds time to the index procedure. Stratifying the susceptibility of patients to BCRL is vital to reduce risk and optimize resource allocation.

Objective: This study aims to evaluate oncologic and treatment-related risk factors for BCRL to inform candidacy for lymphatic surgery.

Method: The TriNetX database was used to identify women with breast cancer who underwent mastectomy or breast conserving surgery. Oncologic characteristics were compared using paired cohorts. Patients were propensity score matched 1:1 for age, race, diabetes, obesity, smoking, radiation, chemotherapy, TNM classification, axillary dissection and free-flap reconstruction. Three-year BCRL rates were compared.

Results: 226,816 patients were identified who underwent breast resection for cancer, of whom 24,165 experienced BCRL after 3 years (10.6%). Increased risk of BCRL was found to be associated with nodal positivity (RR 2.61, $p < 0.0001$), progesterone receptor (PR)-negative/estrogen receptor (ER)-negative/HER2 receptor-negative tumors (RR 1.10, $p = 0.041$), tumor size > 2 cm (RR 1.50, $p < 0.0001$), ER-negative/PR-negative (RR 1.27, $p < 0.0001$), neoadjuvant chemotherapy (RR 1.76, $p < 0.0001$), and radiation therapy (RR 1.87, $p < 0.0001$). In addition, post-operative infection within 60 days after surgery was associated with increased risk of BCRL (RR 1.47, $p < 0.0001$).

Conclusion: Tumor biology and post-operative infection are important variables for determining overall risk for BCRL. These tumor characteristics are available preoperatively and may inform immediate lymphatic reconstruction candidacy. These findings should guide prospective clinical trials to determine the role of lymphatic surgery to minimize the incidence and sequelae of lymphedema.

The Long and Winding Road...The Journey of Patients Who Require Video-Assisted Retroperitoneal Debridement for Management of Infected Pancreatic Necrosis

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Background: The step-up approach for the management of patients with infected pancreatic necrosis (IPN) combines percutaneous drains (PD), endoscopic necrosectomy (EN), and/or video-assisted retroperitoneal debridement (VARD). Though most patients are now treated with antibiotics, drains, and endoscopic necrosectomy, some patients still require VARD for definitive management of IPN.

Objective: The aim of our study was to track the clinical course of patients who require VARD for definitive management of IPN.

Method: We performed a retrospective analysis (2015-2023) of patients who required VARD for the management of IPN at a single institution. Data from before, during, and after VARD was collected.

Results: There were 22 patients who required VARD for management of IPN. They were on average 40 years old, 82% male, and 64% white/non-Hispanic. The most common causes of pancreatitis were alcohol (23%), gallstones (23%), and hypertriglyceridemia (23%), and antibiotics were started 16.3 days after initial diagnosis. All patients underwent PD and 57% underwent EN, 70 days and 94 days after diagnosis, respectively. VARD was performed 106 days after diagnosis, intraoperative time was 125 minutes, 45% required intraoperative transfusion, and 18% were packed for bleeding and required angioembolization. Table shows clinical course before and after VARD. The most common complications were AKI (77%), DVT/PE (41%), VARD wound infection (36%), pneumonia (36%), pancreatic fistula (32%), and ARDS (32%). There were no deaths.

Conclusion: Patients with IPN requiring VARD had extensive, expensive, and morbid hospitalizations. Multiple opportunities exist to improve care, in particular to address bleeding, CT scan utilization, and pre-VARD endoscopic necrosectomy.

	Before VARD	After VARD	Total
Percutaneous Drains	100%	41%	100%
Endoscopic Necrosectomy	59%	5%	64%
CT scans (average)	7.0 scans	3.5 scans	10.5 scans
Enteral Nutrition	21.8 days	12.3 days	34.1 days
Parenteral Nutrition	10.4 days	9.4 days	19.8 days
Angioembolization for bleeding	14%	32%	45%
Hospital Days	47.0 days	24.6 days	71.6 days
ICU Days	32.3 days	11.4 days	43.7 days
Vent Days	14.2 days	6.4 days	20.6 days

ePoster #18 | Clinical Science | Orthopedic Surgery

Impact of Nicotine Dependence on Postoperative Outcomes in Pilon Fracture Open Reduction and Internal Fixation: A Comparative Cohort Analysis

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Background: Pilon fractures treatment sometimes requires surgical intervention like open reduction and internal fixation (ORIF). Nicotine dependence is known to interfere with bone healing and increase postoperative risks, yet its specific impact on pilon fracture surgery outcomes remains underexplored.

Objective: This study examines postoperative complication rates in patients with nicotine dependence compared to non-users to clarify the risks associated with nicotine in pilon fracture recovery.

Method: A retrospective cohort analysis was conducted using data from the TriNetX health research network. Patients aged 18 or older who underwent ORIF for pilon fractures (2000–2022) were categorized into nicotine-dependent and non-dependent groups. Primary outcomes include 2-year follow-up rates of hardware malfunction. Secondary outcomes over a 90-day period included major postoperative events. Statistical analysis calculated risk ratios and odds ratios, with significance set at $p < 0.05$.

Results: Before matching, nicotine users ($n=5,091$) exhibited a greater prevalence of comorbidities. After matching ($n=4,371$ patients), nicotine dependence was associated with increased risks of mechanical complications (5.8% vs. 4.4%; $p=0.003$), repair of malunion/nonunion (6.3% vs. 4.7%; $p=0.002$), and wound disruption (4.5% vs. 3.2%; $p=0.002$). Nicotine users also had a higher infection rate (5.7% vs. 3.7%; $p < 0.001$). Conversely, the incidence of pulmonary embolism was lower in nicotine users (0.3% vs. 0.7%; $p=0.005$).

Conclusion: Nicotine dependence significantly elevates the risk of adverse postoperative outcomes in pilon fracture surgeries, including mechanical failure, wound complications, and infection. These findings underscore the need for targeted preoperative counseling and postoperative management strategies to mitigate risks in nicotine-dependent patients undergoing ORIF for pilon fractures.

ePoster #19| Clinical Science | Colon and Rectal Surgery

Overuse of Computer Tomography in the Diagnosis and Management of Perianal Abscesses: Opportunities for Resource Optimization

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Background: Computed tomography (CT) is a critical diagnostic tool, known for its high sensitivity and specificity, especially in emergency settings. Despite its diagnostic value, there are rising concerns over CT overuse, particularly regarding radiation exposure, healthcare costs, and incidental findings that can complicate patient management.

Objective: The objective of this study is to describe CT utilization in diagnosing and managing perianal abscesses and to evaluate its impact on patient outcomes.

Method: This is a retrospective single-center review of adults who presented to our emergency department between 1/2021-12/2023 with perianal abscess (PAA). We recorded demographics, imaging obtained, abscess type, treatments, admissions, readmissions, and 1-year mortality. We excluded patients with abscesses secondary to malignancy. All statistics were performed with SPSS.

Results: A total of 228 patients were identified. The mean age was 44.2 years (SD = 15), and 170 (74.6%) were male. Physical exam findings were consistent with PAA in 205 (89.9%) and of those 156 (68.4%). The most common chief complaint was pain (N=227, 99.6%). Of the total, 176 (77.2%) received a CT scan. Antibiotics alone were the treatment for 45 (19.7%). Most had either bedside drainage (N=48, 21%) or drainage in the operating room (N=135, 59.2%).

Conclusion: Most patients with PAA received imaging, with CT scans being the predominant modality. Even with exam findings of an abscess, 68.4% received CT scans. These findings highlight the overuse of CT imaging in this disease process. This study underscores the need for refined clinical guidelines for CT use to optimize patient safety and resource utilization.

