

## Case Report

# A case of non-contiguous gastric and esophageal iatrogenic perforations managed by self-expanding metal stent placement

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## Abstract

We describe a case of iatrogenic gastric perforation after sleeve gastrectomy procedure as bariatric surgery. Initially, a covered self-expanding metal stent placement (SEMS) was attempted outside, but it resulted in second iatrogenic perforation at lower esophagus. He improved gradually with drainage, antibiotics, and SEMS placement.

## Key words

Bariatric surgery, perforation, sleeve gastrectomy, self-expanding metal stent

## Introduction

Self expanding metal stents can be used for esophageal perforations/leak in sick patients as minimally invasive intervention. Several case series have shown good results with esophageal self expanding metal stents in these stents. We describe a case with separate perforations in lower esophagus and gastric body managed by long esophageal self expanding metal stent.

## Case Report

A 37-year-old diabetic male with body mass index 35.5 Kg/m<sup>2</sup> underwent sleeve gastrectomy as bariatric surgery. On second postoperative day, he had abdominal pain and respiratory distress; he was diagnosed as having peritonitis. A computed tomography (CT) abdomen was done, which showed leakage of contrast from stomach. Laparoscopic repair of gastric rent was done and an abdominal drain was placed. He had difficult hospital course from day 5 to 15 postsurgery, cultures were positive for *Kleibella* and *Candida* and he had

persistent high drain output. A repeat CT showed persistent defect in proximal body of stomach. He was planned for covered self-expanding metal stent placement (SEMS) placement outside, however, it was difficult negotiation at lower end of esophagus and the patient developed dyspnea on table. He was shifted to Intensive Care Unit, a CT chest was done, which showed leakage of contrast into mediastinum and right pleural cavity. An intercostals drainage tube was placed; he was kept on mechanical ventilation, antibiotics, antifungals and total parental nutrition. He was referred to us on day 29 of surgery. An endoscopy was done, which showed perforation of lower esophagus [Figure 1a] and a gastric rent in proximal body with thickened folds. In view of poor patient condition, endoscopic placement of SEMS was planned to cover both sites of iatrogenic perforations. A fully covered 15 cm long (we did not have a long stent that time and 15 cm length was enough according to our clinical decision, which was confirmed on check contrast study) SEMS was placed and feeding was started through nasojejunal tube. Patient's condition improved but he had a persistent high abdominal drain output. A check endoscopy at day 30 of first SEMS placement showed persistence of gastric rent and distal migration of esophageal SEMS; another SEMS was placed through first SEMS [Figure 2a]. Earlier placed 2 SEMS were removed at 14 weeks follow-up, check endoscopy showed healing of gastric rent and a subcentimetric rent in distal esophagus leading into a purulent cavity; purulent material was aspirated and a long 23 cm SEMS (Niti-S Mega) was placed [Figure 2b]. At 24 weeks of first SEMS placement, stent was removed (after confirmation on CT that there was no collection) and there was no leak of

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10.4103/0976-5042.144834

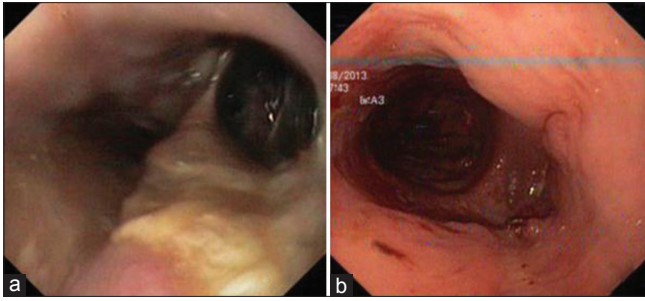
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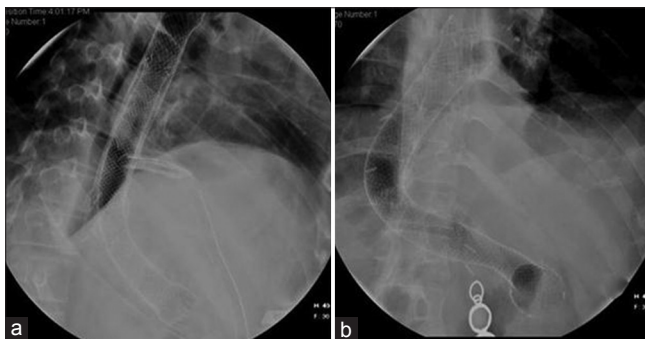
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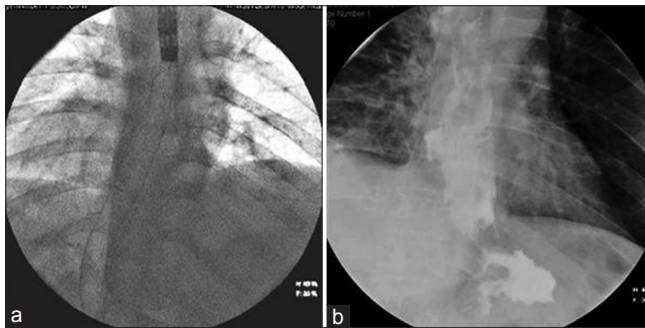
contrast from esophagus [Figure 3]; check endoscopy showed complete healing of esophageal rent [Figure 1b].



**Figure 1:** Endoscopy images showing esophageal perforation site (a) and healed site after removal of self-expanding metal stent placement (b)



**Figure 2:** Fluoroscopy image showing two self-expanding metal stent (SEMS) (a) and a long SEMS (b) in esophagus and stomach



**Figure 3:** Fluoroscopy images showing self-expanding metal stent being pulled out (a) and gastrografin study (b) showing no leak of contrast

## Discussion

Laparoscopic sleeve gastric resection as a part of bariatric surgery may cause gastric leak. In a large series of 378 patients undergoing laparoscopic sleeve gastrectomy, leaks were present in nine (2.38%) patients and these leaks were managed by laparoscopic surgery ( $n = 2$ ), open surgery ( $n = 1$ ), CT guided drainage ( $n = 2$ ) and endoscopic SEMS placement ( $n = 4$ ) along with antibiotics and parenteral nutrition. They could manage all patients successfully. The authors proposed drainage and endoscopic SEMS placement as first-line treatment of these leaks.<sup>[1]</sup> Esophageal SEMS placement may cause esophageal perforation as happened in the present case.<sup>[2]</sup> There are case series on esophageal leak/fistula/perforation managed by SEMS placement with good results.<sup>[3-5]</sup> early placement of the esophageal stent is important as late placement may result in mortality despite successful stent placement.<sup>[5]</sup> The present patient was too sick for surgical management, in addition he had two rents, one in the gastric wall and other in esophagus. Our report suggests that complex perforations also can be managed by endoscopic stent placement.

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**How to cite this article:** Choudhary NS, Puri R, Sud R. A case of non-contiguous gastric and esophageal iatrogenic perforations managed by self-expanding metal stent placement. *J Dig Endosc* 2014;5:78-9.

**Source of Support:** Nil, **Conflict of Interest:** None declared.