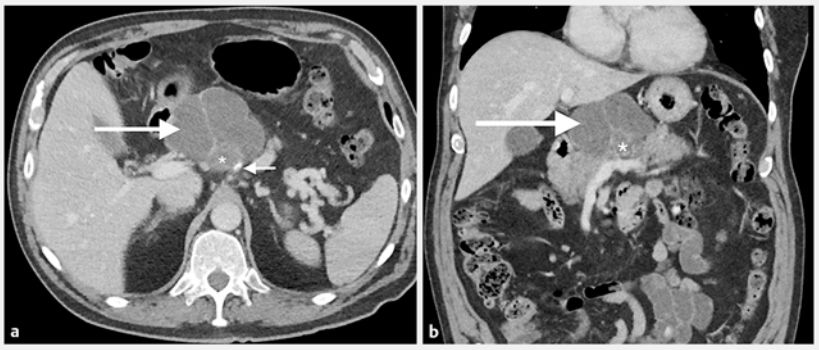
Endoscopic ultrasound-guided, through-the-needle forceps biopsy in the assessment of an incidental large pancreatic cystic lesion with prior inconclusive fine-needle aspiration



▶ **Fig. 1** Cystic pancreatic neck lesion in a 68-year-old man. **a** Axial contrast-enhanced computed tomography (CT) in the portal venous phase shows an exophytic multilocular cystic lesion arising from the genu of the pancreas (long arrow) with a small solid (*) and calcific (short arrow) component posteriorly. **b** Coronal contrast-enhanced CT in the portal venous phase shows the pancreas (arrow) with a small solid component inferiorly (*). The pancreatic parenchyma is otherwise normal.

▶ **Fig. 2** Floating ball-like structures (arrows), each approximately 1 cm in size, within the liquid-filled cyst compartment. The tip of the 19-gauge needle is visible located within the cyst prior to introduction of the micro forceps (see ▶ **Video 1**).

A 68-year-old man underwent endoscopic ultrasound (EUS) and fine-needle aspiration of a large cystic lesion of the pancreatic neck seen incidentally on computed tomography (CT). CT demonstrated a nonenhancing, exophytic, multilocular cystic mass, measuring 82 × 72 mm (▶ **Fig. 1**, ▶ **Video 1**). A mural calcific focus was noted posteroinferiorly and a more solid component posteriorly. The CT density averaged 19 HU for the cystic component and 40 HU for the solid component.

EUS showed a mixed solid/cystic-appearing lesion without mural nodules. The cystic component contained multiple mobile ball-like structures (▶ **Fig. 2**) and the solid component appeared to be hypoechoic and heterogeneous. No infiltration into the surrounding tissue or pancreatic duct communication was identified and the pancreas was otherwise unremarkable. In addition, no lymphadenopathy was present.

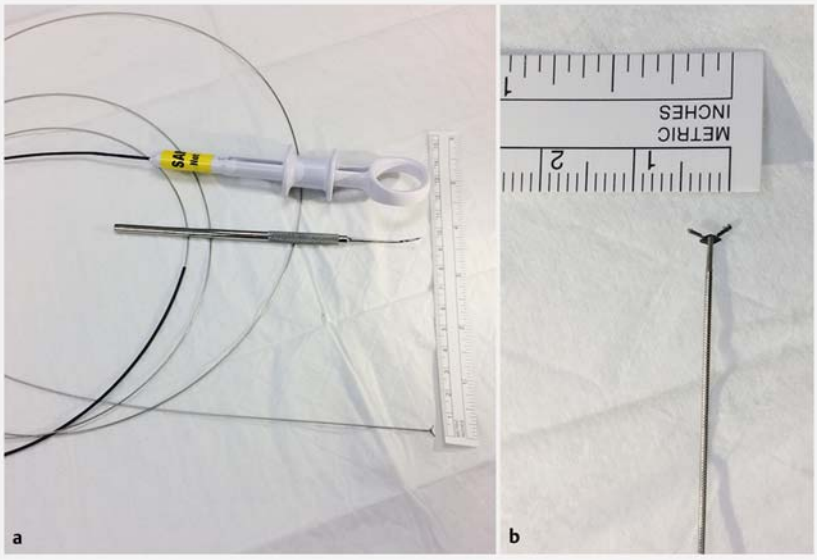
EUS-guided transgastric cyst aspiration was performed using a 19-gauge needle, and 8 ml of an opaque, turbid fluid was sent for cytological examination. Amylase and carcinoembryonic antigen (CEA) levels did not contribute to the diagnosis and the results of cytology investigation were inconclusive, revealing only cholesterol crystals, lipoid droplets, and scant leukocytes.

A repeat EUS was undertaken to biopsy the cyst wall with dedicated through-the-needle Moray micro forceps (US Endoscopy, Mentor, Ohio, USA) (▶ **Fig. 3**). The forceps were passed through a 19-gauge needle and allowed precise and targeted sampling of the cyst wall (▶ **Fig. 2**). In a second pass, the solid-appearing component was targeted and 5 ml of a thick, brown fluid were aspirated.

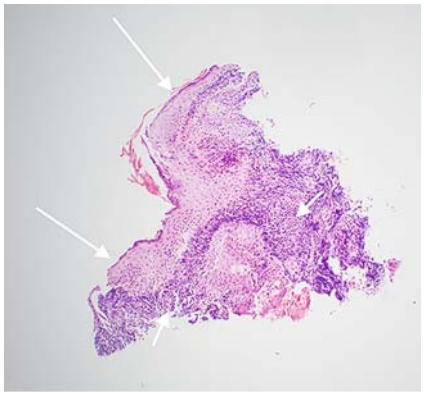
Histological assessment revealed fragments of keratinizing squamous epithe-

VIDEO 1

▶ Video 1: Assessment of a pancreatic cyst in a 68-year-old man using computed tomography (CT) and endoscopic ultrasound (EUS), followed by EUS-guided cyst wall sampling with the novel, through-the-needle Moray micro biopsy forceps, and histological imaging of the diagnostic specimens obtained.



▶ **Fig. 3** Moray micro forceps. **a** The device is shown with the handle and sheath, and includes an extraction pick to aid retrieval from the jaw cup. **b** The serrated jaw opening width of 4.3 mm.



▶ **Fig. 4** Histological appearance of the cyst wall specimen obtained using Moray micro forceps. Keratinizing stratified squamous epithelium (long arrows) with subepithelial dense lymphoid tissue (short arrows) can be seen. (Magnification × 100; hematoxylin and eosin stain.) All cyst wall samples had similar characteristics.

lium with a subepithelial lymphoid infiltrate (▶ **Fig. 4**). Dense keratin was present on the surface. No goblet cells were seen. The findings were diagnostic for a benign lymphoepithelial cyst [1 – 3]. Surveillance is not required for this, and surgery is only considered in symptomatic individuals [4, 5]. The patient could therefore be discharged.

The novel through-the-needle micro forceps were easy to use and allowed precise EUS-guided sampling of the cyst wall.

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Competing interests

The Moray micro forceps used in this specific case was a free sample supplied by US Endoscopy, Mentor, Ohio, USA and Device Technologies, Belrose, New South Wales, Australia.

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