Variable	Total (N=228)
Age in Years, mean (SD)	44.2 (15)
Male, N (%)	170 (74.6)
Presenting Symptoms	
Pain, N (%)	227 (99.6)
Fever, N (%)	44 (19.3)
Pus Drainage, N (%)	40 (17.5)
Physical Exam Finding of Abscess, N (%)	205 (89.9)
CT scan Performed, N (%)	176 (77.2)
Bedside Incision and Drainage, N (%)	48 (21)
Drainage in operating room, N (%)	135 (59.2)

Beyond the Conventional Approach: Preprocedural Caudal vs. Postprocedural Penile Blocks for Pediatric Urologic Surgery Pain Management in Penile Surgeries

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Background: Current literature focuses on preprocedural caudal and penile blocks for perioperative pain management in pediatric penile surgeries but lacks studies on postprocedural penile blocks. Some surgeons favor postprocedural blocks to preserve surgical planes, highlighting a gap in research.

Objective: Our study evaluates pain-related outcomes, specifically the duration of postprocedural acetaminophen/ibuprofen use, frequency of pain-related follow-up calls, and emergency department visits. Through these comparisons, we aim to determine the non-inferiority of postprocedural penile blocks compared to the standard preprocedural caudal or penile blocks.

Method: A retrospective study at a single academic center analyzed 451 pediatric penile surgeries (Aug. 2020–2023). Patients were categorized by block type: 218 received a preprocedural caudal block, while 233 had a postprocedural penile block. Key outcomes included pain-related hospital calls, ED visits, and duration of acetaminophen/ibuprofen use, serving as primary surrogates for assessing pain control. Statistical comparisons were made to evaluate differences in pain management efficacy between the block types, aiming to establish whether the postprocedural penile block is non-inferior to preprocedural caudal and penile blocks in controlling perioperative pain.

Results: In total, 451 patients (218 caudal, 233 no caudal) were analyzed. Phone calls within 30 days for pain were 2.3% in the caudal block and 3.4% in the penile block (RR 0.67, 95% CI:0.22–1.99). ED visits were 0.92% for caudal block and 1.3% for penile block (RR 0.71, 95% CI:0.12–4.2). Average acetaminophen use was 1.45 days (caudal) vs. 1.29 days (penile) (p=0.24); ibuprofen use was 0.91 days (caudal) vs. 0.94 days (penile) (p=0.84).

Conclusion: Our findings suggest that postprocedural penile blocks provide comparable pain control to preprocedural caudal blocks in pediatric penile surgeries, with similar rates of follow-up calls, ED visits, and analgesic use. Given these comparable results and the potential to preserve surgical planes, postprocedural penile blocks could be a viable alternative in pediatric penile surgeries.

	Caudal Block	Postprocedural Penile Block
Included patients (N)	218	233
Age at surgery	1.13 ± 1.12	4.41 ± 4.75
Phone calls for pain (n)	5	8
Phone calls for pain (%)	2.29%	3.43%
Risk Ratio (95% Confidence Interval)	0.67 (0.22-1.99)	
ED visits for pain (n)	2	3
ED visits for pain (%)	0.0092	0.0129
Risk Ratio (95% Confidence Interval)	0.71 (0.12-4.22)	
Mean Days of Acetaminophen Used	1.450	1.291
95% Confidence Interval for days of acetaminophen used	(1.24-1.66)	(1.12-1.46)
p value	0.2445	
Mean Days of Ibuprofen Used	0.913	0.940
95% Confidence Interval for days of ibuprofen used	(0.71-1.11)	(0.77-1.11)
p value	0.837	

ePoster #21 | Education | Vascular Surgery

A Picture is Worth a Thousand Words: The Use of Adjunctive Vascular Schematics in Operative Reports

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Background: To improve health care quality, schematics can be used by surgeons to better communicate with medical professionals and patients.

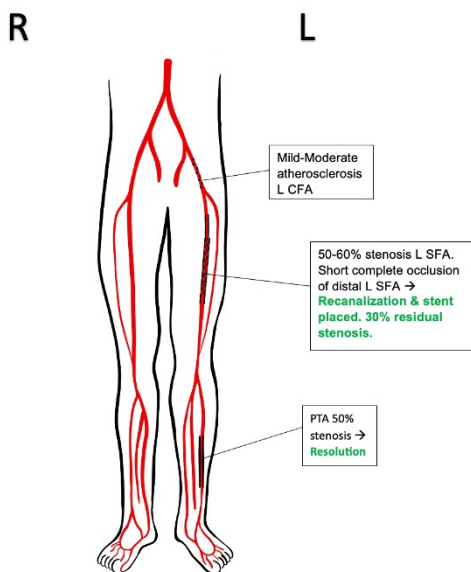
Objective: The objective of this study was to test the utility of a schematic in a vascular operative note from both physicians' and patients' perspectives.

Method: Twelve resident physicians (six general surgery, six podiatry) and ten surgical patients reviewed two notes: one with a schematic (SOP) and one without schematic (NOP). Both notes contained standard procedural text in the EMR; however, the SOP utilized a schematic that illustrated anatomy, diseased segments, and areas of intervention (Figure 1). Subsequently, a survey was used to capture recall of procedure details, location of intervention, and devices used.

Results: Among resident physicians, 92% recalled the diagnosis in both the SOP and NOP. 100% were able to discriminate the location of intervention and laterality in both notes. A difference in recall was observed for arterial location (83%SOP vs. 58%NOP) and devices used (75%SOP vs. 42%NOP).

Among patients, SOP improved recall of procedure location (100%SOP vs. 90%NOP), laterality (50%SOP vs. 30%NOP), leg area (40%SOP vs. 10%NOP), and endovascular device use (50%SOP vs. 20%NOP). Patients could not recall the medical diagnosis or artery name with either note type. Based on Likert scale responses, both groups preferred the SOP, with patients noting that they felt schematics in EMR could benefit primary care providers.

Conclusion: The utilization of a vascular schematic as an adjunct to the operative report in EMR can be useful for communication for medical professionals and patients.



ePoster #22 | Clinical Science | Orthopedic Surgery

Impact of Opioid-Related Disorders on Healthcare Utilization and Postoperative Outcomes in Patients Undergoing Arthroscopic Shoulder Surgery: A Retrospective Cohort Analysis Using Propensity Score Matching

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Background: Arthroscopic shoulder surgery is a common orthopedic procedure with increasing prevalence. The opioid epidemic poses significant challenges in postoperative management due to its association with increased complications and healthcare utilization.

Objective: This study evaluates the impact of opioid-related disorders on healthcare utilization and postoperative outcomes in patients undergoing arthroscopic shoulder surgeries.

Method: Utilizing the TriNetX research network, this retrospective cohort study compared two groups: patients with opioid-related disorders (Cohort 1) and opioid-free patients (Cohort 2), undergoing arthroscopic shoulder surgeries. Data from 92 healthcare organizations were analyzed with 1:1 propensity score matching based on demographic and clinical characteristics to ensure comparability between cohorts. Primary outcomes included postoperative complications, healthcare interactions, medication usage, and surgical revisions.

Results: After propensity score matching, each cohort consisted of 3,216 patients. The opioid-experienced cohort demonstrated higher rates of emergency department visits, inpatient admissions, and postoperative opioid and antidepressant prescriptions compared to the opioid-free cohort. Notably, the opioid-experienced group had a significantly higher rate of conversion to total shoulder arthroplasty within two years post-surgery (OR, 1.511; 95% CI, 1.037-2.201; $p = 0.030$). These findings suggest a significant burden of opioid-related disorders on postoperative care and resource utilization.

Conclusion: Patients with opioid-related disorders undergoing arthroscopic shoulder surgery exhibit increased healthcare utilization and postoperative complications. These results underscore the need for tailored management strategies to mitigate opioid-related risks and enhance recovery in this vulnerable population.

