"They Wanted Everything Done": A Retrospective Analysis of Surrogacy Consent in Patients Undergoing Emergent Laparotomy

Shruthi Srinivas, MD, Whitney F Kellett, MD, PhD, Holly Baselice, MPH, Katherine Bergus, MD, Drayson Bradley Campbell, BS, Wendy L Wahl, MD, FACS, Jennifer C Knight, MD, FACS
The Ohio State University, Columbus, OH

Introduction: In patients with surgical emergencies, balancing time to operative intervention with risks is critical. When patients lack capacity, surrogate consent (SC) is necessary. We aimed to understand outcomes associated with SC.

Methods: We performed a single-center, retrospective review of patients undergoing laparotomy within six hours of consultation. Data were collected on demographics, clinical characteristics, outcomes, and details of consent. Univariate and multivariable analyses were performed adjusting for demographics, comorbidities, and American Society of Anesthesiology (ASA) score.

Results: We included 479 patients, 26.7% with SC. Patients with SC tended to be older (65.2 vs 58.2 years, $p<0.001$), have a higher Charlson comorbidity index (5+; 46.9% vs 22.5%, $p<0.001$), have an ASA classification of IV or V (59.3% vs 24.8%, $p<0.001$), and present with a non-zero quick sequential organ failure assessment (qSOFA) score (51.6% vs 23.4%, $p<0.001$) (Table 1). Associated comorbidities included cancer (25.0% vs 16.2%, $p=0.029$) and neurodegenerative disease (8.6% vs 3.4%, $p=0.019$). Patients with SC were more often discharged with mechanical ventilation (33.6% vs 5.1%, $p<0.001$) and supplementary nutrition (31.3% vs 8.3%, $p<0.001$). They had higher odds of unplanned reoperations (aOR 2.8, 95% CI 1.6 - 4.9), systemic complications (aOR 2.4, 95% CI 1.5 - 3.8), and death (aOR 5.4, 95% CI 2.7 - 11.0).

Conclusion: Patients who underwent laparotomy with SC tended to be older, more severely ill, and with more comorbidities. They were more often discharged with life-sustaining therapy and had higher odds of inpatient complications. When obtaining SC, surgeons should discuss whether these outcomes would be goal concordant.

A Comparative Study of Mesh Fixation vs Non-Fixation in 949 Single Incision Laparoscopic Total Extraperitoneal Inguinal Hernia Repairs Using Progrip Mesh: Fixation Is Not Obsolete

Hector Arroyo, MD, Nader Yamin, MD
Kaiser Permanente Orange County Medical Center, Anaheim, CA

Introduction: The laparoscopic total extraperitoneal (TEP) inguinal hernia repair has become one of the most commonly used techniques in groin hernia surgery. Self-fixating mesh has gained popularity in the TEP repair arena in hopes of reducing chronic groin pain (CGP). The impact of self-fixating mesh on recurrence rates remains largely unknown. Our goal was to assess the role of fixation, as an adjunct to the use of ProGrip, in inguinal hernia repairs.

Methods: A retrospective review of all patients who underwent single incision laparoscopic (SIL)-TEP inguinal hernia repair utilizing ProGrip mesh by a single surgeon, between August 2011 and January 2023, were analyzed.

Results: A total of 949 SIL-TEP inguinal hernia repairs using ProGrip mesh were performed on 672 patients. Of these, 395 patients underwent unilateral repair, and 277 patients had bilateral repairs. Mesh fixation was performed on 224 patients, and 725 patients had non-fixation. The overall recurrence rate was a low 1.7%. 15 patients in the non-fixation had a recurrence (2.1%), and one patient in the fixation group experienced a recurrence (0.4%). A single patient in the non-fixation group experienced CGP. Large indirect hernias were the most common type of recurrence.

Conclusion: In our experience, mesh fixation did not adversely affect patient outcomes. The recurrence rate was disproportionately higher in the non-fixation group. Therefore, mesh fixation is not obsolete, it remains a viable option, and may be surgeon dependent. Ultimately, we advocate for mesh fixation in patients with large hernias, specifically large indirect hernias, to prevent early recurrence.

