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 2mL 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.

This case clearly illustrates the diagnostic challenge of pancreatic cysts. The novel through-the-needle microforceps allowed the acquisition of tissue that showed all of the histological criteria needed for a diagnosis of mucinous non-neoplastic cyst [4]. These results allowed us to choose the most appropriate management for this patient, which, importantly, would have been different if based on CEA results alone. Mucinous non-neoplastic cysts are, in fact, benign conditions, without any malignant potential and for which both surgery and surveillance are not necessary.