

Enterokinase and its Proposed Role in Post-Pancreatectomy Hemorrhage

Jordan A McKean*, Gerik W Tushoski, Kelly M Herremans, Ibrahim Nassour, Song Han, Steven J Hughes

Division of Surgical Oncology

Introduction Postoperative pancreatic fistula is more prevalent after distal pancreatectomy than pancreaticoduodenectomy (PD), yet postoperative hemorrhage from vascular pseudoaneurysm is virtually exclusive to PD. We hypothesize that enterokinase, produced by the reconstructive intestinal limb, drives trypsin activation necessary for pseudoaneurysm formation, and determining the distance to minimal enterokinase production in the jejunum could mitigate this devastating complication. **Methods** Fresh PD samples were procured in the operating room from multiple locations of the small intestine: proximal duodenum, ligament of Treitz (LOT), ligament of Treitz +5cm (LOT+5cm), ligament of Treitz +10cm (LOT +10cm), ligament of Treitz +15cm (LOT +15cm) and ligament of Treitz +20cm (LOT+20cm). Separately, terminal ileum was collected as a control. Enterokinase mRNA and protein abundance at these anatomic points was quantified using qRT-PCR and immunohistochemistry. Comparisons were performed using Wilcoxon Rank Sum Test. **Results** By qRT-PCR, we observed a significant difference in the expression of enterokinase mRNA when comparing the LOT+20cm to the proximal duodenum, and LOT ($p=0.035$, $p=0.008$ respectively). The terminal ileum had significant differences in enterokinase mRNA expression between all locations. No significant differences were observed between LOT+10cm and LOT+20cm ($p=0.309$). However, we also observed a marked difference in the abundance of enterokinase immunostaining at LOT+15cm when compared to the proximal duodenum, LOT, and LOT+5cm with staining intensity decreasing distally. **Conclusions** There is differential expression of enterokinase mRNA in the duodenum compared to the proximal jejunum with heterogeneity between patients and discordance with mRNA quantities with decreasing protein moving distal to the LOT. Our data would suggest resection of at least 20 cm of jejunum distal to the LOT to ensure minimal enterokinase activity at the pancreatojejunostomy.

Funding Sources

T32CA257923

P30CA247796

Abstract Title: Does Prior Trapeziectomy Reduce the Risk of Subsequent Carpal Tunnel Syndrome?

Authors: Brianne Ju Sullivan MD, Mario Blondin MD, Nicholas Schofield MD, Michael Padgett MD, Robert C. Matthias, Jr. MD, Thomas W. Wright, Jr. MD, Ellen Satteson MD

Department of Plastic Surgery

Abstract.

Introduction A trapeziectomy partially releases the transverse carpal ligament, thus it was hypothesized that patients undergoing unilateral trapeziectomy would be less likely to develop subsequent carpal tunnel syndrome (CTS) in the operative hand compared to the non-operative hand.

Methods A retrospective chart review was conducted to identify patients who received a CTS diagnosis or underwent carpal tunnel release (CTR) following unilateral trapeziectomy in their operative hand compared to their non-operative hand as a control. A follow-up questionnaire was distributed to help identify those with undiagnosed CTS symptoms, or CTR performed elsewhere.

Results Two hundred ninety-eight patients meeting inclusion criteria underwent trapeziectomy with or without suspensionplasty during the study period. Based on chart review and the follow-up questionnaire, 20 patients (6.7%) subsequently developed CTS in their operative hand and 32 (10.7%) in their non-operative hand. Four patients (1.3%) underwent subsequent CTR on their operative hand compared to 8 (2.7%) on their non-operative hand. Diabetes was present in 35% of patients who developed CTS in the operative hand and was found to be a risk factor in multivariate analysis. On the non-operative hand, patients with wound healing problems were more likely to develop CTS (9.4 % vs. 1.1%).

Conclusions Trapeziectomy may improve pre-existing carpal tunnel symptoms but does not significantly reduce the risk of subsequently developing carpal tunnel syndrome (CTS). Higher rates of diabetes, thyroid disorders, and obesity in the study group, all of which have been associated with increased rates of CTS, may have impacted the rates of post-trapeziectomy CTS. Patients with thumb carpometacarpal arthritis may have a predilection for carpal tunnel syndrome than the general population, even after trapeziectomy, and should be counseled accordingly.

Funding Sources: None

Abstract Title: Evaluation of Different Surgical Techniques for Revision Cubital Tunnel Release: A Meta-Analysis of Patient Reported Symptoms

Authors Xizhao Chen, M.D.^{1*}, Ramin Shekouhi, M.D.², Justin Taylor, B.S.³, Annika Liu, B.S.⁴, Kevin Hao, B.S.⁴, Ariel Pomputius, MLIS.⁵, Harvey Chim, M.D.²

¹ Department of Surgery, University of Florida, Gainesville, FL ² Division of Plastic & Reconstructive Surgery, Department of Surgery, University of Florida, Gainesville, FL ³College of Medicine, University of Central Florida, Orlando, FL ⁴College of Medicine, University of Florida, Gainesville, FL ⁵University of Florida Health Science Center Libraries, Gainesville, FL

