Laparoscopic sleeve gastrectomy in management of weight regain after failed laparoscopic plication

Halil Coskun, Gokhan Cipe, Suleyman Bozkurt, Huseyin Kazim Bektasoglu, Mustafa Hasbaheci**, Mahmut Muslimanoglu

Bezmialem Vakif University, Faculty of Medicine, Department of General Surgery, Vatan Str, 34093 Istanbul, Turkey

A R T I C L E   I N F O
Article history:
Received 13 May 2013
Received in revised form 26 July 2013
Accepted 26 July 2013
Available online 3 August 2013

Keywords:
Bariatric surgery
Sleeve gastrectomy
Gastric plication
Weight regain

A B S T R A C T

INTRODUCTION: Weight regain after bariatric surgery remains a challenging problem with regard to its surgical management.

PRESENTATION OF CASE: A 30 year-old-female patient with weight regain after failed laparoscopic gastric plication and previous gastric banding was evaluated in a tertiary-care university setting. Her last body mass index was calculated as 40.4 kg/m². Preoperative ultrasonography revealed cholelithiasis. Laparoscopic sleeve gastrectomy with cholecystectomy was planned as a redo surgery. A floppy and plicated stomach with increased wall thickness of the greater curvature was seen. After adhesiolysis between the plicated part of stomach and the surrounding omental tissues, concomitant laparoscopic sleeve gastrectomy and cholecystectomy were performed. She was discharged on the 4th post-operative day without any complaint. At the postoperative 3rd month, her body mass index was recorded as 24 kg/m².

DISCUSSION: Redo surgery of morbid obesity after failed bariatric surgery is a technically demanding issue. Type of the surgical treatment should be decided by the attending surgeon based on the morphology of the remnant stomach caused by previous operations.

CONCLUSION: As a redo surgery after failed laparoscopic gastric plication and gastric banding procedures, laparoscopic sleeve gastrectomy may be regarded as a safe and feasible approach in experienced hands.

© 2013 The Authors. Published by Elsevier Ltd on behalf of Surgical Associates Ltd. All rights reserved.

1. Introduction

Obesity has an increasing incidence, and its treatment is a growing issue. Surgical treatment of obesity includes many types of operative procedures. Although laparoscopic gastric plication (LGP) has been an evolving surgical procedure over the last years, the long term outcomes and complications are not clear yet. However, weight regain with its management seems a significant problem after LGP.1

Herein, we report laparoscopic sleeve gastrectomy (LSG) in the management of weight regain after failed LGP.

2. Presentation of case

A 30 year-old-female admitted to our clinic with intermittent nausea, vomiting and weight regain after her previous bariatric surgeries. She underwent laparoscopic gastric banding in 2009. She was 115 kg in weight (BMI = 40.7 kg/m²) before gastric banding. One year after gastric banding procedure, her weight decreased to 84 kg (BMI = 29.8 kg/m²). However, gastric band was released due to band slippage. Then, she regained weight gradually and reached up to 110 kg (BMI = 39.0 kg/m²) in one year. As a bariatric surgery, LSG was performed in 2011. Although she had nausea and vomiting intermittently, her weight decreased to 91 kg (BMI = 32.2 kg/m²) in 20 months. Consequently, she started to gain weight again. Then, the patient admitted to our department with a body weight of 114 kg (BMI = 40.4 kg/m²). Due to weight regain and intermittent complaints, switch operation to LSG was planned. Abdominal ultrasonography revealed cholelithiasis. Intraoperatively, a floppy and plicated stomach was seen (Fig. 1). Increased wall thickness of the greater curvature of the stomach was seen. There were severe adhesions between the plicated part of stomach and the surrounding omental tissues. Plication sutures were seen after relief of the adhesions by sharp dissection (Fig. 2). Concomitant LSG and cholecystectomy were performed (Fig. 3). The greater curvature of the stomach seemed to be thicker than the native stomach (Fig. 4a and b). She was discharged on the 4th post-operative day without any complaint. She decreased to 68 kg (BMI = 24 kg/m²) at the postoperative 3rd month with no evident complaint.

** This is an open-access article distributed under the terms of the Creative Commons Attribution-NonCommercial-No Derivative Works License, which permits non-commercial use, distribution, and reproduction in any medium, provided the original author and source are credited.

