



ELSEVIER

Surgery for Obesity and Related Diseases ■ (2016) 00–00

SURGERY FOR OBESITY
AND RELATED DISEASES

Original article

Hospital variation in rates of acid-reducing medication use after laparoscopic sleeve gastrectomy

Jason C. Pradarelli, M.S.^{a,b,*,1}, Oliver A. Varban, M.D.^{a,c,d}, Justin B. Dimick, M.D., M.P.H.^{a,c,d,1}

^aCenter for Healthcare Outcomes and Policy, University of Michigan, Ann Arbor, Michigan

^bUniversity of Michigan Medical School, Ann Arbor, Michigan

^cDepartment of Surgery, University of Michigan, Ann Arbor, Michigan

^dMichigan Bariatric Surgery Collaborative, University of Michigan, Ann Arbor, Michigan

Received October 29, 2015; accepted November 18, 2015

Abstract

Background: Postoperative gastroesophageal reflux is one of the most important long-term complications of sleeve gastrectomy, the most common bariatric procedure.

Objective: To assess variation in hospital performance with laparoscopic sleeve gastrectomy using rates of acid-reducing medication use at postoperative 1 year.

Setting: Clinical registry of bariatric surgical patients at academic and community hospitals in Michigan.

Methods: We studied 2923 patients who underwent laparoscopic sleeve gastrectomy across 39 hospitals in the Michigan Bariatric Surgery Collaborative, 2007 to 2014. We compared risk- and reliability-adjusted rates of new-onset reflux—defined by new use of acid-reducing medication—across hospitals and in relation to surgical quality indicators (hospital procedure volume and 30-day complications).

Results: Overall, 20% of patients were newly taking acid-reducing medication at postoperative 1 year. Hospital rates of new medication use varied 3-fold, ranging from 10% (95% CI 7–15%) to 31% (95% CI 23–40%) of patients. Of the 2 hospitals with significantly lower rates of new medication use, 1 was high volume and 1 was medium volume. The 1 hospital with significantly higher rates was medium volume. Rates of acid-reducing medication use did not correlate with hospital volume or perioperative complications.

Conclusion: Across Michigan hospitals, rates of new acid-reducing medication use at 1 year after laparoscopic sleeve gastrectomy varied widely and did not correlate with traditional quality indicators. Future research could explore differences in surgical technique to better understand the factors underlying variation in long-term outcomes after sleeve gastrectomy. (Surg Obes Relat Dis 2016;■:00–00.) © 2016 American Society for Metabolic and Bariatric Surgery. All rights reserved.

Keywords:

Hospital variation; Sleeve gastrectomy; Acid-reducing medication; Postoperative reflux

This work was presented at the Association for Clinical and Translational Science 2015 Meeting in Washington, DC.

*Correspondence: Jason Pradarelli, M.S., 2800 Plymouth Road Building 16, Office 100 N-07, Ann Arbor, MI 48109.

E-mail: jcprad@med.umich.edu

¹Mr. Pradarelli is supported by a grant from the National Institutes of Health (2 UL1 TR000433) through the Master of Science in Clinical Research program at the University of Michigan. Dr. Dimick receives grant funding from the NIH, the Agency for Healthcare Research and Quality, and the BlueCross BlueShield of Michigan Foundation.

Laparoscopic sleeve gastrectomy is now the most commonly performed operation to treat obesity and its related co-morbidities [1]. This operation has found near-comparable effectiveness for weight loss and improved tolerability compared with laparoscopic Roux-en-Y gastric bypass [2–4]. However, postoperative gastroesophageal reflux has emerged as one of the most important long-term complications of sleeve gastrectomy [5–7]. It is thought that the risk of postoperative reflux may be mitigated by technical factors associated with the operation

<http://dx.doi.org/10.1016/j.soard.2015.11.016>

1550-7289/© 2016 American Society for Metabolic and Bariatric Surgery. All rights reserved.

itself, such as concurrent repair of a hiatal hernia and avoidance of narrowing the incisura [8]. Therefore, rates of reflux represent a reasonable indicator for surgical quality for this emerging procedure.