Introduction: Controversy exists regarding the best option for revision surgery in refractory cubital tunnel syndrome (CuTS). The purpose of this study was to evaluate effectiveness of revision surgery and also to determine the optimal surgical approach for patients requiring revision surgery for CuTS. **Methods:** A systematic literature search of the main online databases was conducted. Characteristics of included studies were summarized descriptively. The odds ratio between patient-reported preoperative and postoperative subjective outcomes relating to pain, motor and sensory deficits, was calculated. Random-effects meta-analysis and descriptive statistics were used when appropriate. **Results:** A total of 471 patients was evaluated in 20 studies. There were 254 (53.9%) male and 217 (46.1%) female patients with an average age of 49.2 ± 14.1 years. Pain was the most common clinical symptom (n=346, 81.6%), followed by sensory and motor dysfunction in 342 (80.6%) and 223 (52.6%) patients, respectively. Meta-analysis comparing preoperative and postoperative symptoms showed that submuscular transposition (SMT) resulted in improvement in pain, motor and sensory deficits ($P < 0.05$). Subcutaneous transposition (SCT) resulted in improvement in pain ($P < 0.05$) only, while neurolysis resulted in improvement in pain and sensory deficits ($P < 0.05$), but not motor deficits. Pooled analysis of postoperative satisfaction scores showed that revision surgery is associated with high satisfaction rates ($P < 0.05$), regardless of the type of surgical intervention. **Conclusions:** Revision surgery for CuTS is reliable for addressing recurrent and persistent symptoms. Treatment should be decided based on surgeon preference on a case-by-case basis.

Funding Sources: None

Table 1. Meta-regression analysis based on the effects of surgical interventions on symptom improvement (SMT as the reference procedure).

Covariate	Coefficient	95% CI	SE	P-value
Pain				
SMT	Reference	Reference	Reference	Reference
SCT	0.423	-0.32, 1.17	0.34	0.246
Neurolysis	-0.286	-1.17, 0.60	0.41	0.498
Motor weakness				
SMT	Reference	Reference	Reference	Reference
SCT	0.504	-0.09, 1.10	0.26	0.089
Neurolysis	0.023	0.94, -0.75	0.34	0.948
Sensory deficits				
SMT	Reference	Reference	Reference	Reference
SCT	0.691	0.21, 1.17	0.22	0.008
Neurolysis	0.262	-0.28, 0.80	0.25	0.317

Prophylactic Use of Leukotriene Receptor Antagonists in Preventing Capsular Contracture after Prepectoral Implant-Based Breast Reconstruction

Kyle Ockerman, BS*; **Sabrina H. Han, BHS;** **Kaylan Dadireddy, MD;** **Lisa Spiguel, MD;** **Arash Momeni, MD;** **Sarah Sorice-Virk, MD**

Division of Plastic and Reconstructive Surgery in Surgery Department

Introduction

Capsular contracture remains a common complication of breast reconstruction. Studies have shown benefits of leukotriene receptor antagonists in the treatment of capsular contracture after breast augmentation. However, no study has investigated the use of leukotriene receptor antagonists preoperatively in prepectoral reconstruction. This study aims to introduce leukotriene receptor antagonists (Singulair) as a safe medication for potentially preventing capsular contracture in prepectoral alloplastic breast reconstruction.

Methods

Between November 2020 to February 2023, patients undergoing prepectoral implant-based breast reconstruction were retrospectively analyzed. Patients were treated with daily 10 mg Singulair starting on the day of expander to implant exchange surgery and for 3-6 months thereafter. The presence of capsular contracture was measured by the Baker scale at 1 year postoperatively.

Results

At one year out, only one out of twenty-five patients (4%) in the preoperative Singulair group developed capsular contracture (Baker grade II). Reported medication side-effects in our cohort were minor and included headache (4% or 1/25), gastrointestinal symptoms (4% or 1/25), and pruritus (4% or 1/25).

Conclusions.

This study suggests that the prophylactic use of Singulair in preventing capsular contracture in prepectoral breast reconstruction is safe and well tolerated. When compared to published capsular contracture rates of up to 30% after prepectoral breast reconstruction, our results using Singulair prophylactically for this indication are certainly promising. However, ongoing randomized controlled studies will be necessary to determine the efficacy of Singulair in preventing capsular contracture when used prophylactically in prepectoral implant-based breast reconstruction.

Funding Sources. None

Abstract Title Predicting a Difficult Colonoscopy

Authors P. Mazirka, J. Balch, A. Rashid, K. Ehresmann, K. Terracina, L. Goldstein, TE Read, J. Nordenstam

Division in Surgery Department of Gastrointestinal surgery

Abstract.

Introduction The ability to achieve a quality colonoscopy varies greatly, and prior studies have suggested variables such as body mass index (BMI), gender, co-morbidities and surgical history are associated with cecal intubation time and failure rate [1-3]. We present a retrospective chart review of colonoscopies performed at a single center to identify patient characteristics that contribute to increased colonoscopy difficulty and for predicting complexity prior to the procedure.

Methods IRB approval was obtained. We performed a retrospective chart review of patients 18 years and older undergoing lower endoscopy at a single tertiary academic center over a 12-month period to identify characteristics that increase colonoscopic difficulty. Sigmoidoscopy, pouchoscopy and colonoscopy through a colostomy were excluded. Demographic data were obtained from the medical record. Colonoscopy specific data were retrieved from the report generated with Provation® software. Endoscopists were stratified according to years of post-residency experience. Outcome variables included mean cecal intubation (insertion) time and procedure difficulty, listed as “without difficulty”, “somewhat difficult”, or “technically difficult.” For purposes of our analysis, “without difficulty” and “somewhat difficult” were coded together as “not difficult”. Multivariate and univariate analysis was performed. P-values were calculated using Fisher’s exact test for categorical data and Mann-Whitney test for non-categorical data.

