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Original article

A novel dedicated endoscopic stent for staple-line leaks after laparoscopic sleeve gastrectomy: a case series

Giuseppe Galloro^{a,*}, Luca Magno^a, Mario Musella^b, Raffaele Manta^d, Angelo Zullo^e,
Pietro Forestieri^c

^aDepartment of Clinical Medicine and Surgery, Surgical Digestive Endoscopy Unit, Federico II University, Naples, Italy

^bDepartment of Innovative Bio-Medical Sciences, General Surgery Unit, Federico II University, Naples, Italy

^cDepartment of Clinical Medicine and Surgery, General and Bariatric Surgery Unit, Federico II University, Naples, Italy

^dGastroenterology and Digestive Endoscopy Unit, Nuovo S. Agostino Estense Hospital, Modena, Italy

^eGastroenterology and Digestive Endoscopy, Nuovo Regina Margherita Hospital, Rome, Italy

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Abstract

Background: Staple-line leak is the most serious complication of laparoscopic sleeve gastrectomy (LSG) occurring in .5–7% of cases. Patients with this complication are often managed with an esophageal covered, self-expandable metal stent positioned at endoscopy. Unfortunately, migration of these stents has been reported in 30–50% of cases. A novel fully-covered, self-expanding metal stent (Megastent), specifically designed for post-LSG leaks is now available. The objective of this study was to describe the first case series of patients with a staple-line leak after LSG who were endoscopically managed with such a novel stent.

Methods: Four patients who developed a staple-line leak after LSG were treated by positioning a Megastent at endoscopy. The stents were removed after 8 weeks.

Results: A complete leak repair was achieved in all patients. No stent migration occurred. Prokinetic therapy was needed to treat vomiting episodes during stent presence. At endoscopic evaluation after stent removal, a decubitus lesion at the distal part of the duodenal bulb was observed.

Conclusion: These preliminary results would suggest the use of the Megastent as an option for stenting of a staple-line leak after LSG. Further studies are still necessary. (Surg Obes Relat Dis 2014;■:00–00.) © 2014 American Society for Metabolic and Bariatric Surgery. All rights reserved.

Keywords: Endoscopic therapy; Postsurgical leak; Obesity; Sleeve gastrectomy

Laparoscopic sleeve gastrectomy (LSG), pioneered in 2003, has become a well-standardized therapeutic option for surgical treatment of different degrees of obesity and obesity-related diseases [1]. Although generally effective and safe, some complications may occur after LSG such as bleeding (0–2%), strictures (0–2%), and staple-line leaks (0.5–7%) [1–4]. The latter complication is the most serious

and it has been associated with a significant morbidity [2]. The use of esophageal covered, self-expandable metal stents has effective in managing this problem. This approach allows a temporary bypass of the leak, favoring its healing and enabling oral nutrition, without requiring a further intervention. Unfortunately, migration of these esophageal stents occurs in 30–50% of cases [3]. A novel fully-covered, self-expanding metal stent (Megastent, Taewoong Medical Industries, Kangseo-Gu Songjung-Dong, South Korea), specifically designed for post-LSG leak treatment, has been recently introduced. This is the first case series of

*Correspondence: Prof. Giuseppe Galloro, University of Naples Federico II - School of Medicine, Via S. Pansini, 5 80131 Napoli, Italy.

E-mail: giuseppe.galloro@unina.it

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patients with a staple-line leak after LSG who were endoscopically treated with this new stent.

Endoscopic procedures

All endoscopic procedures were performed with patient in lateral-left decubitus, under deep sedation (propofol, fentanyl, and midazolam) and anesthesiologist assistance. An upper gastrointestinal endoscopy was performed with a single-channel endoscope (EG 490 ZW; Fujinon, Omiya, Japan). Two radiopaque endoclips, the first in distal esophagus some centimeters above the leak, and the second in duodenal bulb were placed to mark the point of maximum insertion of the stent. A stiff guide wire (X Wire 035450 SS, ConMed Endoscopic Technologies Inc., Chelmsford, MA, USA) was placed into the duodenal bulb, and its correct placement was confirmed under fluoroscopy. The endoscope was removed, leaving the remaining guide wire in place, and the stent (23-cm long and a 24-mm diameter Megastent) was deployed over the guide wire and positioned, under fluoroscopic control, between the 2 radiopaque markers. The endoscope was then reinserted beside the guide wire until the distal esophagus to ensure that the proximal end of the delivery system of the stent was positioned at the optimal position. Then the stent was opened, by its distal delivery system, under fluoroscopic control and under direct endoscopic visualization at the proximal end. The day after the stent deployment, a radiologic control was performed to ensure its correct positioning with the 2 flares placed between the proximal and distal radiopaque marks. During stent permanence, clinical controls were performed monthly, while radiologic controls were performed weekly during the first month, and then 1 month to monitor the stent position and to anticipate leak recurrence. After 60 days, the patient was readmitted for stent removal.

Case series

Patient 1

A 27-year-old woman underwent LSG for morbid obesity (Body mass index [BMI] 51 kg/m²) in November 2011. One month after discharge, the patient complained of nausea and vomiting. The Gastrographin swallow was negative, and upper endoscopy showed only a mild substenosis in the middle of the sleeve. Due to the persistence of her symptoms, the patient was readmitted 14 days later. A new Gastrographin swallow showed a gastric leak, with peritoneal extravasation of contrast medium, as well as the previously described substenosis (Fig. 1). A computerized tomographic (CT) scan excluded the presence of abscess, fluid collections adjacent to the sleeve, and free intra-abdominal liquid. Consequently, we decided to treat the leak by placing a Megastent. The Gastrographin swallow showed the correct position of the stent (Fig. 2), and 6 days later the patient was discharged. The patient complained of

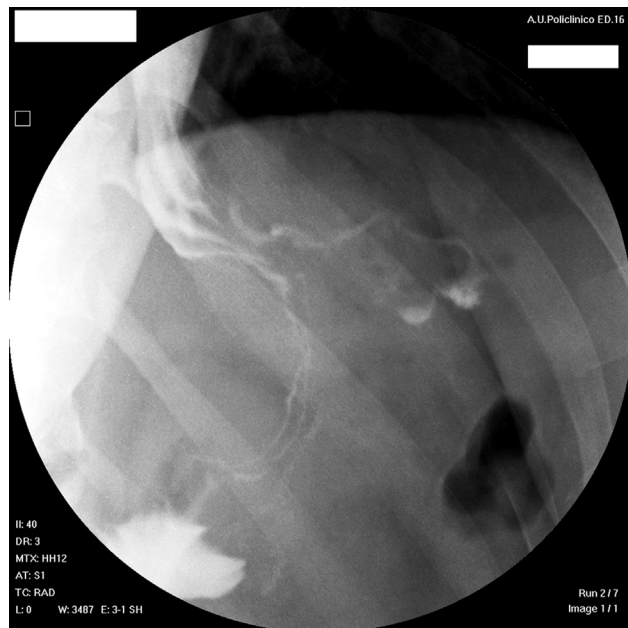


Fig. 1. Gastrographin swallow showing a gastric staple-line leak with extravasation of contrast medium and a substenosis in the middle part of the sleeve.

biliary vomiting, so prokinetic therapy with domperidone, 10 mg t.i.d., was administered, which relieved her symptoms. After 8 weeks, she underwent stent removal. Upper endoscopy showed that the leak had healed, with a whitish granulation tissue filling the hole, and a decubitus lesion at the distal part of the duodenal bulb.



Fig. 2. A Gastrographin swallow control performed the day after Megastent placement shows the correct positioning of the stent, from the distal esophagus to the first part of the duodenum.

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