



Polypoid Sleeve

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Introduction

Upper endoscopy plays an important part in the preoperative plan for bariatric surgery. The bariatric surgeon needs to be aware of gastritis, benign and malignant lesions that can be diagnosed, as well as the optimal management of these conditions.

We present a rare case of diffuse hyperplastic gastric polyposis found in a patient with obesity during preoperative endoscopy and how this condition was managed.

Case Report

A 38-year-old female with hypothyroidism, asthma, and family history of gastric polyps was referred to our surgical department due to morbid obesity (BMI 44.44 kg/m²; weight 118 kg; height 163 cm). Sleeve gastrectomy and gastric bypass technique were both proposed as effective treatment. During preoperative evaluation, the upper endoscopy revealed numerous polyps in the esophagus and more than fifty in the stomach and the second portion of duodenum. The polyps were smooth, dome-shaped and all of them less than 0.5 cm. Endoscopic biopsies revealed hyperplastic polyps (Fig. 1). Based on the benignity of the lesions and in order to avoid a remnant stomach that could not be explored by endoscopy, a laparoscopic vertical sleeve gastrectomy was performed (Fig. 2). The first step was a complete mobilization of the greater curvature of the stomach extending proximally to the angle of His. Transection of the stomach was made with Medtronic (Tri-Staple™ technology) Endo GIA 60 mm purple staplers and calibrated with a 36 French bougie. The staple line was

reinforced affixing the gastrocolic omentum to the lateral side of the sleeve with 3–0 silk non-absorbable sutures. The postoperative course was uneventful and the patient was discharged on the third postoperative day. Pathology reported gastric submucosal lipomatosis. After 10 months of follow-up, the patient had no postoperative complications and no leaks. Upper endoscopy was unremarkable and new biopsies were done to exclude malignancy (Fig. 3).

Discussion

Morbid obesity is associated with a number of gastrointestinal diseases, such as gastroesophageal reflux disease, erosive esophagitis, hiatal hernia, and tumors. Routine use of preoperative endoscopy for patients undergoing bariatric surgery is still controversial. Endoscopy before surgery can identify patients with asymptomatic anatomic findings that may modify surgical approach or delay surgery in a rate of 1 to 9% of patients [1]. Gastric polyps are one of the most important findings in preoperative endoscopy and they should be biopsied for histopathological diagnosis [2]. They can be classified as fundic gland polyps, hyperplastic, and adenomatous.

Hyperplastic polyps (HP) are the most common types of gastric polyps. They are a result of chronic inflammation of the mucosa, mainly due to *Helicobacter pylori* infection, autoimmune gastritis, and long-term use of proton pump inhibitors [3]. They can be single (68–75%) or multiple. Diffuse hyperplastic gastric polyposis (more than 50 polyps) is a rare condition usually associated with hereditary disorder. They are usually asymptomatic and discovered incidentally on upper endoscopy [3]. Malignancy develops in HP between 1 and 20%, through a dysplasia-carcinoma sequence. The risk of neoplastic transformation in HP is increased in polyp size greater than 1 cm, pedunculated morphology, postgastrectomy state, and synchronous neoplastic lesion [4].

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Fig. 1 **A** Arrow shows smooth, dome-shaped polyps inside the stomach. **B** Dash line delineate esophagogastric junction. Arrow shows more polyps on distal esophagus

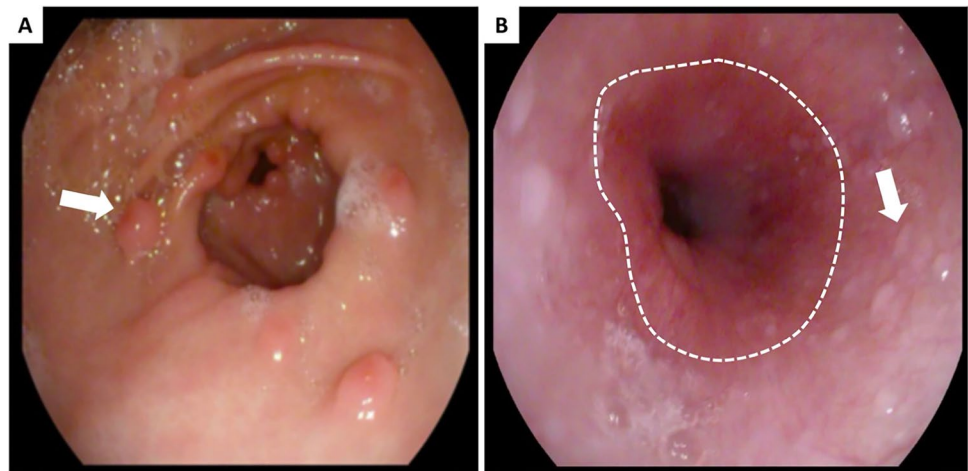


Fig. 2 **A** Arrow shows staple line integrity. Stomach was opened and multiple polyps were seen inside (arrowhead). **B** Long linear staple line from the proximal stomach to the antrum was appreciated without stapler faults

