

Moray™ micro forceps

Case Report Series • Report 1



“Without using the Moray™ [micro forceps], we would not have been able to sample the fluid from this cyst. The obtained tissue specimens provided the surgeon enough data to proceed with the necessary surgery.”

Paul Yeaton, MD
Chief, Gastroenterology
Division of Gastroenterology
Department of Internal Medicine
Virginia Tech Carilion School of
Medicine

Procedure

Endoscopic Ultrasound with sampling of a 3.7cm pancreatic head septated cystic lesion.

Indications

An 81 year old woman presented to the emergency department with COPD exacerbation. A CT scan for evaluation of the shortness of breath demonstrated a 3.7cm septated pancreatic head cystic lesion. The patient was referred for further evaluation.

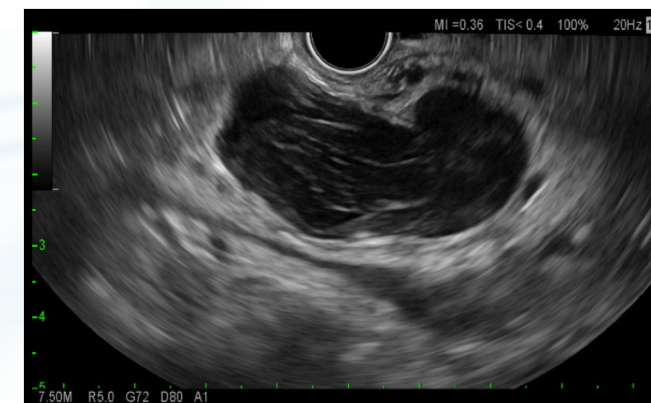
Endoscopic Ultrasound

A septated anechoic cystic lesion with debris was viewed from the duodenal bulb, measuring 44mm in largest diameter. No invasion of surrounding vasculature was noted. No intramural nodules were found. The pancreatic duct appeared normal. The cystic lesion was punctured using a 19-gauge FNA needle. Fluid could not be aspirated from the cyst, despite multiple attempts. The Moray™ micro forceps was then passed 6 times through the 19-gauge needle and samples were obtained from the wall of the cystic lesion without difficulty. Patient was given antibiotics to decrease the risk of infection.

Pathology results revealed mucinous columnar lining epithelium and mucoid material. There was no evidence of atypia. Patient was referred for surgery and underwent a pancreaticoduodenectomy. Surgical pathology confirmed a side-branch IPMN, gastric type, with intermediate to focal high grade dysplasia.



1. CT showing pancreatic cystic lesion



2. Endoscopic ultrasound view of separate cystic lesion



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Moray™ micro forceps

Case Report Series • Report 2



“The Moray™ [micro forceps] was an invaluable tool in providing us with enough tissue for the pathologist to make a difficult diagnosis for a cystic lesion in the pancreas.”

Mohammad H. Shakhathreh, MD MPH
Division of Gastroenterology
Department of Internal Medicine
Virginia Tech Carilion School of
Medicine

Procedure

Endoscopic Ultrasound with sampling of a 5.8cm multiseptated cystic lesion in the pancreas uncinata process.

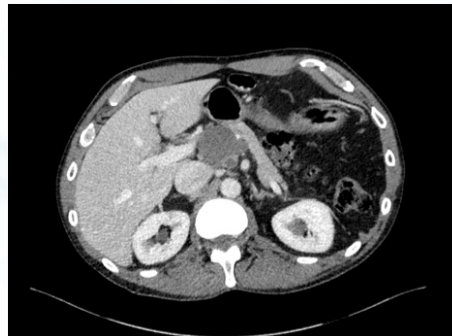
Indications

A 57 year old man presented with lower abdominal pain and fever. He underwent a CT scan showing evidence of diverticulitis. Incidentally, a 5.8cm x 4.3cm multiseptated cystic lesion was seen in the uncinata process. The patient was referred for further evaluation.

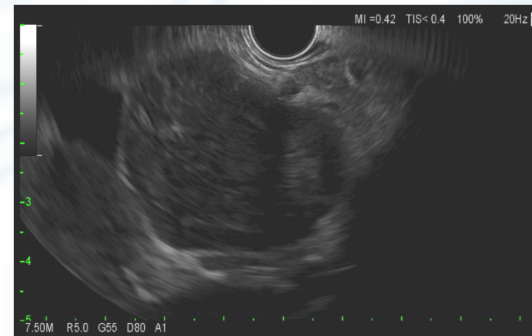
Endoscopic Ultrasound

A septated anechoic cystic lesion was viewed from the stomach and duodenum, measuring 45mm in maximum dimension. No frank invasion of surrounding vasculature was noted; however the lesion encased the portal vein. No intramural nodules were found. The cystic lesion contained a large amount of what appeared to be debris. The pancreatic duct was normal. The lesion was punctured using a 19-gauge FNA needle. About 3mL of gray, slightly viscous, fluid was aspirated from the cyst. The Moray™ micro forceps was then passed 3 times through the 19-gauge needle and samples were obtained from the wall of the cystic lesion. Patient was given antibiotics to decrease the risk of infection.