Table 1. Postoperative Outcomes from Surrogate Consent

	Laparotomy With Patient Consent N=351 (73.3%)	Laparotomy With Surrogate Consent N=128 (26.7%)	p-value
Unplanned re-operation	45 (12.8%)	44 (34.4%)	0.0001
Systemic complication	114 (32.5%)	79 (61.7%)	0.0001
Need for mechanical ventilation at discharge	18 (5.1%)	43 (33.6%)	0.0001
Need for supplementary nutrition at discharge	29 (8.3%)	40 (31.3%)	0.0001
Need for inpatient dialysis	6 (1.7%)	9 (7.0%)	0.0031
Code status de-escalation	25 (7.1%)	42 (32.8%)	0.0001
Discharged to home	163 (48.7%)	21 (22.3%)	0.0001
Death within hospitalization	4 (4.6%)	34 (26.6%)	0.0001
Length of stay, days (median, IQR)	8 [5 – 12]	12 [7 – 20]	0.0001

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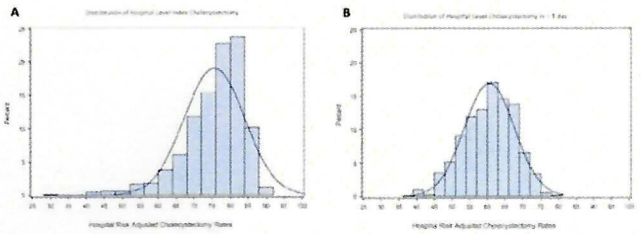

Figure 1.

justed IC within 1 day were more likely to have designated daytime OR resources compared with other hospitals (35% vs 23%, p=0.004). Compared with hospitals with minimal access to daytime OR resources (<1 day/wk), hospitals with 1-4 days and ≥5 days of dedicated daytime OR time were more likely to achieve IC <1 day (aOR 2.0, 95%CI 0.9-4.5; aOR 1.8, 95%CI 1.2-2.9, respectively). High-performing hospitals had lower complications (24% v 28%, p<0.001) and patients were more likely to be discharged to home (74% v. 71%, p<0.013).

Conclusion: High-quality care for acute cholecystitis can be achieved in older adults. Access to daily OR resources may help achieve a high index cholecystectomy rate in a timely fashion in older adults.

The Impact of Rapid Source Control Laparotomy (RSCL) on Surgical Site Infection Rates after Acute Intestinal Perforation

Maosong Ye, PhD, Connor P Littlefield, BA, Linder Wendt, MS, Colette Galet, PhD, Kevin Huang, MD, Dionne A Skeete, MD, FACS
University of Iowa, Iowa City, IA

Introduction: Rapid source control laparotomy (RSCL) has been widely used in emergent laparotomy. However, associated surgical site infection (SSI) rates have rarely been investigated. We hypothesized that RSCL will be associated with lower SSI rates compared with laparotomy with primary fascial and skin closure (LPFSC).

Methods: Patients admitted for emergent intestinal surgery at our institution from 2006 to 2021 and collected for the National Surgical Quality Improvement Program (NSQIP) were included. NSQIP variables including laparotomy type (RSCL, LPFSC, and laparotomy with only primary fascial closure (LPFC)) were used to identify factors associated with SSIs. $P < 0.05$ was considered significant.

Results: Overall, 906 patients were included, 214 underwent RSCL, 175 underwent LPFC, and 517 underwent LPFSC. Superficial, deep, and organ space SSI developed in 66, 6, and 97 patients, respectively. (Table 1) Compared with LPFSC, RSCL (OR = 0.383 [0.164-0.892], p = 0.026) and LPFC (OR = 0.099 [0.023-0.418], p < 0.01) were associated with lower superficial SSI, but they were not significant for organ space SSI (OR = 0.716 [0.267-1.918], p = 0.506 and OR = 0.603 [0.193-1.887], p = 0.385, respectively). Frailty was associated with increased risk of organ space SSI (OR = 3.016 [1.163-7.824], p = 0.023). For RSCL patients, number of operations did not affect SSI.