Results A total of 2342 colonoscopies met criteria for review. Three hundred and twenty one patients were excluded for missing information regarding difficulty and insertion time. Of the remaining 2285 procedures, 570 (25%) were characterized as difficult. The procedure was more likely to be deemed difficult by a less experienced endoscopist (33% vs 24%, $p=0.011$). Insertion time was significantly longer in procedures that were deemed difficult (18 vs 9 minutes, $p < .0001$). Greater than 13 minutes was the upper quartile of insertion time. Among scopes in the upper quartile, multivariate analysis identified the following significant risk factors: female (OR 1.4, $p=0.003$), hysterectomy (OR 1.8, $p=0.002$), gastric bypass (OR 2.0, CI 1.2-3.29), senna use (OR 3.7, $p= 0.043$). Other race was protective (OR 0.5, $p=.013$). On multivariate analysis of endoscopist classification of the procedure, the following variables significantly increased difficulty: constipation (OR 1.4, $p=0.006$), females (OR 1.4, $p=0.006$), hysterectomy (OR 1.6, $p=0.12$), gastric bypass (OR 1.9, $p=0.011$), BMI < 27 or >43 (OR 1.4, $p=0.0006$). Race, other than white or black, predicted an easier colonoscopy (OR 0.52, $p=0.015$).

Conclusions. These factors should be considered when selecting patients for screening/surveillance colonoscopy versus non-invasive methods. Consideration of these criteria may improve scheduling, endoscopy work flow, and identification of patients appropriate for a training environment.

Funding Sources. None

End-to-end intussuscepting pancreaticojejunostomy

Jakob S. Hamilton^{2*}, Jordan A. McKean¹, Stephen J. Hughes³

1. University of Florida College of Medicine, Department of General Surgery; Gainesville, FL
2. University of Florida College of Medicine; Gainesville, FL
3. University of Florida College of Medicine, Department of Surgical Oncology; Gainesville, FL

Introduction: Various techniques for pancreaticojejunostomy (PJ) during a pancreaticoduodenectomy have been compared via the primary outcome of post-operative pancreatic fistula (POPF). An intussuscepting end-to-end anastomosis is less technically demanding and thus amenable to minimally invasive techniques, but outcomes of this technique are essentially unknown.

Methods: This is a retrospective, single institution study of consecutive patients from 2012-2023 undergoing pancreaticoduodenectomy (laparoscopic or open) using the intussuscepting PJ technique.

Results: 382 patients were included in this study with 75 (20%) patients with benign diagnoses and 307 (80%) patients with malignant diagnoses. There were 324 (85%) laparoscopic and 57 (15%) open surgeries. The average age was 64 years-old and average BMI was 27. The average fistula risk score (FRS) was 5 indicating a moderate (14%) risk of POPF. There were 65 (17%) POPF with the majority of these being Grade B fistulas (48). Those with a Grade B POPF were more likely to undergo surgery for a benign diagnosis (p-value 0.0018) and have a soft pancreas (p-value 0.0005). The rate of post-pancreatectomy hemorrhage from pseudoaneurysm was 6%. The 30-day readmission rate was 23%. The 30- and 90-day mortality rates were 3% and 5%, respectively.

Conclusions: In a large experience where an end-to-end intussuscepting PJ technique was applied during both laparoscopically and open cases, primary outcomes of POPF, post-pancreatectomy hemorrhage, readmission, and mortality are non-inferior to reported outcomes of other PJ reconstruction strategies.

Funding Sources: Team-Based Interdisciplinary Cancer Research Program (T32CA257923), UF Health Cancer Center and the Cancer Center Support Grant (P30CA247796)

Enhancing Outcomes in Breast Reduction Surgery: Introducing the Superomedial-Central Pedicle Technique for Improved Aesthetics, Efficiency, and Safety

Armina Azizi MD¹, Nhan Trieu BS², Kyle Ockerman BS², Sarah Applebaum MD¹, Johnathan Butts MD¹, Ramin Shekouhi MD¹, Kalyan Dadireddy MD¹

¹ University of Florida Department of Surgery, Division of Plastic & Reconstructive Surgery ² University of Florida College of Medicine

Division of Plastic & Reconstructive Surgery

Abstract.

Introduction: Choosing the optimal technique of breast reduction that delivers an aesthetically pleasing outcome while minimizing complications, notably the feared nipple areola complex necrosis, presents a significant challenge, especially in larger breasts¹. The superomedial pedicle technique with vertical pattern reduction is favored for its safety, primarily due to leveraging the dominant perforators from the internal mammary arteries that ensure an optimal blood supply to the nipple^{2,3}. Moreover, it enhances aesthetic outcomes by maintaining upper-pole fullness of the breast and reducing the likelihood of bottoming out⁴. Despite its benefits, this method is limited by a maximum reliable notch-to-nipple distance of 37 cm and insufficient flap rotation³. This study proposes a novel approach to reduction mammoplasty, employing the superomedial-central (SMC) pedicle in a vertical pattern. This technique aims to enhance flap rotation and maintain a strong dual perfusion system to the nipple, addressing current limitations while optimizing aesthetic results and safety. It also focuses on minimal assistance, wide dissection to allow rotation and parenchymal shaping along with efficiency.

Methods: A retrospective analysis was conducted on 60 female patients with macromastia who underwent bilateral vertical breast reduction using the SMC pedicle technique by a single surgeon in our Plastic Surgery department from January 2021 to December 2023. Data on patient demographics, preoperative breast measurements, and postoperative outcomes were collected and analyzed.

Results: The average age was 35.6 years with a mean BMI of 30.7. The study recorded key measurements such as body surface area (BSA) and distances from the nipples to the inframammary fold and sternal notch. The average surgery duration was 172.2 minutes, with tissue resection weights of 483.0 grams and 497.6 grams for the right and left breasts, respectively. Postoperative complications occurred in 10% of patients, with no significant association found between these complications and the preoperative variables.

