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Original article

The value of routine gastroscopy before laparoscopic Roux-en-Y gastric bypass surgery in Chinese patients

Hong-Meng Wong, M.D., Wah Yang, M.D., Jingge Yang, M.D., Cunchuan Wang, M.D., Ph.D.*

Department of Gastrointestinal Surgery, First Affiliated Hospital of Jinan University, Guangdong Province, China

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Abstract

Background: Obesity is closely related to upper gastrointestinal diseases. China has a high incidence of gastropathy. Postoperative examination of the distal stomach becomes extremely difficult after laparoscopic Roux-en-Y gastric bypass surgery (LRYGB). Whether preoperative routine gastroscopy should be performed at all remains controversial. The objective of this study was to explore the value of routine gastroscopy before performing LRYGB in Chinese patients.

Methods: The preoperative gastroscopy reports of 180 patients who had undergone LRYGB for morbid obesity and/or metabolic syndrome in the Department of Gastrointestinal Surgery of our hospital from January 2009 to August 2013 were retrospectively analyzed.

Results: Gastroscopy showed chronic superficial gastritis (n = 159, 88.3%), reflux esophagitis (n = 19, 10.6%), erosion (n = 69, 38.3%), hiatal hernia (n = 5, 2.8%), gastric ulcer (n = 3, 1.7%), duodenal ulcer (n = 32, 17.8%), and gastric polyps (n = 10, 5.6%).

Conclusion: It is useful to perform gastroscopy before LRYGB. The findings of this investigation can help physicians to develop tailored therapies and procedures and thus improve the prognosis considerably. Gastroscopy should be routinely performed in Chinese patients who are planning to undergo bariatric surgery. (Surg Obes Relat Dis 2014;■:00–00.) © 2014 American Society for Metabolic and Bariatric Surgery. All rights reserved.

Keywords:

Gastroscopy; Gastric bypass; Morbid obesity; Metabolic syndrome; Bariatric surgery

Bariatric surgery has been widely recognized as the most effective treatment for morbid obesity [1]. Originating in the 1950s, it can effectively reduce patients' weights in a sustainable and steady manner. Along with the rise of laparoscopic surgery, laparoscopic Roux-en-Y gastric bypass (LRYGB) has become the treatment of choice for morbid obesity in the United States because of the relative balance of its weight-reducing effectiveness and surgery-associated risks [2]. In 1994, Wittgrove et al. [3] introduced the procedure of LRYGB. In 2004, the first LRYGB was

performed in our hospital and so far >300 patients have undergone this surgery.

Gastroscopy is an important and commonly used preoperative upper gastrointestinal examination. It enables physicians to visualize a variety of upper gastrointestinal lesions, particularly small lesions. Because LRYGB changes the patient's upper gastrointestinal anatomy, postoperative examination of the distal stomach becomes extremely difficult. Standard gastroscopes are rendered useless and, although specially designed gastroscopes are available for examining the distal stomach after LRYGB or when the examination is performed via the abdominal wall, these instruments are very difficult to master. In addition, according to the World Health Organization (2002) East Asia (South Korea, Japan, and China) has the highest

*Correspondence: Cunchuan Wang, Department of Gastrointestinal Surgery, First Affiliated Hospital of Jinan University, 613 Huangpu Avenue West, Guangzhou 510630, Guangdong Province, China.

E-mail: wangcunchuan@tom.com

incidence of gastric cancer (>40 cases/100,000 males), which is considerably more than the incidence in Southeast Asia/South Asia (Philippines, Thailand, and India) and Western Asia (<10 cases/100,000 males) [4]. According to the data provided by China's National Cancer Registry in 2007 and those reported in the 2010 China Health Statistics Yearbook, gastric cancer is the second most common cancer incidence-wise and has the third highest mortality rate, indicating that China remains a country with one of the highest gastric cancer prevalence in the world [5,6]. Therefore, preoperative gastroscopy is particularly important before LRYGB. It enables preoperative identification of various pathologic changes, particularly cancers and pre-cancerous lesions, in the upper gastrointestinal tract, and thus facilitates the timely adjustment of surgical procedures. In this article, we summarize our experiences of preoperative gastroscopy of all LRYGB patients in our hospital and attempt to evaluate its role in this situation.

