Endoscopic ultrasound-guided histological diagnosis of a mucinous non-neoplastic pancreatic cyst using a specially designed through-the-needle microforceps

Solitary uniloculated pancreatic cysts pose a major diagnostic dilemma. Cystic fluid carcinoembryonic antigen (CEA) concentration and cytology have low sensitivity in distinguishing mucinous from non-mucinous cysts [1], leading to frequent misdiagnoses and unnecessary surgical interventions [2]. Recently evaluated molecular markers seem very accurate, but they are not widely available in clinical practice [3].

We present the case of a 49-year-old woman who was incidentally discovered to have a 25-mm cystic pancreatic neck lesion, without apparent communication with the Wirsung duct (Fig. 1, Video 1). At endoscopic ultrasound (EUS), the cyst had no septa, normal walls, and no mural nodules. Prophylactic intravenous antibiotics were administered and EUS-guided fine-needle aspiration (FNA) was performed using a 19-gauge needle. After 2 mL of fluid were aspirated, a toothed microforceps (Moray microforceps; US Endoscopy, Mentor, Ohio, USA) (Fig. 2), designed specifically for tissue acquisition through a 19-gauge FNA needle, was inserted through the needle into the cyst cavity. Under EUS guidance, the microforceps was opened, pushed against the cyst wall, and then
closed in order to obtain tissue samples (Fig. 3). Two bites of the cyst wall were taken using the biopsy microforceps, and the specimens were placed directly into formalin for histological examination. No procedural or delayed complications occurred.

Cystic fluid amylase and CEA concentrations were 692 U/L and 491 ng/mL, respectively. Histological examination revealed a fibrous wall lined by tall, columnar, mucin-producing, epithelial cells (duct-type epithelium) consistent with the diagnosis of mucinous non-neoplastic pancreatic cyst (hematoxylin and eosin staining). a Low-power field. b High-power field.

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References

Video 1
Endoscopic ultrasound-guided tissue acquisition from pancreatic cyst wall using a novel through-the-needle microforceps.

Fig. 4 Photomicrographs of the samples collected using the novel through-the-needle microforceps. Histology revealed a fibrous wall lined by tall, columnar, mucin-producing, epithelial cells (duct-type epithelium) consistent with the diagnosis of mucinous non-neoplastic pancreatic cyst (hematoxylin and eosin staining). a Low-power field. b High-power field.