Proximal Gastrectomy as a Remedial Operation for Benign Foregut Disease

Thomas J. Watson, MD, FACS

Division of Thoracic and Foregut Surgery, Department of Surgery, University of Rochester School of Medicine and Dentistry, Rochester, New York, USA

Not uncommonly, foregut reconstruction is contemplated due to irremediable pathology localized to the GEJ or upper stomach, raising the possibility of reconstruction via partial proximal or total gastrectomy rather than esophagectomy. The most notable example of where proximal gastrectomy or Roux-en-Y gastric bypass (RYGBP) is a consideration is in the setting of a failed fundoplication for GERD with or without associated gastroparesis. The decision to attempt repeat fundoplication may be a difficult one, particularly after two or more prior fundoplications or after a failed Collis gastroplasty. In addition, obesity may have been a factor contributing to breakdown of a prior operation, for instance by leading to a recurrent hiatal hernia. The explosion in utilization of RYGBP or related bariatric procedures for morbid obesity has added to the body of knowledge regarding the relative risks and benefits of gastric resection or bypass operations for benign disease.

Compared to esophagectomy, gastric resection or bypass is associated with a number of potential benefits. The native esophagus is left intact which, as long as esophageal body function is normal, allows propagation of a food bolus distally and acts as a barrier against the reflux of gastrointestinal contents into the pharynx or airway. As the surgery is localized to the peritoneal cavity, operation typically can be completed through a laparotomy alone, obviating the need for thoracotomy or cervicotomy. Not uncommonly, end-stage foregut disease is associated with delayed gastric emptying that
can be addressed via a gastric operation. Finally, in this era of an obesity epidemic, weight loss from gastric diversion can result in significant long-term health benefits for the morbidly obese individual, such as improvements in diabetes mellitus, hypercholesterolemia or sleep apnea, or prevention of osteoarthritis-related complications.

An increasing body of literature is evolving regarding the control of GERD in patients undergoing RYGBP for morbid obesity. Such an operation effectively diverts both acid and bile from the esophageal mucosa, with or without the addition of a fundoplication or fundopexy. Controversy exists as to whether fundoplication is more prone to failure in the setting of obesity. Recent reports demonstrate a higher rate of recurrent reflux in obese patients undergoing fundoplication compared to overweight or normal weight individuals [30]. While other series have not been able to demonstrate such an association, such reports are limited in that they typically analyze results in obese (BMI > 30) patients, with relatively few subjects falling in the morbidly obese (BMI > 35-40) range. In the morbidly obese patient referred specifically for control of GERD, whether a fundoplication or RYGBP is the procedure of choice remains unknown, though many surgeons at present are choosing the latter option when the patient so agrees.

An issue of controversy is whether or not to resect the excluded distal gastric remnant after gastric bypass. While such a resection is typically not performed in the setting of RYGBP for obesity, resection does appear to reduce or eliminate the potential risks of hemorrhage from the blind gastric pouch, the occurrence of gastrogastric fistula, the development of marginal ulceration due to a retained antrum effect, bacterial overgrowth in the excluded pouch, or development of a subsequent carcinoma which is
not amenable to surveillance. In patients undergoing operation for epigastric pain, distal gastric resection also eliminates a potential source. Whether the benefits of distal gastric resection outweigh the disadvantages, such as the added time, dissection and potential for duodenal stump leak, merits further study and follow-up.

Little has been written about gastrectomy or RYGBP as a remedial antireflux operation after failed fundoplication in the obese. Raftopoulos, et al reported on seven morbidly obese individuals undergoing revision of an antireflux procedure to laparoscopic RYGBP [33]. Mean operative time was over 6 hours. Five patients developed anastomotic strictures and two patients were re-explored for gastric remnant herniation and intestinal obstruction. At a mean follow-up of 24 months, mean excess weight loss was 70.7%, and 70% of co-morbid conditions were improved or resolved. In addition, GERD scores were significantly reduced. The authors concluded that laparoscopic RYGBP after failed antireflux surgery in the morbidly obese, while technically challenging, was a feasible and effective treatment for recurrent GERD and was associated with the additional advantages of weight loss and improvement of co-morbidities.

Williams, et al reported on our experience at the University of Rochester consisting of twelve patients undergoing proximal gastrectomy with Roux-en-Y reconstruction as a remedial procedure for failed fundoplication and compared outcomes to a cohort of 25 patients undergoing refundoplication. The groups consisted of overweight and obese individuals as well as those of normal weight. The gastrectomy patients had a higher prevalence of preoperative endoscopic complications of GERD and of multiple prior fundoplications than those undergoing refundoplication. Mean
symptom severity scores were improved significantly by both gastrectomy and refundoplication, but were not significantly different from each other. Complete relief of the primary symptom was significantly greater after gastrectomy (89% versus 50%, p=0.044.) Overall patient satisfaction was similar in both groups. In-hospital morbidity was higher after gastrectomy than after refundoplication (67% versus 20%, p=0.007) and new-onset dumping developed in two gastrectomy patients. Based on the findings, the authors concluded that in select patients with severe GERD and multiple previous fundoplications, primary symptom resolution occurs more frequently following gastrectomy than after repeat fundoplication. Gastrectomy is an acceptable treatment option for recurrent symptoms particularly when another attempt at fundoplication is ill-advised, such as in the setting of multiple prior fundoplications, failed Collis gastroplasty or severe gastroparesis. The indications for gastrectomy or RYGBP in the primary or reoperative settings, the pros and cons relative to esophagectomy, whether to resect the distal gastric remnant and the situations where a repeat attempt at fundoplication should be abandoned still require further elucidation.