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Gastric carcinoid tumor after laparoscopic gastric banding: Case report of a patient with weight regain

Daniel N. Velasco Hernández^{a,*}, Santiago B. De Battista^b, Héctor R. Horiuchi^b, Maria M. Zicavo^c^a University Hospital Interzonal General San Martín of La Plata, Buenos, Argentina^b Division of Upper Gastrointestinal Surgery, University Hospital Interzonal General San Martín of La Plata, Buenos, Argentina^c Clinical Oncology, University Hospital Interzonal General San Martín of La Plata, Buenos, Argentina

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ABSTRACT

INTRODUCTION: Although carcinoid tumours are a rare gastrointestinal neoplasm with an incidence rate of 1–2.5 cases per 100 000 inhabitants, they are the most common neuroendocrine tumour of the stomach. **PRESENTATION OF CASE:** A 70-year-old man consulted for epigastric pain and dyspepsia symptoms. His past medical and surgical history included obesity (BMI: 53.9 kg/m²), hypertension, hyperlipidemia, diabetes mellitus type 2, cardiac failure and a surgical treatment with laparoscopic gastric banding. For the analysis and control of the gastric banding an upper gastrointestinal endoscopy was performed evidencing many small polyps in the gastric antrum, body and fundus. The histopathological examination of the resected specimen revealed a well differentiated carcinoid. Laparoscopic surgery for the removal of the gastric banding and the subtotal gastrectomy leaving a small gastric remnant of approximately 2-cm in size similar to the pouch of a bypass was done. Twelve months after surgery the patient presented a body mass index of 36.6 kg/m².

DISCUSSION: Gastric carcinoid increased incidence among the obese population, although the causing mechanisms are not clear, yet it is likely that metabolic and hormonal effects of the obesity play a role. The resection may be performed either endoscopically when the lesions are small, or surgically according to the tumor type and size.

CONCLUSION: The resective gastric bypass or gastrectomy with anastomosis by Roux-en-Y bypass may be considered as a treatment of choice for patients who after bariatric surgery were diagnosed with gastric carcinoid and weight regain.

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1. Introduction

Although carcinoid tumours are a rare gastrointestinal neoplasm with an incidence rate of 1–2.5 cases per 100 000 inhabitants, they are the most common neuroendocrine tumour of the stomach. Some recent studies have documented its high incidence among the obese population [1,2]. The aim of this communication is to present a treatment of a patient with gastric carcinoid tumor diagnosis and weight regain after laparoscopic gastric banding. We reported and checked this case based on SCARE guidelines [3].

2. Case report

A 70-year-old man consulted for epigastric pain and dyspepsia symptoms. His past medical and surgical history included obesity

(BMI: 53.9 kg/m²), hypertension, hyperlipidemia, diabetes mellitus type 2, cardiac failure and a surgical treatment with laparoscopic gastric banding 12 years before. After the first postoperative year, despite numerous telephone calls, the patient did not show up for follow-up visits. Ten years later, the patient returned with weight regain. Thus, for the analysis and control of the gastric banding, an upper gastrointestinal endoscopy was performed evidencing many small polyps in the gastric antrum, body and fundus (only at the greater curvatures). The histopathological examination of the resected specimen revealed a well differentiated carcinoid tumor and the immunohistochemical study showed positivity for chromogranine A. Endoscopic ultrasound revealed lesions only extended up to the gastric submucosa and abdominal CT scan showed no evidence of distant disease. Surgical treatment due to the carcinoid tumor and weight regain was decided. Laparoscopic surgery for the removal of the gastric banding which was found to be correctly positioned and the subtotal gastrectomy leaving a small gastric remnant of approximately 2-cm in size similar to the pouch of a bypass was done. Roux-en-Y reconstruction was per-

* Corresponding author at: St 8 N° 2877, Berisso, Buenos Aires, Argentina.
E-mail address: ndvelascohernandez@gmail.com (D.N. Velasco Hernández).

formed with 100 cm of the biliary loop and 100 cm of alimentary loop. Due to the histological type, size and extension depth of the lesions lymphadenectomy was not considered. There were no complications following surgery. The first 24 h the patient remained in the intensive care unit where he was started on oral infusions then he was referred to the general ward to be discharged 72 h postoperatively. Histopathological evaluation confirmed well-differentiated stomach neuroendocrine carcinoma with resected margins and an invasion up to the gastric submucosa. Twelve months after surgery the patient presented a body mass index of 36.6 kg / m² with doses reduction of oral hypoglycemics and minimum requirements of medication for his cardiovascular disease.

3. Discussion

Although carcinoid accounts for only 1% of all the gastric tumors it is the most common type of neuroendocrine neoplasia of the stomach. Usually it is classified into three types: Type 1 is the most frequent one, representing 70–80% of all the cases and it is associated to atrophic gastritis and pernicious anemia; Type 2 is present in 5–10 % of the cases and it is related to Zollinger- Ellinson syndrome and Type 1 multiple endocrine neoplasia (parathyroid tumor, pancreatic endocrine tumor and tumor of the anterior pituitary gland). Tumors of Type 1 and 2 are usually small, multiple and located at the mucosa and submucosa. Type 3 tumor occurs with a frequency of 15 to 25% is the most aggressive, single and large tumor not associated to hypergastrinaemia [4,5]. Its increased incidence among the obese population in relation to the general population is quite remarkable, 1% vs 0.002% respectively; although the causing mechanisms are not clear, yet it is likely that metabolic and hormonal effects of the obesity play a role. Diagnosis is obtained by endoscopic biopsy and immunohistochemical study for chromogranin A and synaptophysin. For better evaluation and staging ultrasound and CT-scan are recommended [6–8]. Usually the tumor treatment is done by resection with the exemption of some cases of Type 1 tumor in the elderly population where it may be controlled. The resection may be performed either endoscopically when the lesions are small, less than 1-cm in size or few in numbers (up to 5) or surgically which may vary according to the tumor type and size. A subtotal gastrectomy or total gastrectomy with lymphadenectomy in Type 3 tumor such as practiced in adenocarcinoma may be done [1,9,10]. Generally, most literature indicates the resection of the antrum to diminish the gastrin production. In obese subjects, candidates for the bariatric surgery, the indication of a gastric bypass resection would be the most adequate treatment of choice but depending on the patient characteristics, the type of tumor and the location of the lesion, vertical gastrectomy could also be considered as a treatment option [10,11]. Although further research is needed to elucidate the association of the bariatric surgery and the gastric carcinoid, the importance of an early detection of this type of neoplasia through a strict follow up is known [5]. Consequently, the resective gastric bypass or gastrectomy with anastomosis by Roux-in- Y bypass (one meter of biliary loop and one meter of alimentary loop) may be considered as a treatment of choice for patients who after bariatric surgery were diagnosed with gastric carcinoid and weight regain.

Ethical approval

The ethical approval has been exempted by the institution.

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Dr. De Battista: Analysis and interpretation of data.

Dra Zicavo: Drafting of manuscript and bibliography search.

Dr. Horiuchi: Study conception and design and bibliography search.

Guarantor

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It is a retrospective observational study. Case report.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

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