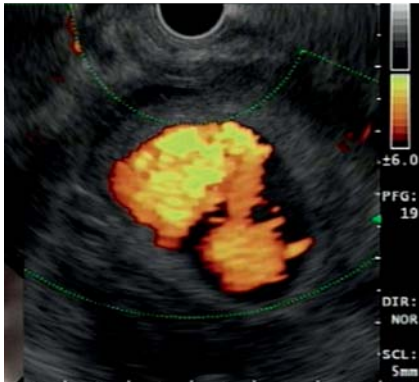


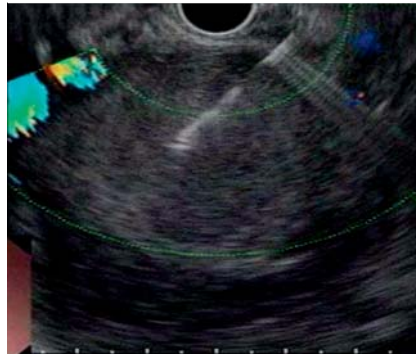
## Endoscopic ultrasound-guided thrombin injection in a large splenic artery aneurysm: first report in a patient with tropical chronic pancreatitis



**Fig. 1** Computed tomography angiography showing a large splenic artery pseudoaneurysm.



**Fig. 2** Endoscopic ultrasound with color Doppler, showing splenic artery pseudoaneurysm with blood flow.



**Fig. 3** Endoscopic ultrasound showing a thrombosed pseudoaneurysm following thrombin injection.



**Fig. 4** Computed tomography at 6 months showing the thrombosed pseudoaneurysm following thrombin injection.

year but had worsened during the past 15 days. The general and systemic examination was normal. Hemogram and liver function tests were normal. Serum amylase was 450 U/L (normal value  $\leq 150$  U/L). Abdominal ultrasound revealed multiple calcifications in a dilated pancreatic duct, peripancreatic inflammation, and a splenic artery pseudoaneurysm. Computed tomography (CT) angiography confirmed acute and chronic pancreatitis with a partially thrombosed splenic artery pseudoaneurysm of size 6.5×6.0×6.8 cm (● Fig. 1).

The patient was treated with analgesics for pain. She could not afford to undergo coil angioembolization of the pseudoaneurysm as this procedure is expensive. Endoscopic ultrasound (EUS)-guided thrombin injection was therefore planned as this procedure is significantly cheaper, and was possible due to the close proximity of the lesion to the gastric wall and the narrow neck of the pseudoaneurysm.

The pseudoaneurysm was located by using a linear echoendoscope (GF-UCT180; Olympus Medical Systems, Tokyo, Japan) (● Fig. 2). A standard 22-gauge needle (Cook Endoscopy, Winston-Salem, North Carolina, USA) was used to puncture the pseudoaneurysm and inject 2 mL of thrombin. Color Doppler confirmed the complete obliteration of the pseudoaneurysm (● Fig. 3). The patient was asymptomatic after the procedure and was discharged after 48 hours. CT angiography at 6 months showed no recurrence of the pseudoaneurysm (● Fig. 4).

There are a few other reports of EUS-guided thrombin injection for visceral pseudoaneurysm [4,5]. Further studies are needed to establish its use as a first-line treatment for visceral pseudoaneurysms.

### Video 1

Endoscopic ultrasound sequence of large splenic artery pseudoaneurysm. Injection of 2 mL of thrombin resulted in thrombosis of the pseudoaneurysm. Color Doppler was used to show blood flow and confirm the thrombosed pseudoaneurysm.

Endoscopy\_UCTN\_Code\_TTT\_1AS\_2AC

**Competing interests:** None

Visceral pseudoaneurysm is an uncommon but serious complication of acute or chronic pancreatitis. It affects the splenic artery in 40% of cases [1]. Traditional treatment includes surgical excision or ligation and endovascular techniques [2, 3]. This article describes the first reported

case of a large splenic artery pseudoaneurysm that was managed by endoscopic ultrasound (EUS)-guided thrombin injection in a patient with tropical chronic pancreatitis.

A 25-year-old woman presented with epigastric pain, which had persisted for 1

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