Staged Mastopexy Prior to Nipple-Sparing Mastectomy in Ptotic Breasts: A Multicenter Review and Timing Analysis

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Objective: This multi-center review and analysis aims to evaluate safety, efficacy, and optimal timing between mastopexy and NSM.

Method: PubMed, Scopus, and Web of Science were searched. We included all observational studies reporting complication outcomes and timing between staged NSM after breast reduction/mastopexy. We excluded studies that performed mastopexy after NSM, case reports, editorials and commentaries.

Results: Twelve studies meeting the eligibility criteria were included, with a combined sample of 552 breasts. The incidence of partial and complete NAC necrosis was 4.17% (23/552 breasts), while skin flap necrosis occurred in 2.72% (15/552 breasts). The average follow-up time was 14.55 months, and the average time interval between reduction or mastopexy and NSM was 9.35 months (range, 3 to 51.8 months). The number of studies included was not satisfactory for a reliable non-parametric correlation test. Instead, by means of ROC analysis, an interval of 4 months or longer was associated with lower odds of NAC necrosis (partial or complete; n = 12 studies, sensitivity 84.6%, specificity 44.4%).

Conclusion: Although our analysis suggests that a 4-month interval or longer may minimize complications, further research with larger sample sizes and randomized controlled trials comparing staged and non-staged approaches is necessary to establish definitive guidelines.

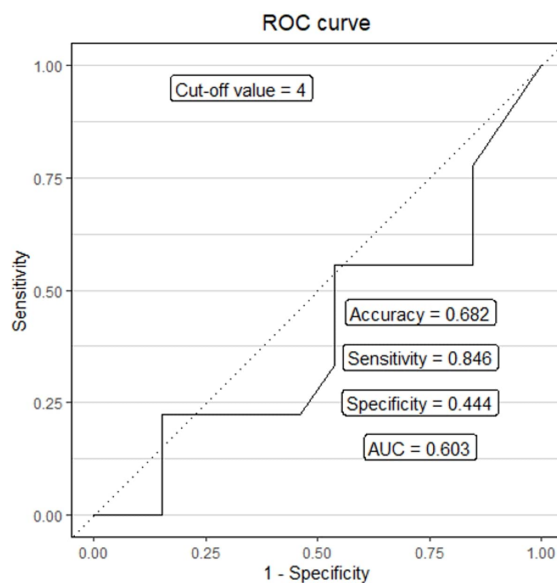


Figure 1. ROC curve showing that an interval of 4 months or longer between staged mastopexy and NSM in ptotic breasts was a good predictor of NAC necrosis.

Reviving Donation: Exploring the Temporal and Geographic Utilization of Normothermic Regional Perfusion in Organ Donation after Circulatory Death

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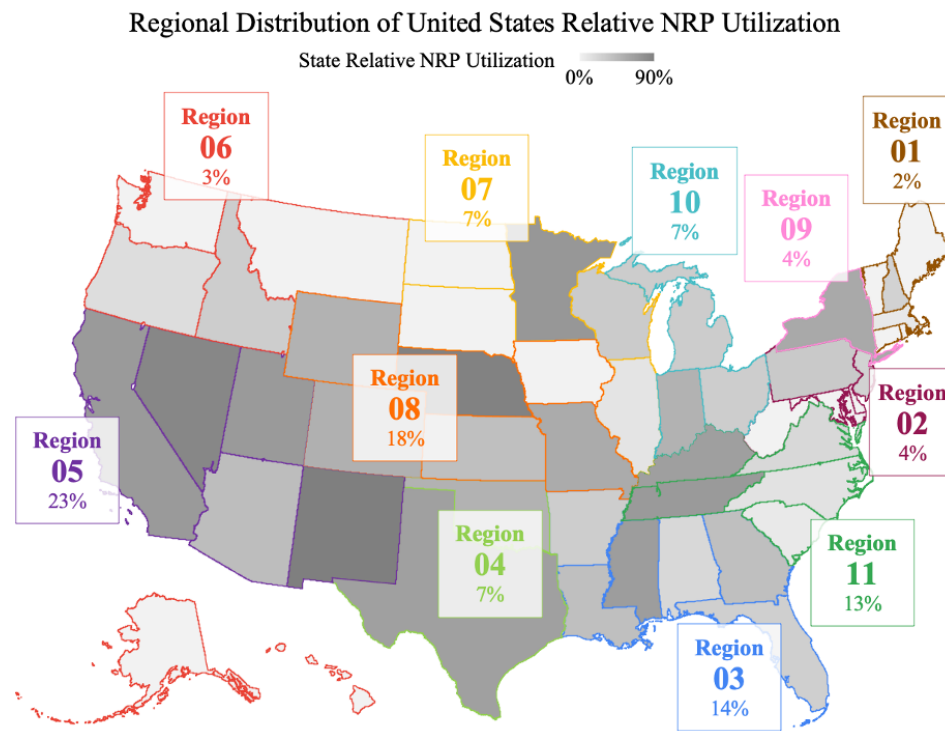
Background: Donation after circulatory death (DCD) represents 30% of the U.S. deceased donor pool. DCD procurement techniques include super rapid recovery (SRR) and normothermic regional perfusion (NRP) – which has so far been promising in small studies.

Objective: Our primary aim was to assess NRP temporal and geographic utilization.

Method: Matching prior studies identifying NRP donors, we utilized the Scientific Registry of Transplant Recipients to perform a retrospective analysis of all DCD donors who had a heart and at least one other solid organ transplanted since U.S. NRP introduction (10/2020–02/2023). Time elapsed between withdrawal of life support and cross-clamp defined the procurement groups (SRR≤60min; NRP>60min). We assessed geographic variation at state and Organ Procurement and Transplantation Network region levels. Our primary outcome was relative NRP frequency ($=\text{NRP}/(\text{NRP}+\text{SRR})$).

Results: 582 donors met inclusion criteria, 42% NRP and 58% SRR. From 2020 to 2021, NRP utilization increased from 23% to 44%, a relative increase of 91%. Since 2020, NRP utilization has remained stable, at 43% in 2022 and 44% in 2023. Figure One represents the geographic distribution of NRP utilization. It varies widely, but is most common in regions 5, 8, 3, and 11, accounting for 68% of overall U.S. NRP utilization. 16 U.S. states utilize at least 50% NRP.

Conclusion: Amongst ideal NRP candidates, NRP relative utilization has increased greatly since 2020, It now represents nearly half of all DCD procurements, although it remains geographically isolated. Notably, this evolution is not linked to outcomes, nor does it necessarily capture all usage.



Cognitive Behavioral Therapy for Chronic Pain Postoperative Anterior Cervical Discectomy and Fusion (ACDF): A Case Report

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Introduction/Objective: Cognitive Behavioral Therapy for Chronic Pain (CBT-CP) helps reduce chronic pain by altering negative thought patterns and promoting healthier coping strategies. Anterior cervical discectomy with fusion (ACDF) is a common surgery for severe neck pain, but chronic pain post-surgery can impact quality of life and mental health.

Case Presentation: This case study discusses a 52-year-old woman who underwent three neck surgeries, including ACDF, and sought CBT-CP for pain management. She experienced persistent pain, functional impairment, depression, and anxiety post-surgery. The patient's goal for CBT treatment was to learn how to deal with and be comfortable with pain without it consuming her life. Prior to treatment, the patient was assessed using The Pain, Enjoyment, and General Activity Scale (PEGS), Generalized Anxiety Disorder-7 (GAD-7) with a GAD-7 score of 16 indicating severe anxiety and a PHQ-9 score of 15 indicating moderately severe depression.

Discussion: Over six CBT-CP sessions, standardized self-reports measures (GAD-7, PHQ-9, and PEGS) tracked her progress with treatment focused on pain acceptance, activity pacing, and cognitive restructuring. Despite ongoing pain, she showed significant improvement in depressive and anxious symptoms and increased confidence in pain self-management. By the final session, she reported better pain management skills and reduced pain impact on daily life, highlighting the benefits of CBT-CP in managing persistent post-surgical pain and psychological comorbidities.

