Endoscopic sutured purse-string resection: a novel technique for resection of large gastric subepithelial lesions

Subepithelial lesions (SELs) in the gastrointestinal (GI) tract are common and often necessitate removal, particularly when > 20 mm [1, 2]. The choice of endoscopic resection depends on various factors, including lesion characteristics, location, and evidence of deeper tissue involvement [2, 3]. Challenges in achieving full-thickness resection have driven the development of innovative over-the-scope devices [4]. However, these devices are typically restricted to lesions < 30 mm, and their size and rigidity often hinder passage beyond the pharynx. We present here a novel technique for accomplishing full-thickness resection of SELs, known as endoscopic sutured purse-string resection (ESPR). ESPR employs the Overstitch device (Apollo Endosurgery, Austin, Texas, USA), a well-established tool for placing full-thickness endoscopic sutures. It involves creating a purse-string configuration around the lesion (Fig. 1) before resection, enabling the safe and complete removal of even larger lesions.

Patient selection followed European Society of Gastrointestinal Endoscopy guidelines, with a preference for lesions located on the greater curve of the stomach, primarily due to the easier access provided by the Overstitch device. Lesions underwent thorough characterization using endoscopic direct visualization, endoscopic ultrasound, and cross-sectional imaging (computed tomography), following a standardized protocol. ESPR is conducted as follows (Video 1): marking the boundaries of the lesion, applying an endoscopic purse string, tenting the lesion with forceps, and creating a pseudopolyp by tightening the purse string. Resection was carried out using a large snare, and the site underwent meticulous inspection for completeness before being oversewn with a Z-shaped suture (Fig. 2). In the two cases where this technique was employed, no perioperative complications were encountered. Patients were discharged on the same day, and histological examination confirmed complete resection, including the muscularis propria and serosa layers, along with omental fat in one case.

This technique presents a safe and viable solution for resecting gastric SELs, effectively addressing the limitations of existing techniques. Its potential applicability extends beyond the stomach, offering a promising avenue for further exploration and adoption in the field of GI endoscopy.
The authors declare that they have no conflict of interest.

The authors

Olaolu Olabintan1, Theodoros Voulgaris1, Homira Ayubi1, Sri Thrumurthy1,2, Aymn Haji1,3, Bu’Hussain Hayee1,2,3

1 Gastroenterology & Advance Therapeutic Endoscopy Department, King’s College Hospital NHS Foundation Trust, London, United Kingdom
2 Upper GI Surgery & Advance Therapeutic Endoscopy Department, King’s College Hospital NHS Foundation Trust, London, United Kingdom
3 Colorectal Surgery & Advance Therapeutic Endoscopy Department, King’s College Hospital NHS Foundation Trust, London, United Kingdom

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References


Corresponding author

Olaolu Olabintan, MD
Gastroenterology & Advance Therapeutic Endoscopy Department, King’s College Hospital NHS Foundation Trust, Denmark Hill, London SE5 9RS, United Kingdom olaolu.olabintan@nhs.net

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