

Role of over the scope clips in the management of iatrogenic gastrointestinal perforations

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Core tip: Gastrointestinal perforation is a frequently encountered, inevitable, and serious complication encountered during endoscopic procedures. In this editorial, we have described our experience with over the scope clip system as a promising therapeutic option in dealing with iatrogenic gastrointestinal perforations. We believe that our experience with this emerging therapeutic approach on three patients will definitely be an excellent asset to available literature and will attract more readers.

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Abstract

Advances in endoscopic and surgical techniques have increased the frequency and complexity of these procedures and associated complications such as gastrointestinal perforation. With the advancements in the field of gastroenterology, the promising use of an over the scope clips (OTSC) has fulfilled the unmet need for a reliable endoscopic device in approximation of gastrointestinal perforation. This novel approach has raised the level of confidence in endoscopist in dealing with this serious complication during endoscopy. Here we have shared our experience with OTSC to evaluate its efficacy and safety in managing iatrogenic gastrointestinal perforations during endoscopy.

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Key words: Gastrointestinal perforation; Over-the-scope clip; Over the scope clip system; Endoscopic adverse events

TO THE EDITOR

Endoscopic adverse events are inevitable and gastrointestinal perforation is one of the serious complications encountered during endoscopic procedures. Therapeutic options are limited in fragile patients with comorbid conditions. Incidence of perforation during diagnostic endoscopy is reported to be between 0.01% and 0.6% and therapeutic endoscopy between 0.6% and 5.5%^[1]. By using over the scope clip (OTSC) technique, immediate closure of these perforations would be possible during endoscopy and would increase an endoscopist's level of comfort^[2]. OTSC has shown its encouraging results in management of closure of gastrointestinal fistulas, anastomotic leaks, bleeding lesions, post bariatric surgery complications and closure of gastrostomies during natural orifice transluminal endoscopic surgery^[3,4]. The following three cases describe the therapeutic efficacy and technical feasibility of OTSC system in management of iatrogenic gastrointestinal tract perforations.



Figure 1 Endoscopic image showing linear 2 cm tear at lesser curvature (A), endoscopic image showing successful closure of the tear with an over the scope clips (B); computed tomography scan of abdomen and pelvis with contrast showing successful closer of tear with clip and no gastrografin leakage (C).



Figure 2 Endoscopic image showing a deep linear and wide tear of 1 cm with base seemed to have fibrinous appearance (A), endoscopic image of successful closure of the tear with an over the scope clips (B); computed tomography scan of abdomen and pelvis with contrast showing successful closer of tear with clip and no gastrografin leakage (C).



Figure 3 Endoscopic image showing area of yellow looking defect possibly omentum or serosa (contained perforation) (A), endoscopic image showing successful closure of the tear with an over the scope clips (B), computed tomography scan image of successful closer of tear with clip without leakage of contrast (C).

In the first case, a 61 years old female with sarcoidosis underwent esophagogastroduodenoscopy for evaluation of dysphagia. Two areas of angioectasia were found in duodenum and were cauterized with a gold probe. Upon withdrawal of the scope, a linear 2 cm tear was seen in the lesser curvature about 5 cm below the gastroesophageal junction (Figure 1A). An OTSC 12/6 GC was successfully deployed endoscopically and satisfactory closure of the perforation was observed (Figure 1B). Post procedure computed tomography (CT) scan of abdomen and pelvis showed free air, however, without gastrografin leak and successful closure of the defect with the clip (Figure 1C). Patient recovered well and was successfully discharged home on day 3.

In the second case, an 80 years old female with multiple co-morbidities underwent percutaneous endoscopic gastrostomy (PEG) placement. After successful PEG tube placement a 1 cm × 2 cm tear was seen along the lesser curvature (Figure 2A). Successful closure of the defect was achieved by deploying an OTSC 12/6 GC (Figure 2B). Post procedure CT abdomen showed free air but without extra-luminal contrast extravasation (Figure 2C). Eventually, the patient was started on regular PEG feeding and discharged to sub acute rehabilitation on day 3.

In the third case, a 67 years old female underwent colonoscopy for hematochezia. During the procedure a recto sigmoid junction perforation with an omental cover

was seen (Figure 3A). Successful closure of defect was achieved by deploying an OTSC 12/6 GC (Figure 3B). CT scan showed free air with the clip appeared to be closing the defect (Figure 3C). As an abundant measure of caution, laparoscopy was performed, which did not reveal an ongoing air leak and confirmed successful closure by OTSC placement. The area was oversown at laparoscopy in order to achieve additional approximation. Patient was further observed closely in SICU. During subsequent days, patient began improving clinically and was initially started on clear liquid diet which was advanced as tolerated. Patient was discharged home on day 5.

In summary, the ability to successfully close iatrogenic perforations with the OTSC is a significant advancement in this field. This enhances patient safety and improves outcome, especially in fragile patients. Our experience supports the promising role of OTSC system as part of the therapeutic armamentarium of the endoscopist to deal with iatrogenic gastrointestinal perforations but further studies with a large sample size will be needed to confirm its efficacy and safety. We would recommend all

endoscopy units including office based and endocenters have a ready supply of clips, with proper training for physicians and staff on its use.

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