

# Managing perforations during endoscopic resection of gastrointestinal lesions



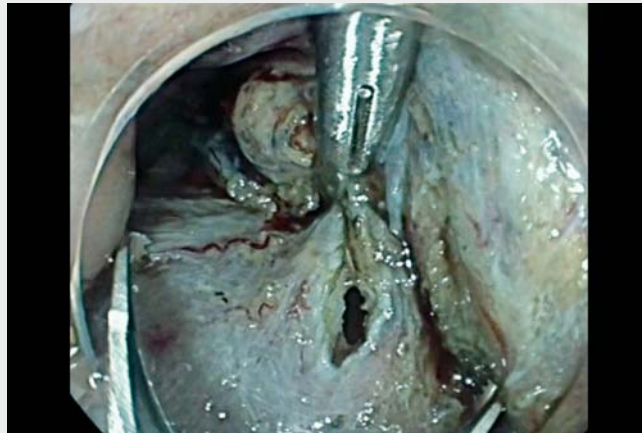
Endoscopic submucosal dissection (ESD) and endoscopic mucosal resection (EMR) carry a risk of perforation (4%–10% and <1%, respectively [1,2]). It is essential that perforations are identified early during resection so they can be managed endoscopically to optimize patient outcomes.

► **Video 1** shows three different cases of perforations occurring during endoscopic resection, and demonstrates different challenges and solutions to manage them.

The first case illustrates the best way to manage perforations during ESD. In this case, after identification of the perforation during gastric ESD, further dissection was performed to isolate and close the perforation without catching the lesion or submucosa in the clip. This ensured that the ESD could be completed without interference from the clip.

The second case demonstrates a challenging situation during ESD of a colonic laterally spreading tumor granular type. During submucosal dissection a perforation was noted. Ideally, the resection should have been continued to create enough space to enable clip closure of the defect without affecting the resection field. Unfortunately, the patient developed severe pain very quickly. Clip closure was performed quickly to control the situation. As shown, the clip caught the edge of the lesion. The video demonstrates the best way to dissect and isolate the clipped area in order to allow successful dissection of the remaining lesion.

The third case is an EMR of a duodenal adenoma. After snare resection, a target sign was seen on the resected specimen and an open perforation was noted in the duodenum. This was closed by clips after resecting the remaining adenoma. However, success of this closure depends on diversion of bile and acid away from the closed perforation; therefore, a nasojunal tube was inserted and placed past the newly closed defect.



► **Video 1** Management of endoscopic perforations.

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## Competing interests

P. Bhandari has received research grants or is on the advisory board for Fujifilm, Boston Scientific, Olympus, Pentax, 3-D Matrix, NEC (Japan), and Medtronic. The remaining authors declare that they have no conflict of interest.

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## Bibliography

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