Endoscopic creation of an omental patch with an over-the-scope clip system after endoscopic excavation and resection of a large gastrointestinal stromal tumor of the stomach

A 75-year-old woman with a history of complex aortic aneurysm repair, rheumatoid arthritis, hypertension, atherosclerosis, and atrial fibrillation was found to have a 35-mm gastrointestinal stromal tumor (GIST) of the gastric fundus (Fig. 1a). Endoscopic ultrasound revealed the GIST to be originating from the muscularis propria. The patient preferred an endoscopic excision. The endoluminal resection was carried out with an endoscopic submucosal dissection (ESD) technique. A mixture of indigo carmine and saline was injected into the base of the lesion. After an incision had been created with the tip of a snare, an insulation-tipped knife (Olympus America, Melville, New York, USA) was used to cut the mucosa and submucosa circumferentially around the tumor (Fig. 1b). With careful dissection, the entire round, muscular tumor was exposed, completely excavated from its base, and enucleated (Fig. 1c). However, during the final steps of the procedure, a perforation was noticed at the side of the tumor base. An 11/6t over-the-scope clip (OTSC) system (Ovesco Endoscopy, Tübingen, Germany) was loaded onto the scope and directed toward the perforation site, which was about 4 to 5 mm in diameter. Despite the difficult retroflexed position, we were able to direct the OTSC system toward the defect, fully visualize the perforation, carefully suction an omental patch into the cap of the OTSC system, and include all the edges of the perforation site within the cap before successfully deploying the clip (Fig. 1d). A second clip was deployed next to the first one to completely close the muscular defect. Water-soluble contrast was then administered through the scope to confirm complete closure of the perforation (Fig. 1e, f). The patient was kept in the hospital, and antibiotics were administered. A radiographic examination 24 hours later did not reveal any leak, and the patient’s diet was gradually advanced over the next 2 days.

ESD and excavation techniques have now become accepted therapies for the removal or palliation of early cancers and submucosal tumors. However, they occasionally result in perforation [1]. Although in
the past perforation was always consid-
ered a catastrophe, full-thickness wall de-
fects can nowadays be completely closed
with the use of endoscopic devices such
as clips, Endoloops, suturing devices, and
OTSC systems [2, 3]. Whereas closure of a
defect used to focus mainly on apposition
of the perforation edges, we believe that
the creation of an endoscopic omental
patch may add strength and improve seal-
ing of the perforation site. Indeed, surgical
omental patches are a classic approach to
improving the sealing and healing of per-
forated gastroduodenal ulcers.

Klaus Mönkemüller, Shabnam Sarker,
K. R. Kyanam Kabir Baig
Basil I. Hirschowitz Endoscopic Center
of Excellence, Division of Gastroenterology
and Hepatology, University of Alabama
at Birmingham, Alabama, USA

Competing interests: None

References
1 Zhang S, Chao GQ, Li M et al. Endoscopic sub-
mucosal dissection for treatment of gastric
submucosal tumors originating from the
muscularis propria layer. Dig Dis Sci 2013;
58: 1710 – 1716
2 Kantsevoy SV, Bitner M, Mitrokov AA et al.
Endoscopic suturing closure of large muco-
sal defects after endoscopic submucosal
dissection is technically feasible, fast, and
eliminates the need for hospitalization
(with videos). Gastrointest Endosc 2014;
79: 503 – 507
3 Mönkemüller K, Peter S, Toshniwal J et al.
Multipurpose use of the ‘bear claw’ (over-
the-scope-clip system) to treat endoluminal
gastrointestinal disorders. Dig Endosc 2014;
26: 350 – 357