Conclusions: The SMC pedicle technique offers a promising alternative for breast reduction, potentially improving aesthetic outcomes and reducing complications. Despite encountering some complications, these were not significantly related to the procedural specifics. This

technique is proposed to enhance breast appearance through better pedicle rotation and a secured blood supply from extensive tissue dissection. Future research should include patient-reported outcomes and postoperative breast metrics to fully evaluate patient satisfaction and the aesthetic success of the procedure, further establishing the benefits of the SMC technique in reduction mammoplasty.

Abstract Title: Enterococcus hirae Conditioned Media Attenuates Pancreatic Cancer Proliferation In Vitro

Authors: Liang Zhang*, Angel Charles, and Ryan M. Thomas

Division: Surgical Oncology

Abstract

Introduction: Pancreatic ductal adenocarcinoma (PDAC) is expected to become the 2nd leading cause of cancer-related deaths in the United States by 2030 and is the only cancer with a rising incidence, approximately 1% annually since the late 1990s. These sobering statistics underscore the need to better understand mechanism of pancreatic carcinogenesis, including those which could aid in treatment. The microbiome which is the collection of host microorganisms, has shown to play a role in various cancers, including PDAC. Our lab has published on the role of the microbiome in pancreatic carcinogenesis and furthermore, have demonstrated that a bacterium, Enterococcus hirae (Eh), is able to reduce PDAC growth in a mouse model. However, the mechanisms of these observations are unclear. We hypothesized that E. hirae-derived supernatant is able to directly impact PDAC growth and responsible for reduced PDAC growth.

Methods: The human PDAC cell line, L3.6pl, was exposed to increasing concentrations of cell-free supernatant (CFS) derived from Eh for 48 hours. Proliferation of L3.6pl cells was subsequently measured utilizing the Alamar Blue assay compared to exposure to bacteria growth media alone. CFS was subsequently fractionated utilizing a 3KDa cutoff filter to narrow down the possible active fraction and proliferation was compared to the unfractionated portion utilizing the same assay. Finally, this <3KDa CFS fraction was heat treated at 95°C for 25 minutes to determine the role of Eh-derived heat-labile compounds in this fraction on proliferation.

Results: There was a 50-75% reduction in proliferation of L3.6pl cells after 48 hours exposure to Eh CFS compared to control ($p < 0.01$) in a dose-dependent fashion. This decreased proliferation persisted even after 3KDa fractionation, suggesting the responsible compound is <3KDa in size. Finally, heat treatment of this 3KDa fraction did not abrogate the decrease in L3.6pl proliferation which continued to reduce proliferation by 50-75% compared to heat-treated Eh culture media ($p < 0.001$).

Conclusion: Cell-free supernatant derived from the culture media of E. hirae bacteria is able to reduce proliferation of the PDAC cell line, L3.6pl, in vitro. The active component appears to be heat-stable and <3KDa in size. Further studies are needed on additional PDAC cell lines and normal pancreatic ductal epithelial cells to determine cell-specificity. This study opens the possibility of utilizing bacteria, such as E. hirae, to work synergistically with available chemotherapy regimens that are currently used to treat PDAC.

Funding Sources: NIH R21CA263462, University of Florida Department of Surgery, University of Florida Health Cancer Center

TITLE

Evaluating Time to Initiation of Therapy Following Zone 2 Flexor Tendon Repair

PURPOSE

Although Zone 2 flexor tendon (Z2FT) injuries comprise a small fraction of traumatic hand injuries, these injuries tremendously impact the functional capacity and quality of life of afflicted patients. Initiation of hand therapy within 3-7 days postoperatively is the current standard of care, yet evidence is limited regarding the impact of this strategy. To guide timely rehabilitation post-operatively, we investigated therapy initiation after Z2FT repair in patients at our institution from 2019 through 2022.

METHODS

Records of pediatric and adult hand trauma patients undergoing Z2FT injury repair at our institution between 2019 through 2022 were retrospectively reviewed. Duration of time from repair to post-operative rehabilitation therapy was assessed, and associations with baseline and demographic characteristics were identified. Descriptive statistics, simple linear regressions, and t-tests were performed with Tableau and R Software.

RESULTS

114 patients with Z2FT injury repair at our institution were included. The cohort was 73.7% male (n=84) with a mean age of 36.3 ± 18.8 years. 108 (94.7%) patients enrolled in post-operative rehabilitation. 41.2% (n=47) of patients received hand therapy greater than seven days after repair, with a mean duration to first rehabilitation visit of 11.4 ± 9.8 days. Uninsured patients had an 8.95-day increase in duration to first rehabilitation visit compared to patients with Medicaid (20.17 versus 11.22 days, $p=0.004$). Similarly, patients with penetrating injuries had a 9.83-day increase in duration to first rehabilitation visit versus those with lacerations (10.17 days, $p=0.02$). Duration to first rehabilitation visit did not differ by demographics or location of therapy; nor was it associated with development of tendon adhesion (n=16).

CONCLUSIONS

While hand therapy within 7 days of Z2FT repair is recommended to reduce tendon adhesions, 41.2% of patients (n=47) accessed therapy more than 7 days post-operatively, so interventions aimed at decreasing this delay are warranted. However, only 14.0% of patients (n=16) developed tendon adhesions and this was not associated with a delay in initiation of rehabilitation in this cohort although the sample size may be insufficient. Nonetheless, certain patient groups including the uninsured have trouble accessing hand therapy in a timely manner.

