Endoscopic band ligation to create an omental patch for closure of a colonic perforation

A 56-year-old woman underwent colonoscopy for colorectal cancer surveillance. At a difficult rectosigmoid turn, a 1.5-cm perforation developed, but application of two endoscopic clips (HX-610-090 L, Olympus, Tokyo, Japan) failed to close the perforation because of the awkward angle (Fig. 1). A banding device (MBL-6, Wilson-Cook, Winston-Salem, North Carolina, USA) loaded on a gastroscope was then used to suck the nearby omentum to complete closure of the perforation, aided by one of the clips serving as a landmark to pinpoint the location of the perforation (Fig. 2). Subsequently, a computed tomography (CT) scan of the whole abdomen with rectal contrast revealed pneumoperitoneum, pneumoretroperitoneum, pneumomediastinum, and right pneumothorax, and confirmed absence of contrast leakage (Fig. 3). The patient was admitted and the pneumothorax was successfully treated with conservative measures, that is, the patient had no oral intake for 1 week and was given broad-spectrum antibiotics. After another 2 days, she was able to tolerate a step-up diet and was discharged. At the 1-month follow-up she had no complaints and reported normal bowel movement.

The rectosigmoid colon is vulnerable to perforation because of its angulation [1, 2]. Perforation at the rectosigmoid junction can lead to pneumoperitoneum as well as pneumoretroperitoneum because the junction is located within both the retroperitoneal and the intraperitoneal spaces. A pneumothorax may occur when air dissects through the mediastinal pleura into the pleural space [3]. The success rate of clipping for closure of a colonic perforation is about 42%-82% [4,5]. For successful endoscopic clipping the perforation should be less than 10 mm in size, as larger sizes carry a significant risk of unfavorable outcome [5], and there needs to be enough space available for passing the scope under direct visualization [4.5]. In our patient clipping was unsuccessful as the perforation was more than 1cm in size and located at the angulated part of the rectosigmoid colon.



Fig. 1 Endoscopic view of the perforation (blue arrow) following a failed attempt at clipping in a 56-year-old woman undergoing colonoscopy for colorectal cancer surveillance. A clip is seen at one corner of the hole (red arrow).

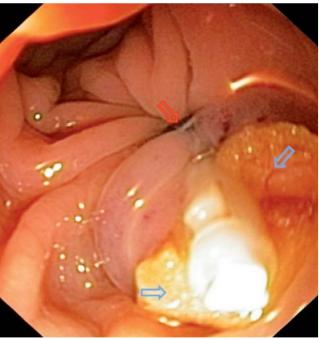


Fig. 2 Endoscopic view of successful closure of the colonic perforation by banding ligation. A black rubber band (red arrow) was used and an omental patch (blue arrows) was created.

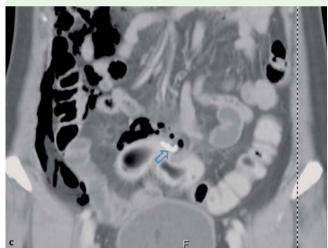
Fortunately, we were able to use one of the previously deployed clips as a guide and suck the nearby omentum to create an omental patch endoscopically. Endoscopy_UCTN_Code_TTT_1AQ_2AG

Competing interests: None



Fig. 3 Computed tomography (CT) scans showing: a pneumoperitoneum, pneumoretroperitoneum, and right pneumothorax (gray arrow); and **b** pneumomediastinum (blue arrow) and right pneumothorax (red arrow). **c** The CT scan with rectal contrast confirmed the absence of contrast leakage at the site of perforation, using the clip as a landmark (blue arrow).





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Bibliography

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