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Case report

Laparoscopic gastric bypass with remnant gastrectomy in a super-super obese patient with gastric metaplasia: a surgical hazard?

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Summary. The endoscopic inaccessibility of the gastric remnant after Roux-en-Y gastric bypass (RYGBP) for morbid obesity represents an important issue for patients with familiar history of gastric cancer (GC) or affected by premalignant lesions, such as intestinal metaplasia. If a different bariatric procedure is contraindicated, RYGBP with remnant gastrectomy represents a reasonable alternative, significantly reducing the risk of GC but potentially increasing postoperative morbidity. For this reason, only few cases have been reported in the recent Literature and none regarding a super-super obese patient. We present the case of a 55-year-old super-super obese man with a family history of GC and antral gastritis with extensive intestinal metaplasia at preoperative upper endoscopy, who underwent laparoscopic RYGBP with remnant gastrectomy. (www.actabiomedica.it)

Key words: Roux-en-Y gastric bypass, obesity, bariatric surgery, gastric cancer, remnant gastrectomy

Introduction

Laparoscopic Roux-en-Y gastric bypass (RGBP) is a widely adopted bariatric procedure, given its impressive effects on weight loss and comorbidity resolution with a well-demonstrated improvement in quality of life (1-7).

One of the possible concerns about the procedure is endoscopic inaccessibility of the gastric remnant, which can lead to a delayed diagnosis of gastric malignancies.

In Western countries, where gastric cancer (GC) incidence is decreasing and early gastric cancer detection is rare, the above mentioned risk is negligible (8); on the other hand, more attention should be paid to patients with familiar history of GC or affected by premalignant lesions, such as intestinal metaplasia.

While the natural history of intestinal metaplasia is still a matter of debate, there is enough evidence that it may be a risk factor for GC (9, 10).

Many techniques have been proposed to access the gastric remnant, no one of which being ultimately satisfactory for routine endoscopic surveillance (11).

Therefore, any increased risk of GC, which cannot be solved preoperatively, (e.g., helicobacter pylori eradication) can justify the adoption of an alternative bariatric procedure, such as sleeve gastrectomy or, in some specific circumstances, RYGBP with remnant gastrectomy. The remnant removal involves a considerable increase in surgical time and probably more surgical risks, although the few cases reported in the literature do not provide reliable data as to this (12-15).

We present a paradigmatic case of a super-super obese patient with increased neoplastic risk submitted

to Roux-en-Y gastric bypass with remnant gastrectomy.

Case report

A 55 years old male patient, affected by severe morbid obesity (weight: 193 kg, height 1.75 m, BMI: 63 kg/m^2) referred to our Institution for a multidisciplinary evaluation for bariatric surgery. Medical history revealed hypertension, type II diabetes mellitus, severe gastro-esophageal reflux disease (GERD) with hiatal hernia and a family history of gastric cancer (father and uncle). No previous abdominal surgery was reported. A preoperative upper endoscopy (UE) showed antral gastritis with extensive intestinal metaplasia (the helicobacter pylori test was negative); a medium size hiatal hernia was confirmed, as well as grade B esophagitis (Los Angeles classification). Echography revealed hepatic steatosis with no biliary tract alteration. Psychiatric evaluation did not find any contraindication for a bariatric procedure, suggesting a restrictive procedure. After a multidisciplinary counseling, we finally indicated a restrictive procedure for the patient. Being aware of the potential worsening of GERD related to sleeve gastrectomy, and particularly worried for the impossibility of endoscopic surveillance of his intestinal metaplasia in case of standard RYGBP, the patient agreed to undergo RYGBP with remnant gastrectomy, aware of the increased operative risk. A standard 6 trocar access was performed (figure 1). Greater gastric curvature was firstly dissected, medially to laterally, and the fundus completely mobilized, dividing the short gastric vessels. Right gastro epiploic and right gastric vessels were divided close to the gastric wall, and the duodenum was then divided using a 60 mm endoscopic linear stapler. Gastric resection was completed stapling the stomach on a 37-French calibration tube, creating a gastric pouch of 40 cc. An antecolic antegastric RYGBP was finally performed (figure 2). The remnant was extracted by an enlargement of a midline trocar and two drains were left in place. Because of the important omental adhesions and impressive visceral adiposity, the intervention was technically demanding (287 min). Postoperative course required a 3 days ventilation support in Intensive Care Unit, and was otherwise surgically regular. The patient was discharged on the 8th postoperative day. At 6-month follow-up the patient presented an excess weight loss of 43%, diabetes and hypertension were resolved and he did not complain of any GERD symptom.

