ePOSTER ABSTRACTS

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ePoster #1 | Case Review | Abdominal/Laparoscopy

DE-EPITHELIALIZATION (DEEP) AND FASCIAL CLOSURE WITH ONLAY MESH REPAIR: AN ALTERNATIVE TECHNIQUE FOR VENTRAL HERNIA REPAIR: A CASE REPORT

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Introduction/Objective: Outcomes of incisional hernia repair (IHR) significantly improved with the advent of modern reconstructive techniques that facilitate fascial closure under physiologic tension and wide overlap meshreinforcement on a sublay position. Such techniques require access to the abdominal cavity, lysis of adhesions, and dissection into the retromuscular and/or pre-transversalis/preperitoneal spaces. Cirrhotic patients with portal hypertension and ascites or those with extensive intra-abdominal adhesions and bowel directly under the skin, the risk for bleeding, inadvertent enterotomies, and contamination of ascitic fluid with concurrent mesh placement are some of the challenges while performing hernia repair. We hypothesized that performing a completely extraperitoneal repair with superficial de-epithelialization of the hernia sac back to fascia followed by closure of the hernia defect with autologous tissue followed by onlay mesh reinforcement could avoid the enterotomies and contamination of ascites.

Case Presentation: A 53-year-old woman with cirrhosis,ascites, and chronic pancreatitis secondary to alcoholism presented to surgery clinic for evaluation of a symptomatic incisional hernia. She was a non-smoker and had a body mass index of 32 kg/m2 Patient history is pertinent for an exploratory laparotomy due to perforated gastric ulcer with subsequent episodes of small bowel obstruction that required repeated laparotomies for lysis of adhesions and resulted on the current incisional hernia. Main complaints were pain and a midline abdominal bulge but no obstructive symptoms. A 12 cm wide midline defect with hernia contents covered by fragile and thin skin was noted on examination [Figure 1A].

Preoperative optimization included ascites control with adjustment on diuretics doses and preoperative paracentesis. The patient was taken to the operating room, and the skin was meticulously dissected free of the underlying hernia sac (de-epithelialization—Figure 1B). Minimal raising of subcutaneous flaps was done bilaterally sufficient to expose the anterior rectus fascia [Figure1C]. Relaxing incisions over the anterior rectus sheaths were performed bilaterally, simultaneously rotating the anterior rectus fascia medially aiming to cover the hernia sac recreate the midline. The sac was invaginated and the anterior rectus fasciaflapswere closed under physiologic tension with non-absorbable suture in a running fashion [Figure 1D]. Repair was then reinforced with placement of 15 × 25 cm piece of macroporous polypropylene mesh on onlay position, fixated to the cut edges of the anterior fascia [Figure 1E]. A 19-French closed suction drain was positioned above the mesh [Figure 1F], and the subcutaneous tissue and skin were closed in layers. The patient recovered uneventfully and was discharged on the first postoperative day. Currently with a 6-month follow-up, no wound complications occurred, and patient remains recurrence-free.

Discussion: De-epithelization is a critical step of transverse rectus abdominis muscle flaps, commonly used for breast reconstruction. We used de-epithelialization of the hernia sac to permit hernia dissection while obviating entrance into the abdominal cavity and the risk for the enterotomy or wound infection which is commonly seen in repairing hernias with bowel directly under the skin obviating the use of

permanent mesh. Use of de-epithelialization during hernia repair with the objective to remain extraperitoneal has been previously reported.[3]

Traditional onlay hernia repair on large hernias requires extensive subcutaneous flaps raising, which are linked to wound complications.[1] Extension of the subcutaneous dissection to allow for external oblique release further increases such risk. As an attempt to minimize such skin de-vascularization, we raised subcutaneous flaps only to the extent necessary for incision and rotation of the anterior fascia. Last, we covered the hernia sac with this native tissue and reinforced the repair with large overlap of synthetic mesh on onlay position. With such, hernia sac is covered by a double layer (fascia/mesh) preventing increased tension on central area of the mesh leading to mesh fractures,[4] bulging of mesh, and other inconveniences of inlay repairs that are often used as an alternative to formal reconstruction in high-risk patients.

Optimal mesh position remains debatable. During open hernia repair, the onlay and sublay positions are most performed. In general, the sublay retromuscular position is preferred as the prosthesis is placed on the well-vascularized retrorectus space favoring mesh incorporation and where it remains protected from superficial wound morbidity. In contrast, the onlay mesh position is faster, obviates entering the abdominal cavity, and can provide similar long-term outcomes with respect to recurrence. The need for subcutaneous flaps raising and resultant division of periumbilical perforators increased odds for wound complications and remains the Achilles' heel of such technique. Haskins et al. [6] compared outcomes of sublay with onlay mesh repair (with adhesive mesh fixation described by Voeller and co-workers[7]. After 2:1 matched analysis, they found comparable rates of wound complications between techniques, at least in the short term. The authors appropriately mention that long-term mesh-related complications, recurrence, and those outcomes in higher risk patients, as ours, remain to be determined.

Conclusion: The approach presented herein could be an alternative for a durable repair in high-risk patients with largehernias in whom entering the abdominal cavity can be problematic. Larger experiences and long-term follow-up are needed to determine the utility of this technique on the armamentarium of the reconstructive surgeon.

ePoster #2 | Case Review | Cardiothoracic

THE PULMONARY ARTERY ANEURYSM: A RARITY AND SURGICAL ENIGMA

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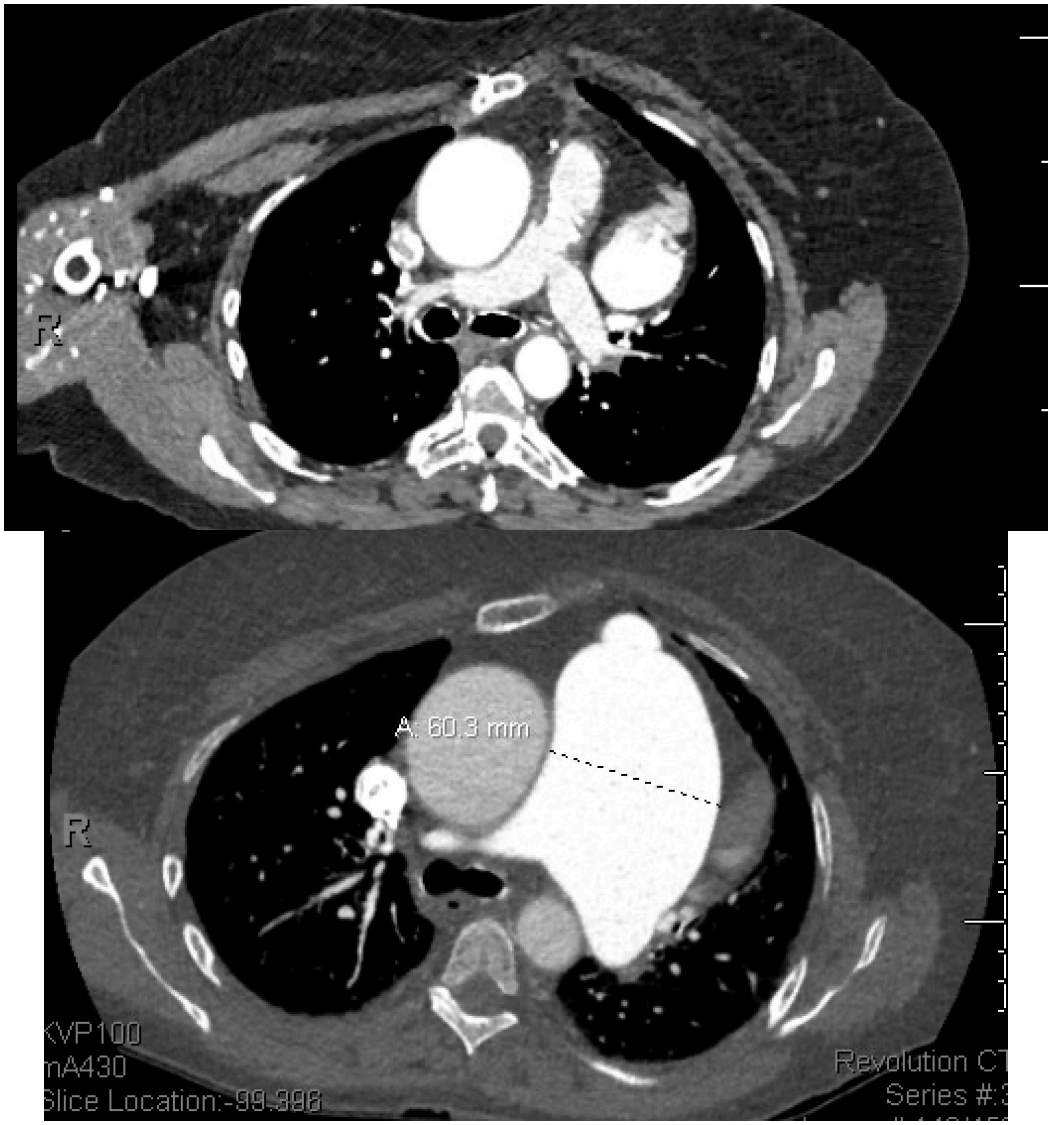
Introduction/Objective: Pulmonary Artery Aneurysms are a surgical enigma. Given the low incidence (Deterling and Clagett, 1947) and minimal reporting of successful surgical treatment, standardized treatment criteria and surgical indications based on size do not exist (Kreibich et al, 2015) We present a successful 4th redo sternotomy to repair a large 6.3cm PAA and discuss surgical indications and the path forward for developing such indications from clinical evidence and the physiology of aneurysms.

Case Presentation: A 61-year-old female with a complex cardiac history, including three sternotomies by the age of eighteen, dilation of the aorta and main pulmonary artery presented with atypical chest pain. Cardiac workup ruled out cardiac causes and CT scan revealed a Pulmonary Artery Aneurysm (PAA) to be 6.3cm in diameter [Figure A]. A cardiac MRI revealed likely erosion of the PAA into the sternum and growth of the PAA when compared to serial imaging [Figure B]. The patient underwent a 4th redo sternotomy for resection the PAA and reconstruction the RVOT and PA with an aortic homograft [Figure C]. The patient was discharged post op day 8 and continues to do well in NYHA class 1 status three years later.

Discussion: PAAs presenting with pain or growth in diameter strongly indicate surgical repair due to the threat of dissection or rupture (Hou et al, 2016) Indications for asymptomatic PAAs based purely on size are more difficult to establish. Some recommend operating on PAAs greater than 5.5cm in diameter in accordance with evidence-based outcomes of aortic aneurysms (Kreibich et al, 2015), which serves as an improvised guideline. We assert that indications for surgical repair of PAAs based on size must be determined by additional reporting of PAAs and associated outcomes, because the pulmonary artery wall is generally thinner than the aorta (Mower et al, 1993) and thus, according to the Law of Laplace, more prone to increased wall stress (Basford, 2002, Mower et al, 1993). We investigate the physiologic implications of a thinner vessel wall and postulate recommendations based on observation of the patient presented.

Conclusion: PAAs continue to be an enigmatic presentation and indications for surgical repair can be difficult to establish. We recommend surgical repair of PAAs associated with pain, growth in size, and large PAAs exceeding 5.5cm in diameter. We implore additional reporting of PAAs to confirm guidelines for size indications and suggest taking a closer look at physiologic relationships of wall thickness and wall stress in aneurysms.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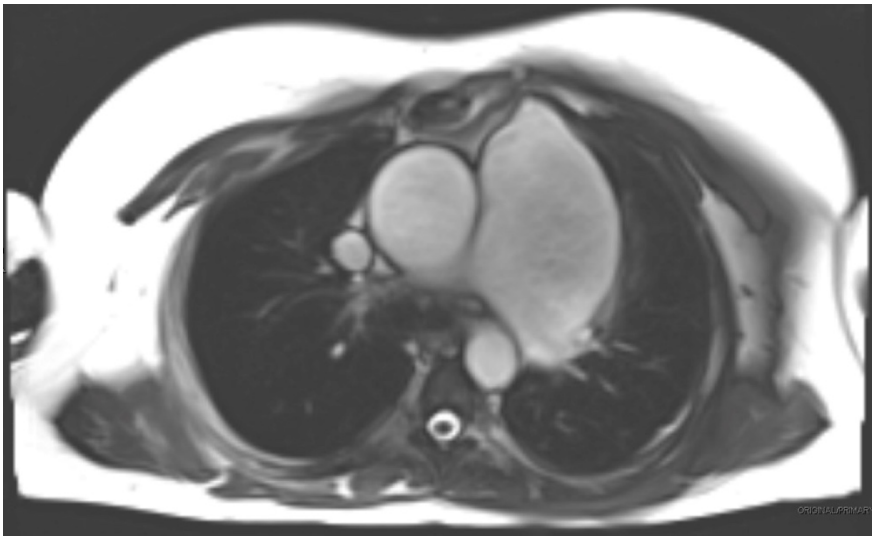

ePoster #3 | Abstract | Critical Care

IF AT FIRST YOU DON'T SUCCEED: CONSIDERATION OF REPEAT EXTUBATION ATTEMPTS IN TRAUMA PATIENTS

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Background: Failed extubation in critically ill patients is associated with poor outcomes. In critically ill trauma patients who have failed extubation, providers must decide whether to proceed with tracheostomy or attempt extubation again.

Objectives: The aim of this study was to describe the natural history of failed extubation in trauma patients and understand the benefits and outcomes of performing a tracheostomy in comparison to repeat attempts at extubation.

Methods: Trauma patients admitted to our Level I trauma center from 2013 to 2019 were identified. Patients who failed extubation, defined as an unplanned reintubation within 48 hours of extubation, were included. Patients who immediately underwent tracheostomy were compared to those who had subsequent attempts at extubation. The primary outcome was mortality, and secondary outcomes were intensive care unit (ICU) length of stay (LOS), ventilator days, and hospital LOS.

Results: The population included 93 patients who failed extubation and met inclusion criteria. 53 patients were ultimately successfully extubated, while 40 patients underwent a tracheostomy. There was no statistically significant difference in demographics or injury patterns. Patients who underwent tracheostomy had a longer ICU LOS and more ventilator days. There was no difference in mortality or hospital length of stay between the two groups

Conclusion: In trauma patients, subsequent attempts at extubation were not associated with increased mortality, and tracheostomy was associated with longer ICU LOS and ventilator days. In certain situations, it is appropriate to consider subsequent attempts at exubation in trauma patients who fail extubation rather than proceeding directly to tracheostomy.

ePoster #4 | Abstract | Foregut

VOLUME MATTERS: ACTUAL VS. PREDICTED OUTCOMES IN LAPAROSCOPIC ANTI-REFLUX SURGERY (LARS) IN AN ELDERLY COHORT

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Background: Proponents of watchful waiting for paraesophageal hernias (PEH) in elderly patients cite historically high mortality, but advancements in laparoscopy as well as centralization of this high-risk cohort to high volume centers has resulted in improved outcomes in laparoscopic antireflux surgery (LARS). Surgical risk calculators (SRCs) are ubiquitous in the preoperative workup, but infrequently utilized by referring providers.

Objectives: Given recent database reviews of the American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP) finding improved mortality (0.5%) and morbidity (7.3%), we sought to evaluate the ACS NSQIP SRC's accuracy in patients >65 undergoing LARS within a high-volume center.

Methods: A retrospective chart review identified 248 patients (28% men, average age 73) matching inclusion criteria from 2018-2020. Predictions were calculated for each patient using the SRC. Observed rates of major complications, reoperations, readmissions, mortality and average length of stay (LOS) was compared to SRC estimations using Fisher's exact test (FET).

Results: Cumulative predictive morbidity risk was 4.9%, compared to 2% that experienced a complication (p=0.14). Three patients (1.2%) required reoperation compared to predicted 1.6% (p=0.99). The average predicted risks of morbidity (5.4% vs 4.6%) or reoperation (1.6% vs 1.6%) did not significantly differ between those who did and did not experience these complications. One mortality (0.4%) occurred, with no readmissions, and a shorter LOS (1.1 vs 1.9 days)

Conclusion: The high-risk patients undergoing LARS at our high-volume center had outcomes similar to those predicted by ACS NSQIP SRC. Interestingly, the SRC predictions for our patient cohort were better than recent literature. Our data supports the concept of volume to outcome relationship, and we believe the ACS NSQIP SRC accurately reflects the outcomes of high volume-centers. Foregut surgeons offering PEH repair should encourage referring providers to utilize this free risk assessment tool, and emphasis should be placed on referring these cases to high-volume centers.

ePoster #5 | Abstract | General Surgery

BURN EXACERBATES MUSCLE FIBROSIS IN MICE WITH DUCHENNE MUSCULAR DYSTROPHY

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Background: Duchenne muscular dystrophy is an X-linked disease that results in muscle tissue degeneration. DMD is the most severe and common form of muscular dystrophy in childhood characterized by a deletion in the dystrophin gene. The absence of functional dystrophin leads to progressive muscular damage in which the muscle fibers undergo a cycle of necrosis and repair until the muscle mass is ultimately replaced by fat and fibrous tissue. Our group has previously shown that burn-induced muscle atrophy is exacerbated in Duchenne muscular dystrophy mice. We hypothesize that muscle atrophy in Duchenne Muscular Dystrophy mice after burn is facilitated by an enhanced replacement of muscle with fat and fibrotic tissue.

