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 sen-
sitivity in distinguishing mucinous from
non-mucinous cysts [1], leading to fre-
quent misdiagnoses and unnecessary sur-
gical interventions [2]. Recently evaluated
molecular markers seem very accurate,
but they are not widely available in clini-
cal practice [3].

We present the case of a 49-year-old wom-
an 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

Fig. 1 Axial T2 weighted magnetic resonance
image showing a 25 ×
20 mm unilocular pan-
creatic neck cystic
lesion without commu-
nication with the
Wirsung duct (arrow).

Fig. 2 View of the novel through-the-needle
microforceps (Moray microforceps; US Endos-
copy, Mentor, Ohio, USA) protruding from a
standard 19-gauge fine-needle aspiration nee-
dle, with its cups opened. The microforceps
has an outer diameter of 0.8 mm, a jaw open-
ing width of 4.3 mm, serrated jaws designed
to effectively grasp tissue, and a spring sheath
to increase its flexibility. Photograph used with
permission from US Endoscopy.

Fig. 3 Tissue acquisi-
tion using through-the-
needle microforceps.

a Endoscopic ultra-
sound-guided opening
of the cups of the
through-the-needle
microforceps inside the
pancreatic cyst (arrow).

b The “tent sign” repre-
senting the cystic wall
(arrow) grasped by the
biopsy forceps and
pulled back in order
to acquire the tissue
sample.

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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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Competing interests: None

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