Conclusion: In our cohort, compared with LPFSC, both RSCL and LPFC were associated with lower superficial SSI but not significant for organ space SSI rates. The risk of organ space SSI increased with frailty.

The Influence of Timing on the Outcome of Emergency Surgery for Colonic Diverticulitis

Desire Pantalone, MD, FACS, Martina Trafeli, MD, Cecilia Monacci, MD, Giulia Cerino, MD, Francesca Cammelli, MD, Martina Izzo, MD, Giulia Mottola, MD, Jacopo Martellucci, MD, Paolo Prosperi, MD
University Hospital Careggi, Firenze, Italy; University Hospital Careggi, Sesto Fiorentino, Italy

Introduction: A specific timeline for emergency surgery in acute diverticulitis is not well established to date. We considered the hours between the official diagnosis of acute diverticulitis and surgery to identify a possible link between preoperative timing and surgical outcome in emergency settings.

Methods: Ours is a single center retrospective cohort study encompassing the period 2016 to 2022. Time zero was the time when CT scan was performed. The patients were divided into two groups: Group A (early), patients operated on within 8-12 hours after the CT scan; The other patients represented group B (late). Patients

Table 1. Results of Univariate Analysis

Variables	RSCL (n = 214)	LPFC (n = 175)	LPFSC (n = 517)	p-value
Age, median [IQR]	62.6 [52.2-70.4]	62.5 [53.6-72.4]	60.6 [46.9-73.8]	0.271
BMI, median [IQR]	31.0 [25.1-38.7]	27.8 [23.3-34.6]	26.4 [22.1-31.3]	**<0.001**
Male, n (%)	103 (48.1%)	91 (52.0%)	243 (47.0%)	0.520
Frailty, n (%)	13.60	8.00	9.10	0.118
White, n (%)	200 (93.5%)	165 (94.3%)	480 (92.8%)	0.413
Post-op SSI, n (%)				
Superficial	9 (4.2%)	3 (1.7%)	54 (10.4%)	**< 0.001**
Deep Incisional	1 (0.5%)	0 (0%)	5 (1.0%)	0.364
Organ Space	37 (17.3%)	17 (9.7%)	43 (8.3%)	**0.002**

were also stratified by type of surgery with and without bowel continuity reconstruction

Results: The population consisted of 68 patients. Patients treated within 8-12 hours had a significantly lower number of days of hospitalization (p=0.0001) from patients treated after 12 hours. Intervention times (p=0.04) and re-interventions (p=0.002) were significantly higher in patients treated after 12 hours. The "immediate reconstruction" group also showed a significant difference in length of hospital stay (p=0.04). Patients operated on after 24 hours had longer operating times (p=0.00001) and more days of hospitalization (p=0.00001). Linear regression was also significant in patients undergoing the Hartmann procedure compared with immediate bowel reconstruction

Conclusion: The study should be considered preliminary for the limited number of patients. However, in patients operated on with greater delay there are longer operating times and longer hospitalization times. These results pave the way for further research with prospective, randomized trials

The Learning Curve for Robotic-Assisted Transcystic Common Bile Duct Exploration in Acute Care Surgery

Jana E Dejesus, MD, Keenan Horani, BS, Camila Franco-mesa, MD, Sarah Samreen, MBBS, FACS, Jennifer Moffett, MD, FACS
The University of Texas Medical Branch at Galveston, Galveston, TX; The University of Texas Medical Branch at Galveston, League City, TX; The University of Texas Medical Branch at Galveston, Houston, TX

Introduction: Choledocholithiasis has a prevalence of approximately 10-15% for patients with symptomatic cholelithiasis. While a two-staged approach with Endoscopic Retrograde Cholangiopancreatography (ERCP) clearance and cholecystectomy has become the standard treatment for choledocholithiasis, the technical skill of common bile duct exploration (CBDE) is an important tool for acute care surgeons to master. The aim of this study is to evaluate the learning curve for robotic-assisted transcystic CBDE, surgical outcomes, and the success rate of duct clearance.