Objectives: The objective of this study is to investigate whether severe burn will exacerbate fibrosis and decrease the cross-sectional area in skeletal muscle of Duchenne muscular dystrophy mice.

Methods: Wild-type C57 BL6/J or DMD Mutant mice (mdx) received a 25% scald burn or a sham procedure and were euthanized at 4-, 7-, or 17-days post injury. Gastrocnemius muscle tissue was collected, embedded in paraffin, and processes for Trichome staining. Qualitative observations were made for collagen, inflammation, and adipose tissue. Quantification of the percent area of collagen was analyzed using the threshold tool on Image J. The cross-sectional area of skeletal muscle was analyzed using the freehand section tool of Image J.

Results: The qualitative analysis shows increased collagen expression in mdx burned mice on day 3 that is resolved on day 14. The quantification of the percent area of collagen shows a significant increase in collagen expression in the mdx burned mice on days 3 and day 7 compared to sham. The percent area of collagen in skeletal muscle was not statistically different when comparing mdx burned mice to WT burned or mdx mice. The cross-sectional area of skeletal muscle analysis showed that the muscle fiber size of the mdx burned mice was significantly reduced on day 14 when compared to WT burned, mdx, and sham mice.

Conclusion: Skeletal muscle of the mdx mice, with pre-existing structural defects, shows a quantitative increase of fibrosis on days 3 and 7 post-burn and a significantly lower cross-sectional area on day 14 when compared to the skeletal muscle of wild-type animals or non-burned mdx mice.

ePoster #6 | Abstract | General Surgery

SYSTEMATIC REVIEW ON TREATMENT OF PATIENTS WITH ACHALASIA: HELLER MYOTOMY, PNEUMATIC DILATION, POEM

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Background: Achalasia is an esophageal motility disorder associated with degeneration of the myenteric plexus, it causes significant symptoms and substantially impacts patient quality of life. Heller myotomy, pneumatic dilation, and per endoscopic oral myotomy (POEM) are commonly chosen interventions for potentially durable treatment of achalasia. It remains unclear on the optimal treatment strategy for patients with achalasia and the impact of these three different interventions on patient quality of life (QOL).

Objectives: The aim of this systematic review is to assess all comparative randomized controlled trials evaluating these three interventions.

Methods: PubMed, Embase, Scopus and Cochrane were searched from inception to April 2020. Randomized controlled trials (RCTs) that compared Heller myotomy, pneumatic dilation, and POEM were included. Primary outcome was QOL at 12-36 months post-operative. Secondary outcomes included reintervention, dysphagia, leak/perforation, and GERD recurrence.

Results: A total of 9 publications of 6 RCTs were included. Of the 9 publications there was no significant difference in quality of life at 12-36 months with the exception of one study (two publications), in which QOL was significantly higher in patients who underwent heller myotomy as opposed to pneumatic dilation at 3 year follow-up; however, at 5 years follow-up, there was no different in the two treatments. Pneumatic dilation was associated with the highest rates of dysphagia recurrence and reintervention while POEM had the lowest rates of dysphagia and reintervention.

Conclusion: The treatment of achalasia should be chosen on a per patient basis in accordance with patient goals and availability of local expertise. Following any of the three interventions, QOL is similar appears to be similar. However, POEM may be associated with the lowest rates of perforation/leak, dysphagia, and reintervention and may be the lowest risk and most durable option for control of symptoms. There are barriers to widespread utilization of POEM due to challenges in training and adoption.

Figure 1: Flowsheet

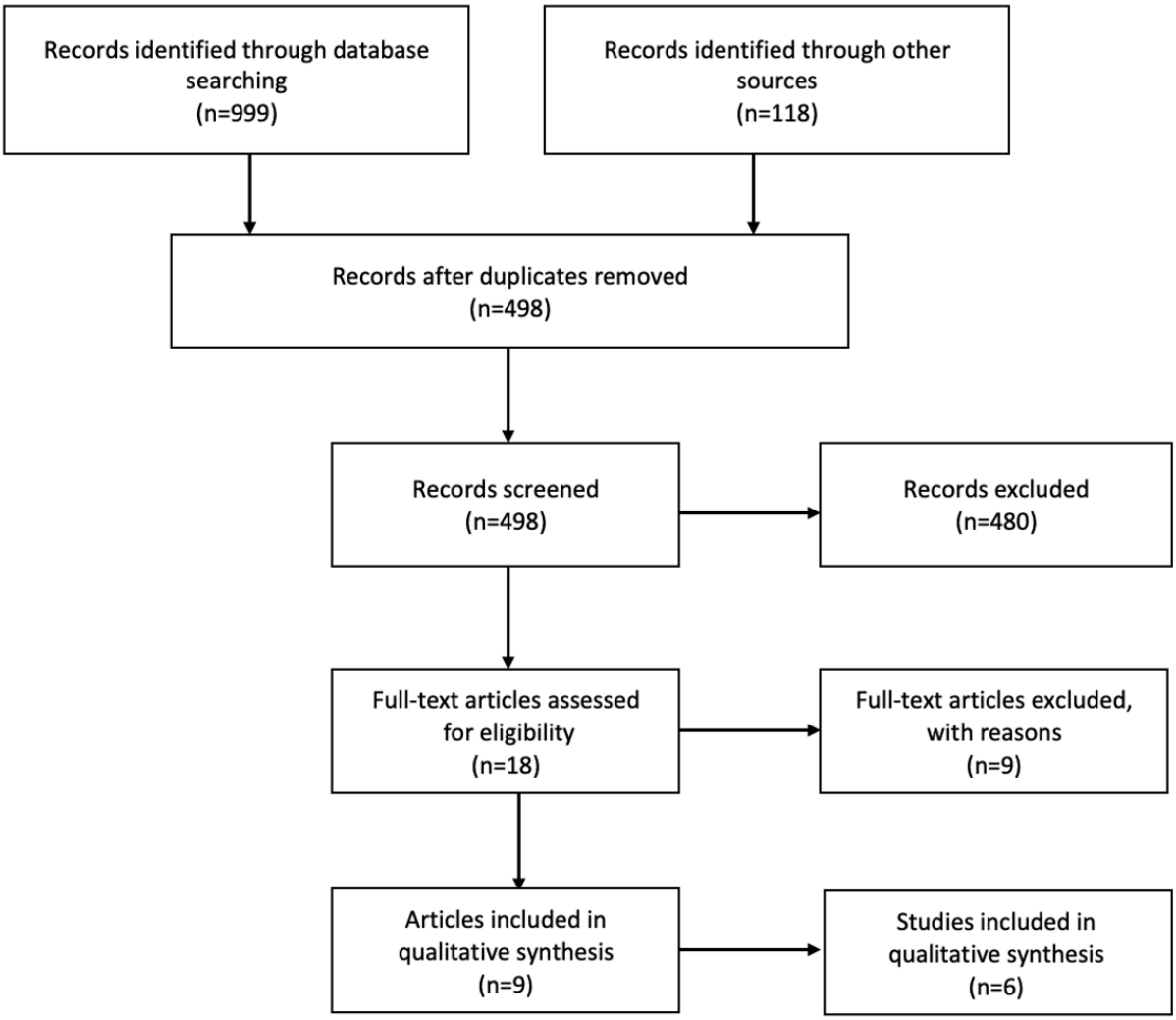

Table 1: Study detail

First Author, Year	Country	F/U Duration months	F/U %	Blinding	Heller Myotomy		Pneumatic Dilation		POEM	
					N	Surgeon experience	N	Surgeon experience	N	Surgeon experience
Sediqi, E. 2020	Sweden	120	81%	Randomization and follow up blinded, surgeon non-blinded	25	NR	28	NR	-	-
Persson, J. 2014		60	71%		25	NR	28	NR	-	-
Ponds, F.A., 2019	Amsterdam	24	69%	Randomization blinded, surgeon non-blinded	-	-	66	20 prior cases	67	20 prior cases
Werner, Y.B., 2019	Germany	24	91%	Randomization blinded, surgeon and follow up non-blinded	121	20 prior cases	-	-	112	50 prior cases
Moonen, A. 2017	Belgium	60	60%	Randomization blinded, surgeon non-blinded.	105	NR	109	NR	-	-
Moonen, A. 2015		60	60%		105	NR	109	NR	-	-
Boeckxstaens, G.E. 2011		24	85%		106	NR	95	NR	-	-
Chrystoja, C.C, 2016	Canada	60	90%	Randomization and follow up blinded, surgeon non-blinded	25	20 prior cases	25	20 prior cases	-	-
Hamdy, E. 2015	Egypt	12	86%	Randomization blinded, surgeon non-blinded.	25	NR	25	NR	-	-

BMI= Body Mass Index in kg/m2
F/U= follow up
NR=not reported
QOL= quality of life
POEM=per-oral endoscopic myotomy

Table 2: Quality at 12-36 months

First Author, Year	QOL Scale	Heller Myotomy		Pneumatic Dilation		Poem		Comments
		QOL Baseline	QOL	QOL Baseline	QOL	QOL Baseline	QOL	
Sediqi, E. 2020 Persson, J. 2014	NR PGWB	NR 91	NR 114 ± 10	NR 83	NR 98 ± 20	- -	- -	Total PGWB score was significantly higher in the HM patients than in the PD group at three year follow up, however there was no difference in PGWB scores at 5 years.
Ponds, F.A., 2019	SF-36 Physical Mental	 - -	 - -	 45.6 45.2	 53.8 52.9	 46.3 45.7	 54.1 54	No significant difference between the groups when accounting for baseline.
Werner, Y.B., 2019	Gastrointestinal QOL index	90.4	114.9	-	-	89.2	117.5	No significant difference between the groups when accounting for baseline.
Moonen, A. 2017	NR	NR	NR	NR	NR	-	-	-
Moonen, A. 2015	SF-36 Physical Mental	50 44	55 55	51 44	54 54	- -	- -	No significant difference between the groups when accounting for baseline.
Boeckxstaens, G.E. 2011	SF-36 Physical Mental	48 42	53 50	48 43	52 48	- -	- -	No significant difference between the groups when accounting for baseline.
Chrystoja, C.C, 2016	SF-36 Physical Mental	 45.1 48.3	 48.7 56.4	 45.0 39.4	 47.9 49.8	 - -	 - -	No difference at one year follow-up. Heller myotomy saw worsening on physical score from baseline at 5 years (-0.8).
Hamdy, E. 2015	NR	NR	NR	NR	NR	-	-	-

NR= Not reported
PGWB=Psychological general well being
POEM=per-oral endoscopic myotomy
QOL= Quality of Life

Table 3: Intra-operative and Perioperative Outcomes

First Author, Year	Heller Myotomy					Pneumatic Dilation					POEM				
	Perforation	**Leak**	**Dysphagia**	**Gerd**	**Reintervention**	**Perforation**	**Leak**	**Dysphagia**	**Gerd**	**Reintervention**	**Perforation**	**Leak**	**Dysphagia**	**Gerd**	**Reintervention**
Sedigi, E. 2020	NR	NR	2/21	NR	NR	NR	0/17	10/17	NR	NR	-	-	-	-	-
Persson, J. 2014	NR	NR	1/21	NR	2/21	NR	0/17	9/17	NR	8/17	-	-	-	-	-
Ponds, F.A., 2019	-	-	-	-	-	1/66	NR	29/66	7/34	23/66	1/64	NR	5/64	8/64	5/64
Werner, Y.B., 2019	3/109	0/109	12/104	NR	8/109	-	-	-	-	-	0/112	1/112	16/108	NR	2/108
Moonen, A. 2017	12/107	0/107	21/107	NR	11/107	5/94*	0/94	8/94	NR	15/94	-	-	-	-	-
Moonen, A. 2015	13/105	0/105	22/105	NR	NR	5/96*	0/96	8/96	NR	24/96	-	-	-	-	-
Boeckxstaens, G.E. 2011	13/98	0/98	15/98	NR	15/98	NR*	4/85	23/85	NR	22/85	-	-	-	-	-
Chrystoja, C.C, 2016	1/25	NR	2.2 mean (0-36, 0=best)	0.9 mean (0-36, 0=best)	0/25	0/23	NR	2.3 mean (0-36, 0=best)	1.7 mean (0-36, 0=best)	5/23	-	-	-	-	-
Hamdy, E. 2015	3/25	1/25	2/24	7/25	1/25	2/25	0/25	5/19	4/25	13/25	-	-	-	-	-
Cumulative	45/469 (9.6%)	1/444 (0.23%)	75/480 (15.6%)	7/25 (28%)	37/385 (9.6%)	13/304 (4.3%)	4/334 (1.2%)	92/394 (23.4%)	11/59 (18.6%)	110/406 (27.1%)	1/176 (0.56%)	1/112 (0.89%)	21/172 (12.2%)	8/64 (12.5%)	7/172 (4.1%)

NR=not reported
POEM= per-oral endoscopic myotomy
* Studies excluded 4 perforations in 13 patients from original protocol.

ePoster #7 | Abstract | General Surgery

VALIDATING THE SAFETY OF REGIONAL ANESTHESIA ADMINISTRATION FOR NEONATES UNDERGOING GENERAL SURGERY PROCEDURES

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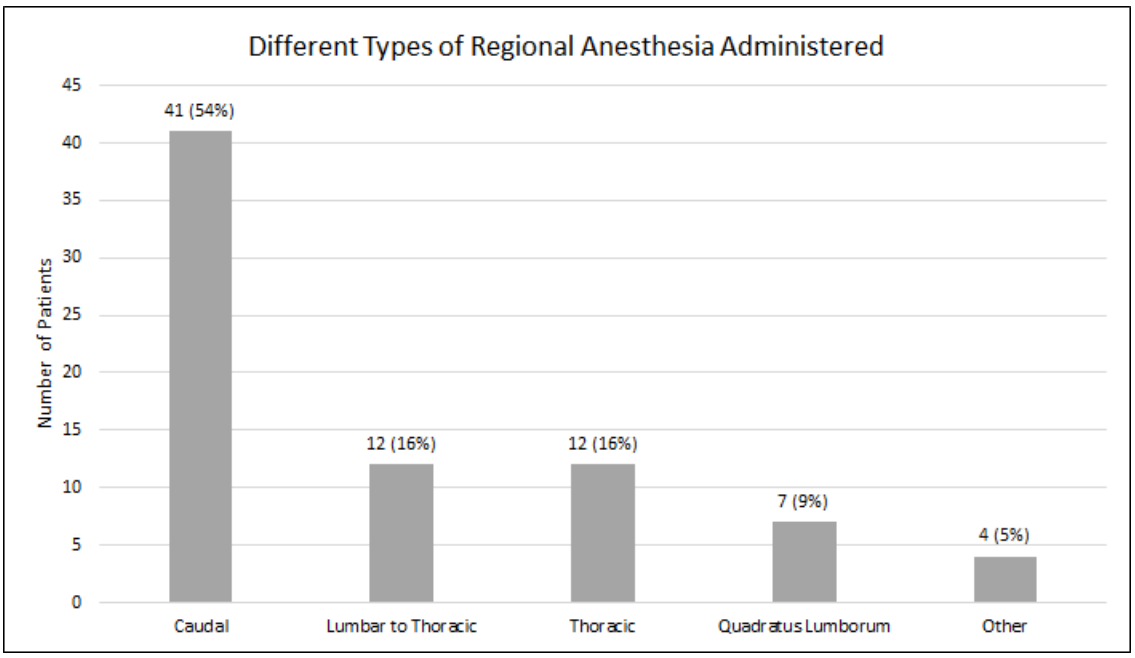
Background: Postoperative pain management resides as one of the forefront considerations for patient recovery following surgery. Due in part to their efficacy and accessibility, opioids are ubiquitous in their applications to manage pain. Opioid consumption in neonatal patients has been shown to increase the predisposition towards an opioid use disorder as well as other neurodevelopmental disorders. As such, there exists an opportunity to explore alternative pain management techniques in neonatal populations in the form of regional anesthesia. Regional anesthesia provides a means to help reduce opioid consumption during post-operative pain management.

Objectives: We aimed to study the current practices and safety of regional anesthesia usage in post-operative pain management for neonates at our institution, hypothesizing that certain patient characteristics increase the likelihood of nerve block administration.

Methods: A retrospective study was conducted of neonatal (age<1 year) general surgery patients undergoing procedures at a tertiary-care pediatric hospital from January 2019 to December 2021. Patients were included if they were administered regional anesthesia at the time of their procedure. Patients who received local infiltrates of anesthetics but no regional blocks were excluded. Patient demographics, operative details, regional anesthesia administration, and complications within 90 post-operative days were extracted from the electronic medical record. Descriptive analysis was performed.

