

Barriers to Enhanced Recovery after Surgery after Laparoscopic Sleeve Gastrectomy

Arinbjorn Jonsson, MD, Edward Lin, DO, FACS, Lava Patel, MD, Ankit D Patel, MD, FACS, Jamil L Stetler, MD, FACS, Heather Prayor-Patterson, PhD, Arvinpal Singh, MD, Jahnavi K Srinivasan, MD, FACS, John F Sweeney, MD, FACS, S Scott Davis Jr, MD, FACS

- BACKGROUND:** Enhanced Recovery after Surgery (ERAS) protocols lead to expedited discharges and decreased cost. Bariatric centers have adopted such programs for safely discharging patients after sleeve gastrectomy (LSG) on the first postoperative day (POD1). Despite pathways, some bariatric patients cannot be discharged on POD1.
- STUDY DESIGN:** We performed a retrospective review of patients undergoing LSG, from 2013 through 2016, in a center of excellence, using a standardized enhanced recovery pathway. Patient variables and perioperative factors were analyzed, including multivariate regressions, for predictors of early discharge.
- RESULTS:** There were 573 patients who underwent LSG (83% female, mean age of 46.3 ± 11.7 years, and BMI of 46.0 ± 6.6 kg/m²). Mean hospital stay was 1.7 days \pm 1.0 SD. Early discharge occurred in 38.2% of patients. Independently, early operating room start times and treated obstructive sleep apnea were associated with earlier discharge ($p < 0.05$). In contrast, preoperative opioid use, history of psychiatric illness, chronic kidney disease, and revision cases delayed discharge ($p < 0.05$). Age, sex, American Society of Anesthesiologists (ASA) class, diabetes, congestive heart failure, hypertension, distance to home, and insurance status were not significant. On regression modeling, early operating room start time and treated obstructive sleep apnea (OSA) reduced length of stay (LOS) ($p < 0.05$), while creatinine >1.5 mg/dL, ejection fraction $< 50\%$, and increased case duration increased LOS ($p < 0.05$). Fifteen patients were readmitted within 30 days (2.6%).
- CONCLUSIONS:** Several clinical and operative factors affect early discharge after LSG. Knowing factors that enhance the success of ERAS as well as the causes and corrections for failed implementation allow teams to optimally direct care pathway resources. (J Am Coll Surg 2018;■:1–9. © 2018 by the American College of Surgeons. Published by Elsevier Inc. All rights reserved.)

Laparoscopic sleeve gastrectomy (LSG) surpassed Roux-en-Y gastric bypass (RYGB) in 2013 as the most popular bariatric surgery in the US.¹ In 2015, 51% of all bariatric procedures were LSG.² Most institutions now implement

Enhanced Recovery After Surgery (ERAS) protocols, as recommended by the American Society for Metabolic and Bariatric Surgery (ASMBS), which has demonstrated improvements in length of stay (LOS) without negatively affecting outcomes.^{3,4} Some centers now even offer LSG as an ambulatory procedure, eliminating the need for a hospital setting and therefore dropping costs substantially. Early results have proven promising, with low readmission rates and equivalent morbidity for appropriately selected patients.^{5,6} Unfortunately, in spite of standardized operative techniques and ERAS protocols, and more than a decade of experience with the LSG, many patients require additional time and resources for their recovery.⁷ We aimed to analyze medical, psychological, intraoperative, and socioeconomic factors to find predictors of patients likely to be discharged on the first postoperative

CME questions for this article available at <http://jacscme.facs.org>

Disclosure Information: Authors have nothing to disclose. Timothy J Eberlein, Editor-in-Chief, has nothing to disclose.

Presented at the Southern Surgical Association 129th Annual Meeting, Hot Springs, VA, December 2017.

Received December 14, 2017; Accepted December 14, 2017.

From the Emory Bariatric Center, Emory University, Atlanta, GA.