The extent to which rates of reflux vary across hospitals after laparoscopic sleeve gastrectomy is unclear. Hospital variations could reflect suboptimal diffusion of appropriate surgical techniques. Thus, studying this variation could potentially identify high-performing hospitals that may serve as a target for surgical quality improvement initiatives. Alternatively, hospital variation in outcome rates could reflect differences in overall surgical quality, which can be gauged using well-established quality indicators for surgery such as procedure volume and short-term postoperative complication rates [9–11]. Whether these quality measures are predictive of long-term outcomes for sleeve gastrectomy, such as gastroesophageal reflux, is not yet understood. A better understanding of the underlying sources of variation in long-term complications may identify tangible targets for improving patients' health and quality of life after bariatric surgery.

In this study, we used data from the Michigan Bariatric Surgery Collaborative to assess hospital-level differences in new-onset reflux, defined as treatment with acid-reducing medication, at 1 year after patients underwent laparoscopic sleeve gastrectomy. Additionally, we sought to explain hospital variation by examining the relationships between rates of acid-reducing medication use, procedure volume, and short-term complication rates.

Methods

Data sources and study population

This study analyzed data from the Michigan Bariatric Surgery Collaborative (MBSC), a statewide payor-funded consortium of hospitals and surgeons providing bariatric surgical care [12,13]. The MBSC consists of all Michigan hospitals that perform a minimum of 25 bariatric surgery cases per year (38 hospitals and 68 surgeons in 2014). Described in greater detail elsewhere, participating hospitals submit data to a clinical registry for all patients who undergo a bariatric procedure, including sleeve gastrectomy, Roux-en-Y gastric bypass, laparoscopic adjustable gastric banding, and biliopancreatic diversion with or without duodenal switch [9]. Data collected include patient demographic and preoperative clinical information, perioperative and intraoperative outcomes for inpatient and outpatient procedures, and in-hospital records for up to 30 days after surgery.

Patients who consent to long-term follow-up with the MBSC complete a baseline preoperative survey and annual postoperative surveys (written or electronic). The baseline surveys request demographic information about race, education, employment, and income; annual surveys include questions about current weight, additional hospitalizations and/or procedures, and satisfaction with their primary

operation. Furthermore, the annual surveys request information regarding medication usage (including acid-reducing medications) in a yes/no format, general health status, and overall quality of life [5].

In this study, we identified all adult patients who underwent laparoscopic sleeve gastrectomy between June 2006 and December 2014 ($n = 16,413$). We limited analysis to patients who completed both baseline and 1-year follow-up survey questions regarding medication use ($n = 4703$; 29% of all patients who underwent laparoscopic sleeve gastrectomy). To evaluate new-onset postoperative reflux, only patients who reported not taking any acid-reducing medication at baseline were included in the final analysis ($n = 2923$ patients; 18% of all patients who underwent laparoscopic sleeve gastrectomy).

Outcome and study variables

The primary outcome of interest was the risk- and reliability-adjusted rates of new-onset reflux 1 year after laparoscopic sleeve gastrectomy, assessed at the hospital level. For this study, new-onset reflux was defined by treatment with acid-reducing medication among patients who did not take that medication at baseline [5,6]. Use of acid-reducing medication indicated a patient's use of a proton-pump inhibitor, H2-blocker, or antacid. As done previously, postoperative reflux was identified for each patient from 1-year follow-up survey questions regarding the patient's use of these medications [5].

The primary exposure variable was the individual hospital where a patient received an operation, identified through the MBSC registry. Patient characteristics, including demographic characteristics and co-morbidities, were used as covariates in the logistic regression model that determined rates of acid-reducing medication use at 1 year after surgery for individual hospitals. Patient demographic data included age, gender, race, insurance type, body mass index, smoking history, and mobility limitations. Co-morbid conditions included history of gastroesophageal reflux, peptic ulcer disease, diabetes, liver disease, musculoskeletal disease, and psychiatric disease. Co-morbidity status was obtained from the MBSC registry and was defined by documentation of that condition or its treatment in the medical record.

To explore the degree to which hospital variation in rates of reflux correlated with traditional surgical quality indicators, we compared rates of acid-reducing medication use with hospital procedure volume and with overall 30-day postoperative complication rates.

Statistical analysis

For each hospital, we generated risk- and reliability-adjusted rates of acid-reducing medication use 1 year after the index operation, calculated mean annual procedure volumes for laparoscopic sleeve gastrectomy, and

Download English Version:

<https://daneshyari.com/en/article/5661738>

Download Persian Version:

<https://daneshyari.com/article/5661738>

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