Results: Of the 704 patients who underwent surgery, 76 (11%) were administered regional anesthesia. Forty-nine (64%) patients were male. The median age and weight at surgery were 3.53 months (1.11, 6.02) and 4.74 kg (3.26, 6.16), respectively. Regional anesthesia was administered to 22 (29%) patients undergoing open inguinal hernia repairs, 19 (25%) exploratory laparotomies, 13 (17%) laparoscopic inguinal hernia repairs, 2 (3%) gastrostomy tube placements, and 20 (26%) other procedures. Ropivacaine was the regional anesthetic of choice for all patients, 13 (17%) of which also received a clonidine adjuvant. Various types of blocks were administered (Figure). One (1%) patient underwent reoperation and 8 (11%) were seen post-operatively for complications. Of the 76 patients, there were no complications related to the administration of regional anesthesia.

Conclusion: This study showed that regional anesthesia is a safe intervention in neonatal surgery, encompassing applications for caudal, thoracic, lumbar to thoracic, and quadratus lumborum blocks. Regional anesthesia was most frequently administered in neonates undergoing inguinal hernia repairs as well as exploratory laparotomies. Further research is needed to understand the efficacy of neonatal regional anesthesia in reducing opioid consumption.


Different Types of Regional Anesthesia Administered
Number of Patients
45
40
35
30
25
20
15
10
5
0
41 (54%)
12 (16%)
12 (16%)
7 (9%)
4 (5%)
Caudal
Lumbar to Thoracic
Thoracic
Quadratus Lumborum
Other

ePoster #8 | Case Review | General Surgery

EXTENDED-VIEW TOTALLY EXTRAPERITONEAL TECHNIQUE (ETEP) FOR RECURRENT SUBXIPHOID HERNIA REPAIR: A CASE REPORT AND REVIEW OF THE LITERATURE

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Introduction/Objective: Subxiphoid hernias are a relatively uncommon abdominal wall defect but when encountered, can be difficult to manage. A wide array of repair techniques has been described with varying levels of success, and there is no consensus on the best approach. Here we describe a case utilizing the extended-view totally extraperitoneal (eTEP) approach to repair a recurrent subxiphoid hernia.

Case Presentation: A 56-year-old man developed a subxiphoid hernia following a median sternotomy for coronary artery bypass graft, and the hernia recurred after an unsuccessful open primary repair. Preoperative imaging demonstrated a recurrent fat-containing hernia inferior to the sternum measuring 4.1 x 3.7 x 2.2 cm. He underwent a robotic eTEP repair for the recurrent hernia because this approach allowed for decreased tension and wider mesh overlap beyond the xiphoid process and costal margins. Direct trocar entry was used to access the left retrorectus space, and blunt dissection with an endoscope created space for additional trocars. The crossover maneuver was performed by incising the medial aspect of the left posterior rectus sheath to enter the contralateral retrorectus space. A partial bilateral transversus abdominis release (TAR) was performed to develop the pretransversalis space of the epigastrium (subxiphoid space). Dissection in the subxiphoid space continued cephalad, passing the costal margin and exposing bilateral diaphragmatic muscle fibers. The subxiphoid hernia defect was encountered and contained falciform fat. The hernia contents were reduced, and the fascial defect was closed with absorbable suture. Dissection of the subxiphoid space continued to the central tendon of the diaphragm to ensure greater than 5 cm of cephalad retromuscular space past the hernia defect for adequate mesh overlap. A polypropylene mesh was placed within the retromuscular space, and fibrin glue was used for fixation. At one-year follow up, there were no clinical signs of recurrence.

Discussion: Due to the uncommon and challenging nature of subxiphoid hernias, there is no standardized approach to repair. Open, minimally invasive, primary, and mesh repair have all been reported. Primary repair has demonstrated high recurrence up to 80%. Mesh has been increasingly used due to its association with decreased hernia recurrence. To date, the only minimally invasive approaches to subxiphoid hernias in the literature are intraperitoneal onlay mesh (IPOM) and transabdominal preperitoneal (TAPP) techniques. We demonstrated that an eTEP approach to subxiphoid hernia repair is a viable option. Advantages of an eTEP approach to these cases include avoidance of mesh contact with viscera, improved operative exposure, and a wide retromuscular dissection for greater mesh overlap.

Conclusion: Subxiphoid hernias are challenging to repair due to anatomic boundaries and mechanical forces in the region. The eTEP technique offers several advantages and appears to be feasible and safe.

ePoster #9 | Abstract | Orthopaedic Surgery

VARIATIONS IN TOTAL HIP ARTHROPLASTY POST-OPERATIVE OPIOID USE BASED ON PROSTHESIS MATERIAL

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Background: Total Hip Arthroplasty (THA), is one of the most common types of orthopedic procedures. Data suggests that over 450,000 hip replacements are performed every year in the United States. This figure has nearly doubled in the last decade and is becoming more common in younger patients. THA patients often use opioids for pain control following their procedure, but little is known about variations in use based on the material of the hip prosthesis. Given the severity of the opioid epidemic and increasing rates of THA, there is a need to understand opioid use based on patient specific factors to better guide patient management.

Objectives: The study objective is to assess the relationship between different types of synthetic substitutes used in THA and post-operative Opioid use.

Methods: Patients with a THA were identified on the TriNetX database using ICD-10 codes. These patients were then stratified into cohorts based on the synthetic substitute used in their hip replacement: metal, ceramic, polyethylene, ceramic on polyethylene, or metal on polyethylene. The use of opioid analgesics was then assessed at the following time points post-THA: one day, one week, and one month. Age analysis was also performed on each cohort and gender stratification was performed on the cohort with the highest rate of opioid use. Data were analyzed using chi-square analysis with $p<.05$ considered significant.

Results: We identified 374,966 patients who have received a Total Hip Arthroplasty. Cohort stratification based on material type was as follows: 47,097 (Metal-M), 44,744 (Ceramic-C), 1,003 (Polyethylene-P), 186,436 (Ceramic on Polyethylene-CP), and 95,686 (Metal on Polyethylene-MP). Demographically, patients with Ceramic on Polyethylene replacements were the youngest (63.5) and patients with Metal replacements were the oldest (74.8). Opioid use one month after THA was highest in patients with a Ceramic on Polyethylene synthetic replacement (28.9%), followed by Metal on Polyethylene (27.7%), Ceramic (26.9%), Polyethylene (26.1%), and lastly Metal (17.62%). Similar trends were seen for one day and one week postoperative opioid use ($p<.05$). The largest differences between opioid use were seen in the one day postoperative use analysis. Among patients with Ceramic on Polyethylene synthetic replacements, males displayed higher opioid use than females at all observed time points ($p<.05$).

Conclusion: The results of the analysis suggest patients with Ceramic on Polyethylene Synthetic hip replacements are associated with higher rates of opioid use. This is particularly seen in male patients. These patients also tend to be younger, which may explain the differences in opioid use. A deeper analysis is needed to better understand these trends and develop protocols for opioid dissemination, given increasing rates of both THAs and opioid use nationwide.

ePoster #10 | Abstract | Pediatric Surgery

EVALUATION OF ANTIBIOTIC THERAPY FOR THE TREATMENT OF NON-OPERATIVE AND OPERATIVE NECROTIZING ENTEROCOLITIS

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Background: Necrotizing Enterocolitis (NEC) is a common gastrointestinal disease in premature infants and one of the leading causes of morbidity and mortality amongst this patient population. In addition to operative intervention for severe cases, all treatment includes bowel rest and intravenous antibiotics; however, there are no standardized guidelines for duration of therapy, especially in non-operative management of NEC.

Objectives: This study aimed to evaluate our institutions' use of antibiotics to treat NEC for both operative and non-operative patients. The goal was to understand adherence to current published guidelines regarding the use of antibiotics to treat NEC and determine any variability in antibiotic regimens that were selected for treatment.

Methods: A retrospective study was conducted of pediatric (age<1 year) NEC cases at a tertiary-care pediatric hospital from January 2018-December 2020. Patient demographics, diagnosis, operative details, treatment plans, and outcomes within 90 days post-operatively were collected from the electronic medical record. Patients who had a confirmed NEC diagnosis and those with suspected NEC were included in the study. Descriptive and univariate analysis was performed.

Results: Of the 99 patients treated for NEC, 49 (49.5%) were male. The median age at diagnosis was 20 (10,41) days with a median weight of 1.25 (0.91,1.92) kilograms. Forty-three (43.4%) patients underwent surgery, while 56 (56.6%) were treated exclusively with antibiotics and bowel rest. The most common antibiotic regimen used was a combination of gentamicin, ampicillin, and flagyl (44.4%), but regimens were variable with 32 different antibiotic regimens being chosen for treatment. Operative patients were more frequently placed on antibiotics for longer than 14 days ((15(35%) vs. 5(9%) p=0.001). Non-operative patients were more frequently placed on antibiotics for 7 to 14 days ((38(68%) vs. 17(40%) p=0.005). Despite this variability, there was no difference in median total antibiotic duration between operative vs non-operative patients ((10 (6,18) vs. 8 (7,11) p=0.06). Patients who underwent an operation were noted to have more complications ((9 (21%) vs. 4 (7%) p=0.044); however, they did not have an increased length of stay ((80.5 (18.0,157.4) vs. 76.0 (48.4,117.9) p=0.44). In total, 14 (14.1%) patients died from complications directly related to NEC.

Conclusion: Antibiotic therapy for treatment of NEC at our institution was very highly variable. Despite this variability, there was no difference in median total antibiotic duration between non-operative vs operative patients. However, operative patients did have more complications. Institutional antibiotic stewardship is needed to create a uniform antibiotic treatment protocol for NEC that provides ease of use for providers and optimizes patient outcomes.

Table 2. Hospital and rehabilitation length of stay, disposition, and discharge needs by mechanism of traumatic injury.

	All (n=96)	MT (n=18)	TBI (n=60)	SCI (n=18)	p-value[1]
Hospital Days, median (IQR)	27.5 (15-44)	19 (9-57)	25.5 (15-45.5)	28.5 (25-42)	0.138
Rehabilitation Days, median (IQR)	23.5 (12.5-36.5)	30.5 (22-37)	19 (12-33)	23.5 (13-40)	0.5173
Discharge, % (n)					0.4275
Home	10.42 (10)	22.22 (4)	5 (3)	16.67 (3)	
Home with PT	71.88 (69)	61.11 (11)	75 (45)	72.22 (13)	
PICU	6.25 (6)	5.56 (1)	8.33 (5)	0 (0)	
Other	1.04 (1)	0 (0)	1.67 (1)	0 (0)	
Acute	10.42 (10)	11.11 (2)	10 (6)	11.11 (2)	
School Aged, % (n)	73.96 (71)	88.89 (16)	65 (39)	88.89 (16)	***0.0346***
Returned to School, % (n)[2]	91.55 (65)	81.25 (13)	94.87 (37)	93.75 (15)	0.2405
School Outcome, % (n)					0.8868
In person/virtual	66.67 (46)	60 (9)	68.42 (26)	68.75 (11)	
Homebound	33.33 (23)	40 (6)	31.58 (12)	31.25 (5)	

ePoster #11 | Abstract | Pediatric Surgery

SIGNIFICANT DEFICITS EXIST IN PARENT PREPAREDNESS AND CONFIDENCE TO VOICE CONCERNS PRIOR TO THEIR CHILD'S SURGERY

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Background: Engaged parental involvement in pediatric surgery has been shown to improve patient safety. Understanding of the pre-operative process is essential, and our institution has previously shown how to include parents during the pre-induction surgical safety checklist (PSSC).

Objectives: This study aimed to evaluate the effectiveness of our institution's pre-operative education in preparing parents for their child's surgery, evaluate if this education was adequate, and understand if these approaches gave parents the confidence to voice concerns about their child's care.

Methods: A convenience sampling of parents and guardians of patients (age<18 years) receiving elective operations was conducted at a tertiary-care pediatric hospital from May 2021- July 2021. All pediatric subspecialties were included. The survey was administered to parents in the waiting area in both English and Spanish. Developed by the research team, the survey used ethnographic characteristics and included statements about preparedness, pre-operative education, and inclusion in the PSSC. Answers were analyzed using 5-point Likert scale. Descriptive statistics was performed.

Results: Out of the 137 caregivers, 127(93%) agreed to take the survey. Incomplete surveys were excluded, leaving 116 included for analysis. The mean patient age was 8±11.9 years(Table). Twenty(17.2%) surveys were completed in Spanish. The most common surgery subspecialty was general surgery(26%). The majority of patients underwent outpatient surgery(78%), and of these, 20% of guardians did not feel prepared for surgery. Forty-five(52%) parents whose child had surgery for the first time answered they felt unprepared, despite our institution's pre-operative education process. Twenty-six(23%) of those that felt comfortable voicing their concerns had a four-year university degree. Thirty percent of parents stated they did not feel they received the appropriate information about their child's outpatient procedure. Out of the 20 Spanish-speaking parents, only 3(15%) felt they received adequate information about their child's surgery, and 95% would voice concerns on behalf of their child if necessary.

Conclusion: Parent involvement in pediatric pre-operative care continues to be important for patient safety. This study showed significant deficits in preparedness and education provided to parents prior to their child's surgery despite purposeful, targeted measures in pre-operative education. Further exploration of potential healthcare delivery disparities, including amongst Spanish-speaking parents, should occur to ensure an equitable pre-operative experience for all pediatric patients.

Table: Parent Responses by Characteristics*

	Total **n=116**	Felt prepared prior to surgery **n= 87**	Received appropriate education prior to surgery **n= 90**	Comfortable voicing concerns **n=115**
Highest Guardian Education, **Completed Four Year Degree**	28 (24%)	26 (27%)	27 (27%)	26 (23%)
Relationship to patient, **Mother**	94 (81%)	76 (79%)	71 (79%)	76 (81%)
Patient age in years	8 (11.9)	7(5.8)	6.9 (5.5)	7 (5.6)
Preferred Language, **Spanish**	20 (17%)	No responses	3 (2%)	19 (95%)
Child's First Surgery	49 (42%)	42 (48%)	49 (49%)	48 (42%)
Hospital Admission Status, **Outpatient**	91 (78%)	77 (80%)	70 (71%)	81 (70%)

* Continuous data presented as mean (standard deviation) and discrete data presented as number (percentage)

ePoster #12 | Case Review | Pediatric Surgery

COLONIC INTERPOSITION FOR GASTROESOPHAGEAL REPLACEMENT IN PEDIATRIC PATIENTS: A CASE REPORT

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Introduction/Objective: Many surgical techniques exist for gastroesophageal replacements. Such operations are infrequent in the pediatric population, and outcomes differ by surgical technique, patient biology, and postoperative care. Here we present the successful use of colonic interposition to replace the gastroesophageal tracts in two pediatric patients.

Case Presentation: After ingestion of drain cleaner, a 17-month-old girl underwent an esophagogastrectomy followed by a gastroesophageal replacement with a colonic interposotion, hepatic resection, jejunostomy creation, and Roux-en-Y reconstruction. Following the procedure, while the conduit was viable, fistulas arose from both of the anastomoses to the skin. Surgical intervention was successful in revising the anastomosis at both ends of the conduit. After two esophageal dilatations, the patient is tolerating small, oral feeds eight months after the initial procedure. The patient was able to tolerate jejunostomy feeds during the peri and postoperative course.

An 8-month-old female with a history of premature birth at 24 weeks and complex medical history, In terms of gastrointestinal, she had necrotizing enterocolitis, ileal resection, and a transverse colectomy with primary anastomosis. At 5 months of age, an EGD showed a small stomach and an undetectable distal outlet. Due to gastric feed intolerance at 8 months of age, a colonic interposition was performed. Since surgery, the patient is tolerating G/J tube feeds and mom has no complaints.

Discussion: Colonic interposition is typically performed to resolve underlying esophageal atresias, strictures, and other rare esophageal disorders. This surgical procedure involves the transposition of the colon, typically the right, into the chest to serve as a conduit. This segment is used to replace the damaged or nonexistent esophagus. With postoperative management and close follow-up, the data on colonic interposition for esophageal replacement shows very low mortality rates. The two cases above illustrate the use of this procedure which should be further investigated in the context of pediatric patients requiring esophageal and gastroesophageal substitution.

Conclusion: Although the necessity of gastroesophageal replacement is becoming less and less frequent, there are cases where surgical treatment is required. Colonic interposition is proven to be an effective treatment for esophageal replacement, but there is limited data on this surgical procedure for gastric replacement. Regardless of the reason for gastric replacement, there should be greater awareness regarding the possibility of this procedure in the pediatric population.

ePoster #13 | Case Review | Pediatric Surgery

PANCREATIC DUPLICATION CYSTS IN AN ASYMPTOMATIC INFANT: A UNIQUE CASE REPORT AND REVIEW OF THE LITERATURE

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Introduction/Objective: Enteric duplication cysts are rare congenital abnormalities most often found along the alimentary tract. Ultrasonography and histologic analysis are necessary for diagnosis, and surgical excision is the current standard of care. Here we describe a case of pancreatic duplication cysts in a three-month-old male, diagnosed prenatally, and successfully managed with laparoscopic surgical excision.