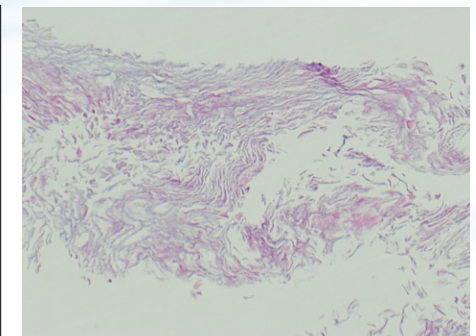
Pathology results revealed thick keratinous debris mixed with inflammatory cells, consistent with a dermoid cyst. Patient has been referred to surgery.



1. CT showing pancreatic cystic lesion



2. Endoscopic ultrasound view of the cyst with debris



3. Abundant keratinous debris



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Moray™ micro forceps

Case Report Series • Report 3



“The ability to visualize the cell lining of the pancreatic cyst under the microscope facilitated the classification and accurate diagnosis of pancreatic cyst.”

Mohamed Othman, MD
Director of Advanced Endoscopy
Assistant Professor of Medicine
Gastroenterology & Hepatology Section
Baylor College of Medicine

Procedure

Endoscopic Ultrasound with Fine Needle Aspiration and tissue acquisition using Moray™ micro forceps.

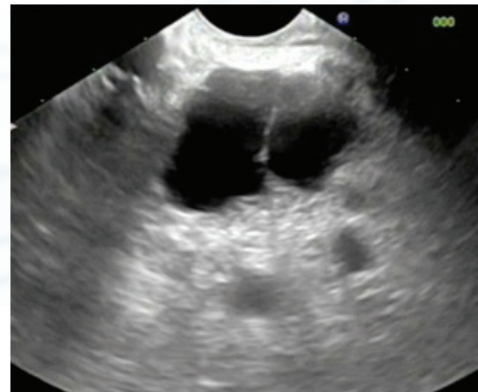
Indications

82 year old patient with an incidental finding of a 3cm pancreatic cyst on an abdominal CT scan.

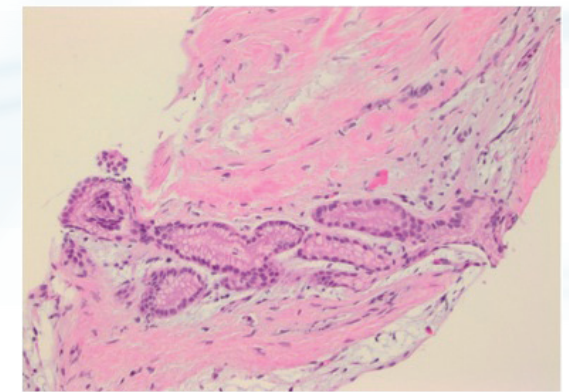
Endoscopic Ultrasound

Endoscopic Ultrasound examination of the pancreas showed a 30mm x 35mm anechoic lesion consistent with pancreatic cyst in the head of the pancreas. The cyst had 3 compartments and was thinly septated. No mural nodules or debris were seen. No clear communication between the cyst and the pancreatic duct was noted. A 19-gauge flexible fine needle aspiration (FNA) needle was introduced into the pancreatic cyst using a transduodenal approach. The stylet was removed, then the Moray™ micro forceps were advanced through the 19-gauge needle and introduced under ultrasound visualization into the cyst. Multiple biopsies were obtained from the cyst wall utilizing the micro forceps under Endoscopic Ultrasound visualization. Visible tissue fragments were submitted for cytological evaluation.

Pathology revealed fragments of mucinous columnar epithelium without high grade dysplasia or invasive carcinoma. Diagnosis of branched duct intra-papillary mucinous neoplasm was established.



1. Endoscopic ultrasound view of pancreatic cyst



2. Microscopic view of cyst cell lining



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Moray™ micro forceps

Case Report Series • Report 4



“In this otherwise difficult case, the intra-cystic biopsies with a Moray™ [micro forceps] lead to a certain diagnosis.”

Khanh Do-Cong Pham, MD
Interventional Endoscopist
Haukeland University Hospital
Bergen, Norway

Procedure

The cyst was punctured with a 19-gauge EUS needle. After removal of the stylet, the Moray™ micro forceps was introduced into the EUS needle.

Indications

An 85-year-old woman with incidental finding of a 30x20mm solitary cystic lesion in the body of the pancreas on CT scan was referred for evaluation with endoscopic ultrasound (EUS) at Haukeland University Hospital in Bergen, Norway. On EUS, the lesion had no connection with the pancreatic ducts, but a small nodule could be seen inside the cyst (Fig. 1).

