Endoscopic management of an iatrogenic gastroesophageal junction obstruction caused by an over-the-scope clip

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INTRODUCTION

Over the years, the use of minimally invasive techniques in endoscopy with new technology, such as the over-the-scope clip system, has reduced the need for surgical intervention for GI bleeding, perforation, and fistula formation.[1] Clinical trials have shown excellent short-term efficacy with clip placement. It was necessary to develop a clip-removal system to remove clips after healing, for ongoing clinical management, in the setting of adverse events, and in the case of clip misdeployment or patient discomfort.[2,3] In our case, an over-the-scope clip was used to close a fistula that formed after a sleeve gastrectomy, with misdeployment resulting in luminal obstruction.

CASE

A 38-year-old woman presented to an outside hospital after a recent repair of a sleeve gastrectomy leak that caused dysphagia to solids and ability to tolerate minimal liquids. Additionally, she reported mild abdominal discomfort without nausea or vomiting. She was hemodynamically stable and tolerating her secretions.

She had a sleeve gastrectomy 1 month before presentation, complicated by a sleeve leak. An esophageal covered stent was placed initially and later removed for early management (Fig. 1). On removal, there was a small fistula noticed near the gastroesophageal junction. Endoscopic closure of the fistula was attempted with an over-the-scope clip. However, on re-evaluation, it was noticed that the clip was misdeployed and was causing complete obstruction of the gastroesophageal junction, as the area could not be traversed with a regular or a pediatric upper endoscope. A CT scan with intravenous contrast was obtained showing the over-the-scope clip near the gastroesophageal junction (Fig. 2). The patient was then referred to a tertiary care hospital for clip removal.

Figure 1. Abdominal CT scan showing the esophageal stent used for initial management of the sleeve gastrectomy leak.

PROCEDURE

We used an upper endoscope with a clear cap distal attachment to protect the esophageal lining and locate the over-the-scope clip (Fig. 3) near the original fistula (Fig. 4). Using a clip-removal system, we positioned the bipolar head of the device on each end of the bear-claw clip and used the generated current to fracture both sides of the clip (Fig. 5). Fracturing of the clip required multiple activations of energy, which may vary depending on clip location and maneuverability of the endoscope in the lumen. The clip is not always easily visible, given surrounding tissue edema, so pretugging the clip may help to expose it from the tissue. This can be done using a double-channel scope with one channel harboring the removal system and the other harboring the rat-tooth forceps, which can be used to help position the clip. Once the prong of the removal system is hooked to the clip, it does not need to be retracted after each deployment of energy. To completely relieve the clip, it must be fractured on both ends. Rat-tooth forceps and a clear cap were used to remove each end of the clip without harming the esophagus (Fig. 6; Video 1, available online at www.videogie.org).

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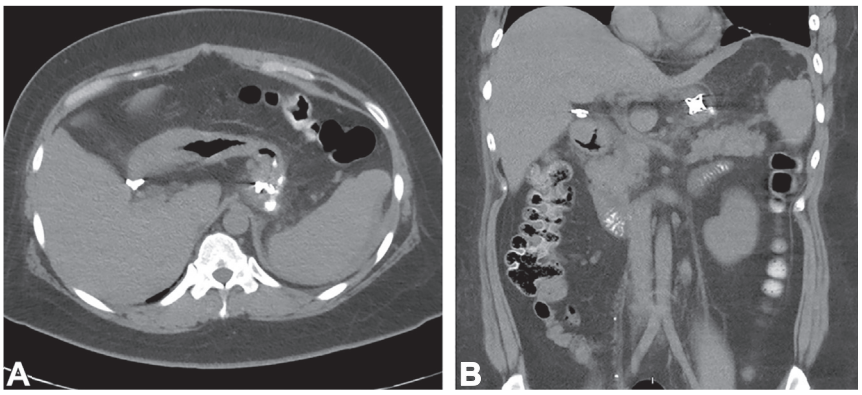

Figure 2. Abdominal CT scan with intravenous contrast showing the obstructing over-the-scope clip on both transverse **(A)** and coronal **(B)** planes.

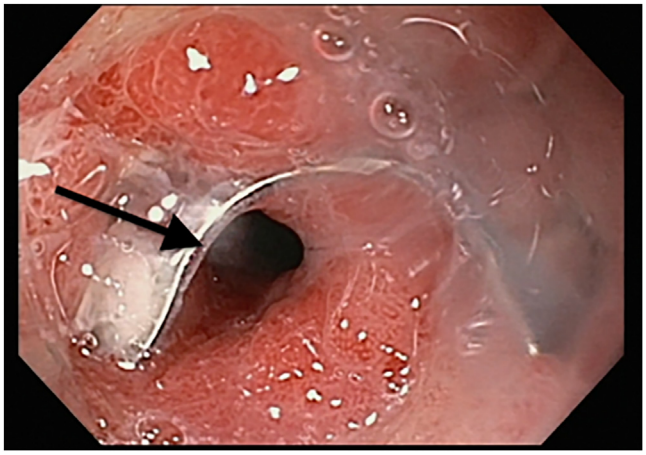

Figure 3. Misdeployed over-the-scope clip obstructing the gastroesophageal junction.