Correspondence address: S Scott Davis Jr, MD, FACS, 1364 Clifton Rd, 4th Floor, Building A, Atlanta, GA 30345. email: sdavisj@emory.edu

Abbreviations and Acronyms

ASA	= American Society of Anesthesiologists
CKD	= chronic kidney disease
ERAS	= Enhanced Recovery after Surgery
LOS	= length of stay
LSG	= laparoscopic sleeve gastrectomy
OSA	= obstructive sleep apnea
POD	= postoperative day

day, or those who may require additional time in hospital recovery. With a better understanding of which factors predict early discharge and which ones present barriers to early discharge, we are able to identify patients likely to require additional resources and to apply those resources more expeditiously in order to reduce LOS without compromising outcomes.

METHODS**Study design**

We performed an Institutional Review Board-approved retrospective review of patients undergoing LSG at 2 participating hospitals. All morbidly obese adults (18 years of age and older), who underwent laparoscopic sleeve gastrectomy between 2013 and 2016 were eligible. All patients were operated on by 1 of 5 bariatric surgeons of the same practice group in centers participating in the Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP) within the Emory University Hospital system, a tertiary referral academic institution. The details of the procedure and the perioperative protocols were established after the learning curve by 2 senior surgeons in the past. The other 3 surgeons have been trainees of this program in the past, leading to consistency in the details of the elements of the enhanced recovery protocols recommended. The group is in agreement about all elements of the protocol.

The primary outcome was “early discharge,” defined as discharge by the end of the first postoperative day (POD1). Secondary outcomes were significant perioperative complications such as 30-day readmissions. Patient demographics, intraoperative characteristics, and postoperative outcomes were analyzed. A total of 22 variables were selected as potentially influencing length of hospital stay (Table 1). From the table, insurance type was defined as a categorical variable, private vs government coverage. The distance from home to the hospital was calculated using ZIP code analysis software. Chronic kidney disease (CKD) was defined as baseline creatinine levels >1.5 mg/dL. Congestive heart failure

(CHF) was defined as left ventricular ejection fraction $< 50\%$ seen on echocardiography. Obstructive sleep apnea was determined by screening with the STOP-BANG questionnaire on all patients, and then selective polysomnography on those deemed to be at increased risk. Treatment was mandated for all patients with moderate to severe obstructive sleep apnea (OSA, defined as an apnea-hypopnea index of >15 on polysomnography). The presence of preoperative medical conditions was gathered from our prospectively maintained database. Additionally, we looked at the impact of mental health on early discharge. Patients taking medications for bipolar disorder, depression, or anxiety were considered to have a “positive” psychiatric history, and the number of medications required for treatment was collected as a secondary variable for analysis. Perioperative data and postoperative complications were accrued from the medical records.

Preoperative evaluation

All patients participated in a presurgical multidisciplinary program consisting of visits with a medical bariatrician, dietitians, and psychologists. Additional referrals were made and testing done as deemed necessary. The duration of the preoperative program is determined by the requirements of the patient’s insurance carrier, except where medical or mental health conditions required further preoperative optimization. All patients participated in preoperative education with nutritionists in a small group setting, where they receive and review a bound manual outlining the expected postoperative dietary progression, micronutrient requirements, and healthy eating habits. The goals of the small group session include nutritional education as well as a preview of the postoperative protocols that patients are asked to follow. The manual is reviewed again with the patients in the hospital before discharge.

Operative technique

All patients are placed on a 1-week liquid meal replacement (Optifast, Nestle Health Science) preoperatively. During this time period, the patients took nothing by mouth after midnight the night before surgery. Clear liquid drinks or carbohydrate drinks were not part of the preoperative protocol during this time period. Patients’ medications were adjusted for the day of surgery to account for NPO status, including reduction of oral or injectable hyperglycemia agents.

All procedures were performed under general anesthesia with endotracheal intubation and intravenous antibiotics administered within 1 hour of incision. A urinary catheter was typically not placed unless there was an extensive

Download English Version:

<https://daneshyari.com/en/article/8833704>

Download Persian Version:

<https://daneshyari.com/article/8833704>

[Daneshyari.com](https://daneshyari.com)