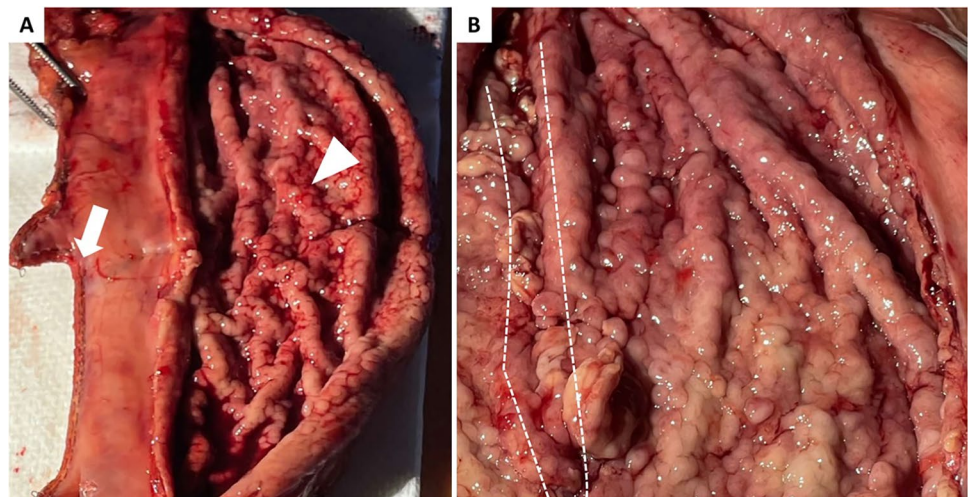
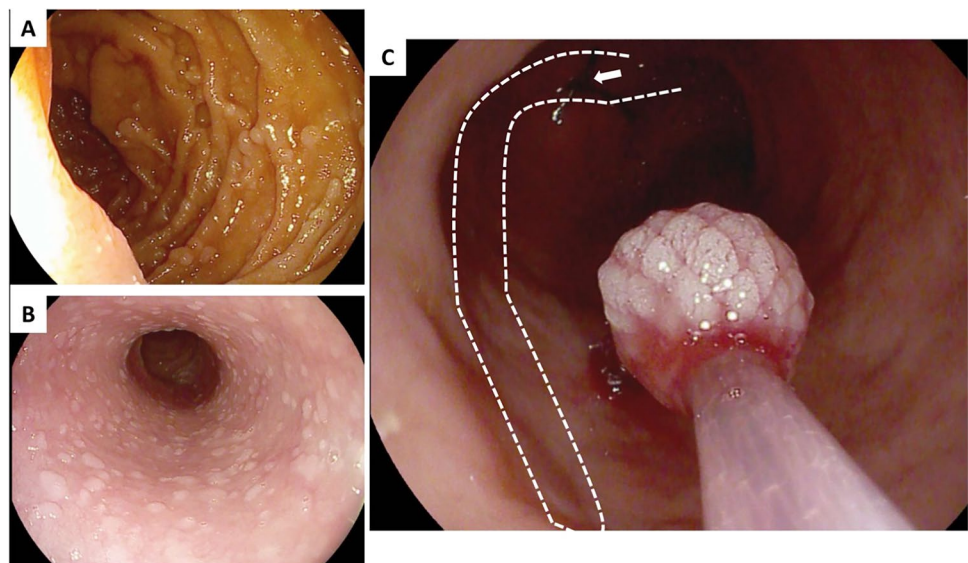


Fig. 3 **A** and **B** Revisonal upper endoscopy shows polyps inside duodenum and distal esophagus. **C** Upper endoscopy shows staple line from inside and polypectomy was done (arrow)



Regarding what bariatric technique should be performed in patients with gastric polyposis, the evidence is scarce. There are reports where sleeve gastrectomy was safely carried out in patients with polyps. Miller et al. [5] reviewed 1463 sleeve specimens and gastric polyps were found in 60 of them. Raveenraj et al. [6] published a retrospective review of 283 preoperative endoscopy findings and 9 revealed polyps in the stomach which were excised along with the surgical specimen. Neither of these series described a higher rate of postoperative complications due to the presence of polyps. There are so also many reports about the safe use of staplers in patients with polyposis [7, 8]. Staple line integrity is a major priority in bariatric surgery and the stomach wall thickness is an important fact to take in consideration and many studies showed no differences in terms of mortality and complications, including anastomotic leak.

In order to decrease the rate of staple line failure, a Tri-Staple stapler was used. It has three rows of staples that provides less stress on the tissue and better hemostasis than the regular double stapler. In addition, variation in staple height has been found to be important for preventing leaks [9].

For the gastric bypass, there is a difficulty of endoscopic surveillance of the polyps in the remnant stomach; therefore, an initial malignant transformation could not be diagnosed. In addition, in the last 10 years, there has been a significant increase in the case reports of remnant gastric cancer after gastric bypass [9, 10].

Risk factors for gastric cancer include *Helicobacter pylori* infection, family history of stomach cancer, and hereditary nonpolyposis colon cancer. There also exist precancerous lesions such as hyperplastic and adenomatous polyps, dysplasia, and intestinal metaplasia. In patients with these conditions, with higher risk of developing gastric cancer, a bypassed stomach should be avoided [11].

Azagury et al. [12] performed a subtotal gastrectomy instead of bypass in two patients with fundic polyps as the lesions would be unexplored in the remnant stomach. However, there is no enough evidence and the risks associated with this gastric resection are high to support this radical strategy.

Conclusions

We report an extremely rare case of gastric polyposis diagnosed during a preoperative endoscopy for a bariatric surgery. In our case, we opted to perform a sleeve

gastrectomy due to HP can develop malignant transformation and in order to avoid a remnant gastric where no endoscopic control could be done. The procedure was safely performed with no postoperative complications.

Declarations

Competing Interests The authors declare no competing interests.

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