Case Presentation: A prenatal ultrasound of a male fetus at seven months gestation identified two cysts abutting the spleen. The patient was born via vaginal delivery at 39 weeks 1 day and abdominal ultrasound one day after birth demonstrated two cystic structures adjacent to both the pancreas and spleen, the largest measuring 2.1 x 1.9 x 2.2 cm. The patient was discharged two days after birth and referred to pediatric surgery for further management of the cysts. Repeat ultrasound at one month showed a slight increase in size of the largest cystic structure to 2.4 x 2.1 x 2.1 cm, however the patient remained completely asymptomatic. At three months of age, the patient underwent diagnostic laparoscopy and cystectomy. Intraoperatively, two cystic structures were identified, both originating from the tail of the pancreas. The cysts were excised and decompressed prior to removal from the abdominal cavity. The patient's postoperative course was uneventful, and no complaints were noted at follow-up visits. Both cystic structures demonstrated similar histologic features: epithelium lining consisting of stratified squamous (esophageal type), columnar mucinous (gastric type) and ciliated (respiratory type) epithelium. These features, in conjunction with their adherence to the pancreas, confirmed the diagnosis of pancreatic duplication cysts.

Discussion: Enteric duplication cysts are most commonly in the ileum, esophagus, colon, jejunum, stomach, and duodenum. Duplication cysts associated with the pancreas are exceedingly rare, with only 25 published cases in the literature. Patients most commonly present with the triad of nausea, vomiting, and abdominal pain (84%) and pancreatitis is a common finding (44%). The presented case is unique in that the patient was diagnosed prenatally and remained entirely asymptomatic. Historically the most common surgical approach was an open cystectomy (56%), however this case demonstrates the feasibility of minimally invasive excision leading to an optimal outcome.

Conclusion: Awareness of this congenital anomaly is important for pediatric surgeons to ensure prompt diagnosis and treatment.

ePoster #14 | Case Review | Pediatric Surgery

UTERINE LEIOMYOMA IN AN ADOLESCENT FEMALE: A CASE REPORT

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Introduction/Objective: Uterine leiomyoma are the most common gynecologic tumor in reproductive females. The incidence in adolescents is less than 1%, with only 25 cases being reported, and the mean diameter is 12.28 cm. This case report documents the management of a 17-year-old female with a 27.8 cm uterine leiomyoma.

Case Presentation: The patient is a 17-year-old COVID+ female transferred to the surgical team after a large abdominopelvic mass was detected on CT after presenting to an outside ED for abdominal pain, nausea, emesis, and diarrhea for 6 hours. The patient also endorsed 3-4 months of increased menstrual bleeding but normal frequency and duration, emesis with periods, and a weight gain of 10 pounds in one year. Family history was notable for a hysterectomy on MGM for "probable uterine cancer." Physical exam was significant for a firm and non-tender palpable midline abdominal mass without peritoneal signs.

Diagnostics were significant for mild leukocytosis, negative hCG, and normal creatinine levels. CT abdomen/pelvis revealed a large abdominopelvic mass, presumably adnexal, bilateral hydronephrosis secondary to ureter compression, and retroperitoneal lymphadenopathy.

The initial plan was exploratory laparotomy with cystectomy vs oophorectomy, but intraoperatively, the mass was found to be adherent to the uterus. Hysterectomy was considered but gynecologic oncology was consulted intraoperatively, and the team decided against a hysterectomy given the patient's age. Core biopsies and peritoneal washings were retrieved for pathology. The procedure was aborted.

Further imaging with pelvic MRI revealed a 27.8 x 12 x 23.7 cm, homogenously hypointense mass on T1. On T2, the lesion was heterogenous with central areas of hypointensity and peripheral areas of hyperintensity. Imaging showed a short pedicle within the left fundal/left cornual region that suggested a pedunculated uterine vs left adnexal soft tissue mass.

Four days later, gynecologic oncology completed an exploratory laparotomy with the removal of a left broad ligament fibroid. Microscopic examination was consistent with leiomyoma, negative for atypical or sarcomatous features.

Discussion: 87.5% of adolescents with a uterine leiomyoma present with symptoms, with abnormal uterine bleeding as the most common. Other symptoms include abdominal pain, increased abdominal volume, and mass effects such as urinary retention or frequency. 1The preferred diagnostic imaging includes transabdominal US with MRI providing further mass classification if indicated.

While there are limited guidelines regarding the management approach of adolescent

uterine masses, almost all patients were managed with myomectomy (88.2%) either via hysteroscopy, laparoscopy, or laparotomy.

Conclusion: While uncommon, providers should remember to include uterine leiomyoma in the differential diagnosis for an adolescent patient presenting with symptoms of abnormal uterine bleeding, pelvic fullness, and mass effect symptoms. The diagnostic approach can include transabdominal US and possible MRI with surgical management consisting of fertility-sparing myomectomy.

ePoster #15 | Abstract | Plastic Surgery

SerpinA3n Gene Expression Elevated in Severe Burned Mouse

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Background: Severe burns result in muscle wasting, which are associated with increased incidences of infection, sepsis, and even death. Serpina3n encodes a serine protease inhibitor α-1antichymotrypsin, and has been seen to play a role in muscle differentiation in myoblasts. Recent study showed that circulating level of serpina3n elevated in experimental stimulated muscle wasting models and decreased in hypertrophy model, indicating its relationship of modulating muscle atrophy. We thus hypothesize that serpina3n compensatory increased in response to severe burn associated with muscle wasting and atrophy.

Objectives: The purpose of our study is to investigate the inflammatory role of serpina3n in response to severe burn in animal models that are associated with muscle wasting and atrophy.

Methods: This study included eight C57BL6 adult male mice that received 25% TBSA scald burn and 4 sham as the control. After euthanizing animals, we harvested the muscle tissue 1 day and 3 days after injury. We did RNA extraction using the the TRIzol DNA and RNA purification kit from Ambion. Gene expression was done using Next Seq550 Reads-130M – sequence platform and reconfirmed with RT-qPCR of MyoD, CDK, IL6 and Serpina3n. Western blots were done to investigate the protein expression of STAT3 (Y705), STAT3 (S727), STAT3 Total, Serpina3n and used GAPDH for the internal control. ImageJ was used for analyzation of western blot. t-tests were done for both gene and protein expression levels.

Results: When gene sequencing, Serpina3n was significantly upregulated 2.47 folds in burned mice at day 1. ($p < 0.05$) When doing RT-qPCR there was a significant increase of MyoD, IL-6 and Serpina3n on the first day after burns. ($p < 0.05$) No significance were observed at day 3 after burn when compared to the sham group. In protein expression, serpina3n level remained unaltered in mouse muscle at 1 day and 3 days after burn. There was a significant difference in STAT 3 (s727) between day 1 and day 3. ($p < 0.05$)

Conclusion: The study showed SerpinA3n gene expression upregulated in mouse muscle right after severe burn, which was associated with IL-6 activated JAK-STAT pathways. The information gained from this study reflects the association between burned mice and an increased expression of Serpina3n during an inflammatory response that may lead to muscle atrophy.

ePoster #16 | Abstract | Plastic Surgery

CHARACTERIZING THE ONLINE PRESENCE OF PLASTIC SURGEONS - A POTENTIAL MARKETING OPPORTUNITY

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Background: The growth of the Internet has increased patients' access to information. Patients often use the Internet to make healthcare decisions including selecting a provider. Unfortunately, information on the Internet may be inaccurate because third-parties, not physicians, control the content. This problem is exacerbated by the fact that the incorrect information may include crucial aspects of selecting a provider including physician information, physician reviews, and healthcare coverage. Plastic surgeons are particularly affected as their reputation plays an important role in patient acquisition.

Objectives: This project aims to analyze and provide mechanisms to strengthen the digital footprint of plastic surgeons.

Methods: Data was collected by creating a Google Custom Search Engine (GCSE) to query the first 10 results for each plastic surgeon in The Physician Compare National Downloadable File provided by the Centers for Medicare Service. The results collected were then organized into one of the five categories: social media, third-party, academic journal, health/hospital system or physician-controlled sites, or others.

Results: A total of 59,660 queries are included in the analysis. The results showed 53.79% of the search results were third-party websites and 37.41% were health/hospital or physician-controlled sites while only 7.38% were from social media.

Conclusion: The online presence of plastic surgeons is mainly associated with third-party websites. These results indicate a potential marketing problem for plastic surgeons. The expansion of social media could provide a solution for plastic surgeons to efficiently reach their patient population and provide an opportunity for accurate healthcare information dissemination.

ePoster #17 | Abstract | Plastic Surgery

RECONSTRUCTION OF COMBINED ORBITAL MEDIAL WALL AND FLOOR DEFECTS WITH 3D MEDPOR TITAN IMPLANT

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Background: Orbital fractures are common in maxillofacial trauma and have varying anatomical deficits depending on the mechanism of injury.. Orbital floor fractures are most common, but many patients suffer from two wall- floor and medial wall defects. Precise reconstruction and positioning of the orbital implant post traumatic injury can be technically challenging, especially in two wall fractures. Anatomy of medial wall down into floor is three dimensionally challenging .Overlapping implants such as Suprafoil prepunched nylon foil and Medpor Micro Thin Sheet have been used to manage medial wall and orbital floor fractures. The 3D Medpor Titan was developed using CT-scan data of over 300 patients' medial wall and orbital floor anatomy and has been used in many orbital reconstructions.

Objectives: We present our experience using 3D Medpor Titan on a series of seven patients with combined medial wall and orbital floor fractures.

Methods: A retrospective chart review was performed of seven patients with combined medial wall and orbital floor fractures treated with Medpor-Titan 3D between February 2016 and June 2020. The inclusion criteria were unilateral combined medial and orbital floor fractures due to traumatic etiologies, no previous history of orbital trauma, age older than 18 years, a contralateral healthy orbit, and a clinical follow-up of at least 1 month. Variables and outcomes included patient age, gender, mechanism of injury, visual defects, post-op infections, enophthalmos, proptosis, and diplopia. An O-arm intraoperative CT scanner was brought into the surgery suite to verify the implant position.

Results: Ten patients presented with combined medial wall and orbital floor fractures, 3 were lost to follow-up. There were six men and one woman and their ages ranged from 24 to 57 (mean age 38). Follow-up time ranged from 0 to 52 weeks, and a mean of 20 weeks. None of the patients experienced intraoperative complications such as hemorrhage, soft tissue incarceration, or acute optic neuropathy. No patients had postoperative infection or any change in visual acuity. One patient exhibited persistent diplopia at their respective follow-up of 4 weeks (Table 1). However, no soft tissue abnormalities were present. There were no cases requiring return to the operating room. All patients had satisfactory implant positioning as verified by intraoperative CT.

Conclusion: The prefabricated design of the 3D Medpor Titan allows for efficient and precise reconstruction of combined medial wall and orbital floor fractures in the author's experience. Intraoperative CT was used to ensure appropriate placement of the implant. This study suggests a method that can be used for consistency and reliability in future surgeries.

Table 1. Clinical Data On Patients

No.	Sex	Age	Orbital Fracture Area	Plate Size	Visual Acuity	Diplopia	Enophthalmos	Post-op Infection	Follow-Up (weeks)
1	Male	57	Medial wall & orbital floor	Small	No complaints	Persistent	None	Orbital cellulitis	4
2	Male	24	Medial wall & orbital floor	Small	No complaints	None	None	None	52
3	Male	35	Medial wall & orbital floor	Large	No complaints	None	Minor	None	12
4	Female	41	Medial wall & orbital floor	Small	No complaints	None	None	None	10
5	Male	35	Medial wall & orbital floor	Small	No complaints	None	None	None	24
6	Male	35	Medial wall & orbital floor	Large	No complaints	None	None	None	36
7	Male	36	Medial wall & orbital floor	Large	No complaints	None	None	None	0

ePoster #18 | Abstract | Plastic Surgery

ANALYSIS OF CURRENT PLASTIC AND RECONSTRUCTIVE SURGERY RESIDENTS AND THEIR PRIOR MEDICAL EDUCATION: MEDICAL SCHOOL RANKING IMPACT ON PLASTIC AND RECONSTRUCTIVE SURGERY MATCH

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Background: Plastic and reconstructive surgery (PRS) is a highly competitive field having fewer residency spots per applicant per year. We believe medical school tier plays and will continue to play a very important role in the present time and near future, pending the change in USMLE STEP 1 from three digit-score to a Pass/Fail system.

Objectives: In this study we analyze the PRS residents currently in training studying the association between the rank of the medical school attended and that of their residency program.

Methods: We obtained a list of accredited programs from the Electronic Residency Application Services website for PRS programs and US News and World Report for medical schools. PRS programs who have integrated or integrated and independent pathways were included in this study. Each PRS residency program webpage was located. The webpage was evaluated for the presence of a residents roster. For each residency roster available, we recorded the medical school attended by each resident and assigned tiers based on their respective ranking. For residents whose medical schools were not found on the residency programs' website, a Google search was performed and needed information was retrieved from websites (Doximity, webMD, linkedIN, instagram...). Chi squared test was used to analyze the association of PRS residency tier and medical school tier.

Results: We obtained a list of accredited programs from the Electronic Residency Application Services website for PRS programs and US News and World Report for medical schools. PRS programs who have integrated or integrated and independent pathways were included in this study. Each PRS residency program webpage was located. The webpage was evaluated for the presence of a residents roster. For each residency roster available, we recorded the medical school attended by each resident and assigned tiers based on their respective ranking. For residents whose medical schools were not found on the residency programs' website, a Google search was performed and needed information was retrieved from websites (Doximity, webMD, linkedIN, instagram...). Chi squared test was used to analyze the association of PRS residency tier and medical school tier.

Conclusion: Medical school ranking is an important factor programs take into consideration for prospective PRS residents. This factor may become more important once objective factors such as USMLE STEP1 become pass/fail for consideration of academic performance starting match cycle 2022.

ePoster #19 | Case Review | Plastic Surgery

CASE SERIES OF MRI NEUROGRAPHY USED AS A DIAGNOSTIC TOOL FOR NEUROGENIC THORACIC OUTLET SYNDROME

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Introduction/Objective: Thoracic outlet syndrome (TOS) refers to a sum of signs and symptoms that arise from compression of the neurovascular bundle that sits within the confined space between the first rib and behind the clavicle, also known as the thoracic outlet space1. Neurogenic TOS (nTOS) is most prevalent (90–98% cases) and the nerve impingement frequently occurs in the interscalene triangle or the costoclavicular space1,2. It is one of the more challenging diseases to diagnose. Often, it is a diagnosis of exclusion in which physicians rely on typical sensory and/or motor symptoms as well as nerve studies such as electromyography (EMG) tests that are sensitive but not specific1.
The purpose of this case series report is to demonstrate that MRI neurography is a useful diagnostic tool to confirm the presence of neurogenic TOS in patients whose nerve studies failed to detect abnormalities in the brachial plexus and surrounding anatomy.

Case Presentation: We present a case series of a total of seven patients presenting to the plastic surgery clinic with symptoms suggestive of nTOS in the span of one year. Upon initial encounter with the patients, a thorough history was taken, and a focused physical examination was performed. The underlying cause of each patient's nTOS varied in nature. However, the symptoms they described were almost identical. The patients had persistent upper extremity symptoms such as paresthesias, burning sensation and arm and neck pain. The vast majority had previously been examined and evaluated by other specialists (neurologists, orthopedic surgeons, vascular surgeons etc) prior to being referred to our clinic. In all these seven cases, results in EMG were normal or inconclusive for nTOS, denoting abnormal nerve conduction in the distal upper extremity neural distribution such as mild cubital or Guyon's canal alterations but failed to detect abnormalities in the brachial plexus pathway. MRI neurography radiologic findings proved the presence of nTOS. Surgery was then performed for brachial plexus decompression and/or neurolysis with occasional first rib resection, scalenectomy, pectoralis minor release and targeted muscle reinnervation, relieving most patients from the burden of their disease.

Discussion: Most patients with nTOS present with pain as the predominant symptom, often without objective physical examination findings and negative or non-conclusive EMG. MRI neurography is an emerging diagnostic tool for high resolution imaging of peripheral nerves. This case series highlights the utility of MRI neurography in evaluating the nTOS with surgical confirmation of the preoperative imaging findings.

Reports in literature support the common diagnosis pathway utilizing EMG, ultrasound, angiography, CT and MRI with or without contrast. Nonetheless, these diagnostic tools are often insufficient in detecting muscle denervation changes and subtle nerve enlargement or edema4. Our case series demonstrates the power of MRI neurography in confirming the diagnosis of nTOS, allowing for appropriate management of this disease.