Abstract Title: Factors Correlating with Positive Electrodiagnostic Findings for Neurogenic Thoracic Outlet Syndrome

Authors: Ramin Shekouhi, M.D., Syeda Hoorulain Ahmed, MBBS, Harvey Chim, M.D.

Division of Plastic and Reconstructive Surgery, Department of Surgery, University of Florida, Gainesville, FL, USA

ABSTRACT

Introduction: Diagnosis of neurogenic thoracic outlet syndrome (nTOS) remains a challenge. The role of electrodiagnostic studies (EDX) in the workup of nTOS remains controversial. The aim of this study was to report EDX findings in a cohort of patients undergoing surgery for nTOS and also analyse patient related and intraoperative factors associated with positive EDX findings supportive of a diagnosis of nTOS.

Methods: Baseline characteristics of patients including age, sex, duration of symptoms, type of nTOS, and pattern of brachial plexus involvement were gathered and analysed. All patients received a preoperative EDX evaluation and were divided into two groups based on positive or negative EDX results for comparison.

Results: A total of 30 consecutive patients were included in this study comprising 11 (36.7%) male and 19 (63.3%) female patients, with a mean age of 44.6 ± 17.6 years. When classified by type of nTOS, 22 (73.3%) patients had type 1 nTOS with muscle weakness and atrophy, followed by 7 (23.4%) patients with type 3, and one (3.3%) patient with type 2 nTOS. In terms of the pattern of nTOS, 26 (86.7%) patients had lower plexus pattern of involvement (C8-T1), followed by 17 (56.7%) with upper-middle plexus pattern (C6-C7), and 13 (43.3%) with upper plexus pattern (C5-dorsal scapular nerve (DSN)). When comparing the characteristics of patients with positive and negative EDX findings suggestive of nTOS, only older age and type 1 nTOS ($P < 0.05$) were significantly associated with positive EDX findings.

Conclusions: EDX assessment, at this point in time, may not be the best modality for diagnosis of nTOS. Interindividual variation in findings reported by different clinicians performing the EDX remains a significant limiting factor. Older patients and those with more severe nTOS (type 1) are more likely to have positive results with EDX.

Abstract Title: Hernia Mesh & Social Media: Misinformation, Legal Solicitation and Conflict of Interest.

Authors: Austin Eason*, Heather McDougall, Amba Ganesh, Ariel Pomputius, Dan Neal, Mazen R. Al-Mansour

Division of Gastrointestinal Surgery

Abstract

Introduction: Patients often utilize social media platforms as a resource for medical information. Lately, hernia mesh has been surrounded by controversy due to highly publicized mesh recalls. We aimed to assess the rates of misinformation, legal solicitation and conflict of interest of hernia mesh information on YouTube and Facebook.

Methods: We conducted a cross-sectional study of YouTube videos and Facebook posts using the search term “hernia mesh”. The first 150 YouTube Videos and public Facebook posts were initially selected, in addition to the first 30 posts of public Facebook groups. We excluded duplicates, non-English language and videos/posts that are no longer available. Video/post characteristics and the presence of misleading information, legal solicitation and conflict of interest were independently recorded by three trained raters. Cohen’s kappa coefficient (κ) was calculated to determine Inter-rater agreement.

Results: A total of 122 YouTube videos and 207 Facebook posts were included. 24% of videos/posts were uploaded by a law firm. The raters indicated that an average of 28.7 (8.7%) videos/posts contained misleading information, while an average of 41.4 (12.6%) included solicitation of legal services and 69 (21.0%) included conflict of interest. Inter-rater agreement was fair for misleading information ($\kappa=0.31-0.37$), almost perfect for legal solicitation ($\kappa=0.81-0.88$) and moderate for conflict of interest ($\kappa=0.45-0.53$).

Conclusions: With regards to hernia mesh, misleading information, legal solicitation and conflict of interest are somewhat common on popular social media platforms. Trained raters had a high level of agreement on legal solicitation but limited agreement on misleading information. Our findings suggest that individuals seeking medical information on hernia mesh from social media platforms might be unable to recognize misleading information.

Funding Sources - This project received funding from the Medical Student Research Program (MSRP) from the University of Florida College of Medicine

Abstract Title: Preferred Approach for Malignant Melanoma in Critical Anatomical Sites: Complete Margin Control Surgery

Authors Caroline Sachse BA*, Rainer Sachse MD

Broward Plastic Surgery

Abstract.

Introduction: Surgical melanoma treatment has transitioned from highly radical to increasingly tissue-sparing methods. Current literature supports resection with minimal margins while emphasizing complete margin control. Conversely, existing treatment guidelines, such as NCCN, remain relatively inflexible regarding surgical margin width. This creates a challenging scenario for physicians and their patients when determining the appropriate extent of resection.

Method: This study employs a survey to investigate the preferred treatment options that physicians, including Oncologic Surgeons, Plastic Surgeons, Mohs Surgeons, Dermatologists, Oncologists, and Dermatopathologists, would choose if faced with a melanoma in anatomically sensitive areas like the lips, nose, or eyelids. The survey was distributed to physicians actively involved in the treatment of malignant melanoma in both private and academic practices.

Results: Preliminary data from this ongoing study reveals significant diversity in the recommended extent of resection for melanomas in anatomically sensitive areas. 11% of physicians suggest adhering to current NCCN guidelines for surgical treatment of 1 mm Breslow thickness melanoma, whereas 17% favor a narrower margin, and 72% recommend a much narrower surgical margin with a complete margin control method (Mohs or Slow Mohs Surgery). Additionally, 84% of physicians would obtain gene expression data for further treatment decisions.