Conclusion: CBT-CP may benefit patients with mental health issues and stress before surgery, preparing them and enhancing coping strategies. Integrating CBT-CP with surgical treatments, similar to multidisciplinary pain clinics combining CBT and physiotherapy, shows promise in supporting these patients.

Table 1: Outcome sources at each visit

	First module	6 weeks after first module	Final module
PEGS (0-10)	9	8	8
GAD-7 (0-15)	18	16	12
PHQ-9 (0-20)	12	12	10

PEGS: Pain, Enjoyment, and General Activity Scale
GAD-7: General Anxiety Disorder-7
PHQ-9: Patient Health Questionnaire-9

Management of Abdominal Compartment Syndrome in a Pediatric Burn Patient: Role of Peritoneal Drain Placement in Burn Resuscitation and Surgical Management

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Introduction/Objective: Abdominal compartment syndrome (ACS) is a potentially life-threatening complication that can arise in critically ill burn patients due to the accumulation of bowel edema, mesenteric edema, or combination of bowel edema and distention in the abdominal cavity, leading to elevated intra-abdominal pressure (IAP). This condition can compromise organ function, particularly renal and respiratory systems, and requires prompt diagnosis and intervention. In pediatric burn patients, the management of ACS may be further complicated by the need for specialized care and interventions tailored to the patient's age, size, and burn severity. This case report discusses the management of abdominal compartment syndrome in a 3-month-old female with extensive flame burns, highlighting the use of a peritoneal drain for abdominal decompression as part of a multidisciplinary approach to her care.

Case Presentation: A 3-month-old female with no significant past medical history who presented to the outside hospital (OSH) in Mexico with severe second- and third-degree flame burns to 27% of her total body surface area (TBSA). Her injuries involved the left upper extremity (including the hand and digits), left thigh, right arm, scalp, forehead, face, ears, nose, and lips. Initial management at OSH included intubation, fluid resuscitation using the Parkland formula (4mL/kg/TBSA), and fasciotomies of the left upper extremity and dorsal hand. Antibiotic therapy with clindamycin was initiated, and the patient was also catheterized with a Foley and an orogastric tube. On 9/1/24, the patient was transferred to Shriners Galveston for definitive care, where she deteriorated in flight requiring initiation of norepinephrine. Initial labs revealed significant acute kidney injury (AKI) and under resuscitation. She was also noted to have worsening abdominal distension, indicating potential abdominal compartment syndrome.

Hospital Course and Interventions:

Upon arrival at Shriners Galveston, the patient was continued on milrinone and norepinephrine to maintain her blood pressure. Volume was administered with responsiveness noted and further administration of crystalloid and colloid over the following day allowed for the quick removal of pressors. However, urine output was not keeping up the administered volume in the early stages and the patient began to third space into the abdomen. A peritoneal drain was placed on 9/2/24 to manage suspected abdominal compartment syndrome, following concerns of intra-abdominal hypertension (IAH) with the development of AKI. The drain successfully alleviated the elevated intra-abdominal pressures, with 200mL of straw-colored fluid drained, and the patient's abdominal distention improved.

Over the following days, the patient underwent multiple debridement and grafting procedures, including excision, left eyelid release, and split-thickness skin grafts to the left upper extremity, thigh, scalp, and face, along with burn scar contracture releases. On POD1 after drain placement, she developed pneumatosis intestinalis, worsening her condition and requiring antibiotics and two weeks of total parenteral nutrition (TPN). The peritoneal drain was removed on 9/9/24, and the patient was closely monitored for gastrointestinal complications, including melena and hematochezia, while renal function was supported with fluid management to maintain a urine output of 1-2 mL/kg/hr. On 10/4/24, she tested positive for RSV, but recovered by 10/9/24. Feeding difficulties were managed by a speech-language pathologist (SLP), and the patient was transitioned to bolus tube feeding with continued TPN to support recovery.

Discussion: Abdominal compartment syndrome is a known complication in burn patients, particularly those who undergo large-volume fluid resuscitation. In pediatric patients, ACS can be more difficult to diagnose due to the variability in presentation and the difficulty of measuring intra-abdominal pressures accurately. Symptoms may include abdominal distention, decreased urine output, respiratory difficulty, and hemodynamic instability. In this case, the patient exhibited all of the aforementioned symptoms, prompting placement of the peritoneal drain after failure of initial conservative management.

Role of Peritoneal Drain in Managing ACS:

Peritoneal drainage is an effective and minimally invasive method of managing ACS in pediatric burn patients. It allows for the reduction of intra-abdominal pressure, increasing the preload and improving perfusion to the kidneys and intestines. The placement of a peritoneal drain in this patient was instrumental in stabilizing her condition, eliminating the need for more invasive procedures like laparotomy, and preventing further deterioration of organ function. The drain also allowed for continuous monitoring of peritoneal fluid output, providing valuable information about the patient's volume status.

Burn management in pediatric patients requires a multidisciplinary approach, including intensive care, nutrition, wound care, and rehabilitation. In this case, collaboration between specialists was key in which nutrition managed TPN needs, while the speech-language pathologist optimized oral feeding. This comprehensive care supported the patient's recovery through nutrition, wound care, and rehabilitation.

The management of severe pediatric burns involves challenges such as fluid resuscitation, infection control, pain management, and nutrition support. Goal-directed resuscitation and early de-resuscitation were critical in preventing complications. Monitoring trends helped identify issues such as fluid overload or inadequate perfusion, guiding timely interventions. The patient also required ongoing surgical procedures, including contracture release and grafting, due to scarring. Neurological and developmental follow-up was essential to address potential long-term physical and psychological effects.

Abdominal Compartment Syndrome in Burn Patients:

ACS has been well-documented as a major cause of morbidity in burn patients, especially those requiring extensive resuscitation. Recent studies suggest that intra-abdominal pressure monitoring is critical in detecting ACS early, particularly in pediatric patients who may not exhibit clear clinical signs. Peritoneal drainage is recommended when IAP exceeds 20 mmHg, particularly when associated with organ dysfunction (Jeschke et al., 2017). The use of peritoneal drains in pediatric burn patients is supported by evidence from several centers specializing in burn care, including the University of Texas Medical Branch, which emphasizes their role in preventing progression to multi-organ failure (Linden et al., 2020).

Conclusion: This case highlights the critical role of peritoneal drainage in managing abdominal compartment syndrome (ACS) in a pediatric burn patient. Early recognition of ACS and prompt interventions—such as diuretics, paralysis, or minimally invasive techniques like CRRT—can significantly improve outcomes and prevent further organ dysfunction. Peritoneal drainage serves as a key temporizing measure, with ex-laparotomy considered if less invasive options fail. A goal for the future is to increase awareness of peritoneal drainage as a viable option, emphasizing the techniques required for effective drain placement, such as ultrasound-guided procedures and the use of small-bore pigtail or straight catheters. This approach can be particularly useful in resource-limited settings or before transfer to a major burn center. A multidisciplinary team approach is essential for optimizing recovery and minimizing long-term complications. Ongoing research and evolving clinical guidelines will continue to refine management strategies in fluid resuscitation, ACS management, and wound care.