Conclusion: In conclusion, patients suffering from symptoms suggestive of nTOS would benefit from MRI neurography as a diagnostic tool. The diagnosis and management of nTOS remains a clinical challenge which future must emphasize the improvement of available diagnostic and treatment techniques, and the development of a consensus gold standard for diagnosis.

ePoster #20 | Case Review | Plastic Surgery

CULTURED KERATINOCYTE GRAFTS FOR THE TREATMENT OF BURNS OF SPECIAL REGIONS

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Introduction/Objective: Burn wounds can occur due to thermal, chemical, or electrical sources. They can be classified according to thickness, surface area, and affected regions. Special regions are defined as the face, hands, feet, and perineum. Regardless of source or severity, all burns are a matter of public health with clinical and economical implications, and special regions also present a heavy burden on the patients' functionality, appearance, self-esteem, and social interactions. Treatments for burn injuries vary, we present a successful outcome with a combination of in-vitro cultivated keratinocyte grafts and hyperbaric oxygen therapy.

Case Presentation: We present a case report involving a 39-year-old Hispanic patient with first and second-degree burns in special regions due to direct fire exposure. Immediate medical attention was granted at a private hospital in Mexico, treatment included multiple surgical interventions for debridement and in-vitro cultivated keratinocytes (Epifast®) placement, as well as hyperbaric oxygen therapy, and antibiotics. Follow-up including physical rehabilitation and psychosocial therapy was provided after initial hospital discharge.

Discussion: Burn injuries are a leading cause of morbidity worldwide, causing up to 180,000 deaths and 10 million new cases each year, out of which 10% require hospitalization. Function and esthetics of affected body regions are concerns for both the patient and caregiver, it also impacts the patient’s mental health and income. Through this case report, we evaluate burn severity and initial evaluation, as well as different therapeutic approaches and the benefits of in-vitro cultivated keratinocytes, to preserve function and esthetics of special regions of the body.

Conclusion: Patients who overcome burn injuries have a direct impact on the affected region, whether it is function, esthetics, or self-perception. A multidisciplinary approach is necessary for the immediate and long-term treatment of the patient. Information about advanced management of first and second-degree burns with the use of allogenic grafts is scarcely available in developing countries. We believe that the use of in-vitro cultivated keratinocytes and hyperbaric oxygen therapy in combination with physical and psychosocial therapy is the best available option of treatment for burnt patients in Mexico.

Figure A: Patient at moment of admission to ER, with first and second degree burns affecting special regions.
A.1) Front view of patient's face. A.2) Left view. A.3) Right view.

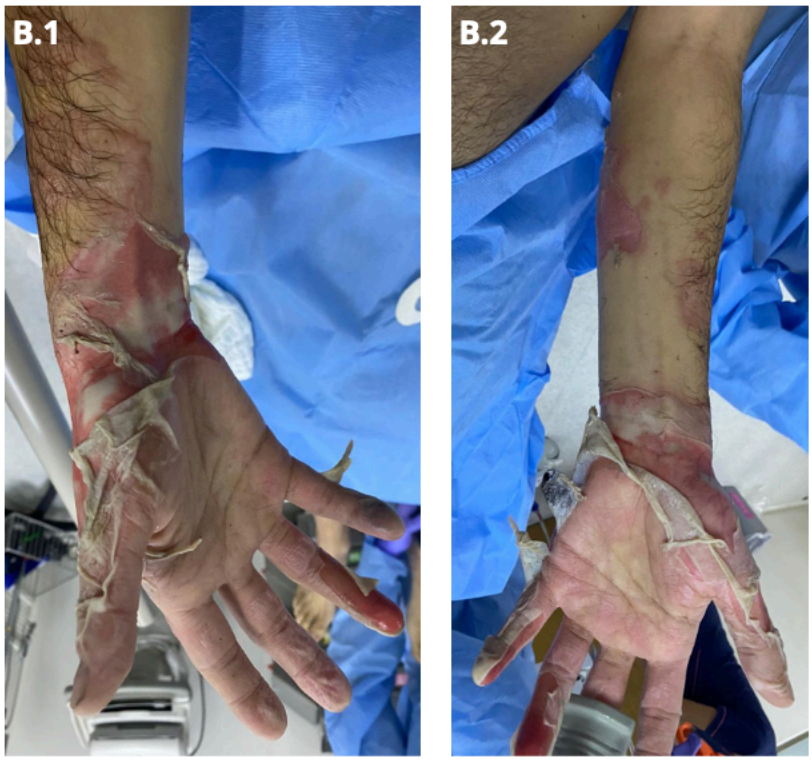

Figure B: Patient's wounds affecting hands and forearms at moment of admission to ER.
B.1) Right hand and forearm. B.2) Left hand and forearm.

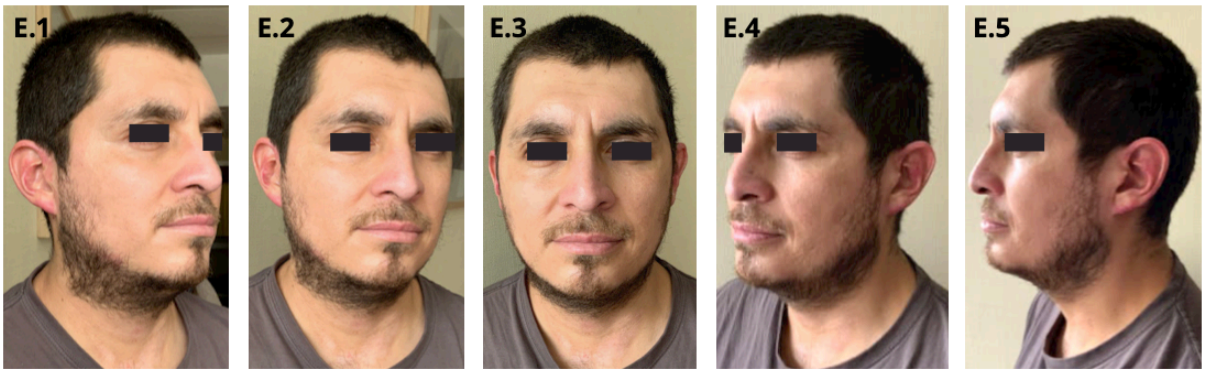

Figure E: Patient's face 5 months after initial hospital discharge.
E.1) Right lateral view. E.2) Right 3/4 view. E.3) Front view. E.4) Left 3/4 view. E.5) Left lateral view.

Figure F: Patient's right hand 5 months after hospital discharge.
F.1) Anterior view. F.2) Left lateral view. F.3) Posterior view. F.4) Hand with preserved strength and function.

ePoster #21 | Case Review | Plastic Surgery

NECROTIZING SOFT TISSUE INFECTION OF ABDOMINAL WALL AFTER COSMETIC SURGERY PERFORMED ABROAD, A CASE OF COMPLICATION FOLLOWING MEDICAL TOURISM

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Introduction/Objective: Necrotizing soft tissue infection (NSTI) is an acute and life threatening complication possible after cosmetic surgery.

Case Presentation: The patient is a 48-year old female diagnosed with NSTI of abdominal wall after liposuction, abdominoplasty and ventral hernia repair in South America complicated by bowel perforation requiring emergent debridement, bowel resection, and broad spectrum antibiotics. She required multiple subsequent washouts and split-thickness skin graft (STSG).

Discussion: Post cosmetic surgery complications such as NSTI in this patient are highly prevalent in cosmetic medical tourism contributing to high financial burden in domestic health care.

Conclusion: Patient education by their surgeons and plastic surgery societies should be prioritized. Due to the increasing trend of cosmetic medical tourism, it is important for domestic emergency physicians, plastic surgeons, and other care team members to understand complications post cosmetic surgery for timely management.

Figure 1.: Clinical images of the patient. A, Right lower abdomen with hemorrhagic bullae on physical exam. B, Right lower flank with hemorrhagic bullae on physical exam.

ePoster #22 | Case Review | Plastic Surgery

RECONSTRUCTION FOLLOWING RESECTION OF UNDIFFERENTIATED PLEOMORPHIC SARCOMA AND INVASIVE DUCTAL CARCINOMA IN A LI-FRAUMENI SYNDROME PATIENT

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Introduction/Objective: Li Fraumeni syndrome (LFS) is rare autosomal dominant genetic disease that causes predisposition to multiple cancers. The risk of individuals with Li Fraumeni developing cancer over a lifetime is 75% for men and nearly 100% for women. Patients commonly suffer from a variety of core cancers including breast cancer, brain tumors, bone sarcoma, soft tissue sarcoma, and adrenocortical carcinoma.

Case Presentation: Our patient is a 34 year old female with newly diagnosed LFS who presented with concurrent invasive ductal breast carcinoma and undifferentiated pleomorphic sarcoma. These primary cancers were both treated surgically with bilateral mastectomy and resection with wide margins, respectively. The patient required multiple concurrent reconstructive surgeries of the breast and lower leg. Breast reconstruction was accomplished using alloderm slings and tissue expanders with eventual silicone implant placement, while the leg wound site required integra matrix and autologous skin grafting

Discussion: Our patient's young age at breast cancer diagnosis triggered a genetic workup which uncovered a diagnosis of Li Fraumeni syndrome. The p53 mutations in this genetic disease leave patients with increased sensitivity to ionizing radiation. Due to the predisposition to develop cancers, tumors which arise in this population are often preferentially treated with wide surgical resection. These surgeries can have a disfiguring effect on patients which cumulates over a lifetime with the appearance of new cancers. This often necessitates that these LFS patients undergo a variety of reconstructive surgeries, given the variation in cancer types that can arise throughout the entire body in this disease.

Conclusion: Li Fraumeni syndrome can have a profound physical and psychological impact on patients who develop multiple cancers, often requiring surgical treatment followed by reconstructive measures. Management of these patients requires careful planning and consideration for the long term need for future reconstructive surgeries.

ePoster #23 | Case Review | Plastic Surgery

SYMPTOMATIC LABIA MINORA NEUROMA FOLLOWING LABIAPLASTY: AN UNREPORTED COMPLICATION

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Introduction/Objective: A neuroma is a benign growth of nerve tissue secondary to a disorganized regeneration of nerve fibers following injury, and it can be the cause of significant pain. No reports of neuroma formation after a labiaplasty have been reported. We present one case of symptomatic labia minora neuroma after cosmetic labiaplasty, which was treated successfully with neuroma excision and capping of the nerve ends.

Case Presentation: The patient is 66-year-old female presenting to the plastic surgery clinic two years after labiaplasty complicated by infection of the right labium necessitating oral antibiotics and repeated wound washout, with a two-year duration of pain localized to her right labium minus that was aggravated by sitting, sexual intercourse, and horse riding. Her medical history is positive for childhood traumatic injury with subsequent painless deformity of her right labium minus. Since then, only partial pain relief was achieved by conservative treatment. On physical examination, along the medial aspect of the lower third of the right labium minus, a painful firm subcutaneous nodule suggestive of a neuroma was noted. Subsequently, surgical exploration of the area was performed confirming the presence of a neuroma measuring approximately one centimeter deep within the right labium at the confluence of three sensory nerve branches. The neuroma was carefully dissected and excised. At the patient's six-week post-operative visit, she reported a significant decrease in pain without discomfort while seated. At 15 months postop, the patient was still pain free. She reported minimal pain when direct pressure is applied to the area where the neuroma was excised.

Discussion: Reports of traumatic symptomatic vulvar neuromas are rare in the medical literature with most published cases involving neuromas of the clitoris after traumatic amputation. There are only three cases regarding neuromas of the labia minora. To the best of our knowledge, this is the first case report of symptomatic labia minora neuroma following a reduction labiaplasty. We have enough evidence to believe that neuroma resection alone is not sufficient to prevent recurrence but given the scarcity of reported cases in the literature, it is difficult to determine which is the best surgical technique to treat a labia minora neuroma. It is questionable whether the scarcity of reports is due to true rarity or underdiagnoses and underreporting, especially given the multitude of etiologies for dyspareunia and altered vulvar sensation.

Conclusion: Neuroma formation is a potential complication to patients undergoing reconstructive or cosmetic genital procedures. Treatment of painful neuroma can be done

according to the accepted protocol which consists of excision, terminal nerve capping, nerve crushing, suturing and, final implantation into vascularized adjacent tissue.

ePoster #24 | Case Review | Plastic Surgery

THE PLANTARIS TENDON STATIC SLING TO SUPPORT FREE FLAPS FOR FACIAL RECONSTRUCTION

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Introduction/Objective: Patients with locally advanced head and neck malignancies involving the skin often require resection of facial mimetic muscles, branches of facial nerve, facial bones and surrounding facial skin. This can lead to adverse consequences such as oral incompetence, difficulty with speech, nasal airway obstruction, facial asymmetry and deformity. Free flap reconstruction often results in bulky flaps and sagging of the surrounding facial soft tissue. We present a novel technique for free flap support using the plantaris tendon as static sling.

Case Presentation: We reviewed two cases involving locally advanced head and neck malignancies requiring resection of facial skin, muscle, bone, and facial nerve branches. The first case is that of a 52-year-old male who underwent right orbital exenteration and partial maxillectomy for squamous cell carcinoma (SCC) on his lower eye lid invading the orbit and maxilla. He also had a simultaneous right parotidectomy with sacrifice of the right facial nerve for adenocarcinoma of the parotid gland. The second case is that of a 51-year-old male presented with SCC destroying his lower lip and abutting his mandible. The patient was treated with full thickness resection of his left modiolus, 90% of his lower lip and chin, and the outer (labial) cortex of his anterior mandible. Both had immediate reconstruction with free flaps. A plantaris tendon graft was used, in immediate or delayed fashion, to support the flap. The plantaris tendon was harvested through a single 1.5cm incision at the medial ankle using a vein stripper and grafted to support the facial structures of concern, significantly improving functionality and facial symmetry.

Discussion: The plantaris tendon sling prevented, or corrected sagging of the free flap reconstruction and surrounding soft tissue to improve severe facial asymmetry and deformity. Functional deficits such as oral incompetence and nasal airway obstruction improved. There were no major complications, such as flap failure or donor site morbidity. To date, plantaris tendon grafts have only been reported in cases of facial nerve paralysis, but not in an oncological-reconstructive setting involving tumor resection. The use of a plantaris tendon graft as a static sling to support free flap in oncologic head and neck reconstructions is a valuable option to prevent or correct many adverse consequences, as well as improve facial symmetry and aesthetic outcomes.

Conclusion: We conclude that the use of a plantaris tendon graft as a static sling to support a free flap in oncologic head and neck reconstructions can prevent or correct nasal airway obstruction, oral incompetence, and drooling, as well as improve facial symmetry and aesthetic outcome. These complications and morbidities of major head and neck resections

result from resection of facial nerve, facial mimetic muscle, and overlying facial skin, and can be favorably reconstructed with a free flap and plantaris tendon graft sling.

ePoster #25 | Abstract | prehospital

RETENTION OF FOCUSED ABDOMINAL SONOGRAPHY FOR TRAUMA (FAST) SKILLS IN A PREHOSPITAL AEROMEDICAL PROGRAM

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Background: The use of focused abdominal sonography in trauma (FAST) to localize bleeding in critical trauma patients is rapid, effective, and has largely supplanted diagnostic peritoneal lavage. With advances in ultrasound technology, FAST is increasingly common in the prehospital (PH) setting. After the introduction of FAST into a prehospital aeromedical program in 2014, sensitivity of the study was calculated to be 46%, specificity 94%, positive predictive value (PPV) 55%, and negative predictive value (NPV) 92%. These values were consistent with other studies of PH FAST.

Objectives: FAST skill retention in the prehospital setting is not well described. We hypothesized that FAST accuracy would remain similar six years after its introduction into an aeromedical EMS system.

Methods: Retrospective study of all highest activation trauma patients arriving at an urban level 1 trauma center by air ambulance between 1/1/2019 and 12/31/2019. Demographic, mechanism, and injury-related data were collected, as were results from any FAST exam performed by aeromedical personnel. Emergency department (ED) FAST exams were collected for comparison. Cross-sectional imaging results and operative reports for emergency operations served as a reference standard for each FAST examination. PH FAST results were compared to the reference standard for that examination to calculate test diagnostics (sensitivity, specificity, PPV, NPV).

Results: 280 patients were enrolled. Mean age 41 (±18) years, 82% male gender, 71% blunt trauma mechanism, mean Injury Severity Score 23 (±16). All had at least one abdominal view of the FAST exam performed in the prehospital setting. 229 (85%) of these patients also had a FAST exam performed in the ED. For the PH abdominal exams, sensitivity was calculated to be 31%, specificity 93%, PPV 65%, and NPV 78%. For the cardiac exams: sensitivity 25%, specificity 100%, PPV 100%, and NPV 99%. For the lung exams: sensitivity 11%, specificity 98%, PPV 75%, and NPV 72%. For the complete FAST exam (combining abdomen and cardiac): sensitivity 32%, specificity 93%, PPV 65%, and NPV 78%. By comparison, ED FAST exam sensitivity was calculated to be 47%, specificity 94%, PPV 75%, and NPV 82% (TABLE).