For more advanced melanomas (Breslow 2.2 mm), 68% of physicians prefer a tissue-sparing approach, with only 18% following NCCN guidelines. In thick melanomas (>4 mm), 33% suggest adhering to NCCN guidelines, while twice as many physicians prefer a more tissue-sparing approach.

Conclusion: Only a small percentage of physicians would recommend following current NCCN guidelines for resecting thin, intermediate, and thick melanomas in anatomically sensitive areas for their family members or themselves. Complete margin control techniques have not only gained respect but have become the preferred treatment for the majority of physicians actively involved in treating this disease. This dataset provides physicians with a broader range of accepted treatment options for malignant melanoma during informed consent discussions with their patients.

Funding Sources. UF Qualtrics

Predictors of Unplanned Post-op Visits in a VA Hand Surgery Practice

Ryan M. McKee, MD*; Loretta Coady-Fariborzian, MD

Division of Plastic and Reconstructive Surgery

Introduction

Patients make unplanned appointments after elective soft tissue hand surgery for real or perceived complications when they are in pain, anxious, or fearful. Unplanned appointments can create travel and financial burdens for patients and families. These appointments take time away from scheduled appointments and can contribute to late arrivals and delays in other clinics. If predictive factors can be identified, unplanned appointments may either be ameliorated or avoided with better perioperative risk management or education.

Methods

Medical records was queried for all the plastic surgery cases performed in the operating room from 7/1/18 through 6/30/22 (excepting pandemic year 2020). Elective soft tissue hand surgery cases were identified based on the operative description. Potential indicators of unplanned visits were recorded. These included: age, gender, diabetes, smoking, depression, anxiety, PTSD, and residential zip codes. Clinic notes were followed for three months to identify unplanned postoperative visits and the reason for the appointment. A chi square analysis with a p value <0.05 was used to determine if age (>60), gender, proximity to the medical center, diabetes, smoking, depression, anxiety, or PTSD were statistically significant independent risk factors for these appointments.

Results

A total of 1009 elective soft tissue hand surgeries were reviewed. 8.0% of patients returned for unplanned visits. Age (p=0.82), proximity to the medical center (p=0.34), diabetes (p=0.60), smoking (p=0.55), anxiety (p=0.33), and PTSD (p=0.37) were not statistically significant predictors of unplanned appointments. A diagnosis of depression (p=0.035) and female gender (p=0.032) were found to be independent risk factors for an unplanned appointment. The most common indication for the requested appointment was pain related.

Conclusions

Unplanned postoperative visits after elective soft tissue hand surgery can be predicted. A diagnosis of depression on the patient's problem list is a statistically significant predictor for an unscheduled appointment in the early postoperative period.

Presence of higher levels of intratumoral T cells after chemotherapy and immunotherapy may be associated with improved outcomes in pancreatic ductal adenocarcinoma

¹Abhishek Shrestha*, ¹Isabella Angeli Pahim, ¹Sergio Duarte, ²Ilyas Sahin, ¹Ali Zarrinpar

¹Division of Transplant and Hepatobiliary Surgery, Department of Surgery, University of Florida

²Division of Hematology and Oncology, Department of Oncology, University of Florida

Abstract

Introduction

Pancreatic ductal adenocarcinoma (PDAC) is a highly aggressive cancer with a poor prognosis. It's often detected at a late stage, limiting surgical options. FOLFIRINOX chemotherapy is the standard treatment and offer a median survival of less than a year. This case report describes a patient with unresectable PDAC who received standard chemotherapy initially. However, due to their mismatch repair deficiency (dMMR) status, their treatment was switched to immunotherapy. dMMR, found in 1-2% of PDAC patients, allows for the use of immunotherapy drugs. In this case, pembrolizumab, an FDA-approved immune checkpoint inhibitor, significantly shrunk the tumor, making it surgically removable. This study aims to understand the mechanism behind this patient's remarkable response to treatment. Previous research suggests that a dense tumor stroma can create an immunosuppressive environment, hindering T cell infiltration and function. However, the presence of intratumoral T cells, as observed in this case, may contribute to an anti-tumor immune response leading to tumor regression.

Case description. A 64-year-old woman, diagnosed with unresectable, poorly differentiated pancreatic ductal adenocarcinoma, initially received one cycle of palliative neoadjuvant chemotherapy with modified FOLFIRINOX but could not tolerate it due to side effects. Despite this, her disease progressed, as indicated by subsequent imaging. Her genomic profile showed an abnormal mismatch repair (MMR) gene, with an absence of MLH1 and PMS2 proteins, which provided an opportunity to use pembrolizumab. The patient received this treatment for nine months, resulting in a positive response, normalization of tumor markers, and resolution of symptoms. She then underwent successful distal pancreatectomy and wedge gastrectomy, followed by three months of adjuvant pembrolizumab. Currently, there is no evidence of cancer, and she is under surveillance.

Methods

FFPE sections were stained with Hematoxylin and Eosin (H&E) for routine histological evaluation and with antibodies against CD3 ϵ and CD8 α to assess T-cell distribution. The number of CD3⁺ and CD8⁺ T cells within the tumor and background tissue were quantified in a blinded fashion. We randomly selected 15 high-power fields (40x objective) from each region and averaged the cell counts. These values were then plotted to visualize the T-cell infiltration patterns.

Results

Analysis of FFPE sections revealed a significantly higher concentration of CD3 ϵ ⁺ and CD8 α ⁺ T cells within the tumor compared to surrounding tissue ($p < 0.0001$, Mann-Whitney test). This

suggests an intratumoral infiltration of T cells, potentially contributing to the anti-tumor immune response.

