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Case report

PERFORATED ANASTOMOTIC MARGINAL ULCER POST ROUX-EN-Y GASTRIC BYPASS SURGERY: A CASE REPORT

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Abstract

Among the techniques available for bariatric surgery, Roux-en-Y gastric bypass is safe and effective option. However, it may present with some complications such as marginal anasomotic ulcers, which can perforate and become serious surgical emergency.

We present a case of 28-year-old female patient, with abdominal pain and vomiting with clinical presentation of diffuse peritonitis, radiological presentation of pneumoperitoneum and medical history of RYGB 3 years before, with suspected perforation after initial medical assessment and examination. Upper medial laparotomy was performed with large amount of fibrinopurulent content presented in abdominal cavity and perforated MU at medial anastomotic site. It was closed with omental patch, after thorough abdominal irrigation. The patient was discharged on the 10th day after surgery.

One of the most common long-term complications after RYGB is the occurence of peptic ulcers and anastomotic stenosis. The main manifestation of untreated MU is perforation, which is urgent surgical and life-threatening condition. The perforated marginal ulcer is a complication of the RYGB procedure in bariatric surgery and is an acute surgical condition. Thorough irrigation of abdominal cavity and omentoplasty of the ulcer lesion is a safe and effective treatment of choice and it gives a good postoperative outcome.

Keywords: bariatric surgery, Roux-en-Y gastric bypass (RYGB), marginal ulcers (MU), perforated ulcer

Introduction

The concept of surgical treatment of obesity can be defined as a change in the physiology and anatomy of the digestive tract with the help of surgery in order to achieve benefit in patients with severe metabolic disorders. Roux-en-Y gastric bypass (RYGB) is one of the most commonly performed surgical procedures for the treatment of morbid obesity as it involves exclusion of most of the stomach, duodenum and proximal jejunum[1]. Marginal ulcers (MU) of the anastomosis are one of the long-term complications of RYGB and their incidence varies in a wide range between 2-12%, which probably arises from the degree of surgical aggression, classification of individual authors or which surgical technique is used[2]. The most common manifestation of marginal ulcers is epigastric pain and vomiting, depending on whether they are accompanied by stenosis of gastrojejunal anastomosis. They are diagnosed endoscopically and usually heal with appropriate conservative therapy[3]. If they are treated improperly, especially in tobacco users, MU can perforate and progress to a

surgical emergency. This case report presents a young female patient with perforation of a previously diagnosed marginal ulcer of gastrojejunostomy, after RYGB.

Case report

A 28-year-old female patient was brought to our Emergency Centre with a referral diagnosis of acute abdomen, referred from another health facility, with presence of pneumoperitoneum on abdominal X-ray. The patient stated that the abdominal pain initially started in the lower parts of the abdomen with urinary retention and she associated them with menstrual cycle (III day of menstrual bleeding onset), vomiting >10 times, after which the pain localized in the upper abdominal parts, with strong intensity and sharp in quality. Additional data in her past medical history were: she underwent Roux-en-Y gastric bypass surgery for morbid obesity three years ago, and she was also diagnosed with anastomotic marginal ulcer, proven endoscopically three months ago and treated with PPI (Pantopazol). The patient is an active smoker and has not used NSAIDs after being diagnosed with the ulcer.

Additionally, she was brought 10-12 hours after symptoms onset and at the time of admission she had signs of endotoxic shock, she was hypotensive, febrile, tachycardic with diffuse abdominal rigidity and peritoneal irritation. Previous results of abdominal US showed presence of free fluid recorded around liver and in the pelvis and abdominal X-ray, with a finding of free gas presence under both diaphragmatic domes, predominantly left. Rapid Ag and PCR test for Covid-19 were performed by protocol, with both negative results. A computed tomography (CT) was made and it showed pneumoperitoneum in all upper parts of abdomen with discontinuity in the stomach wall in the place of previously placed clips, with suspected perforation. Free fluid was present in all abdominal compartments. Such clinical and radiological findings and previous history of RYGB surgery led the medical team into the suspicion of a perforated gastric ulcer previously endoscopically proven at the anastomosis level.

After urgent preoperative surgical preparation, the patient was taken immeadiately into surgery, where she was operated on by an open approach, with upper medial laparotomy incision. During the initial assessment of the abdominal cavity a large amount of fibrinopurulent content was revealed, with finding of diffuse visceral and parietal peritonitis. Further exploration found perforation at the level of the ulcer on the medial side of a gastrojejunal anastomosis, measuring 5 to 6 mm (Figure 1).

