

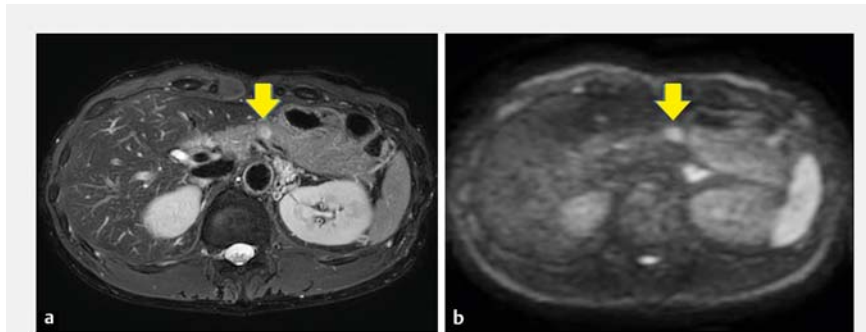
A case of pancreatic schwannoma with a focus on contrast-enhanced endoscopic ultrasonography



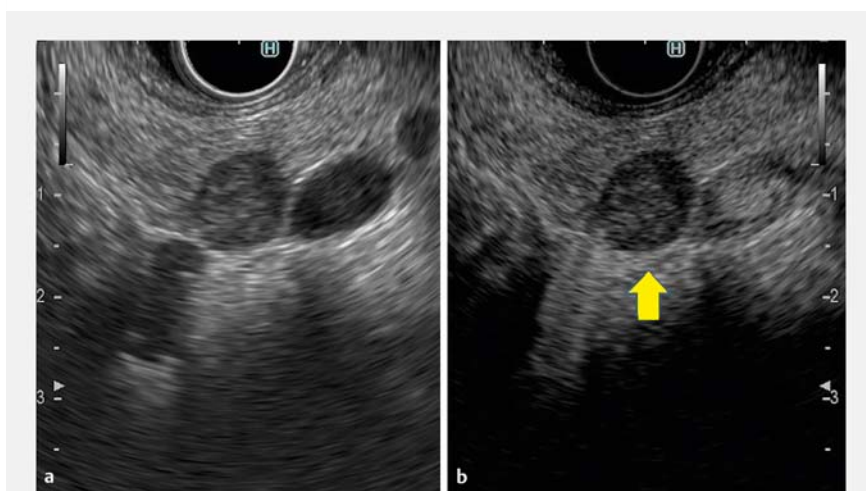
► **Fig. 1** Contrast-enhanced computed tomography revealed a 10-mm hypovascular tumor (arrow) in the pancreatic body.

A schwannoma is a benign peripheral nerve sheath tumor originating from Schwann cells [1]. Although schwannomas appear as well-demarcated hypoechoic masses on endoscopic ultrasonography (EUS) [2], there are few reports on pancreatic schwannoma diagnosed by EUS. A pancreatic schwannoma is difficult to diagnose preoperatively because of the lack of established imaging characteristics. We present a case of pancreatic schwannoma that was diagnosed by contrast-enhanced EUS and endoscopic ultrasound-guided fine-needle aspiration (EUS-FNA).

A 54-year-old man was admitted to our hospital with a 12-mm tumor in the pancreatic body. The tumor was revealed on ultrasonography during a medical check-up without any symptoms. Contrast-enhanced computed tomography revealed a 10-mm hypovascular tumor in the pancreatic body (► **Fig. 1**). Magnetic resonance imaging of the tumor revealed hypointensity on T1-weighted images, hyperintensity on T2-weighted images, and hyperintensity on diffusion-weighted images (► **Fig. 2**). No abnormalities were observed on magnetic resonance cholangiopancreatography. EUS showed a 12-mm, clear-boundary, solid, round, and hypoechoic tumor in the pancreatic body. Contrast-enhanced EUS showed a



► **Fig. 2** Magnetic resonance imaging and magnetic resonance cholangiopancreatography. **a** A T2-weighted image shows a hyperintensity (arrow). **b** A diffusion-weighted image shows a hyperintensity (arrow).

