INTRODUCTION: Application of indocyanine green (ICG) fluorescence imaging is effective in guiding laparoscopic lymphadenectomy for gastric cancer (GC). However, the optimal approach for ICG injection is controversial. This study was conducted to compare the efficacy and cost-effectiveness of ICG injection between the preoperative submucosal and intraoperative subserosal approaches for lymph node (LN) tracing during laparoscopic gastrectomy.

METHODS: Patients with resectable GC (clinical tumor stage cT1-cT4a, N0/+, M0) were enrolled in a randomized clinical trial (ClinicalTrials.gov, NCT04219332) at a tertiary hospital between December 2019 and October 2020. The number of retrieved LNs, and postoperative complications were compared between the groups.

RESULTS: In total, 259 patients (n=130 and n=129 in the submucosal and subserosal groups, respectively) were included in the modified intention-to-treat analysis. The mean (SD) total numbers of retrieved LNs were 49.8 (14.6) and 49.2 (14.0) in the submucosal and subserosal groups, respectively, with no significant difference (p=0.71). No significant difference was found between the submucosal and subserosal groups in terms of the incidence (17.7% vs 16.3%; p=0.76) or severity of postoperative complications. The mean cost of fluorescence in the submucosal group was higher than that in the subserosal group ($335.3 vs $182.4; p<0.001). The overall treatment satisfaction score was lower in the submucosal group than in the subserosal group (70.5 vs 76.1%, p=0.048).

CONCLUSION: ICG administered by subserosal injection was comparable to that administered by submucosal injection for LN tracing in GC. However, the former approach imposed a lower economic and mental burden on patients undergoing laparoscopic D2 lymphadenectomy.

Coverage of Fertility Preservation and Treatment among US General Surgery Residents: The First Nationwide Survey

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INTRODUCTION: Surgery trainees spend their prime fertility years in training, which leads to delays in childbearing and accompanying infertility challenges and high-risk pregnancies. Literature reports of institutional support for fertility preservation (egg/sperm freezing) and treatment are lacking. Cost tends to be prohibitive while in residency. This study aimed to assess availability of fertility resources to US general surgery (GS) residents and fellows as well as institutional coverage of fertility services.

METHODS: We composed and distributed a 26-question survey to all GS residency and fellowship program directors nationwide to survey residents and fellows. Summary and descriptive statistics were tabulated, and categorical variables were analyzed using Pearson’s chi-square test.

RESULTS: A total of 234 US GS residents (male n=75, female n=155, unreported n=4) completed the survey. We found that 12.0% of respondents reported having been counseled on family planning/fertility treatment during training, and only 5.1% were counseled on fertility preservation. Perceived lack of support from program (p=0.027) and counseling of fertility preservation (p=0.009) was significantly associated with female gender. Only
3.4% of residents reported having insurance coverage for fertility preservation and 7.7% had coverage of fertility treatment. In addition, 2.6% respondents pursued fertility preservation while in training and 32.9% reported that they would pursue fertility preservation if it was covered by insurance.

CONCLUSION: Fertility preservation is rarely discussed in US GS residency programs. The large majority of GS residents lack insurance coverage of fertility preservation and treatment. Strong efforts are necessary to improve educational curriculum and insurance coverage to meet trainees' needs.

Emergency General Surgery Transfers to a Tertiary Care Hospital Are High Risk for Poor Outcomes: a Propensity Score Matched Analysis

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INTRODUCTION: Emergency general surgery (EGS) patients undergoing interhospital transfers (IHTs) have increased mortality. Previous analyses on IHT have been limited by inability to track post-discharge outcomes or have ignored nonoperative EGS. We evaluated outcomes for IHT to our tertiary care facility (TCF) compared to direct admission through the emergency department.

METHODS: Patients admitted directly to the TCF (2015-2017) with common EGS diagnosis (appendicitis, cholecystitis, choledocholithiasis, small bowel obstruction, and diverticulitis) were propensity score matched (PSM) to patients transferred from another acute care hospital. PSM was performed using patient characteristics, EGS diagnosis, comorbidities, and surgical critical care (SCC) consultation. Primary outcomes were length of stay (LOS), 30-day hospital readmission, and 30-day mortality.

RESULTS: We identified 3,153 direct admit patients and 1,272 IHT patients. IHT patients were older (mean 59.4 vs 51.5 years), had higher Charlson Comorbidity Index (CCI) (median 3 vs 1), White race (72% vs 49%), and BMI > 40 kg/m² (11.6% vs 9.8%). After PSM, each group included 1,033 patients. Outcomes are reported in Table 1. IHTs had longer median LOS (5.5 days vs 3.8, p < 0.001), higher inpatient mortality (odds ratio [OR] 1.69, p = 0.03), and more complications (OR 1.57, p < 0.001). Rate of post-discharge 30-day hospital encounters was similar (OR 1.08, p = 0.460). However, IHT had more emergency department encounters (OR 1.35, p = 0.04) and fewer observation-status readmissions (OR 0.53, p = 0.01).

CONCLUSION: After PSM to reduce confounding variables, patients with common EGS diagnoses transferred to a TCF have increased inpatient morbidity and mortality. Furthermore, the increased morbidity and resource use for these patients extends beyond the index hospital stay.

Enhanced Recovery after Surgery Patients Are Prescribed Fewer Opioids at Discharge: a Propensity-Score Matched Analysis
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INTRODUCTION: Enhanced Recovery after Surgery (ERAS) programs have shown a reduction in the inpatient opioid use, but their impact on discharge opioid prescribing remains unclear. We aimed to compare discharge opioid prescriptions pre- and post-ERAS implementation.

METHODS: Patients from a tertiary care center undergoing hysterectomy, pancreatectomy, or hepatectomy, between October 2016 and November 2020, were included. In each procedure, ERAS was implemented during the study period. To compare pre- vs post-ERAS discharge opioids (number of pills and oral morphine equivalents [OME]), propensity-score matching was performed on age, sex, race, American Society of Anesthesiologists score, previous opioid use, and procedure type. Subgroup analyses by procedure type were also performed.

RESULTS: A total of 3,983 patients were included (1,929 pre-ERAS, 2,054 post-ERAS). Post-ERAS patients were younger (56.0 vs 58.4 years; p < 0.001), more often female (95.8% vs 78.1%; p < 0.001), more often White (77% vs 82%; p < 0.001), more often had previous opioid use (20.1 vs 28.1%), and more often underwent hysterectomy (91% vs 56%; p < 0.001). After matching, there were no significant differences between groups. At discharge, post-ERAS patients were prescribed significantly fewer opioid pills (17.2 vs 21.9 pills; p < 0.001) and less OMEs (131.3 vs 166.7; p < 0.001) than matched pre-ERAS patients. In subanalyses, post-ERAS patients were prescribed significantly fewer OMEs in major hysterectomy (open and debulking), minor hysterectomy (vaginal and laparoscopic), and major hepatic resection (major and minor).

Figure