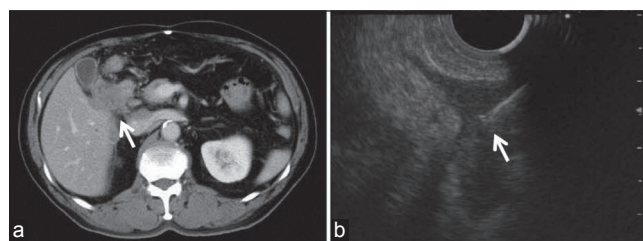


# Malignant peritoneal mesothelioma diagnosed by EUS-guided tissue acquisition

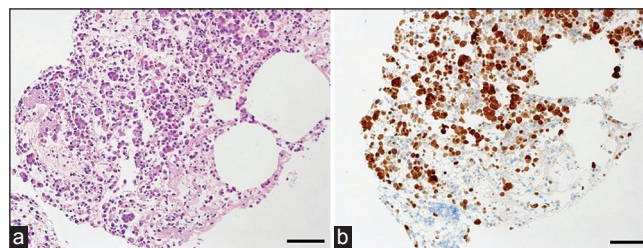
Dear Editor,

A 73-year-old man with a history of sigmoid colon cancer 5 years ago presented with an abdominal mass. A 17-mm omentum nodule had been incidentally resected at the time of sigmoidectomy with the diagnosis of malignant mesothelioma. He had not been exposed to asbestos. The patient underwent postsurgical surveillance by CT every 6 months without recurrence, but CT showed a 3-cm, ill-defined, soft tissue mass surrounding the second portion of duodenum [Figure 1a]. Fluorodeoxyglucose-positron emission tomography (FDG-PET) revealed FDG accumulation with a maximum SUV of 10.5. The duodenal mucosa appeared normal on endoscopy with negative biopsy. Endoscopic ultrasound (EUS) revealed a hypoechoic mass infiltrating both the liver and duodenum. EUS-guided tissue acquisition was performed using EUS-guided through-the-needle biopsy (EUS-TTNB)<sup>[1]</sup> [Figure 1b] and fine-needle aspiration (FNA). The lesion was punctured with a 19-G FNA needle (EchoTip, Cook Medical, Bloomington, IN, USA) preloaded with 0.75-mm miniature biopsy forceps (MTW Endoskopie, Wesel, Germany) from the duodenal bulb. After taking through-the-needle forceps biopsies, a regular FNA was subsequently performed with a single pass. Immunohistochemical staining [Figure 2a] was positive for calretinin [Figure 2b] and cytokeratin 5/6, but negative for CEA and CDX-2, confirming the diagnosis of recurrent malignant mesothelioma.

Mesothelioma is a malignancy of mesothelium, the serosal membrane that covers the internal organs. Most of mesotheliomas are derived from pleural



**Figure 1.** Computed tomography (CT) and endoscopic ultrasound (EUS) images. (a) Abdominal CT showing soft tissue mass surrounding the second portion of duodenum (arrowhead). (b) EUS-guided through-the-needle biopsy (EUS-TTNB) being performed with a 19-gauge needle and the cup of biopsy forceps was opened (arrowhead)



**Figure 2.** Histocytological appearance showing; (a) a hematoxylin and eosin (H and E)-stained section; and (b) on calretinin staining, the specimen was positive (original magnification  $\times 100$ , bar 500  $\mu\text{m}$ )

mesothelium, and peritoneal mesothelioma is relatively rare (10-20%).<sup>[2,3]</sup> Pathological diagnosis of peritoneal mesothelioma is difficult because the cytological evaluation of ascites is not sensitive and is difficult to differentiate with other cancers.<sup>[4]</sup> Although there were case reports of pleural mesothelioma diagnosed by EUS-FNA, EUS diagnosis of peritoneal mesothelioma is very rare.<sup>[5,6]</sup> For definitive diagnosis, it is needed to perform laparotomy biopsy or laparoscopic examination in most cases. EUS-FNA is known to be useful for the diagnosis of malignant lymphoma in the abdominal cavity as well as pancreatic tumor and gastroduodenal submucosal tumor (SMT).<sup>[7]</sup> We reported a case of peritoneal mesothelioma successfully diagnosed by EUS-guided tissue acquisition. EUS-guided tissue acquisition should be the first diagnostic procedure, rather than invasive procedures such as laparoscopy and/or laparotomy.

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