Ectopic pancreas mimicking gastric submucosal tumour treated using robotic surgery

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\section*{INTRODUCTION}

Gastric submucosal tumours (SMTs) are usually incidental endoscopic presentations. Obtaining accurate preoperative diagnoses of SMTs through grasp or needle biopsy is difficult. SMTs may originate from mesenchymal tumours, lymphomas, epithelial tumours or congenital abnormalities. Ectopic pancreas is a congenital abnormality that can cause gastric SMTs. Herein, we report a case of gastric ectopic pancreas treated using robotic surgery.

\section*{CASE REPORT}

A 55-year-old man had a medical history of hypertension, type 2 diabetes mellitus, peptic ulcer disease and gastroesophageal reflux disease as well as a surgical history of appendectomy. He was completely independent in his daily activities. He was referred to our hospital for management of an incidental gastric SMT diagnosed during a health examination. He denied any gastrointestinal symptoms or associated family history of malignancy. No obvious abnormalities were detected during physical examination except for the appendectomy scar. Routine laboratory
investigations did not reveal any specific abnormalities. Serum tumour markers, including chromogranin A (63.5 ng/mL), carcinoembryonic antigen (2.89 ng/mL) and carbohydrate antigen 19-9 (<13.4 U/mL) were all within the normal limits. Esophagogastroduodenoscopy revealed a polypoid tumour with intact overlying mucosa and central umbilication on the posterior wall of the antrum [Figure 1a and b]. During endoscopic ultrasonography (EUS) examination, the tumour exhibited homogeneous iso/hypoechoic density, arose from the muscularis mucosa layer and exhibited a preserved muscularis proper layer [Figure 1c]. The fine-needle aspiration biopsy revealed only chronic gastritis. An abdominal computed tomography revealed a focal enhancing submucosal thickening at the gastric antrum [Figure 1d]. After receiving robotic partial gastrectomy, he recovered satisfactorily and was discharged uneventfully with a post-operative hospital stay of 6 days. The pathology report of the tissue specimen indicated ectopic pancreatic tissue [15 mm × 11 mm × 7 mm, Figure 1e]. He still regularly visits our outpatient department for follow-up.

Surgical procedure
Before surgery, endoscopic tattooing for tumour localisation was performed. Under endotracheal general anaesthesia, the patient was placed in the supine position. The trocars were inserted and positioned as shown in Figure 2. Subsequently, the patient was placed in the 30° reverse Trendelenburg position, and the Da Vinci robotic (Intuitive Surgical, Inc., Sunnyvale, CA, USA) system was docked above the patient's head. A Harmonic scalpel (Ethicon Endo-Surgery, Inc., Cincinnati, OH, USA) and ProGrasp (Intuitive Surgical, Inc., Sunnyvale, CA, USA) were used as robotic instruments. We used the harmonic scalpel to perform a full-thickness, circumferential and wedge resection with a margin of approximately 1 cm along the tattooed area. The gastrectomy wound was closed intracorporeally in the fashion of two-layered Albert–Lembert continuous sutures using with 3-0 V-Loc barbed sutures (Medtronic, Minneapolis, Minnesota, USA). The negative suction drain was placed around the anastomosis, and the trocar wound was closed.

DISCUSSION
The incidence of ectopic pancreas was reported to be 0.6%–13.7% in an autopsy series. Gottschalk et al. reported that ectopic pancreas accounts for 11% of all SMTs receiving EUS examination. It may arise from anywhere along the primitive foregut but is most commonly observed in the stomach (26%–38%) and duodenum (28%–36%). Usually, ectopic pancreas does not cause symptoms; if it does, symptoms may result from stenosis, ulceration, bleeding, inflammation or tumour formation.

Symptomatic gastric ectopic pancreas or tumours with uncertain histological representation in which the possibility of malignancy cannot be discounted may need further intervention. Therefore, excision of the entire tumour with a safe margin remains a curative and definitive approach.
treatment. The two major excision methods are surgical excision and endoscopic submucosal dissection (ESD).\textsuperscript{[4,5]} In addition, the three surgical approaches for excision are classic laparotomy, laparoscopic surgery\textsuperscript{[6]} and robotic surgery.\textsuperscript{[7,8]} ESD is less invasive than surgery but requires a high level of skill. Furthermore, the consequences, such as the involvement of the resection margin or ESD-related complication, should be considered. Both laparoscopic surgery and robotic surgery are less invasive approaches than classic laparotomy and require lower levels of skill than ESD. The robotic surgery system provides a magnified three-dimensional high-definition vision system and tiny wristed instruments to enable surgeons to perform complex operations with dexterity and precision in a more ergonomic position compared with standard laparoscopic surgery. Thus far, no consensus or guideline exists for the management of patients with gastric ectopic pancreas. The case in our study was suitable for minimally invasive surgery, and robotic surgery was selected because he exhibited a posterior gastric SMT. Considering the high cost of robotic surgery, robotic surgery may have to be reserved for patients with posterior gastric wall SMTs or those who require intracorporeal reconstruction and anastomosis.\textsuperscript{[7,8]}

CONCLUSION

Gastric ectopic pancreas is a rare gastric SMT. Surgical excision is suitable for symptomatic patients or those with uncertain tumour histology. In some patients, robotic surgery may be a safe and feasible approach.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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