International Journal of Surgery Case Reports 92 (2022) 106824

Contents lists available at ScienceDirect

International Journal of Surgery Case Reports

journal homepage: www.elsevier.com/locate/ijscr

Case report

Severe malnutrition after single anastomosis sleeve jejunal bypass (SASJ) surgery due to a rare surgical complication: Report of the case

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ARTICLE INFO

Keywords:
Obesity
Bariatric surgery
Laparoscopy

ABSTRACT

Introduction: Bariatric procedures rates are increased due to the epidemic in obesity. Up to 50% of patients operated with vertical banded gastroplasty (VBG) procedures experience failure or complications in the mid- and long-term and present for revision bariatric surgery. Despite the increase in revisions, their safety and efficacy remain controversial.

Case presentation: A 44-year-old female patient with severe malnutrition after single anastomosis sleeve jejunal bypass (SASJ) surgery was referred to this center. SASJ was the chosen bariatric procedure for her after the first failed VBG. She was unable to swallow anything. Upper GI endoscopy was done and the laparoscopic prolene mesh used in the first bariatric surgery (VBG) was seen inside the gastric lumen. Total parental nutrition was initiated and continued for 12 days in this medical center and then she was candidate for exploratory laparoscopy.

Clinical discussion: Using prophylactic preperitoneal Prolene mesh during wound closure in bariatric surgery is safe and effective in preventing incisional hernia development. During the revision bariatric surgeries, surgeons should be careful about the used mesh in the first bariatric surgery.

Conclusion: Surgeons should be aware of the management of rare surgical complications that might lead to malnutrition which is insidious.

Level of evidence: V

1. Introduction

Obesity and metabolic disorders have become major concerns around the world [1]. A sedentary lifestyle, less physical activity and urbanization have led to excessive food consumption in people [1]. Otherwise, innovation of bariatric surgeries regardless of their methods has become the best treatment method of morbid obesity. Single-anastomosis sleeve jejunal (SASJ) bypass that has been developed since 2004 is a bariatric technique with advantage of presenting stomach and intestine anatomy with more similarity to normal anatomy compared with other bariatric techniques [2]. Another surgical treatment modality of morbid obesity is vertical banded gastroplasty (VBG). Although over the past 20 years, thousands of patients have undergone VBG, this procedure is no longer performed in the US [3]. The failure rate of weight loss after VBG is too high and hence the VBG has been largely replaced by gastric bypass bariatric procedures [3,4]. Herein, we have reported a rare surgical complication that led to severe malnutrition following SASJ procedure after the first VBG weight regain. This care presentation has been gathered according to the SCARE 2020 Guideline [5].

2. Case presentation

A 44-year-old female patient referred to this academic public medical center due to severe malnutrition after single anastomosis sleeve jejunal bypass (SASJ) surgery. In past history, she mentioned an initial weight of 90 kg, BMI 38.9 kg/m^2 and vertical banded gastroplasty (VBG) surgery 10 years ago. After VBG, the patient had lost weight for two years. She had no nausea and vomiting. The patient's weight decreased to about 70 kg and her weight remained stable for about 8 years. Afterwards, she gained weight again until she reached 95 kg, BMI 41.1 kg/m^2. Following this weight gain, she was candidate for the second

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https://doi.org/10.1016/j.ijscr.2022.106824
Received 22 January 2022; Received in revised form 5 February 2022; Accepted 10 February 2022
Available online 12 February 2022

bariatric surgery and hence upper gastrointestinal endoscopy before surgery was done that was normal. The patient underwent second bariatric surgery (SASJ) [6]. The patient developed a fever 2 days after SASJ. To investigate the cause of fever, left pleural effusion was found which was exudative after pleural tap. The patient was discharged after receiving antibiotics and she had no more symptoms for 2 months and she mentions weight loss in that time. After these 2 months of having no symptoms, she reports of having nausea and postprandial vomiting in less than 30 min. She was unable to swallow anything. The patient gradually developed symptoms of malnutrition and suffered from weakness, lethargy, anasarca edema and hair loss. In physical examination, her skin was thin and brittle. Her nails were fissured. The patient underwent upper GI endoscopy again and this time the laparoscopic prolene mesh used in the first bariatric surgery (VBG) was seen inside the gastric lumen (Fig. 1).

Due to severe malnutrition, the patient was admitted in this medical center. Upon admission in the general surgery department, his vital signs were all normal. She had blood pressure of 127/80 mmHg, a pulse rate of 84/min, a respiratory rate of 30/min, and oral body temperature of 37.2 °C. Complementary laboratory tests were requested; Na (135 mg/dl), albumin (3.2 g/dl), total protein (5.9 g/dl), white blood cell count (4800 per microliter) and anemia (Hb 10.4 mg/dl) were detected. Total parental nutrition was initiated and continued for 12 days in this medical center and then was candidate for exploratory laparoscopy. During operative surgery, after releasing multiple adhesions between the omentum and the gastric wall, erosion of laparoscopic prolene mesh inside gastric lumen causing obstruction was found by the experienced laparoscopic surgeon (Fig. 2).