Sacroischiatic Reconstruction of Paraplegic Pressure Ulcer with Autografts Harvested from Bilateral Above-the-Knee Amputation

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Introduction/Objective: There are few documented cases of mesh skin graft harvested from amputated limbs. This is surprising considering the high disease burden of pressure ulcers and their close association with venous occlusive disease. Pressure ulcers affect about 1 in 3 patients suffering from spinal cord injury. Paralyzed or bed-ridden patients are at risk of developing pressure ulcers secondary to venous stasis and deep vein thrombosis. This is in part due to the lack of vascular tone from restricted or absent muscle movements resulting in venous stasis. This venous stasis along with poor lymphatic drainage can lead to tissue necrosis, thus causing or exacerbating pressure ulcers. A 2020 meta-analysis suggests that 12.8% of the population worldwide suffers from pressure ulcers, with a hospital-acquired incidence of 8.4% and the most affected sites being the sacrum, hip, and heel. Pressure ulcers often act as a predictor of mortality. Their appearance is associated with health decline and decreased quality of life, with mortality rates in elderly patients as high as 60% one year post-hospitalization. However, despite advances in medical and surgical interventions, the average incidence and disease burden of pressure ulcers have not significantly changed since 1990. While Stage 1 and 2 pressure ulcers may be responsive to conservative treatment, Stage 3 and 4 ulcers often require reconstructive surgery, which is limited by donor site vascularization and availability. This can present an issue in patients with Stage 3-4 ulcers with venous occlusive disease, as venous occlusion may reduce the availability of viable donor sites, requiring alternative interventions that may challenge ideal treatment algorithms.

Case Presentation: A 45-year-old male with paraplegia presented to the hospital with increased purulent drainage from bilateral lower extremity and pelvis decubitus ulcers, lymphedema, and bacteremia. The patient had suffered an abdominal gunshot wound in 1998 damaging the L1 spinal cord. Additionally, he had been suffering from chronic bilateral deep vein thrombosis with surgical insertion of an IVC permanent filter years prior, now presenting chronic thrombus extending from the level of the filter to the common iliac veins bilaterally. On physical examination, venous return from the lower extremities was considerably compromised, with progressively deteriorating Stage 4 sacral/ischiatic, left trochanteric, and left heel decubitus ulcers (Figure 1) and additional ulcers present on right heel and distal legs bilaterally (Figure 2). CT also revealed chronic osteomyelitis and diffuse osteopenia of lower extremities. Pelvic CT angiogram revealed intra-abdominal and superficial venous collateralization secondary to IVC blockage. Additional factors contributing to decompensation of condition included urosepsis, malnutrition, and chronic inflammation leading to fatigue, weakness, and inability to relieve pressure from ulcerated extremities.

Bilateral above-the-knee amputation was suggested to manage the patient's chronic non-healing lower extremity wounds, improve quality of life, and reduce the risk of medical complications. The patient was originally reluctant to agree to amputation, insisting on the hope he would one day be able to walk again. However, after further discussion on the possible improvements on the patient's quality of life, low probability of regaining motility after 25-year paralysis, and reduction of medical complications following amputation, the patient agreed to the procedure, which would involve excision and debridement of tissue, bilateral above-the-knee amputation, and insertion of mesh autograft for sacral ulcers harvested from lower extremity flaps.

The procedure began with the preparation of the sacroischiatic wound bed, which included 260 cm² on the left hip, 575 cm² on the right, and 60 cm² on the perineum. The lower extremity flaps were removed using sharp excision, and a Versa Jet was used for debridement. Once these skin grafts had been successfully harvested, the above-the-knee amputations were performed with fish mouth technique. The fascia and musculature of the anterior thighs were divided using Bovie electrocautery. The femurs were skeletonized using a periosteal elevator anteriorly and a lap sponge posteriorly. Silk ties were inserted for ligation of femoral vessels and the femurs were surgically transected. The patient's severe venous hypertension resulted in 750 mL of hemorrhage for the whole procedure; however, this complication was successfully controlled. The fascia and

musculature of the posterior thigh were removed using a Lipsky knife prior to filing the femoral bone ends. The fascia and skin were sutured with an interrupted 2-0 Vicryl suture and a 2-0 Prolene suture with staples, respectively. Following completion of the amputation, the patient was placed prone for sacroischiatic reconstruction using the flaps harvested by the burn team and the autograft was meshed on a 2:1 ratio with a dermatome device. The sacroischiatic area was bandaged using Fluffy burn gauze and surginet. One month post-procedure, the patient presented for follow-up in no apparent distress with bilateral above-the-knee amputation intact with staples (Figure 3). The sacroischiatic region presented extensive scarring in an area over 10 cm with open wounds, purulence, and fibrinous exudate, with 5% graft take.

Discussion: A 45-year-old male with paraplegia presented to the hospital with increased purulent drainage from bilateral lower extremity and pelvis decubitus ulcers, lymphedema, and bacteremia. The patient had suffered an abdominal gunshot wound in 1998 damaging the L1 spinal cord. Additionally, he had been suffering from chronic bilateral deep vein thrombosis with surgical insertion of an IVC permanent filter years prior, now presenting chronic thrombus extending from the level of the filter to the common iliac veins bilaterally. On physical examination, venous return from the lower extremities was considerably compromised, with progressively deteriorating Stage 4 sacral/ischiatic, left trochanteric, and left heel decubitus ulcers (Figure 1) and additional ulcers present on right heel and distal legs bilaterally (Figure 2). CT also revealed chronic osteomyelitis and diffuse osteopenia of lower extremities. Pelvic CT angiogram revealed intra-abdominal and superficial venous collateralization secondary to IVC blockage. Additional factors contributing to decompensation of condition included urosepsis, malnutrition, and chronic inflammation leading to fatigue, weakness, and inability to relieve pressure from ulcerated extremities.

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Conclusion: An Ovid Medline database search conducted on February 19, 2024 using the terms "ulcers," "amputation," and "skin grafts" revealed only one other documented case of sacroischiatic ulcer reconstruction using autografts from amputated tissue dating from 1994. This case reported wound dehiscence which required reintervention one month post-procedure; however, there was satisfactory sacral coverage and no ulcer recurrence four years later.¹⁹ The 1994 case report used a

plantar island flap to cover the sacral ulcer, which was not possible in the present case due to the size of the lesion and bilateral heel and ankle ulcers.¹⁹ The uniqueness of this current case report would add to the scientific literature documentation of an uncommon surgical procedure, adding evidence that would help guide successful interventions such as the one in 1994 and prevent poor surgical outcomes. The requirements for a successful graft often take into account surgical techniques and cosmetic considerations for donor site selection. However, there is limited research regarding the consideration of donor site selection for improved graft take given preexisting comorbidities such as extensive ulceration and venous stasis, especially in the setting of tissue availability from a necessary amputation. Any techniques pioneered in this field could not only be applicable to treat pressure ulcers by providing a viable option for autologous skin graft in patients with paralysis, but also could be applicable in bed-confined patients, extensive burns, and refractory wounds.

ePoster #28 | Clinical Science | General Surgery
Acute Acalculous Cholecystitis in Pediatric Patient

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Introduction/Objective: Epstein-Barr Virus (EBV) is a herpesvirus that targets oropharyngeal B-cells and epithelial cells. EBV-related diseases result from an overactive immune response. The classic signs and symptoms of infectious mononucleosis (lymphoid organ swelling, malaise) result from T-cell proliferation to attack EBV-infected B-cells. Acute acalculous cholecystitis (AAC) related to EBV infection is rare. In this report, a 17-year-old presenting with AAC is described.

Case Presentation: A 17-year-old male presented with right upper quadrant (RUQ) pain. He was diagnosed with infectious mononucleosis three days prior. He had been experiencing malaise,odynophagia, and fevers.

Laboratory data revealed transaminitis and hyperbilirubinemia. Ultrasound and MRCP revealed evidence of acute cholecystitis without choledocholithiasis (Figure 1).

The joint decision was made to not undergo surgical intervention. The patient was subsequently discharged.

Discussion: AAC is often seen in hospitalized adults. The pathogenesis of AAC involves bile stasis and mucosal ischemia.

