Endoscopic submucosal dissection of pancreatic heterotopia in children

Aberrant pancreatic tissue is mostly found in the submucosal layer of the upper gastrointestinal tract, occurring in 1.7% of the population according to summarized post-mortem studies [1]. Gastric pancreatic heterotopia was first recognized by Klob in 1859 [2]. Herein we describe the resection of gastric pancreatic heterotopic lesions in children by endoscopic submucosal dissection (ESD). After the lesion has been localized endoscopically (GIF-HG 290; Olympus Medical, Tokyo, Japan), its extent within the stomach wall is clarified by ultrasound (UM-2R; Olympus Medical) (Fig. 1). A solution is circumferentially injected into the submucosa of the lesion (Fig. 2). This solution consists of 2.5 mL 1% sodium hyaluronate (Hyruran; LG Life Sciences) and 7.5 mL of a mixture that is made up of 5 mL adrenaline (1:10000; DBC Adrenaline Injection) and 1–2 mL of 8% indigo carmine (Indigocarmin Amino) diluted in 100 mL normal saline. An electrosurgical knife (DualKnife, KD-650L; Olympus Medical) is used for the mucosal incision and submucosal dissection of the lesion (Fig. 3).

A 12-year-old girl with known hemoglobin H disease presented with intermittent epigastric pain. She was diagnosed with gallstones and a polypoid lesion in the antrum of the stomach (Fig. 4). She underwent a laparoscopic cholecystectomy and the gastric lesion was removed by ESD.
At follow-up, she continued to complain of mild abdominal pain when eating oily foods. Another antral lesion was identified in a 14-year-old girl with epigastric pain. After the resection of her 10-mm submucosal tumor by ESD, she returned with similar complaints at her follow-up.

The histology of both of these lesions showed pancreatic lobules with islet cells representing type 1 pancreatic heterotopia, according to the classification by von Heinrich [3]. Whilst the alleviation of symptoms is questionable in both patients, the timely removal of these lesions should prevent long-term risks such as gastric outlet obstruction through enlargement, blood loss through ulceration, and neoplastic transformation [4, 5]. In both cases the ESD technique was performed without complications. There have been no late sequelae or evidence of local recurrence after a mean follow-up of 3 years.

ESD currently offers the most elegant method to resect aberrant pancreatic tissue, with perforation being the only significant risk factor [6].

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References

1. De Castro Barbosa JJ, Dockerty MB, Waugh JM. Pancreatic heterotopia; review of the literature and report of 41 authenticated surgical cases, of which 25 were clinically significant. Surg Gynecol Obstet 1946; 82: 527–542

Competing interests: None