Methods

A total of 180 patients who had undergone LRYGB for morbid obesity and/or metabolic syndrome in the Department of Gastrointestinal Surgery of our hospital from January, 2009 to August, 2013 were retrospectively analyzed. Clinical data collected and assessed include sex, age, height, weight before surgery, preoperative body mass index (BMI), length of postsurgical hospital stay, postoperative complications, surgical records, and gastroscopy reports (including upper gastrointestinal inflammation, ulcers, polyps, hiatal hernia) (Table 1). The average follow-up period was 11 months (range: 1–28 mo). The same surgeon performed the procedures on all patients. Intraoperative exploration and hiatal hernia repair when this diagnosis was confirmed was performed in all patients in whom hiatal hernia was suspected on the basis of preoperative gastroscopy findings. In patients in whom preoperative gastroscopy had identified gastric or duodenal ulcers and gastric polyps, resection of the excluded stomach was performed simultaneously; resection included the distal

excluded stomach at 1-cm distal to the duodenal bulb. Patients with erosive gastritis were tested for *Helicobacter pylori*. Those who were positive for *H. pylori*, but without ulcers or polyps, received routine preoperative antibiotic treatment.

Results

A total of 180 patients who had undergone LRYGB for morbid obesity and/or metabolic syndrome in the Department of Gastrointestinal Surgery of our hospital from January 2009 to August 2013 were studied. All study patients had undergone gastroscopy before surgery. Findings are presented as mean \pm standard deviation (SD). The male to female ratio was 98 (54.4%):82 (45.6%); height: 170 ± 9.2 cm (range 149–190 cm); weight: 114 ± 37.5 kg (range: 53.5–216 kg); BMI: 38.97 ± 11.47 (range: 32.0–90.0); mean postsurgical hospital stay: 7.0 ± 10.84 days (range: 5.0–12.0 d). In all, 6/180 patients (3.3%) experienced complications (lung infection: 1 case; umbilical infection: 1 case; alopecia: 3 cases; and anemia: 1 case). No patient's procedure required conversion to open surgery. No postoperative bleeding or gastric paralysis was observed. There was no anastomotic leakage or stenosis, no duodenal stump leakage, and no intraoperative or postoperative deaths. Gastroscopic examination identified 7 types of pathologic change (Table 1). Five patients had hiatal hernias, ranging in size from 3.5–4.5 cm. All 5 hernias were diagnosed and repaired during surgery. Final pathologic examination revealed 5 gastric ulcers, 32 duodenal ulcers, and 10 polyps. Histologic examination identified 3 patients with fundic gland polyps, 6 with hyperplastic polyps, and 1 with adenomatous polyps. Thirty-eight patients underwent resection of the excluded stomach. Forty-eight patients tested positive for *H. pylori* and 23 received routine preoperative antibiotic treatment.

Discussion

The role of gastroscopy has not been fully recognized

LRYGB for the treatment of obesity is widely recognized, but whether a preoperative routine gastroscopy should be performed remains controversial. For example, Muñoz et al. [7] reports that all patients should undergo preoperative gastroscopy, whereas Azagury et al. [8] suggests that it should only be performed in patients with preoperative symptoms. Interestingly, both researchers reported the same rate of abnormalities in their respective studies (46%). Gastroscopy can visualize the various diseases of the upper gastrointestinal tract in a flexible manner and also facilitate biopsy. After decades of development, it has become a mature technology. However, it is a painful option for many patients who are planning to undergo surgical treatment for morbid obesity or metabolic syndrome, and a preoperative gastroscopy may appear to be

Table 1
Pathologic changes identified on gastroscopy

Pathologic change	n	Percentage (%)	Treatment
Chronic superficial gastritis	159	88.3	Conservative
Reflux esophagitis	19	10.6	Conservative
Erosion	69	38.3	Conservative
Hiatal hernia	5	2.8	Intraoperative repair
Gastric ulcer	3	1.7	Resection of the excluded stomach
Duodenal ulcer	32	17.8	Resection of the excluded stomach
Gastric polyps	10	5.6	Resection of the excluded stomach

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