

Treatment of gastrointestinal stromal tumor (GIST) during bariatric surgery

Tratamento de tumor gastrointestinal estromal (GIST) durante cirurgia bariátrica

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A B S T R A C T

The gastrointestinal stromal tumor (GIST) is a rare mesenchymal tumor. One should pay special attention when the GIST comes in obese patients during surgery. The laparoscopic resections with standard techniques, such as gastric bypass, have been described with good results. However, GIST resection associated sleeve gastrectomy for the treatment of obesity is rare, but can be done safely, depending on the location of the tumor.

Key words: Obesity. Obesity, Morbid. Bariatric Surgery. Gastrectomy. Postoperative Complications. Gastrointestinal Stromal Tumors.

INTRODUCTION

The gastrointestinal stromal tumor (GIST - Gastrointestinal Stromal Tumor) is a rare mesenchymal tumor, though the most common in the digestive tract ¹. The clinical presentation depends on its location, which can be from the esophagus to the anus, and it is more common in the stomach (60%). Surgical treatment is the gold standard and should be indicated as soon as the diagnosis is made ².

GIST can be asymptomatic, diagnosed with routine examinations, or even recognized during laparoscopy. Laparoscopic resection with already standardized techniques, such as gastric bypass, have been described with good results ³. But resection of gastric GIST during vertical gastroplasty is rare ⁴.

TECHNIQUE

We report an alternative surgical strategy to treat patients with GIST that need to be submitted to surgical treatment of obesity. The technique used was the vertical banded gastroplasty in a patient 54 years of age, male gender, morbid obesity (weight: 109kg, height: 1,59m, BMI: 43), with type II diabetes, hypertension and severe hepatic steatosis. Preoperative endoscopy found a submucosal, hypervascular lesion, located in the posterior wall of the gastric fundus, measuring approximately four centimeters in diameter. The results of four biopsies were inconclusive.

Computed tomography of the abdomen showed no other abnormalities.

At laparoscopic inventory, we could not find the tumor. We then opted for a digestive endoscopy for perioperative marking of the lesion with perilesional injection of methylene blue. We started by the release of the greater curvature of the stomach with the sealing of the left gastroepiploic vessels for greater mobilization of the stomach and visualization of the posterior lesion. We followed with the gastric release to identify with certainty the marking on the posterior wall around the lesion (Figure 1). We emphasize that we routinely do the stapling of the sleeve first, releasing the vascularization only after completely dividing the stomach,, according to the standardization of the described technique. However, in this case described we chose the variation of the surgical procedure to better visualize the tumor. We introduced the Fouchet-type 32 gastric catheter for the sleeve calibration (Figure 2). We performed the first two shots with a 45 mm load for thick tissue, keeping the distance of three centimeters from the pylorus. This distance is important to prevent the narrowing of the *incisura angularis* and hence a gastric fistula. We continued the to gastroplasty with 60mm load for normal tissue. The last two shots were made with 45mm loads for thin tissue, fully encompassing the lesion under direct vision (Figure 1). We then Tested the integrity of the sleeve with the introduction of methylene blue by the Fouchet catheter. We removed the specimen and placed a 19FR silicone drain in abdominal cavity.

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The next day, the patient started oral intake of clear fluids and was discharged on the second day after surgery. Histopathology confirmed GIST without mitotic activity (index 0x50 in high-power field). Immunohistochemical examination showed positive CD117 and CD34 cells. Six months after the operation the patient had lost 23 Kg in weight. The medications used prior to gastric resection were stopped (insulin, captopril and hydrochlorothiazide).

DISCUSSION

The incidence of previously undiagnosed diseases encountered during operations to treat obesity is estimated at 2%, and gastric GIST, around 0.8% of patients 5. Since GIST is an tumor of the submucosa and / or muscle layers of the digestive tract, endoscopy can be falsely negative. When a GIST is found in a obese patient, ones must give special attention to the gastric study, because during gastric bypass, undiagnosed disease may remain in the excluded stomach, which will be inaccessible to routine exams 2. During the sleeve preparation, although there resection and continuity of the normal transit, one should pay attention to the exact location of the lesion so as to ascertain the possibility and feasibility of safely using this technique without causing stenosis or tortuosity in the staple line (Figure 2). Stenosis of the *incisura angularis* allows for the existence of fistula in the His angle that can be very serious, even causing the patient's death 6.

According to the criteria established by the National Institutes of Health, our case of GIST can be

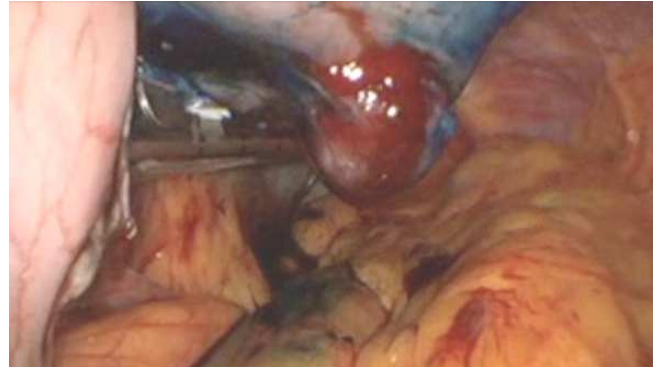


Figure 1 - Gastroplasty with resection of the lesion.



Figure 2 - Final appearance of the sleeve.

considered a benign tumor. Therefore, we deemed the resection curative with safety margins and, therefore, treatment with Imatinib was not indicated.

R E S U M O

O tumor estromal gastrointestinal (GIST) é um tumor mesenquimal raro. Deve-se ter atenção especial quando o GIST apresenta-se em pacientes obesos durante o ato operatório. As ressecções laparoscópicas com técnicas padronizadas, como o bypass gástrico, têm sido descritos com bons resultados. Porém, a ressecção de GIST associada à gastrectomia vertical para o tratamento para a obesidade é rara, mas pode ser feito com segurança, dependendo da localização do tumor.

Descritores: Obesidade. Obesidade Mórbida. Cirurgia Bariátrica. Gastrectomia. Complicações Pós-Operatórias. Tumores do Estroma Gastrointestinal.

REFERENCES

- Graadt van Roggen JF, van Velthuysen ML, Hogendoorn PC. The histopathological differential diagnosis of gastrointestinal stromal tumours. *J Clin Pathol.* 2001;54(2):96-102.
- Saund MS, Demetri GD, Ashley SW. Gastrointestinal stromal tumors (GIST). *Curr Opin Gastroenterol.* 2004;20(2):89-94.
- Sanchez BR, Morton JM, Curet MJ, Alami RS, Safadi BY. Incidental finding of gastrointestinal stromal tumors (GISTs) during laparoscopic gastric bypass. *Obes Surg.* 2005;15(10):1384-8.
- Beltran MA, Pujado B, Meindez PE, Gonzales FJ, Margulis DI, Contreras MA, Cruces KS. Gastric gastrointestinal stromal tumor (GIST) incidentally found and resected during laparoscopic sleeve gastrectomy. *Obes Surg.* 2010;20(3):393-6.
- Finnell CW, Madan AK, Ternovits CA, Menachery SJ, Tichansky DS. Unexpected pathology during laparoscopic bariatric surgery. *Surg Endosc.* 2007;21(6):867-9.
- Stol A, Gugelmin G, Lampa-Júnior VM, Frigulha C, Selbach RA. Complicações e óbitos nas operações para tratar a obesidade mórbida. *ABCD, arq bras cir dig.* 2011;24(4):282-4.

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