Conclusion: Six years after its introduction, the accuracy of PH FAST has declined. By comparison, the accuracy of ED FAST is unchanged and is more sensitive than the PH FAST. These findings suggest a need for altered training and quality assurance to improve and maintain reliability.

TABLE. Diagnostic accuracy of FAST examinations performed by aeromedical providers in the prehospital setting in 2014 (top) and in 2019 (bottom). Individual ultrasound exam components (abdomen, cardiac, and lung) are presented. Abdomen and cardiac results are combined to create the classic FAST examination result. Only complete examinations with a gold standard reference are included.

	Sensitivity	Specificity	PPV	NPV	# of Exams
2014 Press et al results					
Abdomen	46%	94%	55%	92%	200
Cardiac	0%	100%	0%	99%	240
Lung	19%	99%	80%	93%	491
FAST	46%	94%	55%	92%	200
2019 results					
Abdomen	31%	93%	65%	78%	249
Cardiac	25%	100%	100%	99%	237
Lung	11%	98%	75%	72%	275
FAST	32%	93%	65%	78%	230

ePoster #26 | Abstract | Surgical Infections

FRUCTOSAMINE AS A GLYCEMIC BIOMARKER IN ORTHOPEDIC SURGERY: A SYSTEMATIC REVIEW

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Background: Clinicians and researchers have continued to be interested in fructosamine as a reliable alternative to HbA1c in determining glycemic control. Studies are underway to assess its utility as an acceptable glycemic marker in surgery. However, further investigation is warranted, specifically pertaining to the Orthopedic community, to determine this parameter has utility in indicating hyperglycemia and predicting postoperative infection and complication rates.

Objectives: Our goal was to compile all available evidence specific to orthopedic surgery, fructosamine, and postoperative infections in order to help determine the validity of fructosamine as a glycemic biomarker.

Methods: The MEDLINE database was searched from its inception to January 2021 for published English language original research papers that were relevant to the objective of this systematic review. First, we selected studies by browsing the titles for relevant key terms. Next, the abstracts were read to further assess appropriateness. Finally, for those passing this screen, further screening was performed through full-text reading. The abstracts and full texts articles were retrieved and assessed independently by three investigators; any disagreements were resolved by discussion. All authors reviewed references in the studies to identify additional studies that might be included but were not discovered in the initial search. A professional librarian assisted in the development of the search, and in retrieving the references. Studies were included if they fulfilled the following criteria: (1) they were related to pre or postoperative glycemic control; (2) they related to orthopedic or general surgery; (3) a comparison was made between fructosamine levels and some other marker of glycemic control. In contrast, studies were excluded if: (1) the data in the studies were insufficient to compare the predictability of glycemic control between fructosamine and other markers; (2) they did not pertain to preoperative or postoperative glycemic control.

Results: Among the 163 articles identified, a total of 6 studies met the inclusion criteria and were analyzed. Three of the studies were prospective, two were literature reviews, and one was a retrospective study. Study outcomes aimed to determine the utility of fructosamine as a glycemic marker to predict postoperative infections and complications, compared to other glycemic markers, both traditional and more novel.

Conclusion: Fructosamine is a shorter-term marker, indicating glycemic control of a patient in the prior 2-3 weeks from the time of assessment, compared to 3 months with HbA1c. Data systematically compiled from these 6 articles indicate the validity, efficiency, and efficacy of the use of fructosamine as an alternative to the traditional markers of glycemic control of HbA1c. Fructosamine also proved to be a more accurate predictor of

postoperative infection rates. Further study into fructosamine's use as a glycemic biomarker for orthopedic surgery pre-operative screenings is needed.

ePoster #27 | Case Review | Surgical Oncology

ANAPLASTIC LYMPHOMA KINASE (ALK) POSITIVE MESENTERIC INFLAMMATORY MYOFIBROBLASTIC TUMOR IN ADULT WOMAN

CPT Christina S. Lee, MC USA; CPT Jason S. Kim, MC USA; LTC Rosemarie Rodriguez, MC USA; Lt Col Robert W. Krell, MC USAF, San Antonio Military Medical Center

Introduction/Objective: Inflammatory myofibroblastic tumors (IMT) are rare mesenchymal neoplasm comprised of spindle cells and variable inflammatory components. They have unclear biological behavior and may have local recurrences and metastases; therefore, complete surgical resection is mainstay of treatment. Treatment of non-resectable or metastatic disease involve chemotherapy, radiation, and targeted therapy such as tyrosine kinase inhibitors.

Case Presentation: We report a 31-year-old woman presenting with 3 months of cough, fatigue, weight loss and acute-on-chronic abdominal pain. Laboratory investigations showed normocytic anemia and elevated acute phase reactants. Computed tomography showed a large, well-circumscribed enhancing mass in the right colic mesentery. The patient underwent a laparoscopic right hemicolectomy. Final pathologic diagnosis showed fascicular spindle cells and numerous admixed chronic inflammatory cells. Cells stained diffusely positive for smooth muscle actin and anaplastic lymphoma kinase, confirming diagnosis of IMT. Post-operatively, patient reported alleviation of symptoms and had normalization of lab values. She remains without evidence of recurrence at 9 months.

Discussion: While IMT accounts for up to 20% of primary lung tumors in children, it is exceptionally rare in adults at about 0.7-1.0% of lung tumors. Case series report the commonest extrapulmonary IMT sites as the mesentery and omentum. Patients with intraabdominal IMT may present with nonspecific abdominal symptoms such as abdominal pain, nausea and vomiting as well as systemic symptoms such as fever, chills, fatigue, and weight loss. Up to 30% of patients with IMT present with elevated inflammatory markers such as erythrocyte sedimentation rate, anemia, thrombocytosis, and hypergammaglobulinemia. In general, imaging studies of IMTs show a soft tissue mass with variable enhancement and fibrosis, often initially suspected to be malignant neoplasms. IMT stains strongly for vimentin and can show variable expression of SMA, muscle specific actin, and desmin. About 50% of IMT shows diffuse positive cytoplasmic staining using monoclonal antibodies targeting Anaplastic Lymphoma Kinase (ALK).
While the mainstay of treatment for IMT is R0 surgical resection as long as technically and anatomically feasible, effects of incomplete resection are unclear. Hence, the discovery of ALK mutation in IMT was an important advance in its systemic treatment. Crizotinib is an ALK inhibitor used to treat metastatic non-small cell lung cancer that are ALK or ROS1 positive. Case series have shown 75-86% complete and partial response rate in adult and pediatric patients with ALK-positive unresectable IMT treated with ALK inhibitors.

Conclusion: Long-term follow up of all patients diagnosed with IMT is crucial given that the biologic timeline and well as prognostic factors are not well established. Regular surveillance radiologic and laboratory workup is recommended given possible local recurrence and distant metastasis of IMT.

Figure 1: Axial (a) and coronal (b) contrast-enhanced CT images of the abdomen demonstrate a circumscribed avidly enhancing mass arising from the mesentery near the hepatic flexure.

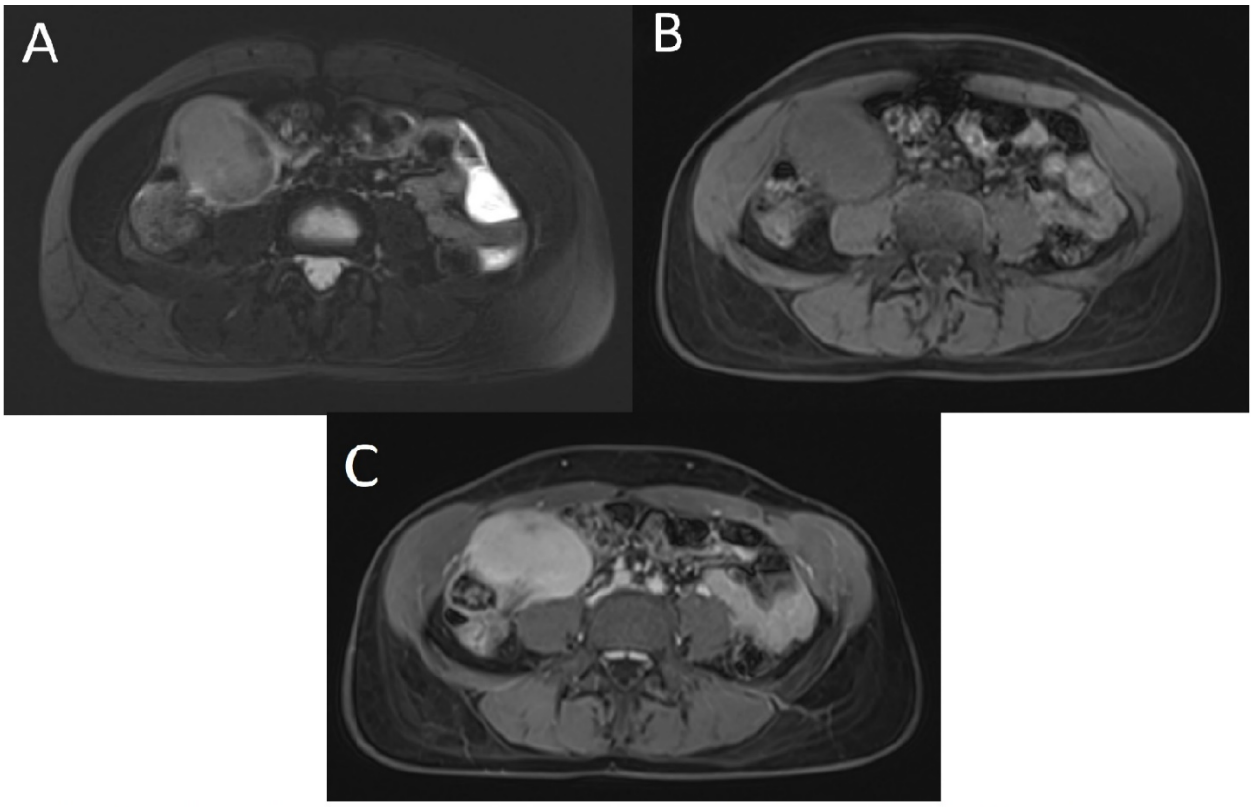

Figure 2: Axial MR T2-weighted image with fat saturation (a) demonstrates a T2 mildly hyperintense mass with peripheral edema. There are heterogeneous T2 hypointense components reflective of fibrosis. Axial T1 weighted images with fat saturation before (b) and after (c) intravenous gadolinium show a T1 intermediate intensity mass with avid heterogeneous enhancement.

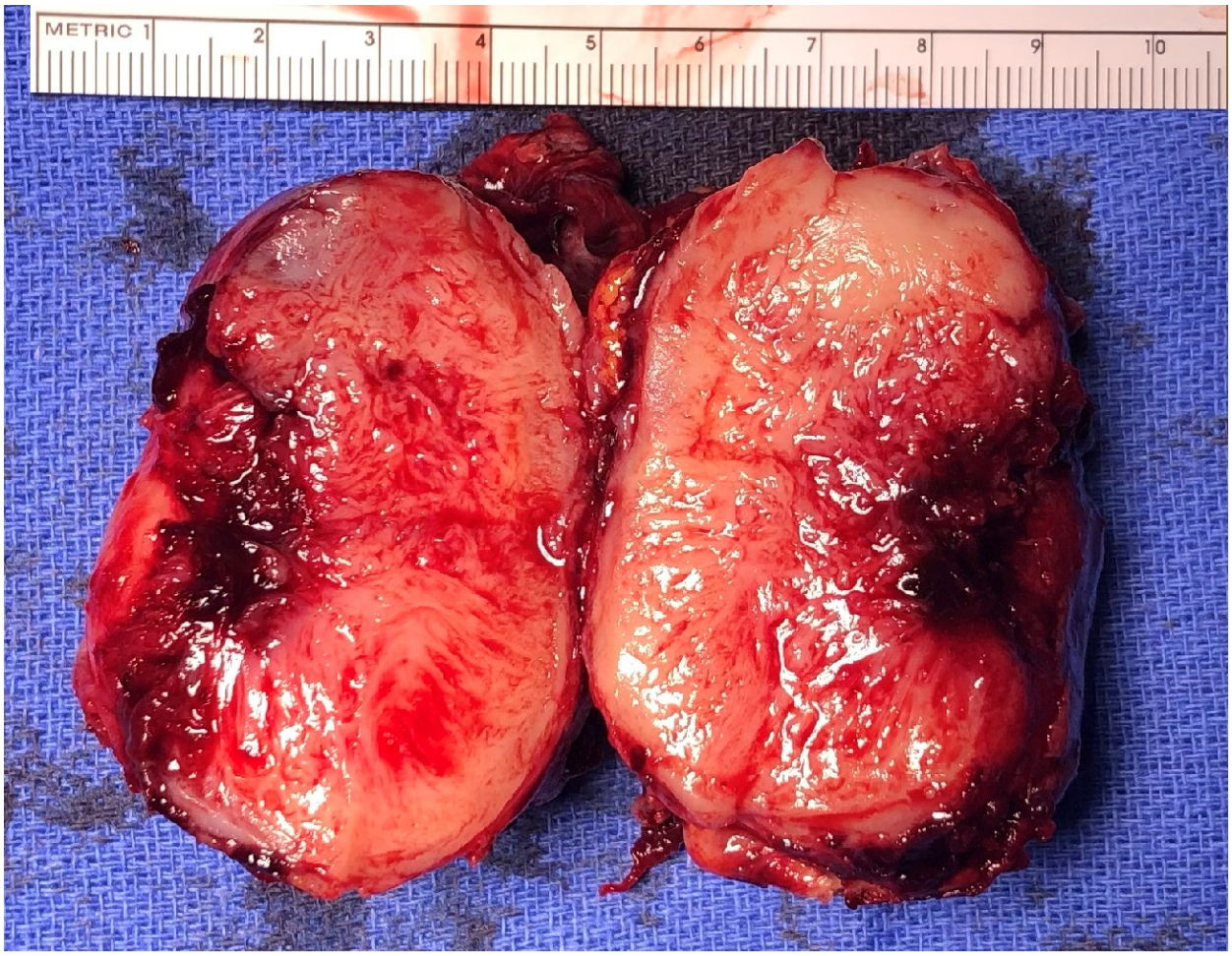

Figure 3: Operative specimen. Well-circumscribed mass measuring 4.5 x 6.5cm with firm, rubbery white surface when bisected.

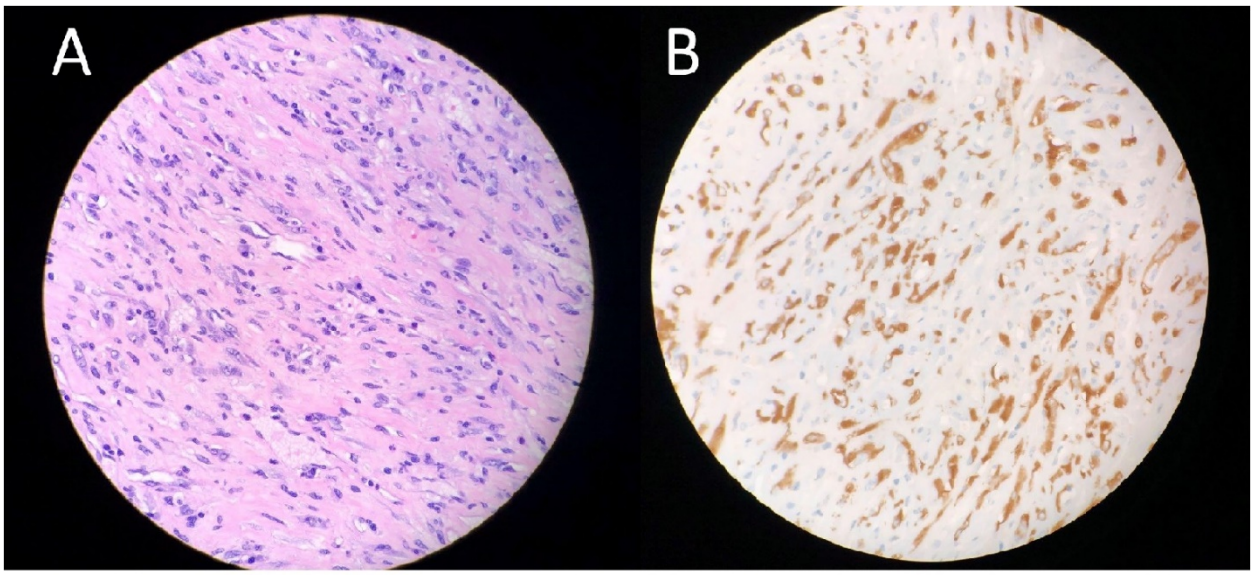

Figure 4: Pathology slides: A) Hematoxylin and Eosin stain showing fascicular proliferation of spindle cells with palely eosinophilic cytoplasm and plump mildly atypical vesicular or more tapering nuclei. B) strong positive stain ALK expression on immunohistochemistry. Not shown: Negative stains for AE1/AE3, Lu-5, EMA, CK7, CK20, CD45, S100, PAX8, GATA3, CD34, myogenin, CD117, Dog-1, CDX2, SOX10, HMB45, p63, CD15, CD30, CD21, CD23, calretinin, and EBER ISH.

ePoster #28 | Case Review | Surgical Oncology

CUTANEOUS ANGIOSARCOMA IN RENAL TRANSPLANT RECIPIENTS - CASE REPORT & REVIEW OF THE LITERATURE

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Introduction/Objective: Breast cancer is the second most-frequently recurring malignancy in renal transplant recipients and is associated with an excess mortality of greater than 40% when compared to breast cancer in the general population. Cutaneous angiosarcoma, frequently but not exclusively associated with prior breast cancer, is a rare and very aggressive malignant neoplasm described in few solid organ transplant recipients to date. Secondary, or radiation-associated, cutaneous angiosarcoma has proven even more extraordinary, with only three cases described in post-transplant patients. We detail herein, to our knowledge, the first case of secondary breast angiosarcoma in a transplant recipient.