The diagnosis of AAC is based upon clinical signs with imaging findings, such as gallbladder wall thickening of $\geq 3.5\text{mm}$, sonographic Murphy's sign, and pericholecystic fluid without cholelithiasis. Cholestasis in the setting of EBV infection is attributed to the associated viral hepatitis. Histologic evidence of EBV infiltration of mononuclear lymphocytes within lobular and portal areas has been noted in the literature. Other herpesviruses are noted to directly infect gallbladder epithelium.

Conclusion: AAC may occur with infectious mononucleosis. This report describes an adolescent with AAC after being diagnosed with infectious mononucleosis. Imaging revealed a thickened gallbladder wall without evidence of cholelithiasis or choledocholithiasis. This rare phenomenon can make the diagnosis challenging.

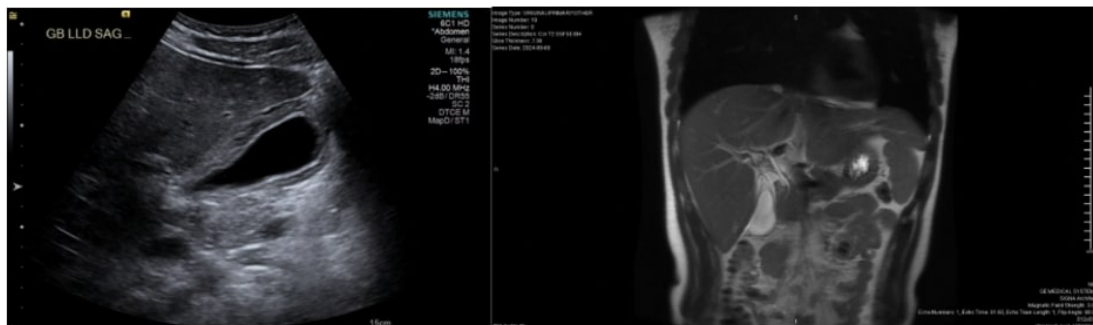


Figure 1. Ultrasound (left) demonstrating gallbladder wall thickening with associated pericholecystic fluid. No evidence of cholelithiasis or sludge. MRCP (right) reveals no evidence of common bile duct dilatation.

Construction of the Bilateral Anterior and Posterior Cruciate Ligaments in a Patient with Bilateral Fibular Hemimelia and Cruciate Agenesis

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Introduction/Objective: Fibular hemimelia (FH) is a congenital condition with hypoplastic or absent fibula often associated with knee, foot, and ankle abnormalities. The prevalence of cruciate ligament absence is 0.017 per 1000 live births. This investigation aims to present a case of bilateral FH type II with bilateral agenesis of the anterior (ACL) and posterior cruciate ligaments (PCL), treated with bilateral construction of both cruciate ligaments resulting in significant improvements in knee function.

Case Presentation: A 16-year-old female with a history of bilateral FH presented for evaluation of chronic bilateral knee instability. Clinical and radiologic examination demonstrated increased translation of the tibia on the femur, both anterior and posterior without endpoint, indicative of ACL and PCL agenesis. Treatment consisted of arthroscopic ACL and PCL construction which included significant notch-plasty and the use of anatomic bone and soft tissue landmarks to guide tunnel placement. The PCL tibial tunnel was placed distal to the posterior tibial drop-off and between the mamillary bodies with an accessory posteromedial portal. The femoral PCL tunnel was placed at the superomedial apex of the notch just posterior to the medial femoral condyle cartilage surface using an accessory low anterolateral portal. The femoral ACL tunnel was positioned in line with the posterior cartilage margin and posterior to the bifurcate ridge using the anteromedial portal with the knee in full flexion. The ACL tibial tunnel was positioned between the tibial spines and in line with the posterior border of the anterior horn of the lateral meniscus. Allografts were used to construct the ligaments, and the patient was rehabilitated and returned to normal activity with improved knee function and no instability.

Discussion: Bilateral FH with ACL and PCL agenesis is rare, and deficiencies in normal anatomy present technical challenges in the use of anatomic landmarks. There is limited literature guidance for the treatment of this condition and the functional outcomes of doing so. Instability is congenital and likely to result in accelerated cartilage and meniscus degeneration if left untreated.

Conclusion: Patients with cruciate agenesis are likely to benefit from ACL and PCL construction to protect the articular cartilage from further degenerative changes and the ability to participate in more strenuous activities. Further investigation to evaluate the outcomes of ACL and PCL construction in these patients is warranted.

Paraduodenal Hernia: Two Cases in a New GME Surgery Program

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Introduction/Objective: A paraduodenal hernia (PDH) is a rare congenital mesenteric defect caused by failure of midgut rotation. Two subtypes were named in 1889 according to their orientation to the ligament of Treitz: left or right. The clinical presentation can be variable and contains a lifetime risk of up to 50% for bowel ischemia.

Case Presentation: 1. A 29-year-old female presented with acute peritonitis with distention and vomiting. An emergent exploratory laparotomy was performed, revealing a ruptured tubo-ovarian abscess with diffuse purulence. A left PDH was found incidentally and repaired with absorbable sutures in an interrupted fashion.

2. A 44-year-old female presented with acute abdominal pain and obstipation. A computerized tomography scan (CT scan) demonstrated a mildly thickened loop of jejunum with fecalization in the left upper abdomen, requiring diagnostic laparoscopy with conversion to laparotomy. A loop of jejunum was contained within a right PDH defect. The defect was repaired with interrupted absorbable sutures.

Discussion: Characteristic CT findings for PDH, such as clustering of small bowel in the perinephric space, have been identified in order to aid in prompt diagnosis. Surgical repair is recommended, even for incidental PDH, via primary suture closure of the defect with or without mesh or omental flap. Operative repair consists of reduction of hernia contents, possible resection of ischemic segments of intestine and repair or elimination of the hernia orifice.

Conclusion: A PDH should be included in the differential diagnosis of small bowel obstruction. Repair of all PDH is recommended to prevent internal hernia, strangulation, and bowel ischemia.



Idiopathic Spontaneous Compartment Syndrome

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Background: Acute compartment syndrome can occur spontaneously without any obvious triggering factors. Systemic diseases such as diabetes mellitus, hypothyroidism, systemic capillary leak syndrome (Clarkson's syndrome), HIV, hematological/leukemic disorders, or systemic sclerosis can all be complicated with compartment syndrome. Risk factors such as excessive blood loss, large volumes of infusion, obesity, prolonged operative time, and EPs can be contributory. Symptoms and treatment do not differ from the ones in the usual compartment syndrome presentation. Recognition of this condition is important to avoid delay in diagnosis. Clinical exam remains the most important step to diagnose compartment syndrome. In patients who are at high risk for operative intervention and with a high index of suspicion for acute compartment syndrome, medical optimization is key prior to any treatment. An extensive discussion with the patient regarding the risks and benefits of the surgery should occur preoperatively especially since the patient's wounds will be left open initially.

Case: A 43 year male with a past medical history of cirrhosis secondary to chronic fatty liver disease, diabetes mellitus and morbid obesity presented with an acute onset of idiopathic right lower extremity pain and swelling with no known recent trauma. Progression of symptoms overnight suggested compartment syndrome. Patient underwent successful surgical intervention with four compartment fasciotomy and achieved good recovery.

Discussion: In our review of the English-language literature, idiopathic compartment syndrome was reported in less than 7% of cases. These findings highlight the need for increased awareness among medical personnel when evaluating patients with unexplained, disproportionate pain and other highly suspicious symptoms suggestive of compartment syndrome. A thorough preoperative discussion with the patient regarding the risks and benefits of surgery is essential, particularly given that the wounds will initially be left open. We advocate for increased reporting of this condition to establish a more accurate incidence rate.

ePoster #32 | Education | Trauma/Burn/Critical Care

The Role of Surgical Futility in End-of-Life Discussions: Case Report

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Introduction/Objective: Operative futility should be considered in goals of care conversations with the critically ill surgical patient. The following case highlights the importance of shared decision making and questions whether surgical intervention should have been offered.

