Submucosal tunneling endoscopic resection of a gastric gastrointestinal stromal tumor

A 64-year-old man was admitted to our hospital for endoscopic resection of a gastrointestinal stromal tumor (GIST) of the gastric antrum. The submucosal tumor had been previously observed during an esophagastroduodenoscopy, which revealed a protruded lesion in the greater curve of the gastric antrum. The subsequent endoscopic ultrasound showed that the tumor was large (20 mm), arose from the muscularis propria layer, and showed a persistent enhancement after infusion of SonoVue (Bracco, Milan, Italy). The contextual fine-needle aspiration, performed with a 19 gauge Echotip Ultra (Cook Medical Inc. Limerik, Ireland), showed solid clusters of spindle cells, which were positive for CD34 and CD117, and therefore diagnostic for GIST. On this basis, a submucosal tunneling endoscopic resection (STER) was performed with a HybridKnife T-Type (ERBE, Tübingen, Germany) and IT-Knife 2 (Olympus, Tokyo, Japan). A submucosal tunnel was created through a longitudinal incision of the mucosal layer. After reaching the tumor, the lesion was carefully dissected from the layers of the gastric wall and subsequently removed (▶ Fig. 1 a, b). At the end of the procedure, the mucosal defect was closed with Instinct clips (Cook Medical Inc.) (▶ Fig. 1 c). The STER procedure was completed, without adverse events, in about 150 minutes (▶ Fig. 1 d, Video 1).

The histopathological examination showed a low risk GIST [1] that was positive for smooth muscle actin, CD34, and CD117, and negative for S-100 protein. The mitotic activity was 1 mitoses per 50 HPF (▶ Fig. 2). The patient was discharged after three days uneventful, and was referred for endoscopic follow-up. The endoscopic and echoendoscopic follow-up performed after 1 year did not reveal any residual or recurrent tumor.
Our case confirmed that STER is a safe and effective technique for removal of gastric GIST and is a viable alternative to surgery [2].

Competing interests
None

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