Methods: We analyzed 20 consecutive patients who underwent transcystic CBDE during robot-assisted cholecystectomy by the same surgeon. Preoperative and intraoperative variables as well as postoperative outcomes were assessed. A learning curve analysis was performed using cumulative summation of operative times (CUSUM).

Results: The average patient age was 44 years old and average BMI was 31.2. Five patients had biliary pancreatitis and 15 had choledocholithiasis. Average operative time was 203 minutes (range: 127 - 260 minutes). When analyzed in 4 case clusters, mean operative times and ranges improved over time. CUSUM analysis demonstrated an initial 10 case learning phase followed by a refinement phase over the subsequent 10 cases (Figure 1). The average duct clearance rate was 85% (17/20). Total length of stay was 4.6 days and postoperative length of stay was 1.8 days. There were no postoperative complications or 30-day readmissions.

Conclusion: Robotic-assisted transcystic CBDE is a safe and efficacious option for the treatment of choledocholithiasis. We have demonstrated that acquisition of the necessary skills for this procedure is feasible for acute care surgeons with an acceptable learning curve.

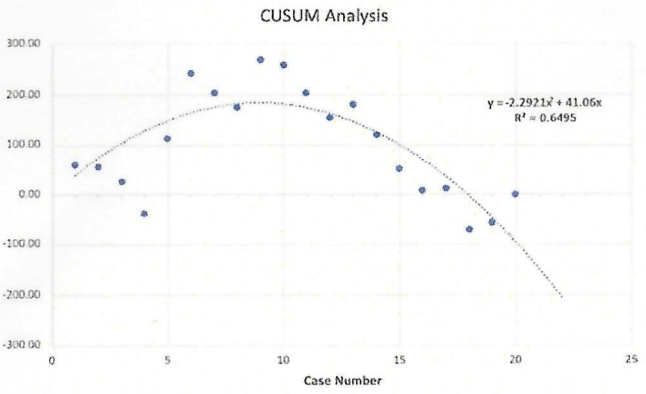

Figure 1.

The Modern Management of Suspected Choledocholithiasis: The Direct to Surgery Approach

Bryce Patin, BS, Jefferson I Driscoll, BS, Elise Biesboer, MD, Morgan Maring, BS, Imeh B Ndiokho, BS, Andrew S Kastenmeier, MD, FACS, Colleen M Trevino, Rachel S Morris, MD, FACS, Marc A De Moya, MD, FACS, Patrick Murphy, MD, FACS
Medical College of Wisconsin, Wauwatosa, WI; Milwaukee, WI; Fox Point, WI; Wauwatosa, WI

Introduction: Choledocholithiasis affects up to 20% of patients admitted to hospital with gallstones. Treatment of suspect choledocholithiasis remains controversial but may include preoperative clearance followed by laparoscopic cholecystectomy or laparoscopic cholecystectomy with intra-operative cholangiogram. This study investigated a direct to surgery approach: laparoscopic cholecystectomy with intra-operative cholangiogram (LC-IOC) for patients with suspected choledocholithiasis.

Methods: This is a single-center retrospective review of all adult (≥18 years) patients admitted from 2/1/2021 to 2/28/2022 with any combination of acute cholecystitis, choledocholithiasis, biliary colic, or gallstone pancreatitis. The primary outcome was length of index hospitalization (LOS) for patients undergoing a direct to surgery approach via laparoscopic cholecystectomy and intraoperative cholangiogram compared with those patients undergoing preoperative duct clearance. Secondary outcomes included complications.

Results: 208 patients underwent cholecystectomy. Of the 90 (43%) patients with suspicion of choledocholithiasis (dilated common bile-duct [CBD], CBD stone on imaging, elevated liver function tests (LFTs) or bilirubin), 59 (65%) underwent a direct to surgery