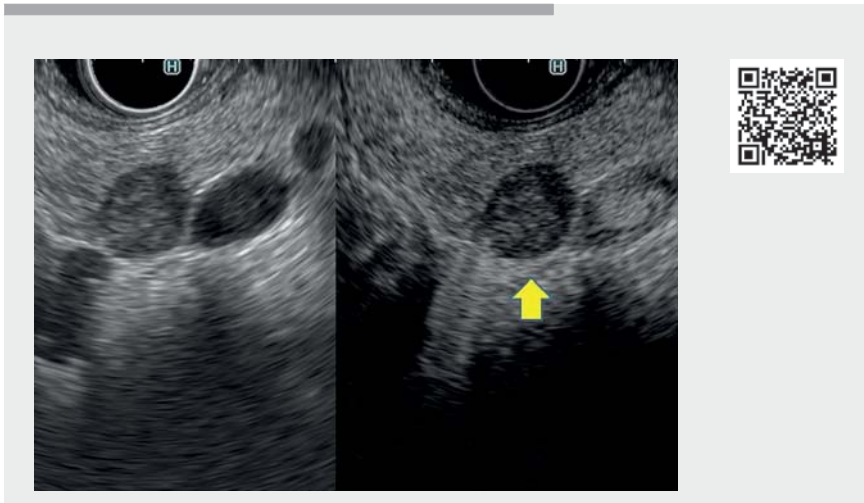


► **Fig. 3** Contrast-enhanced endoscopic ultrasonography showed a hypovascular tumor compared with the surrounding pancreatic parenchyma.

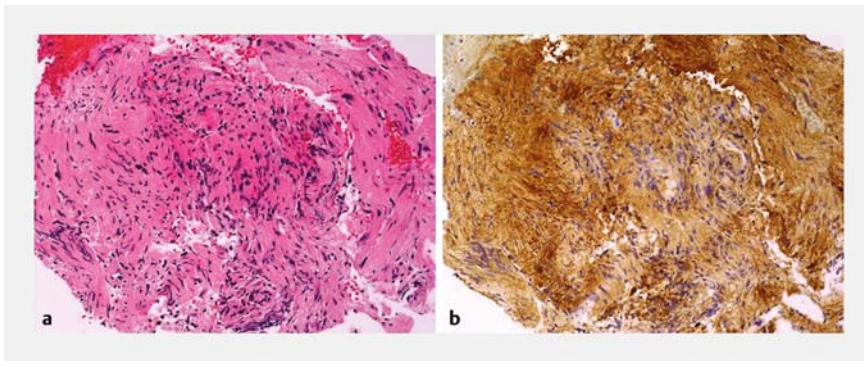
hypovascular tumor compared with the surrounding pancreatic parenchyma (► **Fig. 3**), and contrast-enhanced EUS findings were observed continuously over 2 minutes (► **Video 1**). We performed EUS-FNA with a 22-gauge needle (Sono Tip Pro Control; Medi-Globe GmbH, Rosenheim, Germany) to make a pathological diagnosis. Histopathological examination revealed a proliferation of spindle cells. These tumor cells were positive for S-100 protein and negative

for c-kit and desmin in immunohistochemical staining (► **Fig. 4**). Based on these findings, the lesion was diagnosed as a schwannoma. The patient was carefully monitored without surgical resection.

Contrast-enhanced EUS images of this tumor had a slightly delayed enhancement; therefore, a solid pseudopapillary neoplasm and pancreatic neuroendocrine neoplasm were considered as differential diagnoses [3]. In conclusion, small



▶ Video 1 Hypovascular tumor compared with surrounding pancreatic parenchyma on contrast-enhanced endoscopic ultrasonography, observed continuously over 2 minutes. Cystic components were undetected. Endoscopic ultrasound-guided fine-needle aspiration was performed using a 22-gauge needle.



▶ Fig. 4 Histopathology of endoscopic ultrasound-guided fine-needle aspiration. **a** Fascicles of spindle cells were observed (hematoxylin and eosin stain; high power field). **b** Immunohistochemical staining of these cells was positive for S-100 protein (high power field).

and solid schwannomas may resemble solid pseudopapillary neoplasms and pancreatic neuroendocrine neoplasms. Therefore, contrast-enhanced EUS and EUS-FNA may be useful in avoiding surgical resection.

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Competing interests

The authors declare that they have no conflict of interest.

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Bibliography

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