By removing the tissues and attached omentum, the laparoscopic prolene mesh entry into the gastric lumen was found (Fig. 3).

It seemed that it was from previous walled off site of leak from VBG procedure. From the gastrotomy site, the inverted prolene mesh was removed as much as possible. After extensive repair of gastrostomy site, two drains were placed, a Jackson drain was placed under the omentum pouch and a tube drain on the omentum, on the right side of the stomach. The rest of the procedure was completed without complications. Nasogastric(NG) tube was leaded to distal limb of jejunal bypass. The patient's vital signs were stable during hospitalization. Three days after surgery the patient was fed with NG tube. One week after the surgery, the patient went on a liquid diet concurrent with feeding using NG tube (Fig. 4). At first there was high output fistula and the amount of discharge from drains was high which gradually decreased during 3 months.

Following decreased discharge after 3 months, abdominal CT scan with contrast was done (Fig. 5) which confirmed no leakage and then we removed the two drains and NG tube.

Fig. 1. Prolene mesh inside the lumen in upper endoscopy.

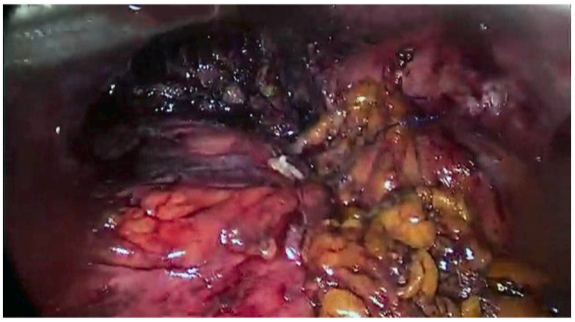

Fig. 2. Prolene mesh from the first bariatric surgery (VBG).

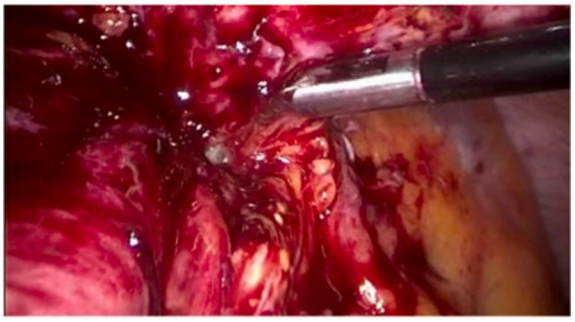

Fig. 3. Entry to the gastric lumen.

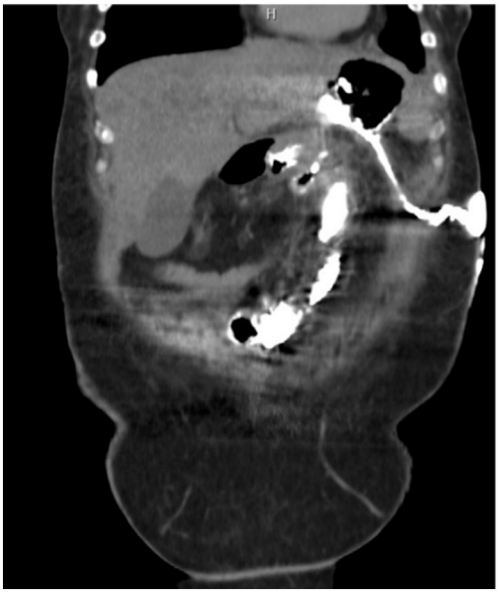

Fig. 4. High output fistula during the first month after surgery.

3. Discussion

Given the frequency by which VBG was being performed in the 1980's and a number of associated complications, bariatric surgeons commonly encounter patients with a VBG that requires revision. Failure occurs in up to 60% of the patients that were treated with primary restrictive bariatric operations such as VBG [7]. Insufficient weight loss and weight regain are the most commonly reported reasons of failure . Most of previous studies showed a rapid weight loss after VBG with a weight regain after 2 years [8]. The patient in our study had gained weight to the amount of before surgery in 8 years after VBG. The main

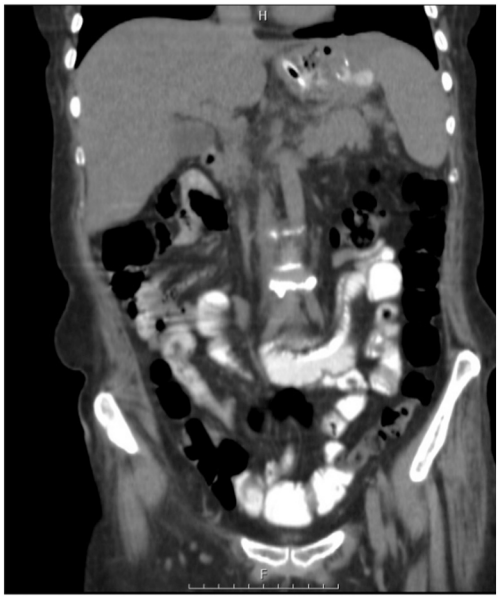

Fig. 5. Abdominal Ct scan with contrast after 3 months showing no leakage.

reason of revision surgery (SASJ) was weight regain in our case [9]. Post-operative malnutrition may occur after malabsorptive surgeries such as bypass, biliary pancreatic shunt and is due to the restriction and change in absorption. Types of malnutrition after bariatric surgery include protein-energy malnutrition and deficiencies of micronutrients, such as iron, folate, and vitamin B12 [10].

