



Diego Camacho and Dina Podolsky

Introduction

Over the past 60 years, the field of bariatric surgery has experienced an unprecedented growth in popularity as it has proven to be the most effective treatment of obesity and its associated comorbidities. It is estimated that nearly 200,000 bariatric procedures are performed annually in this country, a volume that may be satisfying less than 1% of the population's need [1, 2]. As weight loss surgery is being offered to increasingly complex patients with ever-rising BMIs, the impetus remains on the surgical community to provide this service in a safe and responsible manner. This textbook aims to define frequently encountered postoperative complications following weight loss surgery (WLS), as well as the current standards of care for treating them.

Over the past several decades, multiple factors have come together to decrease morbidity and mortality following WLS. From a technical standpoint, the widespread adoption of laparoscopy has greatly increased the safety profile of WLS; currently, over 90% of all bariatric surgery procedures are completed using minimally invasive techniques [3]. As the popularity of WLS increased, both the American College of Surgeons (ACS) and the American Society Metabolic and Bariatric Surgery (ASMBS) helped define standards and benchmarks for safe practice at high-volume, accredited hospitals, known as Centers of Excellence (COE) [4, 5]. The majority of bariatric surgery procedures are now being done at COEs, with various studies confirming that rates of postoperative complications are lower at accredited centers as compared to community hospitals [1, 6, 7]. Furthermore,

D. Camacho (✉)

Albert Einstein College of Medicine, Montefiore Medical Center, Bronx, NY, USA

e-mail: dicamach@montefiore.org

D. Podolsky

Department of General Surgery, NYC Health + Hospitals/Jacobi, Bronx, NY, USA

e-mail: dpodolsk@montefiore.org

bariatric surgery outcomes are now being monitored via the Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP), which grants accreditation to these centers and tracks outcomes on a national level [1].

According to the most recent ASBMS data, sleeve gastrectomy is the most frequently performed bariatric procedure (54%), followed by gastric bypass (23%), revisional surgery (14%), and gastric banding (6%) [8]. All-cause mortality following bariatric surgery, regardless of procedure, has been estimated to be between 0.05% and 2% [9]. Postoperative complications can be divided by both pathophysiology and temporality. Short-term complications, defined as occurring within 30 days of the index procedure, have been estimated to occur at a rate of 4.8–10% [1, 10]. Early complications include, but are not limited to, leaks, bleeding, dvt/pe, cardiovascular and respiratory complications, and death [4]. Maintaining a high degree of suspicion in the postoperative period is imperative, as the majority of these complications can be managed effectively when diagnosed early. In less stable patients, frequently surgical re-exploration is required, a fact that any surgeon engaging in WLS should be prepared for.

Late postoperative complications, or those occurring after 30 days following the index procedure, include anastomotic stenosis, gallstone formation, bowel obstruction, intussusception, marginal ulcers, and fistula formation [4]. Some of these issues, such as stenosis or biliary disease, can be worked up in an outpatient setting and treated with either medication or endoscopic techniques. Others, such as complications from marginal ulcers and bowel obstructions, may present as surgical emergencies. Internal hernias, the most feared complication following RYGB, occur between 2.5% and 11.7% of the time, depending on technique used [11]. The use of advanced imaging techniques such as CT scan combined with a high index of suspicion can help turn these once deadly events into manageable complications. In many instances, surgical re-exploration remains the standard of care.

The purpose of this textbook is to provide a comprehensive and up-to-date reference for the management of complications stemming from bariatric surgery procedures, written by and for bariatric surgeons. Each chapter delves into common problems associated with the most frequently performed bariatric procedures, spanning the spectrum from acute to chronic presentations with a focus on both diagnosis and treatment. Our hope is that the words written in this book will provide guidance to those taking care of patients in need, as well as the tools necessary for the next generation of bariatric surgeons to continue this great public service in a safe and effective manner.

References

1. Ibrahim AM, Ghaferi AA, Thumma JR, Dimick JB. Variation in outcomes at bariatric surgery centers of excellence. *JAMA Surg*. Published online April 26, 2017. <https://doi.org/10.1001/jamasurg.2017.0542>.
2. O'Neill KN, Finucane FM, le Roux CW, Fitzgerald AP, Kearney PM. Unmet need for bariatric surgery. *Surg Obes Relat Dis*. 2016 pii: S1550-7289(16)30879-6. <https://doi.org/10.1016/j.soard.2016.12.015>.

3. American Society for Metabolic and Bariatric Surgery. Metabolic and bariatric surgery. <http://asmbs.org/resources/metabolic-and-bariatric-surgery>. Accessed 31 May 2016.
4. Lim RB. Complications of gastric bypass and repair. In: Fischer JE, editor. Fischer's mastery of surgery. 6th ed. Philadelphia: Lippincott Williams & Wilkins; 2012.
5. American Society for Metabolic and Bariatric Surgery. The Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP). <https://asmbs.org/about/mbsaqip>. Accessed May 31, 2016.
6. Gebhart A, Young M, Phelan M, Nguyen NT. Impact of accreditation in bariatric surgery. *Surg Obes Relat Dis*. 2014;10(5):767–73.
7. Telem DA, et al. Rates and risk factors for unplanned emergency department utilization and hospital readmission following bariatric surgery. *Ann Surg*. 2016;263(5):956–60.
8. American Society for Metabolic and Bariatric Surgery. Estimate of bariatric surgery numbers. 2011–2015. <http://asmbs.org/resources/estimate-of-bariatric-surgery-numbers>. Accessed 31 May 2016.
9. DeMaria, et al. Baseline data from the American Society for Metabolic and Bariatric Surgery – designated bariatric surgery centers of excellence using bariatric outcomes longitudinal database. *Surg Obese Relat Dis*. 2010;6(4):347–55.
10. Coblijn UK, et al. Predicting postoperative complications after bariatric surgery: the Bariatric Surgery Index for Complications, BASIC *Surg Endosc* 2017. <https://doi.org/10.1007/s00464-017-5494-0>. [Epub ahead of print].
11. Aghajani E, Nergaard BJ, Leifson BG, et al. The mesenteric defects in laparoscopic roux-en-Y gastric bypass: 5 years follow-up of non-closure versus closure using the stapler technique. *Surg Endosc*. 2017. Published online February 15, 2017. <https://doi.org/10.1007/s00464-017-5415-2>.