Case Presentation: A 67-year-old female with a history of renal transplantation and invasive ductal cancer of the left breast (treated with breast-conserving surgery and adjuvant chemoradiation) presented 19 years post-transplant with left breast pain and an irregular papular skin lesion. Biopsy revealed epithelioid angiosarcoma and simple mastectomy was performed followed by systemic chemotherapy. Currently, the patient is alive with no evidence of recurrent disease.

Discussion: Literature review revealed twenty-three published cases of cutaneous angiosarcoma post-transplant, with the majority arising in renal transplant recipients. On average, angiosarcoma was detected seven years post-transplant, at a mean age of 53. Mortality reached 92% (despite reductions in immunosuppression), with the majority developing metastatic disease and living an average of only seven months following angiosarcoma diagnosis. Further studies are needed to delineate the potential increased risk, heightened aggressiveness, and advanced time course of angiosarcoma in post-transplant patients.

Conclusion: Cutaneous angiosarcoma is an exceedingly rare post-transplant malignancy with poor survival outcomes and should be carefully excluded in all transplant patients regardless of prior cancer history.

ePoster #29 | Case Review | Surgical Oncology

GRANULAR CELL TUMOR OF THE BREAST: A DIAGNOSTIC CONUNDRUM IN BREAST ONCOLOGY

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Introduction/Objective: A GCT is a neoplasm that accounts for 0.5% of soft tissue tumors. Although a GCT can arise at any location, nearly 5-6% are observed in the breast. A GCT of the breast (GTCB) is usually benign and malignancy is rare (1-2%). The incidence of a GCTB is low, accounting for 5% to 8% of all GCTs and 0.1% of breast tumors. It is also more common in middle-aged, premenopausal women, especially African American women. A GCTB presents a diagnostic challenge, as clinical and radiological findings are indistinguishable from common subtypes of malignant breast cancer. This can often prompt the need for an extensive workup. We present the following case in accordance with the CARE reporting checklist

Case Presentation: In this report, we present a GCT of the (R)-breast in a multiparous, postmenopausal 63-year-old African American female. She denied having a palpable mass, skin changes, pain, or nipple discharge. A physical exam showed no evidence of a mass, retractions, axillary lymphadenopathy, supraclavicular lymphadenopathy, nipple or skin changes.

An initial screening mammogram was done (BIRADS 0) and demonstrated a low-density mass, with indeterminant microcalcifications, in the outer lower quadrant of the right breast. A subsequent b/l US determined the mass to be highly suggestive of malignancy (BIRADS 5). The nodule was irregular, heterogeneously hypoechoic, with vascularity and shadowing (Figure 1). An US-guided percutaneous biopsy was performed. The nodule was initially diagnosed as a tubular adenoma. An addendum was later made to categorize it as a GCT.

A lumpectomy with appropriate margins was performed for the tumor. The histopathological specimen from the lumpectomy confirmed a 1.7 cm GCTB, with fibrocystic changes, columnar cell and focal florid ductal hyperplasia, and adenosis with microcalcification. The tumor was positive for the S100 (Figure 2) and SOX-10 (Figure 3) markers, focally positive for TFE3, and negative for CD1a.

Discussion: A GCTB is rare and may account for 5% to 8% of GCTs and 0.1% of breast tumors. This tumor shares clinical and radiological features with the more common subtypes of malignant breast carcinoma. Clinically, a GCTB may present as a solitary, non-tender nodule that occurs more frequently in the upper inner quadrant of the breast. This is in contrast with the common subtypes of malignant breast carcinoma, which are usually found in the upper outer quadrant. Furthermore, microcalcifications are not typical finding for GCTs. The presence of calcifications is often one of the earliest signs of malignant breast disease.

Due to the high positivity rates for neuron specific enolase (NSE) and S-100 protein, the tumor may originate from Schwann cells. The tumor is also thought to arise from intralobular breast stroma and typically occurs within the distribution of the cutaneous

branches of the supraclavicular nerve. Therefore, contractions or shrinkage may be seen along this respective distribution.
Although a GCTB is often benign, malignancy is still possible (1-2%). From a histopathologic perspective, six features have been identified in determining whether a GCTB is malignant or not including necrosis, spindling, vesicular nuclei with large nucleoli, increased mitotic activity (>2 mitoses/10 high-power fields at ×200 magnification), high nuclear-to-cytoplasmic ratio, and pleomorphism. If none of these diagnostic criteria are met, the tumor is considered to be benign. If one or two criteria are met, the tumor is considered to be atypical, and if three or more criteria are met, the tumor is considered to be malignant. The most common metastatic sites for a malignant GCT are the lymph nodes, lungs, liver, and bones. It has a 39% mortality rate in a 3-year interval. Additionally, a malignant GCT carries a poor prognosis with a 32% chance of local recurrence and a 50% chance of metastasis.
The use of chemotherapy and radiotherapy is ineffective for a GCTB, due to the tumor being resistant, acapsular, and proliferatively invasive. Therefore, surgical resection with adequate margins remains the primary option for management. The long-term prognosis for a benign GCTB is excellent, even if the tumor is excised with positive marginS.

Conclusion: This case highlights one of the many presentations of a GCTB. A definitive preoperative diagnosis facilitates the prompt differentiation of a benign tumor from a malignant and allows necessary surgical intervention. Additionally, current evidence regarding a benign GCTB becoming locally malignant, or invasive, is lacking and cannot be fully excluded. Considering the paucity in literature, further research is needed to gain a better understanding of the clinical, radiological, and histopathological spectrum of GCTs in the breast. This will better aid clinicians in management and societies in developing more encompassing breast cancer guidelines.

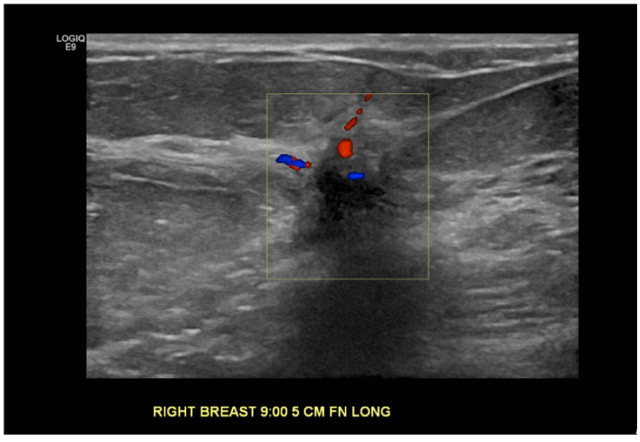

Figure 1. At 9 o' clock and 5 cm from nipple, an irregular heterogeneously hypoechoic nodule is seen with vascularity and shadowing measuring 0.9x0.8x0.8 cm.

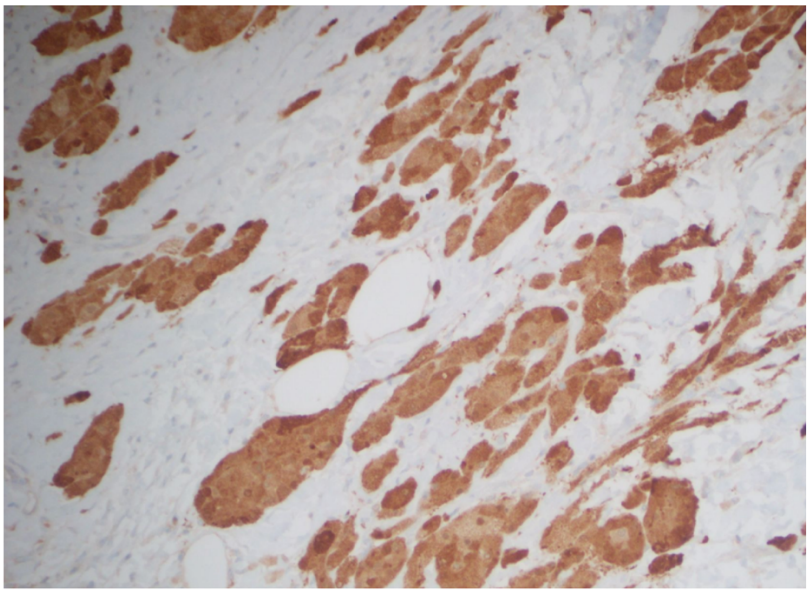

Figure 2. An S-100 immunostain demonstrating strong tumor cell reactivity.

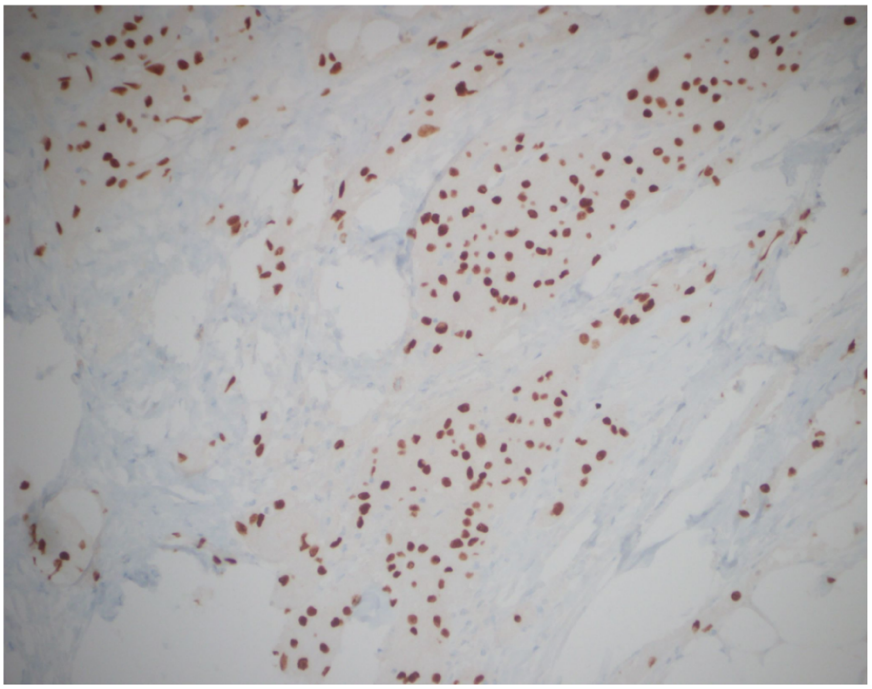

Figure 3. A SOX-10 immunostain which stains the nuclei brown.

ePoster #30 | Case Review | Surgical Oncology

ONCOPLASTIC RECONSTRUCTION OF A LARGE CHEST WALL DEFECT USING FASCIOCUTANEOUS FLAPS

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Introduction/Objective: Tissue volume replacement and defect coverage following extensive tumor extirpation remains a daunting reconstructive challenge for surgeons. Fasciocutaneous flaps (FF), based off of superior epigastric artery perforators medially and the lateral intercostal artery perforators laterally have been documented as a viable option for breast reconstruction, however very few have described their use for coverage of extensive chest wall defects. We present the use of a FF to reconstruct a full-thickness chest wall defect following resection of a large mass and Pectoralis major post-mastectomy in a previously radiated breast.

Case Presentation: The patient is a 67 year-old female who had a previous diagnosis of T2N1M0 triple negative invasive ductal adenocarcinoma in 2003, treated with bilateral mastectomies, left axillary lymph node dissection and adjuvant chemoradiation. She presented to our institution with complaints of a rapidly growing left chest wall mass with overlying open wound, in the region of previous radiotherapy. The mass had been present for 3 months with progressive growth and had been biopsied multiple times without evidence of malignancy. Physical exam demonstrated radiation-induced skin changes of the left chest wall with a 15 cm fixed mass and central draining wound. (Figure 1). One month prior computed tomography of the thorax demonstrated a circumscribed fluid collection in the left chest wall with central opening, measuring 8.2cm, extending posteriorly into the pectoralis muscles. Given the physical exam and imaging findings, differential diagnoses included angiosarcoma versus local recurrence.

The patient underwent resection of the chest wall mass and Pectoralis major, with a resulting defect measuring 19x10cm (Figure 2 'yellow star'). Frozen sections taken around the resection margin demonstrated atypical cells consistent with radiation damage. Reconstruction with a medially-based thoracoepigastric flap was performed first; the base of the flap was positioned medially at the subxiphoid region extending laterally to the anterior axillary line (Figure 2 'green arrow'). After elevation of this tissue, superomedial rotation facilitated optimal positioning to cover the acquired defect (Figure 3 'blue arrow') and the resultant lateral defect was then covered with an intercostal artery perforator flap (Figure 3 'yellow arrow'). Three surgical Blake drains were left in place. The flap was then secured to surrounding tissue in multiple layers using 3-0 Vicryl and 3-0 Nylon (Figure 4). The patient tolerated the procedure well and the flap maintained adequate perfusion perioperatively.

Discussion: The described FF flaps are an historically useful approach to oncoplastic reconstruction. Advantages of these flap include a consistent vascular supply from medially and laterally based perforators, robust tissue bulk, as well as substantial length to reach the upper quadrants. Given our patient's prior radiation history, high BMI and extent of resection, a combination of FF flaps proved to be an optimal approach.

Conclusion: FF may be successfully used to reconstruct large surface area chest wall defects, even for patients in poor health, previous breast surgery and radiotherapy who would not otherwise tolerate musculocutaneous reconstruction. This is a safe and effective option with which general surgeons should be familiar, in order to minimize morbidity and achieve wound healing.

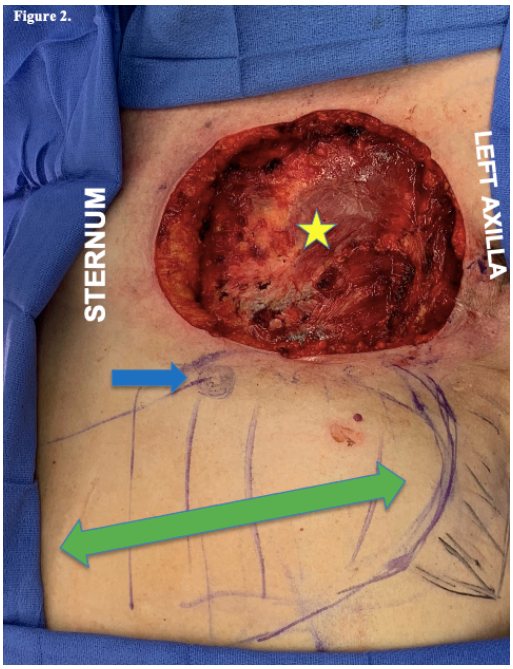
Figure 2.
STERNUM
LEFT AXILLA

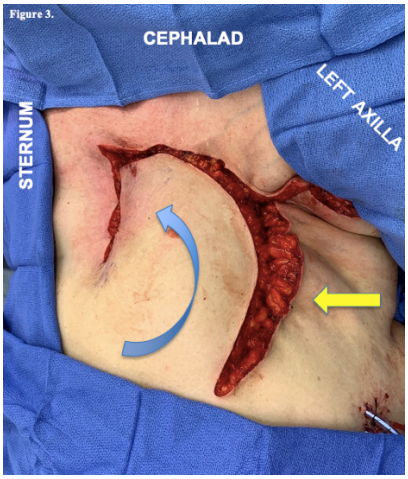
Figure 3.
CEPHALAD
LEFT AXILLA
STERNUM


Figure 4.
CEPHALAD
LEFT AXILLA
STERNUM

ePoster #31 | Abstract | Trauma

OUTCOMES AFTER RIB FRACTURE IN ELDERY PATIENT DUE TO BLUNT TRAUMA AT DOCTOR RENAISSANCE HOSPITAL

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Background: Blunt trauma remains the most common traumatic reason for presentation at a hospital. Despite their frequency, there remains high morbidity and mortality. This is particularly true amongst the elderly, who are at increased risk of developing pulmonary complications such as pneumonia, etc., compared to their younger counterpart. Rib fractures are the most common type of trauma to the chest sustained by elderly patients. Pain control remains the most critical treatment and prognosis factor to prevent catastrophic and fatal pulmonary events. About 16.5 percent of the American population was 65 years old or over in 2019. This number is projected to reach 22 percent in 2050; In Texas, the elderly population will make up 20 – 25 percent of the population by 2060. Consequently, there has been an increase in the number of geriatric patients with trauma. Some clinical guidelines requiring admission to an intensive care setting in trauma centers for elderly patients with two or more rib fractures have been adopted by some trauma centers. According to Sahr SM et al., usage of these guidelines may lead to significant decreases in hospital stats, ICU stats, and use of mechanical ventilation. However, the effectiveness of these guidelines has not been validated across different institutions.