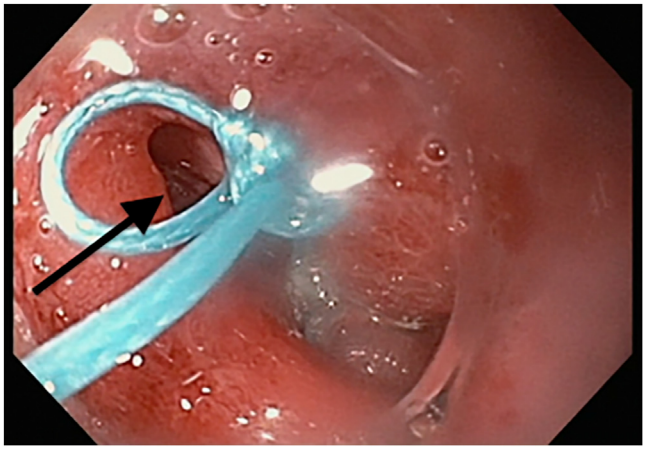

Figure 4. The fistula that the over-the-scope clip was intended to close.

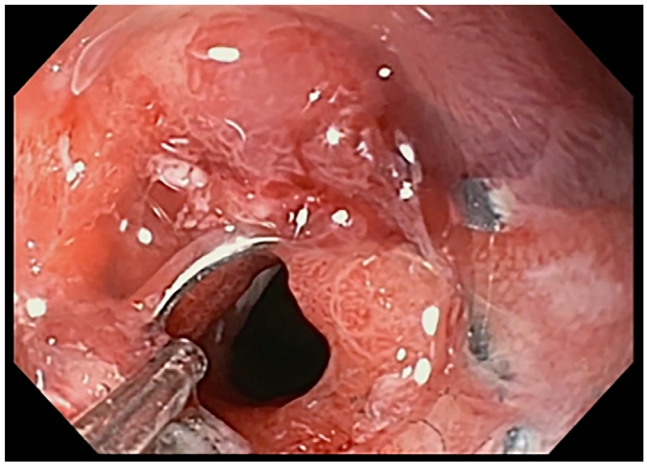

Figure 5. Removal system being used to fracture the clip.

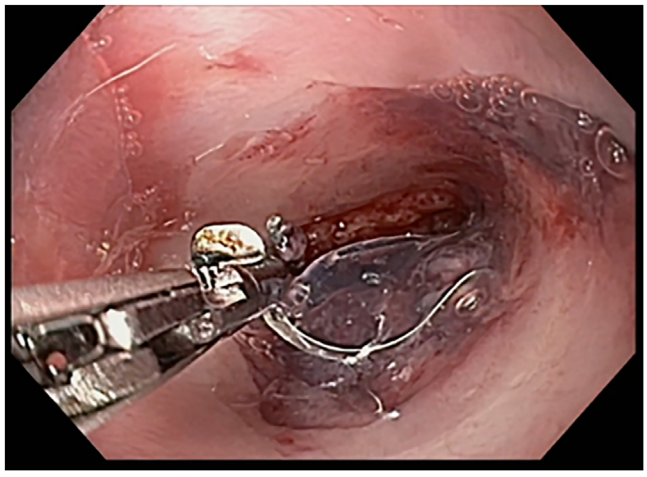

Figure 6. Rat-tooth forceps and clear hood being used to remove clip shards.

Figure 7. Both ends of the fractured clip after removal.

OUTCOMES

Endoscopy after clip removal with the removal system showed no remaining clip shards in the esophagus (Fig. 7). The gastroesophageal junction was traversable with an adult endoscope. The patient was placed on total parenteral nutrition until her fistula was percutaneously drained with interventional radiology. Adverse outcomes with the removal system are minimal but include superficial thermal damage, mucosal tears, and minor bleeding.[4-6]

CONCLUSIONS

An over-the-scope clip can cause complete luminal obstruction if misdeployed in tight GI luminal spaces including the esophagus, pylorus, duodenum, and ileocecal valve. A systematic review evaluating the need for the over-the-scope removal system showed that "adverse events after over-the-scope clip implantation" (ie, ulceration, stenosis, obstruction) and "misplacement" were significant contributors to the use of the removal system.[3] We describe the use of the removal system in the setting of a misdeployed over-the-scope clip.

DISCLOSURE

The authors disclosed no financial relationships relevant to this publication.

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