Fig. 1. Intraoperative finding of perforated anastomotic ulcer on the medial side of gastrojejunal anastomosis

The passability of the anastomosis was assessed intraoperatively and it was with some stenosis, but passable for a 22F tube, which was placed through the anastomosis in the small intestine. The perforation was closed with 3-0 Maxon and patched with a portion of the omentum (Graham's patch) after a thorough abdominal irrigation with saline solution (Figure 2). Three drain tubes were placed, the first one on the left subphrenic side, the second around the anastomosis and the third in rectovaginal pouch of Douglas.

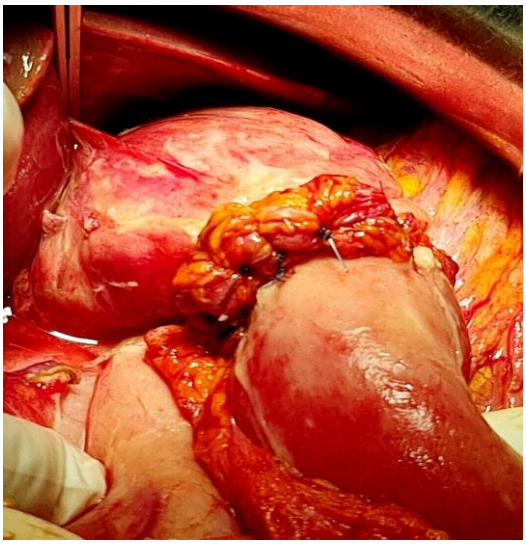

Fig. 2. Ulcer lesion closed with Graham's patch

The patient remained hemodynamically stable during the postoperative period. The discharge from the hospital was made on the tenth postoperative day in good condition with a recommendation for therapy with PPI and recommendation for further consultation with gastroenterohepatologist one month after the operation.

Discussion

Since its introduction by Mason[4] in 1969 and the modification of Griffen[5] using Roux limb to drain the gastric pouch, RYGB has been one of the most popular surgical options in bariatric surgery, still in use and providing effective results. In USA, compared to the past, this intervention has lost the primacy of the most commonly used bariatric surgery, in favor of sleeve gastrectomy, which avoids the long-term complications of RYGB, such as marginal ulcers and intestinal obstruction. Marginal peptic ulcers mostly affect gastrojejunal anastomosis. Among the risk factors that favor the development of the ulcers and must be taken into consideration are: the presence of DM II, smoking (due to its mechanism of direct microvascular and mucous barrier lesion), the use of non-absorbable sutures, use of non-steroid anti-inflamatory or sistemic streoid medications (both reduce prostaglandins in the gastrointestinal tract), as well as *H. pylori* infection. In the reported case, beside the fact that the patient is an active smoker, she denied recent history of antiinflammatory or steroid medications use, and the presence of *H. pylori* infection was unknown. Smokers are considered to have very little chance of healing ulcerative lessions despite appropriate conservative therapy.

One of the main manifestations of improperly treated or untreated marginal ulcers of the anastomosis is perforation[6]. According to a publication written by Søreide *et al.*, in 2006 in the United States, over 150,000 patients were hospitalized due to complicated peptic ulcers and about 4% of them suffering from perforated ulcers. Perforation in these ulcers is a common complication, with a mortality rate of about 30%[6]. It presents with sudden onset of abdominal pain, accompanied by signs of localized or diffused peritoneal irritation and

abdominal rigidity, with a high risk of fast lethal progression due the development of sepsis. In our case, at the time of admission, the patient presented signs of endotoxic shock, with hypotension, tachycardia and tachypnea, and clinical signs of diffuse peritonitis. Urgent surgical approach is essential for a good clinical outcome. Treatment with irrigation of abdominal cavity with omentoplasty of perforated ulcer is considered as safe and effective approach[7].

Regarding the effect of PPI therapy, there are insufficient studies confirming the benefit of prolonged PPI prophylaxis in bariatric surgery patient. However, some studies have shown some minimal reduction in the incidence of marginal peptic ulcers in bariatric surgery patients treated with pantoprazole (40 mg daily) for 6 months (1.2% incidence), compared to patients who do not receive prophylaxis (ulcer incidence of 7.3%) [8].

Conclusion

The perforated marginal ulcer is a complication of the RYGB procedure in bariatric surgery and is an acute surgical condition. Thorough irrigation of abdominal cavity and omentoplasty of the ulcer lesion is a safe and effective treatment of choice and it gives a good postoperative outcome. Appropriate studies on the etiology and prevention of such complications are still lacking, but what is known is that smoking is one of the most significant risk factors for these complications in RYGB and the use of proton pump inhibitors (PPI) has an impact on the control of ulcer lesions.

Conflict of interest statement. None declared.

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