Case Presentation: 49-year-old male with significant chronic disease burden was hospitalized for acute candidemia and candida-peritonitis when he decompensated, requiring intubation and high-dose pressor support. He was found to have evidence of bowel perforation on CT scan. General Surgery was consulted and offered surgical intervention. Goals of care discussion was undertaken by surgical team where clinical judgement and ACS NISQIP calculator demonstrated patient had an 80% likelihood of death with exploratory laparotomy. With this information, the patient's wife decided to transition him to comfort care with the support of the surgical team, and the patient died.

Discussion: The concept of futility, and if it should be considered in end-of-life care, has been debated in the medical community since the 1980s and is based in beneficence versus nonmaleficence. A 2023 retrospective study of 860 patients with NISQIP predicted mortality >75% found a 92% post-operative mortality. We need to question at what point surgical intervention should not be offered, and the extent futility should be included in goals of care conversations. Would operating have been appropriate for our patient? As our population ages, these discussions are increasingly relevant.

Conclusion: The surgical community needs to further engage in discussions of surgical futility in end-of-life care and when to not offer surgical intervention to patients.

ePoster #33 | Clinical Science | Colon and Rectal Surgery

Giant Colonic Diverticulum

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Introduction/Objective: Giant colonic diverticulum is defined as diverticulum measuring greater than 4 cm. We present a case of giant colonic diverticulum measuring 46 cm.

Case Presentation: 27-year-old male with chronic constipation, anemia, and melena since childhood presented with 8 days of constipation, abdominal pain, and a palpable left abdominal mass. CT abdomen demonstrated colonic dilation with large stool burden. The patient was initially managed non-operatively, but he acutely decompensated on HD2 and was taken for emergent exploratory laparotomy. We found a perforated sigmoid diverticulum measuring 46 cm containing a mass of stool. The necrotic colon and diverticulum were resected, feculent abdomen irrigated, and patient received end colostomy on takeback. Patient underwent complex hospital course with recurrent intraabdominal abscess, multiple IR drain placements and extended antibiotic course. He is now discharged home.

Discussion: Since initial records of giant colonic diverticulum in the 1950s, approximately 200 cases have been reported, 90% in the sigmoid colon, primarily in ages 60-79, and averaging 4-9 cm in diameter. This case is a unique incidence of giant colonic diverticulum measuring 46 cm in length and occurring in a young patient. The most common reported symptoms are abdominal pain, palpable abdominal mass and constipation. Despite the rarity, giant diverticulum should be in the differential for abdominal pain and constipation.

Conclusion: Understanding the highly variable presentation of giant colonic diverticulum and recognizing its signs and symptoms can lead to earlier diagnosis, prompt surgical resection, and reduced morbidity.



Traumatic Ventricular Septal Defect and Right Ventricular Aneurysm in Pediatric Blunt

Trauma: A Case Report

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University of Texas HSC - Houston

Introduction/Objective: Blunt cardiac injury (BCI) is a rare but potentially a highly lethal complication of blunt thoracic trauma, with a broad spectrum of presentations and structural injuries, including traumatic ventricular septal defects (VSD). Traumatic VSD is a rare complication of blunt cardiac injury, with less than 100 cases described in literature to date.

Case Presentation: We report the case of a 13-year-old female with who sustained a traumatic VSD and right ventricular aneurysm following a jet ski accident without any traditional signs of cardiac injury on presentation as well as a review of the literature.

Discussion: In traumatic VSDs, particularly those associated with other injuries, the decision for early or delayed repair depends on the patient's stability and the risk of further complications, such as ventricular aneurysm formation

Conclusion: This case highlights the rarity of traumatic VSDs and right ventricular aneurysms, the challenges in management, and the need for early diagnosis and intervention in preventing further cardiac deterioration.

Monkeypox Hand Lesions Diagnosed Early Follow Staged Resolution with Local Wound Management Alone: A Case Report

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Introduction/Objective: Monkeypox was declared a public health emergency by the World Health Organization in 2022. Typical presentation involves a pruritic, papular rash progressing to pustular and crusting lesions on the face, trunk, and extremities. Uncommonly, patients present with an isolated lesion on the hand. We present a case of monkeypox initially appearing as a finger abscess, treated successfully with debridement and local wound care.

Case Presentation: A 50-year-old male with well-controlled HIV presented with an isolated, painful infection of the dorsal index finger. He reported a history of recurrent but self-resolving hand blisters. He underwent minimal excisional debridement of necrotic skin and subcutaneous tissue. No pus was encountered. Surgical pathology demonstrated cytopathologic features of a pox virus. He subsequently developed diffuse body pustules confirmed as monkeypox via PCR. The finger wound worsened significantly after debridement, prompting a second, more extensive debridement. Vesicles consistent with viral infection became apparent at that point. With local wound care only, the finger wound healed within three months, achieving an excellent functional result.

Discussion: This case illustrates the potentially confusing presentation of monkeypox, sometimes appearing to be a bacterial infection prior to the typical vesiculation. Early diagnosis minimizes unnecessary surgical intervention, as prompt antiviral treatment and conservative wound measures result in reliable healing.

Conclusion: Early recognition of monkeypox is critical, as these lesions should be treated non-operatively. Differentiation of viral infection from bacterial infection is important to avoid unnecessary surgery.

A Robot-Assisted Transabdominal Preperitoneal Repair of a Grynfeltt-Lesshaft Lumbar Hernia: A Case Report and Historical Discussion

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Introduction/Objective: Lumbar hernias are a rare pathology with no established standard surgical approach. This case report evaluates the feasibility of a robotic-assisted preperitoneal approach and provides an overview of relevant historical surgical techniques.

Case Presentation: Our patient, a 56-year-old female with a history of laparoscopic hysterectomy, presented with a painful, enlarging left-sided bulge. Imaging revealed a 12 x 12 x 5 cm superior triangle lumbar hernia. In a robotic-assisted transabdominal preperitoneal approach, the hernia was reduced, the defect primarily closed, self-gripping polypropylene mesh placed in the preperitoneal space, and the flap closed. The patient's postoperative course was uneventful.

Discussion: Lumbar hernias were first described by Garangeot in 1731, with anatomical definitions provided by Petit in 1783 (inferior space) and Grynfeltt in 1866 (superior space). Ravaton performed the first documented surgical repair in 1750. Complex closure techniques were introduced in the 1900s with musculoaponeurotic rotation flaps, and mesh repairs began in 1950. In 1963, Hafner introduced modern synthetic mesh. Burick and Parascandola pioneered laparoscopic approaches in 1996. Studies in the early 2000's demonstrating comparable outcomes to open repairs, with greater efficiency and lower costs. Robotic-assisted techniques have gained traction more recently, showing promising results in terms of feasibility and patient outcomes.

Conclusion: With only approximately 300 reported cases and limited familiarity among surgeons, no single treatment modality is definitive for lumbar hernias. This case demonstrates the feasibility of robotic-assisted transabdominal preperitoneal repair, underscoring its potential as a viable option in the evolving treatment of lumbar hernias.



ePoster #38| Clinical Science | Trauma/Burn/Critical Care

Blunt Cardiac Trauma Following a Low-Speed Collision in a Patient with Becker Muscular Dystrophy

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Introduction/Objective: Blunt cardiac injury (BCI) is a rare but significant cause of morbidity and mortality following trauma, particularly from motor vehicle collisions (MVC).

Case Presentation: This case report discusses the presentation, management, and outcome of a 59-year-old male who sustained a cardiac rupture after a low-speed MVC. The patient, with a history of arteriovenous malformations and seizures, underwent out-of-hospital CPR and achieved ROSC (return of spontaneous circulation). Imaging revealed a large pericardial effusion, prompting emergent surgery. He was noted to have an injury at the apex of the heart leading to cardiac tamponade. Postoperative evaluation revealed that the patient had Becker Muscular Dystrophy, which explained the underlying cardiomyopathy and cardiac muscle weakening that predisposed him to cardiac rupture with minimal trauma.