Objectives: We sought to determine the mortality rate of elderly patients with ribs fracture compared to patients < 65 years of age at Doctor Renaissance Hospital (Level I trauma center). We also investigated the relationship between the side of injury, the need for mechanical ventilation, ICU length of stay, and overall length of hospital stay – in blunt trauma patients without major vascular injuries or those needing emergent surgery due to other injuries.

Methods: We performed a retrospective cohort study involving all blunt trauma patients between 18 – 100 years with rib fractures, excluding those with major vascular injuries or those needing emergent surgery due to other injuries. Patients admitted to Doctor renaissance Hospital (Level I trauma) between 2017 – 2020 were divided into two groups. The experimental group consisted of 58 patients aged 65 years or older. The control group was made of 75 patients aged < 65 years old admitted during the same time. (table 1) Outcomes parameters included pulmonary complications (such as pneumonia or respiratory failure), number of ventilator days, intensive care unit length and hospital stay, disposition, and mortality.

Results: In the experimental group, 58 patients were identified. These patients were divided into four groups: those with right-sided rib fractures, left-sided rib fractures, and unspecified and bilateral rib fractures. The overall mortality was 1.72 % compared to 4 % in the control group ($p < 0.05$). Patients with right-sided rib fractures had a median hospital length of stay of 4 days vs. 6 days in the control group ($p < 0.05$) (figure 2). We found no difference in the number of days spent in ICU between the control and experimental group with right-sided rib fractures. Patients with left-sided rib fractures had

a similar median hospital length of stay compared to the control group. We noted no difference between the number of days spent in the ICU or ventilator days between these patients (figure 2).

Furthermore, patients with bilateral rib fractures had a median hospital stay of 8 days compared to 13 days in the control group ($p < 0.05$) (figure 2). Also, patients in the control group with bilateral rib fractures had a median ICU stay of 3 days and median ventilator use of 2 days compared to 0 days ($p < 0.05$) in the experimental group (table 2). Lastly, patients 65 and older with unspecified multiple rib fractures had a median length of stay of 3.5 days compared to 1.5 days in the control group ($p < 0.05$). The median length of stay in ICU and ventilator use was 1 day longer in the control group than the experimental group.

Conclusion: Elderly patients with more than 2 rib fractures admitted at Doctor hospital renaissance between 2017-2020 had better outcomes than patients younger than 65 admitted during the same period. Therefore, efforts to decrease rib morbidity should focus on other factors such as injury mechanisms instead of solely based on the patient's age. Furthermore, contrary to the guidelines for managing elderly patients with ≥ 2 rib fractures, our data suggest that elderly patients with ≥ 2 rib fractures do not necessarily have to be admitted to the intensive care unit.

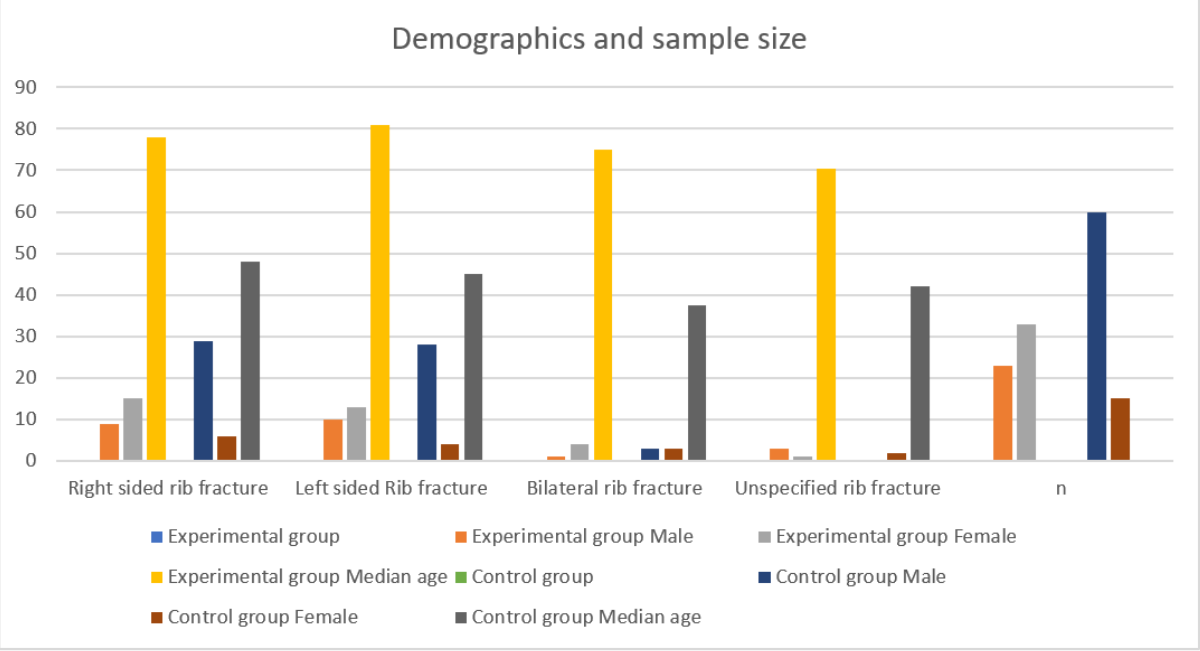

Figure 1: Number of patients versus associated rib fractures and age.

Table 1: Sample size and patient demographic

	Right sided rib fracture	Left sided Rib fracture	Bilateral rib fracture	Unspecified rib fracture	n
Experimental group					
Male	9	10	1	3	23
Female	15	13	4	1	33
Median age	78	81	75	70.5	
Control group					
Male	29	28	3	0	60
Female	6	4	3	2	15
Median age	48	45	37.5	42	

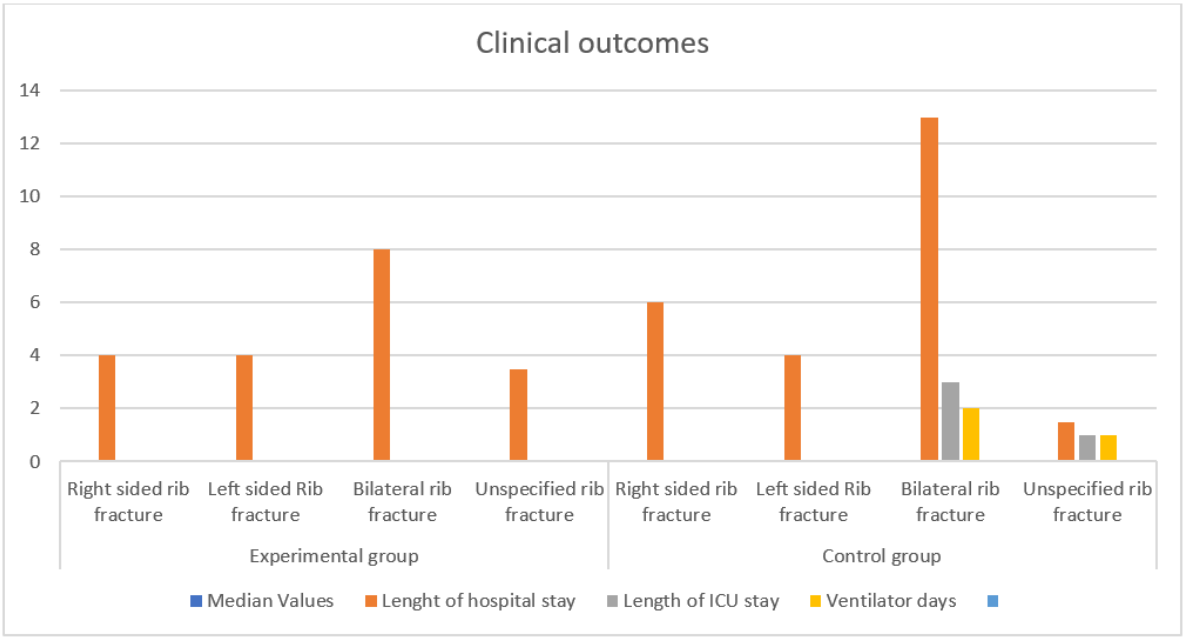

Figure 2: Localization of multiple rib fractures versus the length of hospital stay, ICU stay and ventilation days.

Table 2: Outcomes in terms of length of hospital stay, ICU stay and ventilation days.

	Experimental group				Control group			
	Right sided rib fracture	Left sided Rib fracture	Bilateral rib fracture	Unspecified rib fracture	Right sided rib fracture	Left sided Rib fracture	Bilateral rib fracture	Unspecified rib fracture
Median Values								
Lenght of hospital stay	4	4	8	3.5	6	4	13	1.5
Length of ICU stay	0	0	0	0	0	0	3	1
Ventilator days	0	0	0	0	0	0	2	1

ePoster #32 | Abstract | Trauma

PREVENTION OF TRACHEOSTOMY RELATED PRESSURE ULCERS IN UTMB PATIENT POPULATION

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University of Texas Medical Branch - Galveston

Background: Pressure ulcers are one of the preventable hospital-acquired conditions. Recently, there has been an increased emphasis on preventing pressure ulcers, including tracheostomies-related ones. Patients who undergo tracheostomies are at higher risk for these events due to lack of mobility, neurological impairments, a favorable environment due to tracheal secretions, and a plastic flange on bony prominences. These factors can create an ideal environment for localized ischemic injury to the tissues surrounding the tracheostomy. There are several protocols to help reduce and prevent tracheostomy-related pressure ulcers in both pediatrics and adults. The purpose of this study is to evaluate the use of Mepilex foam dressing to prevent tracheostomy-related pressure ulcers.

Objectives: We hypothesized that we could reduce the rate of tracheostomy-related pressure ulcers by placing simple, repeatable, and low-cost protocols in place that could be easily communicated to nursing staff and other providers.

Methods: Mepilex foam dressings were cut and adapted under the flanges of the tracheostomy tube at the end of the procedure, and sutures were placed to secure the tracheostomy faceplate. Sutures were removed within five days, a Velcro tie placed, and another dressing adapted beneath the tracheostomy tube. Nursing staff and respiratory therapists were instructed to maintain the head in a neutral position and avoid any pressure from the ventilator. Nursing staff and the surgical team were also educated to change the dressing and notify the team of any issues.

Results: Since 2018 we have performed more than 80 tracheostomies; none of the patients with Mepilex foam dressing developed tracheostomy-related pressure ulcers throughout their hospital stay.

Conclusion: Mepilex foam dressing is an easy, repeatable, and low-cost protocol that can prevent tracheostomy-related pressure ulcers and improve the global care of tracheostomy patients. A multidisciplinary team approach and an institution-wide protocol should be established to include all services that perform a tracheostomy.

ePoster #33 | Case Review | Trauma

HOW EARLY REHABILITATION IMPROVE RECOVERY AFTER TRAUMA?

Zainab J Al Lawati,

Introduction/Objective: Trauma is the most common cause of morbidity and functional impairment across the United States. Early involvement of physiatry has been shown to improve acute care and facilitate the patient's transition to the rehabilitation journey. Their care does extend beyond the acute care and continues to the rehabilitation hospital where the main focus is quality of life and independence within their limitations. Furthermore, outpatient follow-up with Physiatry to address their care needs after in-patient stay is important as their complications vary and evolve.

Case Presentation: We report a 73-year-old man with multiple cardio-vascular risk factors presented to the ED with a fall hitting his head. He also sustained multiple rib fractures and thoracic spinous process fractures. He lived alone and was independent in his activities of daily living. His brain imaging showed acute on chronic subdural hematoma with midline shift. Neurosurgery service was involved and he required burr holes to evacuate his hematoma. Post op he was closely monitored in the surgical ICU and Physical Medicine and Rehabilitation (PM&R) specialist was involved to optimize his care. PM&R specialist started him on medications to promote his neuro-recovery. His cardiovascular risk factors were optimized. His neurogenic bowel and bladder issues were addressed and proper family education was provided prior to discharge. He was scheduled to be seen at PM&R clinic for continuity of care.

Discussion: The awareness of the potential short- and long term consequences of trauma rehabilitation has increased markedly during the last decades. The society of critical care medicine advocates for early rehabilitation interventions to prevent reversible complications, decrease length of stay and optimize patient's functional outcomes. The role of Physiatry extends beyond the acute hospital stay and in-patient rehabilitation and goes as outpatient follow up as patients face new concerns during their recovery. With intraparenchymal bleeding and after neurosurgical interventions, PM&R specialists evaluate the cognitive recovery and start medications that promotes neuroplasticity. A comprehensive mental status evaluation is conducted with collaboration with speech language pathologist and neuropsychologist to determine the challenges in affected cognitive domains and plan for remediation and compensatory strategies. A detailed functional evaluation is warranted to evaluate the safety and independence of the patient after trauma and determine the adaptive equipment needed to accommodate patient's needs and maximize recovery.. PM&R are experts in classifying and managing neurogenic bowel and bladder aiming for social continence using behavioral and pharmacological interventions. PM&R are experts in pain management and how to adjust pain medications to achieve better pain control and maximize patient's quality of life. As the patient gets back to the community PM&R supervise and advice certain strategies to make sure that community integration is a smooth ride. Long term complications are not uncommon such as arthritis, dementia and functional decline and PM&R are expert in managing these issues along with other medical professionals.

PM&R specialists are also experts in palliative care and addressing goal oriented care in patients with terminal illnesses and make sure comfort care is addressed.

Conclusion: Clinical management and rehabilitation of patients with trauma starts at the acute phase and continues along the patient's recovery. PM&R are experts in addressing trauma related complications and manage them with various interventions to maximize recovery and optimize quality of life.

ePoster #34 | Case Review | Trauma

SUCCESSFUL MANAGEMENT OF A CIRCUMFERENTIAL MOREL-LAVALLÉE LESION OF THE TORSO BY EXTRAPERITONEAL LAVAGE SYSTEM

Shine MD, Ryan; Mateo de Acosta Andino MD, David; Skubic DO, MSc, FACS, Jeffrey, University of Texas Rio Grande Valley

Introduction/Objective: Morel-Lavallée lesions (MLL) are relatively rare, closed traumatic soft-tissue degloving injuries that occur following shearing of superficial tissues from fascia. In polytrauma patients, the presence of a MLL can have a significant impact on management, exacerbated by their often delayed diagnosis. Here we describe the case of a massive circumferential MLL of the torso after crush injury, successfully managed by open surgical debridement. Wound closure was assisted by use of an extraperitoneal lavage system with vacuum-assisted negative-pressure wound dressings improvised from readily available surgical supplies.

Case Presentation: The patient is a 52-year-old male presenting with a crush injury to the torso after being run over by a semi-truck. Bilateral rib, lumbar spine, and pelvic fractures were identified on admission. The patient developed hemorrhagic shock and acute respiratory failure requiring massive transfusion, binding of the pelvis, and endotracheal intubation. On post-trauma day (PTD) three, the patient underwent external fixation of his pelvic ring fractures. A necrotic eschar had formed across the patient's anterior abdominal wall by PTD six, thus surgical debridement was performed at the time of definitive treatment of the pelvic fractures. A massive circumferential degloving-type injury of the torso extending into bilateral thighs and the pubis, consistent with a MLL was identified, encompassing 36% total body surface area. Progressive tissue loss and necrosis ensued, requiring serial surgical debridements. Due to the resultant soft tissue defect, patient's large body habitus, and massive fluid losses, traditional wound care methods proved ineffective as the wounds worsened and became infected. An improvised wound dressing was devised (with available surgical supplies) to allow for continuous antimicrobial irrigation of the wounds and vacuum-assisted effluent removal. The progression of the wounds was arrested and marked improvement realized. Final closure of the patient's wounds using advancement flaps and split-thickness skin grafts was nearly complete by the date of transfer to an inpatient rehabilitation facility on PTD 47.

Discussion: This case highlights the unusual and often delayed presentation of MLL, as well as challenges in the management of these complex injuries in the setting of polytrauma. Despite their rarity, these wounds share similarities to wounds more frequently encountered, including thermal burns and necrotizing soft-tissue infections. Here we demonstrate a simple, improvised method to manage a massive soft-tissue wound that is economical and feasible with items readily available in a standard operating theater.

Conclusion: MLL are uncommon entities that, when large, may contribute significant morbidity to the polytrauma patient. By the use of an improvised, extraperitoneal lavage system, we salvaged a patient with a severe circumferential MLL; this promising management strategy could be used in the treatment of other large, infected wounds.