Conclusion

This case report highlights the potential of immunotherapy in overcoming treatment limitations for a specific subset of PDAC patients. Here, we describe patients with unresectable, locally advanced PDAC who achieved tumor downsizing with chemotherapy and pembrolizumab-based immunotherapy, allowing for curative surgery with negative margins. This success is attributed to their mismatch repair deficiency (dMMR) status, which makes them responsive to immunotherapy. To understand the mechanisms behind this response, we are currently analyzing the tumor microenvironment and performing longitudinal cytokine analysis. Our ongoing research delves into these factors, potentially leading to breakthroughs in understanding dMMR-positive PDAC and the development of novel therapeutic strategies.

Reducing the Re-Operation Rate After Breast Conservation Surgery at a Safety Net Hospital Over the Past Decade: Advancement in Medicine

Jonathan D. Kass, BA*, Fern J. Webb, PhD, Rachel Cortese, DO, Erin M. Mobley, PhD, MPH, Adeline Deladisma, MD, Leigh Neumayer, MD, MS, MBA, Bharti Jasra, MD

Division of General Surgery & Surgical Oncology, College of Medicine Jacksonville

Introduction: Every year, nearly 300,000 women are diagnosed with breast cancer in the United States. Of these, nearly 65% will undergo breast conservation therapy (BCT), and on average, 18% of these women will require re-operation. Prior studies have examined factors associated with re-operation rates following BCT, yet there is still much to be explored. We evaluated the re-operation rate over the past decade in light of the adoption of new margin guidelines, routine usage of intraoperative shave margins, and increase practice of neoadjuvant chemotherapy.

Methods: Patients who underwent BCT from January 1, 2012 through September 5, 2023 were identified. Women with BCT with only the index operation and BCT plus an additional re-operation were included. Three time periods were established based upon the adoption of new margin guidelines and routine intraoperative shave margins: period one was defined as before the adoption of new margin guidelines (1/1/12-12/31/13), period two was after the adoption of new margin guidelines but before the routine usage of intraoperative shave margins (1/1/14-8/11/22), and period three was after the implementation of intraoperative shave margins (8/12/22-9/5/23). Descriptive analyses were conducted, and Chi-square tests were used to test for statistical associations between categorical variables.

Results: A total of 1,246 women were included. Overall, 1,114 (89%) had BCT with only an index operation and 132 (11%) had re-operation. Among those who had a re-operation, 23 (17%), 105 (10%), and 4 (6%) women had their index operation during periods one, two, and three, respectively ($p=0.020$). Of the 141 women who received neoadjuvant chemotherapy, 138 (98%) had only their index operation and 3 (2%) required re-operation ($p=0.006$).

Conclusions: With the adoption of new margin guidelines and routine practice of intraoperative shave margins, the re-operation rate has decreased over the past decade. Moreover, with advancement in systemic treatment and application of neoadjuvant chemotherapy, the re-operation rate may be further reduced. Despite potential limitations, this study conveys that a multidisciplinary approach coupled with adherence to modern surgical practices is necessary to reduce re-operation in women with breast cancer receiving BCT.

	Overall sample N=1,246 (100%)	Index operation only N=1,114 (89%)	Required re-operation N=132 (11%)	<i>p-value</i>
Period 1: 01/01/12-12/31/13	134 (11%)	111 (83%)	23 (17%)	0.020
Period 2: 01/01/14-08/11/22	1,048 (84%)	943 (90%)	105 (10%)	
Period 3: 08/12/22-09/05/23	64 (5%)	60 (94%)	4 (6%)	
Received neoadjuvant chemotherapy	141 (28%)	138 (98%)	3 (2%)	0.006
Received adjuvant chemotherapy	366 (72%)	332 (91%)	34 (9%)	

Funding Sources. The authors did not receive support from any organization for this work.

Abstract Title: Single Versus Double Fascicular Transfer for Brachial Plexus Injuries: A Systematic Review and Meta-Analysis with Meta Regression

Authors: Paul.F. Marji, M.D., Ramin Shekouhi, M.D., Syeda Hoorulain Ahmed, MBBS, Alexzandra Mattia, B.S, Yousef Husseiny, B.S, Cameron Gerhold, B.S, Kevin A. Hao, B.S, Harvey Chim, M.D

Division in Plastic Surgery

Abstract

Introduction

The primary objective of this study was to assess whether double fascicular transfer (DFT) has superior outcomes compared to single fascicular transfer (SFT) for reanimation of elbow flexion.

Methods

Medical Research Council (MRC) grade for elbow flexion was recorded and compared before and after surgery. The effect size was calculated using the risk ratio (RR) and results were compared across different interventions. A meta-regression analysis was performed to further compare the outcomes between SFT and DFT controlling for level of injury.

Results

A total of 59 studies with 1402 patients (mean age 29.3 ± 7.9 years old) were included in the review. The average duration from the time of injury to surgery was 6.2 ± 4.8 months. C5-C6 injury had the best outcomes, with 91.6% and 74.8% of patients recovering MRC grade 3 and 4, respectively. With C5-C7 injury, 86.0% and 69.2% of patients recovered MRC grade 3 and 4, respectively. With C5-C8 injury, 70.9% and 56.4% recovered MRC grade 3 and 4, respectively. Subgroup analysis comparing the severity of BPI showed no significant difference ($P < 0.05$). The aggregated mean DASH score was 38.3 for the SFT group and 27.3 for the DFT group. Meta-regression demonstrated that DFT and C5-C6 injury were significant predictors for achieving MRC grade 3, while DFT and shorter duration of surgical delay were a significant predictor for achieving MRC grade 4 (Table 1, Figure 1).