Biopsy

The Moray™ micro forceps was easily identified on EUS (Fig. 2), even when it was passing inside the EUS needle. By manipulating the distance and angle of the EUS needle and the Moray™ micro forceps to the target area, we could direct the forceps with great accuracy inside the pancreatic cyst. A few biopsies of the cyst wall (Fig. 3) and targeted biopsies of the nodule were performed. A clear serous cyst fluid was also collected for biochemistry and cytology. The cytology of the cyst fluid was negative, and Carcinoembryonic antigen (CEA) and Amylase was within normal range. The histopathological results from both the cyst wall and the nodule revealed mucinous epithelium (Fig. 4), and the diagnosis of a mucinous pancreatic cyst was made.



Figure 1
EUS view of cyst with small nodule



Figure 2
EUS view of Moray™ micro forceps



Figure 3
EUS view of Moray™ micro forceps tissue acquisition

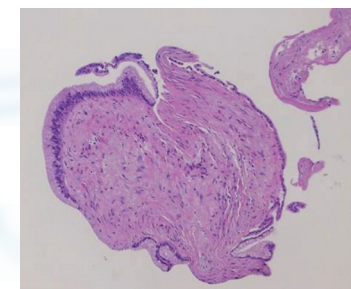


Figure 4
Microscopic view of mucinous epithelium



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Visit www.youtube.com/usendoscopy to view the Moray™ micro forceps case report EUS video

Moray[®] micro forceps

Case Report Series • Report 5



"I could not have made the diagnosis in this patient without the ability to biopsy the cell wall of the pancreatic cyst using the Moray[®] [micro forceps]."

Stephen Kim, MD
Clinical Instructor of Medicine
Division of Digestive Diseases
David Geffen School of Medicine at
UCLA
Los Angeles, California

Procedure

Endoscopic Ultrasound (EUS) with fine needle aspiration and tissue acquisition using the Moray[®] micro forceps.

Indications

A 54-year-old man had an incidental finding of a pancreatic cyst in the tail of the pancreas on a CT scan. Subsequent Magnetic resonance cholangiopancreatography (MRCP) revealed a 2.5cm cystic lesion in the tail of the pancreas with mural enhancement of the walls. EUS was performed for further evaluation.

Endoscopic Ultrasound

A 2.6 x 2.4cm anechoic, well-demarcated cyst with a few septations was seen in the tail of the pancreas. The cyst wall was unusually thickened measuring up to 2.8mm in maximum thickness. The main pancreatic duct was non-dilated, and there was no clear communication seen between the cyst and main pancreatic duct. The cyst underwent fine needle aspiration with a 19-gauge FNA needle with about 5cc of thin, slightly pink colored, clear fluid. The cyst fluid was sent for carcinoembryonic antigen (CEA), amylase, and cytology. After injection of 5cc of normal saline back into the cyst, the Moray[®] micro forceps was passed through the FNA needle and two biopsies of the thickened cyst wall were performed.

The cyst fluid analysis showed a CEA of 1.6ng/mL and amylase of 74U/L. Cytology was paucicellular and non-diagnostic. The microscopic results from the cell wall biopsies showed clusters of monotonous cells with round nuclei and smooth nuclear contours which stained positive for chromogranin. The findings were consistent with a neuroendocrine tumor.

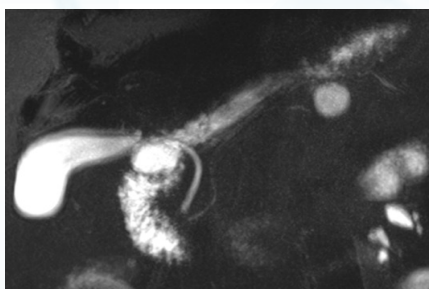


Figure 1
MRCP image of the pancreatic cyst in the tail of the pancreas

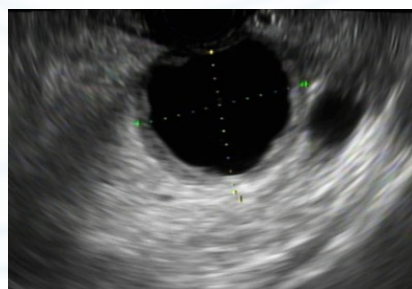


Figure 2
EUS image of the pancreatic cyst



Figure 3
EUS image of the Moray[®] micro forceps obtaining a biopsy of the cell wall

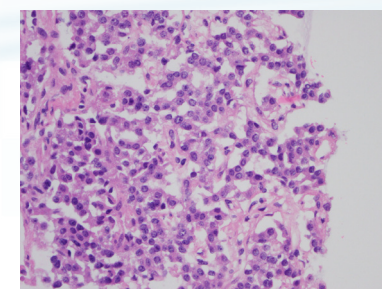


Figure 4
Microscopic view of the cyst wall



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