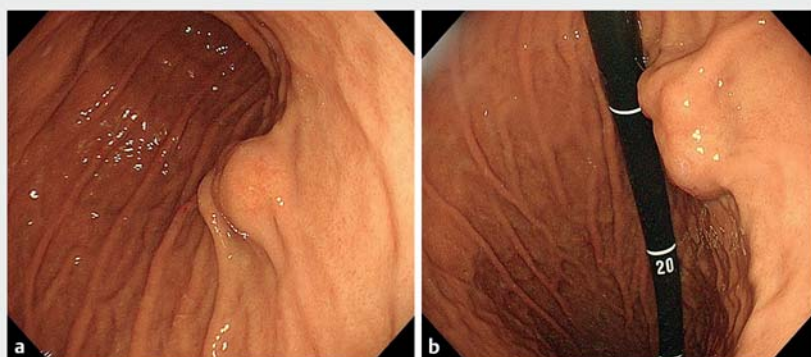
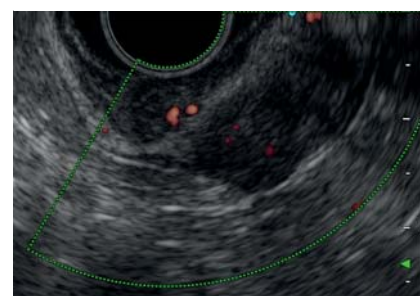


## Endoscopic full-thickness resection of IgG4-related gastric submucosal tumor-like lesion

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► **Fig. 1** Endoscopic appearance of the 20-mm submucosal tumor-like lesion on the posterior wall of the middle part of the stomach on: **a** antegrade view; **b** retroflexed view.



► **Fig. 2** Endoscopic ultrasonography view of the submucosal tumor-like lesion showing an 18-mm low-echoic mass derived from the muscularis propria of the stomach.



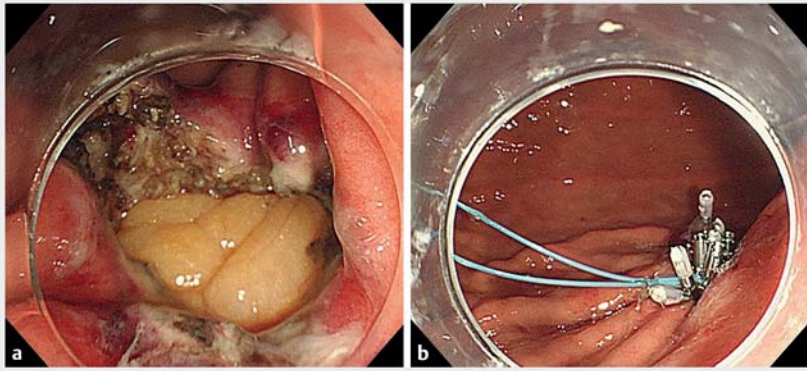
► **Video 1** Endoscopic full-thickness resection of a 20-mm gastric submucosal tumor-like lesion.

IgG4-related disease (IgG4-RD) is an immune-mediated disorder in which abundant IgG4-positive plasma cells infiltrate the affected organs. IgG4-RD presenting as a submucosal tumor of the stomach is rare, and preoperative diagnosis is difficult. Herein, we demonstrate endoscopic full-thickness resection (EFTR) of IgG4-RD presenting as a submucosal stomach tumor for the first time.

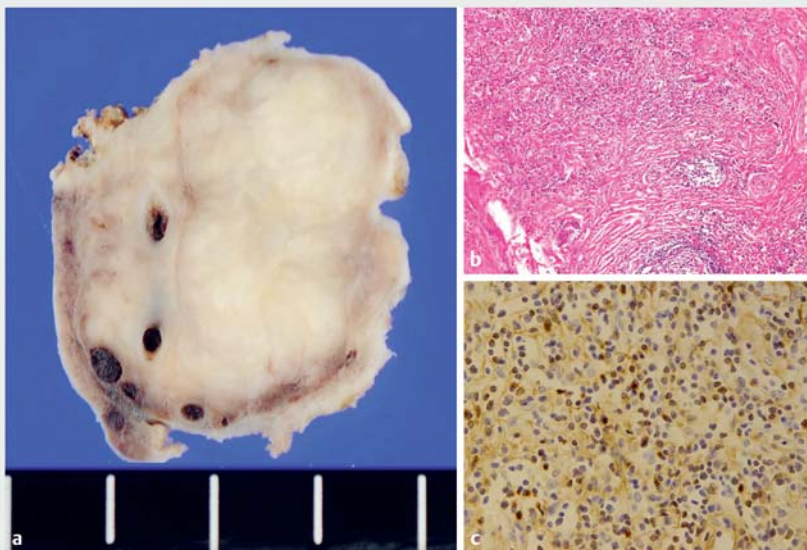
Our patient (a 77-year-old man) had a 20-mm submucosal tumor in the posterior wall of the stomach, which was initially identified by upper gastrointestinal endoscopy (► **Fig. 1**). Endoscopic ultrasonography showed a low-echoic mass derived from the muscularis propria of the stomach (► **Fig. 2**). Fine-needle aspiration biopsy could not confirm the diagnosis. Enhanced computed tomog-

raphy showed neither lymph node enlargement nor metastasis.

A malignant gastrointestinal stromal tumor (GIST) was suspected and EFTR was performed with the patient under general anesthesia. The mucosa was incised around the submucosal tumor using a FlushKnife BT 2.5 (Fujifilm, Tokyo, Japan). After the lesion had been pulled towards the stomach lumen using two clips and a thread, the resection was completed using an IT-Knife 2 (Olympus, Tokyo, Japan). Fibrosis made this lesion unusually difficult to resect; therefore, two clips were required for sufficient traction. The perforation site was closed using SureClips (Micro-Tech, Nanjing, China) and a detachable snare (Olympus) (► **Fig. 3**; ► **Video 1**). Histopathology showed a mass with lymphoplasmacytic infiltration, fibrosis, and IgG4-positive plasma cells (► **Fig. 4**). A postoperative elevation of serum IgG4 levels was noted. No recurrence was observed within 1 year. This case was one of definite IgG4-RD presenting as a gastric submucosal tumor. EFTR allowed accurate diagnosis. IgG4-RD may present as a gastric lesion and often cannot be differentiated preoperatively from a GIST [1]. Patients with such lesions have undergone various types of surgery [2]; however, this is the first re-



► **Fig. 3** Appearances following endoscopic full-thickness resection of the gastric lesion showing: **a** the resection site with intraperitoneal fat visible; **b** closure of the perforation with hemostatic clips and a detachable snare.



► **Fig. 4** The pathological examination of the lesion showing: **a** macroscopically, a lesion of 22×20×18 mm; **b** microscopically on hematoxylin and eosin staining, a diffuse lymphoplasmacytic infiltration and fibrosis; **c** on immunostaining with IgG4, the presence of abundant IgG4-positive plasma cells.

port of EFTR of gastric IgG4-RD. Minimally invasive endoscopic treatment should be considered for undiagnosed submucosal lesions.

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### Competing interests

The authors declare that they have no conflict of interest.

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