* Corresponding author. Tel.: +90 2124531700; fax: +90 2126217580.
E-mail address: hasbaheci@yahoo.com (M. Hasbaheci).

Z210-2612/5 – see front matter © 2013 The Authors. Published by Elsevier Ltd on behalf of Surgical Associates Ltd. All rights reserved.
http://dx.doi.org/10.1016/j.jiscr.2013.07.020
3. Discussion

Surgical treatment of obesity includes many types of operations. Both LSG and LGP are restrictive procedures. LSG has gained popularity throughout the world. Large scale studies showed that LSG for obese patients has proved to be a technically easy, safe, and beneficial operation.\(^\text{3–6}\)

On the other hand, LGP is an evolving surgical approach over the past few years. No sufficient and satisfactory data has been reported about the long-term effectiveness of this procedure.\(^\text{7}\)

Due to the lack of long-term results, management of weight regain after LGP remains controversial. However, in a recently published prospective nonrandomized study, the short-term outcomes and associated complications between LGP and LSG were studied. According to the study, there were significant differences in mean percentages of excess weight loss and loss of feeling of hunger at the postoperative first year after LGP and LSG (58.8 ± 16.7 versus 80.0 ± 26.8, \(p = 0.038\); 27.3 versus 72.7, \(p = 0.033\), respectively). Therefore, LGP comparing with LSG was regarded as an inferior restrictive procedure for weight loss despite of its lower cost.\(^\text{8}\)

In the present case, we successfully managed the problem of weight regain after failed LGP via LSG. It was thought that previous LGP was unsuccessful to reduce the capacity of the stomach as a restrictive procedure. The stomach was enlarged and its volume was increased to an approximately native stomach. Intraabdominal adhesions evolved around the stomach causing some technical difficulties which could be overcome by advanced laparoscopic experience of our team.

To the best of our knowledge, this is the first case in which LSG has been performed for failed LGP in the English literature. As a redo surgery after failed LGP and laparoscopic banding procedures, it was shown that LSG may be regarded as a safe and feasible approach. However, further clinical trials and larger case series needed to define the optimal management of weight regain after bariatric surgery.

Conflict of interest statement

None declared.

Funding

None.

Ethical approval

Patient consent was taken from the patient before the process of the article.
Author contributions
H.C. and G.C. helped in study design, data collections, data analysis and writing. S.B. helped in data collections and data analysis. H.K.B. helped in data collections, data analysis and writing. M.H. and M.M. helped in data collections and writing of the manuscript.

References
1. Glatt D, Sorenson T. Metabolic and bariatric surgery for obesity: a review. South Dakota Medicine 2011 [Spec no: 57–62].
2. Taha D. Efficacy of laparoscopic greater curvature plication for weight loss and type 2 diabetes: 1-year follow-up. Obesity Surgery 2012:22:1629–32.
3. Noun R, Chakhtoura G, Nasr M, Skaff J, Choucair N, Rkaybi N, Tohme-Noun C. Laparoscopic sleeve gastrectomy for mildly obese patients (body mass index of 30 <35 kg/m²): operative outcome and short-term results. Journal of Obesity 2012:2012:813650.
4. Armstrong J, O’Malley SP. Outcomes of sleeve gastrectomy for morbid obesity: a safe and effective procedure. International Journal of Surgery 2010:8:69–71.
5. Kehagias I, Spyropoulos C, Karamanakos S, Kalfarentzos F. Efficacy of sleeve gastrectomy as sole procedure in patients with clinically severe obesity (BMI ≤ 50 kg/m²). Surgery for Obesity and Related Diseases 2013:9:363–9.
6. Jacobs M, Bisland W, Gomez E, Plasencia G, Mederos R, Celaya C, Fogel R. Laparoscopic sleeve gastrectomy: a retrospective review of 1- and 2-year results. Surgical Endoscopy 2010:24:781–5.
7. Abdelbaki TN, Huang CK, Ramos A, Neto MG, Talebpour M, Saber AA. Gastric plication for morbid obesity: a systematic review. Obesity Surgery 2012:22:1633–9.
8. Shen D, Ye H, Wang Y, Ji Y, Zhan X, Zhu J, Li W. Comparison of short-term outcomes between laparoscopic greater curvature plication and laparoscopic sleeve gastrectomy. Surgical Endoscopy 2013:27:2768–74.