Conclusions

When controlling for the level of injury, DFT is associated with greater likelihood of achieving MRC grade 3 and 4 power compared to SFT in patients undergoing surgical management of brachial plexus injuries. A shorter duration of surgical delay was a significant predictor for achieving MRC grade 4.

Funding Source: none

DOS Research Day Abstract 2024

Tensegrity Model for Nasal Tip Support: An Educational 3D CAD Approach

Jonathan Butts, MD, Kalyan Dadireddy, MD*

Department of Surgery

Introduction

The nasal tip plays a crucial role in facial aesthetics and function. Rhinoplasty techniques impact tip dynamics and midvault stability. We present a novel 3D CAD model, incorporating tensegrity principles, to simulate nasal tip support. Our model allows visualization of the effects of various rhinoplasty maneuvers on tip and airway dynamics.

Methods

We developed a 3D CAD model utilizing open-source soft tissue CT and CAD/CAM software, based on tensegrity principles. The model includes anatomical structures relevant to nasal tip support, such as the upper and lower lateral cartilages, and septum. Tensegrity elements represent the soft tissue connections, and rigid struts simulate bony structures. The model accounts for tissue elasticity and mechanical interactions.

Results

Preliminary simulations demonstrate the model's ability to visualize changes in nasal tip dynamics following different rhinoplasty techniques. By adjusting tension in the tensegrity elements, we can observe alterations in tip projection, rotation, and support. The model provides a valuable educational tool for understanding the biomechanics of nasal tip surgery.

Conclusions

Our 3D CAD tensegrity model enhances the teaching of rhinoplasty concepts. Surgeons, trainees, and students can explore the effects of surgical maneuvers on nasal tip stability. Further validation and refinement are ongoing, with the goal of improving surgical outcomes, surgical education, and patient satisfaction.

Keywords: Tensegrity, rhinoplasty, nasal tip, 3D CAD, education

Abstract Title The Role of Plastic Surgery in Addressing the Global Burden of Disease: Plastic Surgery and the Sustainable Development Goals

Authors

Rachel H. Safeek, MD, MPH¹, Zohra Aslami, BA², Richard Redett, MD², Chao Long Azad, MD, MPH².

¹University of Florida, Gainesville, FL, USA, ²Johns Hopkins University, Baltimore, MD, USA.

Abstract

Introduction: Surgical conditions account for nearly one-third of the global burden of disease. Plastic surgeons play a vital role in treating many of these conditions, including congenital deformities, wound care, acute burn care and reconstruction, traumatic injuries, and oncologic reconstruction. We examine the role of plastic surgeons in addressing the sustainable development goals (SDGs), a 17-part call to action adopted by the United Nations.

Methods: We reviewed each of the 170 subgoals of the 17 SDGs and analyzed them for relevance to plastic surgery. We conducted a literature review to identify evidence of how plastic surgery supports each subgoal and SDG.

Results: Plastic surgical interventions can advance 50 of the 170 (28%) subgoals and 11 of the 17 SDGs (65%). Most applications were evident in SDG 3: “Ensure healthy lives and promote well-being for all at all ages.” Examples of plastic surgery applications in the SDGs (Table 1) include reconstructive efforts for congenital anomalies, traumatic and accidental injuries, such as road traffic accidents, encouragement of smoking cessation, and mitigating mortality and morbidity from environmental and chemical exposures.

Conclusions: Our study identifies the meaningful and unique ways that plastic surgery can advance the SDGs and address the global burden of surgical disease. This supports the integration of plastic surgery into broader public health efforts to build surgical capacity.

Abstract Title: Use of language as an eligibility criteria in gastrointestinal cancer clinical trials in the United States

Authors: Gerik W. Tushoski-Alemán^{*1,2}, Alexandra J. Crespín¹, Enrique A. Maduro¹, Chibeze J. Oguejiofor¹, Jordan A. McKean¹, Song Han¹, and Steven J. Hughes¹

¹University of Florida, Department of Surgery, Division of Surgical Oncology

²University of Florida, Department of Surgery, Division of Colorectal Surgery

Abstract

Introduction: The use of language as an eligibility criterion in clinical trials can significantly impact patient recruitment and the generalizability of research findings. This study aims to evaluate the prevalence of language requirements in gastrointestinal (GI) cancer clinical trials.

Methods: We systematically searched ClinicalTrials.gov for clinical trials related to esophageal, gastric, pancreatic, liver, gallbladder, small bowel, and colorectal cancers from January 1, 2014, to January 1, 2024. Trials were included if they were related to the cancer of interest, explicitly mention language in their eligibility criteria, and were conducted in the United States.

Results: We screened 4594 GI cancer clinical trials. Of these, 303 explicitly mentioned language in their published eligibility criteria. 74% (223/303) of trials required English proficiency, 24% (72/303) allowed English or Spanish-speaking participants, 5% (17/303) included additional languages (Mandarin, Vietnamese, and French) or offered interpreter services. Trials in California (n=44), Texas (n=35), New York (n=21), Massachusetts (n=18), and Florida (n=14) excluded non-English speaking (NES) patients in 77%, 49%, 62%, 66%, and 35% of trials, respectively. In 2014, 84% (16/19) of trials excluded NES patients, in 2024, 66% of trials (23/35) excluded NES patients.

Conclusions: A significant proportion of GI cancer clinical trials require English proficiency and exclude NES patients. Reducing language barriers, when appropriate, may help in recruiting more diverse patient populations and allow for more patients to participate in clinical research.

Funding Sources: No funding was used to conduct this study.