Retained surgical sponge or gossypiboma is the most commonly retained foreign material in the body after surgical operations, which lead to serious damages. High BMI in bariatric surgeries is a risk factor for gossypiboma [11]. There was no foreign body found in the stomach in our case but the Prolene mesh from the first bariatric surgery (VBG) was loose and inverted inside the stomach. Using prophylactic preperitoneal Prolene mesh during wound closure in bariatric surgery is safe and effective in preventing incisional hernia development. During the revision bariatric surgeries, surgeons should be careful about the used mesh in the first bariatric surgery. The prolene mesh should not be in the surgical path. If the mesh is not excised, the anastomosis should not be done around it. Although rare, malnutrition might be due to the inverted previous used mesh in revision bariatric surgeries.

4. Conclusions

Bariatric surgeries have increased life expectancy and reduced the complications of obesity. The outcome of a patient depends on the actions of the whole surgical team. Complications after these surgeries are rare and practitioners should be aware of the management of these surgical complications which might lead to malnutrition which is insidious and might cause irreversible neurologic complications.

Provenance and peer review

Not commissioned, externally peer-reviewed.

Sources of fundings

None to declare.

Ethical approval

Ethical approval not required.

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.

Research registration

N/A.

Guarantor

Dr. Seyeh Hadi Mirhashemi.

Credit authorship contribution statement

All authors made a major contribution in preparing this manuscript.

Research location

Loghman Hakim Hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

Declaration of competing interest

The author(s) declare no potential conflicts of interests with respect to the research, authorship, and/or publication of this article.

References

[1] M. Blüher, Obesity: global epidemiology and pathogenesis, Nat. Rev. Endocrinol. 15 (5) (2019) 288–298.
[2] M. Sayadishahraki, M.T. Rezaei, M. Mahmoudieh, B. Keleydari, S. Shahabi, M. Allami, Single-anastomosis sleeve jejunal bypass, a novel bariatric surgery, versus other familiar methods: results of a 6-month follow-up—a comparative study, Obes. Surg. 30 (2) (2020) 769–776.
[3] S. Cariani, L. Agostinelli, L. Leuratti, E. Giorgini, P. Biondi, E. Amenta, Bariatric revisionary surgery for failed or complicated vertical banded gastroplasty (VBG): comparison of VBG reoperation (re-VBG) versus roux-en-Y gastric bypass-on-VBG (RYGB-on-VBG), J. Obes. 2010 (2010).
[4] K. Najjari, M. Gouravani, M. Talebpour, F. Kor, M. Iranmanesh, H. Z. Mahmoudabadi, Gastric lumen obstruction after open VBG and Guillain-Barré syndrome following revisional surgery: a case report, Obesity Surg. (2021) 1–3.
[5] R.A. Agha, T. Franchi, C. Sohrabi, G. Mathew, A. Kerwan, A. Thoma, et al., The SCARE 2020 guideline: updating consensus surgical CAse REport (SCARE) guidelines, Int. J. Surg. 84 (2020) 226–230.
[6] N. Poublon, I. Chidi, M. Bethlehem, E. Kuipers, R. Gadiot, M. Emous, et al., One anastomosis gastric bypass vs. Roux-en-Y gastric bypass, remedy for insufficient weight loss and weight regain after failed restrictive bariatric surgery, Obes. Surg. 30 (9) (2020) 3287–3294.
[7] D.I. Athanasiadis, S. Monfared, J.N. Choi, D. Selzer, A. Banerjee, D. Stefanidis, Vertical banded gastroplasty revision to gastric bypass leads to effective weight loss and comorbidity and dysphagia symptom resolution, Obes. Surg. 30 (9) (2020) 3453–3458.
[8] R. Schouten, D.C. Wiryasaputra, F.M. Van Dielen, W.G. Van Gemert, J.W.M. Greve, Long-term results of bariatric restrictive procedures: a prospective study, Obes. Surg. 20 (12) (2010) 1617–1626.
[9] A. Pazouki, M. Kermansaravi, Single anastomosis sleeve-jejunal bypass: a new method of bariatric/metabolic surgery, Obes. Surg. 29 (11) (2019) 3769–3770.
[10] Y. van der Burgh, A. Boerboom, H. de Boer, B. Witteman, F. Berends, E. Hazebroek, Weight loss and malnutrition after conversion of the primary roux-en-Y gastric bypass to distal gastric bypass in patients with morbid obesity, Surg. Obes. Relat. Dis. 16 (3) (2020) 381–388.
[11] N. Saxena, D.K. Kardam, R. Chauhan, T. Chaudhary, Gossypiboma-successful retrieval through laparoscopy: a case report, Int. J. Surg. Case Rep. 106109 (2021).