Discussion: This case highlights the importance of recognizing pre-existing cardiac conditions that can exaggerate traumatic impact, even in low-impact accidents. Rapid prehospital intervention and early surgical management were critical in this patient's survival.

Conclusion: The report highlights the need for heightened awareness of cardiac complications in trauma patients, particularly those with neuromuscular disorders.

A Stubborn Constellation: 10 Year Course of a Complex Recurrent Venous Thoracic Outlet Syndrome Patient

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Introduction/Objective: Residual stenosis after intervention on thoracic outlet syndrome (TOS) can create a complex surgical problem. This recurrence is most common with venous thoracic outlet syndrome (vTOS). vTOS is typically approached endovascularly. However, recurrence has created a need for secondary interventions such as angioplasty, venous bypass, first rib resection, and/or claviclectomy. This case describes a 10 year course of a vTOS patient.

Case Presentation: A 30 year old female presented with persistent right upper extremity deep venous thrombosis (DVT) concerning for vTOS on imaging. She underwent thrombolysis and placement of subclavian stent. Patients course was complicated by a fractured stent at follow up. She subsequently underwent first rib resection, removal of stent, and subclavian patch angioplasty. She again presented with DVT and underwent recanalization of subclavian vein with stent. She endorsed worsening neurological symptoms: pectoralis minor syndrome and arm swelling and underwent a posterior first rib resection, middle scalenectomy, and pectoralis major tenotomy. She then presented with new subclavian stent thrombosis at followup for which underwent an internal jugular turndown. Patient continued to have symptoms resulting in a repeat venogram demonstrating kinking of jugular vein over clavicle. Patient was ultimately taken for a claviclectomy to improve flow. This resulted in partial improvement of patients swelling.

Discussion: Long term outcomes of endovascular management of vTOS have often involved surgical escalation due to symptom persistence. The management algorithm for extended course TOS has yet to be clarified.

Conclusion: This case demonstrates an example of a vTOS patient who failed initial treatment requiring an extended course of surgical intervention.

The Efficacy of Cognitive Behavioral Therapy as part of a Multimodal Approach to Treat Cancer Pain: A Case Report

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Introduction/Objective: Approximately 70% of patients undergoing treatment for colorectal cancer experience pain, with survivors continuing to suffer from chronic pain even after completion of curative treatment. Psychological interventions, such as Cognitive Behavioral Therapy for Chronic Pain (CBT-CP) help patients adapt to living with chronic pain and encourage positive behavioral changes.

Case Presentation: This case study examines a 55-year-old female with stage III colorectal cancer and significant psychological distress following diagnosis and treatment leading to anxiety, depression, and persistent pain. Initial evaluation was performed using the Pain, Enjoyment, and General Activity Scale (PEGS), Generalized Anxiety Disorder-7 (GAD-7), and Patient Health Questionnaire-9 (PHQ-9). The patient was then introduced to CBT-CP for chronic pain management and in achieving her goal of weaning off pain medications.

Discussion: Four of six CBT-CP modules were completed that involved setting SMART goals, cognitive reframing, and activity pacing. The patient reported significant improvements in pain and anxiety with a reduced PEGS score of 6 to 2, a GAD-7 score of 13 to 2 and decreased her oxycodone to once a day despite no significant improvement in depression. This study demonstrates that CBT-CP addresses chronic pain as a multifactorial psychological process and helps to unlink negative associations and improve functional outcomes in cancer patients.

Conclusion: This study highlights the importance of early intervention surrounding initial cancer diagnosis and indicates that CBT-CP is suitable for cancer patients experiencing chronic pain. CBT-CP shows potential for improving negative unhelpful thinking, disturbances within one's daily life, depression, anxiety and perhaps can reframe one's approach to a multimodal treatment plan.

Table 1: Outcome sources at each visit

	Initial Visit	Midpoint (4 weeks)	Final Visit
PEGS (0-10)	N/A	6	2
GAD (0-21)	13	1	2
PHQ-9 (0-27)	6	4	7

PEGS: Pain, Enjoyment, and General Activity Scale

GAD-7: General Anxiety Disorder-7

PHQ-9: Patient Health Questionnaire-9

Pain, Enjoyment, and General Activity Scale

Bilateral Septic Arthritis of the Wrist with Streptococcus dysgalactiae: a Case Report

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Introduction/Objective: Septic arthritis is an infection of the joint space that can lead to joint destruction, disability, and death. Mortality risk is increased by old age, comorbidities such as decreased kidney function, and involvement of multiple joints.

Case Presentation: A 101-year-old female presented to the emergency department with acutely worsening pain of the left wrist that had been present for two days prior. At the time of admission, laboratory results showed leukocytosis, elevated absolute neutrophil count, CRP, and ESR. At that time, the patient denied symptoms at any other joints. Blood cultures were drawn. An arthrocentesis of the L wrist was performed in the Emergency Department showing gross purulence. The patient was then taken to the operating room the same day for open debridement and irrigation. The following day patient was complaining of acute worsening pain of the contralateral wrist. Arthrocentesis of the right wrist was performed at the scapholunate joint. 1cc of gross purulence was aspirated. The patient was then taken the same day for open debridement and irrigation of the right wrist. Microbiology results were notable for Streptococcus dysgalactiae in both wrists (left: 4+, right: 3+) and in blood cultures. The patient was given a 14-day course of cefadroxil 500mg BID. Patient recovered well without complications.

Discussion: Septic arthritis has a high mortality rate in elderly populations, especially those with comorbidities. Septic arthritis of bilateral joints is commonly under/misdiagnosed as it is a common incorrect belief that this is a lower differential if bilateral joints are involved. Streptococcus dysgalactiae—the organism responsible for the infection of our patient—is uncommon in adults. Recent studies have shown increasing rates of invasive S. dysgalactiae infections, often in immunocompromised patients.

Conclusion: This case illustrates the necessity of monitoring pain in other joints in cases of monoarticular septic arthritis to rule out polyarticular involvement to prevent long-term complications, morbidity, and mortality.

Rare Case of Peptic Ulcer Perforation in a Post-Cesarean Patient: Observations from Texas Medical Students in Egypt

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Introduction/Objective: Peptic ulcer perforation is a severe complication of peptic ulcer disease, resulting from erosion of the upper gastrointestinal mucosa. While uncommon in post-cesarean patients, its symptoms can resemble post-operative complications, risking delayed diagnosis and adverse outcomes. This case highlights the need for an expanded diagnostic approach in post-cesarean patients with atypical abdominal symptoms.

Case Presentation: A 27-year-old West African woman presented to Ain Shams University Hospital in Cairo, Egypt, with worsening abdominal pain, vomiting, fever, and tachycardia three weeks post-cesarean. Initially misdiagnosed with gastroenteritis, she underwent emergency laparotomy due to persistent symptoms, which revealed a 3 cm perforated peptic ulcer. An omental patch repair was performed, and she was discharged in stable condition seven days later.

Discussion: Peptic ulcer perforation, although rare post-cesarean, can mimic common post-operative symptoms, leading to diagnostic delays. A thorough evaluation of abdominal symptoms unresponsive to standard post-operative care is essential, as misdiagnosis increases risks of morbidity. Non-gynecologic causes should be considered, particularly with persistent symptoms.

Conclusion: Physicians should consider peptic ulcer perforation in post-cesarean patients presenting with sustained abdominal pain, fever, or gastrointestinal distress. Recognizing atypical complications early allows timely intervention, improving outcomes and reducing mortality. This case underscores the value of broad differential diagnoses in post-operative care.