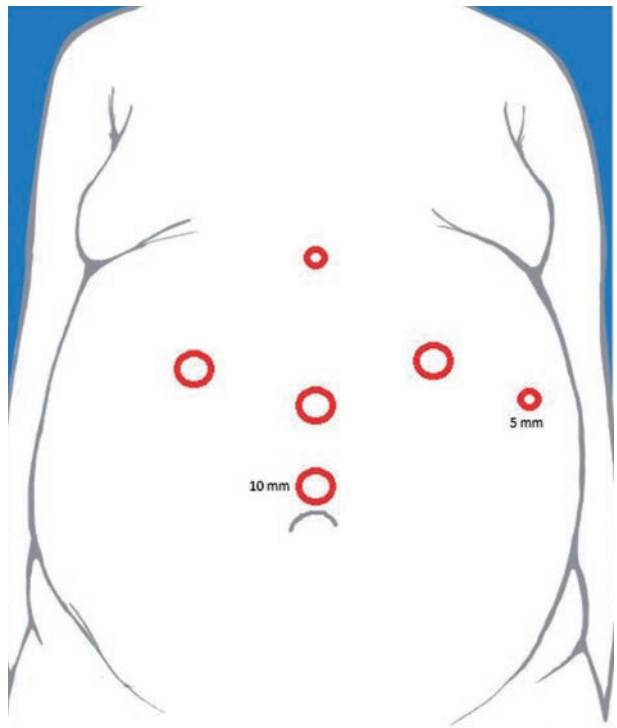

Figure 1. Trocar position

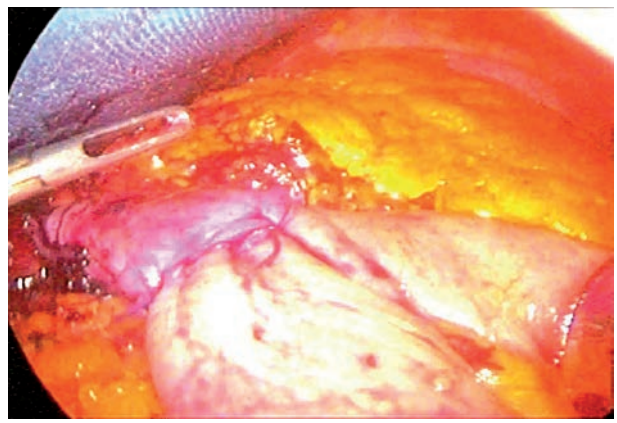

Figure 2. The gastro-jejunal anastomosis

Discussion

In spite of its declining incidence in the last decades, GC still represents the second leading cause of cancer-related death in the world (16, 17), due to poor prognosis (18, 19). Obesity is considered a risk factor for some types of GC (20); bariatric surgery could represent a preventive measure in this sense, but relative risk reduction is difficult to assess, owing to the lack of cross sectional or case control studies.

Despite the few cases of GC after RYGBP reported in the literature (8), many concerns have been raised regarding possible delay in diagnosis due to the endoscopic inaccessibility of the remnant.

In fact, functional activity suppression, along with reduced contact with alimentary carcinogenic agents, seems to represent a protective factor against GC after RYGB (21); therefore, the lack of endoscopic surveillance should not be considered an issue, especially in low incidence countries.

On the other hand, in case of premalignant lesions or familiarity for GC, the indication for RYGBP should be carefully considered.

Indeed, as demonstrated by Correa, intestinal type gastric cancer frequently develops through a sequence of histological events: chronic gastritis, intestinal metaplasia, dysplasia, and finally invasive carcinoma (22). In particular, intestinal metaplasia may increase the risk of gastric cancer proportionally to its extension (10). Although recently debated, UE with bioptic mapping is therefore considered a mandatory investigation practice prior to RYGBP (23, 24).

In case of intestinal metaplasia detection at preoperative UE, endoscopic surveillance of gastric remnant surely represents an important issue. Many techniques to endoscopically access the remnant have been described, mainly if biliary tract maneuvers are required. All the above techniques require a minimally invasive surgical approach to the remnant, and cannot be proposed for endoscopic routine surveillance.

Some authors proposed a RYGBP on vertical banded gastroplasty in order to endoscopically access the remnant (25). The above technique seems to be useful in providing an endoscopic direct access (oral) to biliary tract in the not infrequent cases of postoperative lithiasis, even though gallbladder removal is often performed during RYGBP. On the other hand, in Western countries, where detection of early GC during routine endoscopic surveillance is extremely rare, its role as a primary prevention for GC is doubtful.

"Serological biopsy" (Gastropanel) for surveillance of gastric remnant, as recently reported (21), cannot be considered a reliable measure too.

In case of high risk patients, a RYGBP with remnant gastrectomy is otherwise a really effective measure to prevent GC, removing the greater part of the stomach along with its "instable" mucosa.

The real impact on surgical risk of adding a remnant gastrectomy is difficult to evaluate, because of the few reports in the Literature (12-15). In experienced surgical units, remnant removal should not be considered a demanding procedure, even though visceral obesity could represent a technical issue, as already demonstrated in various fields of laparoscopic surgery (26-28). Moreover, duodenal stump leaks represent an additional surgical risk and prolonged surgical times could lead to postoperative respiratory complications, particularly in super-super obese patients.

Sleeve gastrectomy certainly represents the most reasonable alternative to RYGBP for obese patients with premalignant gastric lesions. However, the reported worsening of symptoms represents at least a relative contraindication in patients affected by GERD (29).

In those rare cases, if a malabsorptive procedure is contraindicated based on preoperative evaluations, as for the case we are presenting, RYGBP with remnant removal remains the most reasonable option.

Conclusions

RYGBP with remnant gastrectomy represents an alternative to standard RYGBP in obese patients that are candidates for a restrictive procedure with increased risk of GC. Due to a potential surgical risk increase, it should be taken into consideration only if an alternative procedure (e.g. sleeve gastrectomy) is contraindicated.

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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