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 (Hyruan; 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 (Indigocarmine 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].

Acknowledgments

We would like to thank Eason Ng (IT Team, Department of Surgery) for his support editing the images and the video.

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

Corresponding author

C. H. Houben, MD
Division of Paediatric Surgery Urology
Department of Surgery
Prince of Wales Hospital
The Chinese University of Hong Kong
Hong Kong SAR
China
Fax: +852-26324669
chhouben@web.de

Competing interests: None