Relapsing Pancreatitis: The Role of Endoscopy

William R. Brugge, MD
Professor of Medicine
Harvard Medical School
Director, Pancreas Biliary Center
MGH

Definition of the Problem

► Acute pancreatitis (AP) caused approximately 275,000 hospitalizations in 2009 (an increase of more than 2-fold since 1988) and is the single most frequent gastrointestinal cause of hospital admissions in the US.

► Patients with chronic pancreatitis have a life expectancy that is roughly 8 years shorter than that of the general population.

► Nearly $900M is spent yearly
Relapsing Pancreatitis

Clinical Manifestations

- Pain
- Weight loss
- Diarrhea
- Recurrent episodes

Important Opportunities

► Autoimmune pancreatitis
► Pancreatic cancer
► Pancreatic duct obstruction

Imaging for Relapsing Pancreatitis

1. Abdominal Ultrasound
2. CT scanning
3. MRCP
4. EUS
5. ERCP
Autoimmune Pancreatitis

- Diffuse infiltration of the pancreas
- Focal plasma cell infiltration
- Enlarged pancreas

Pancreas imaging: detection of Autoimmune Pancreatitis
Dual-phase contrast-enhanced MDCT images of 91 patients (39 with autoimmune pancreatitis, 25 with pancreatic ductal adenocarcinoma, 27 with acute interstitial pancreatitis) were evaluated by two radiologists.

- Sausage shape, low-attenuation halo, and absence of a pancreatic duct or biliary dilatation differentiated autoimmune pancreatitis from pancreatic ductal adenocarcinoma with an accuracy of 0.88. Sausage shape and absence of peripancreatic stranding differentiated autoimmune pancreatitis from acute interstitial pancreatitis with an accuracy of 0.82.

- Typical cases of autoimmune pancreatitis can be accurately differentiated from pancreatic ductal adenocarcinoma and acute interstitial pancreatitis on the basis of characteristic MDCT features. However, autoimmune pancreatitis should be considered in the presence of atypical features.

FNA of Autoimmune Pancreatitis

A total of 273 patients, including 25 with AIP, underwent EUS-FNA and histological examinations.

RESULTS:
EUS-FNA by using 22-G needles provided adequate tissue samples for histopathological evaluation in 20 of 25 patients (80%). Obliterative phlebitis was observed in 10 of 25 patients (40%). Using the International Consensus Diagnostic Criteria for AIP, 20 of 25 patients were suggested to have lymphoplasmacytic sclerosing pancreatitis.

CONCLUSIONS:
The results of this study suggest that EUS-FNA by using 22-G needles provides tissue samples adequate for histopathological evaluation and a histological diagnosis of AIP.
METHODS: 44 patients who were diagnosed with AIP and underwent EUS-FNA with a 19-gauge needle.

RESULTS: The specimen amount was inadequate from 3 patients. Among the remaining 41 patients, histopathologic analysis revealed lymphoplasmacytic sclerosing pancreatitis in 17 samples and IgG4-positive plasma cells in 5 (3 samples were positive for both); no samples had granulocytic epithelial lesions. Therefore, 19 patients (43%) were diagnosed with AIP based on histologic analysis. One patient had temporary abdominal pain.

CONCLUSIONS: EUS-FNA, with a 19-gauge needle, is a safe and reliable procedure for obtaining pancreatic samples for the histologic analysis of AIP.


Steroid Trial

Is a 2-week steroid trial after initial negative investigation for malignancy useful in differentiating autoimmune pancreatitis from pancreatic cancer? A prospective outcome study.
Detection of Pancreatic Cancer

Key features on imaging

- Dual phase contrast
- Early phase: arterial - pancreas
- Late phase: venous-liver
- Low attenuating mass - adenocarcinoma

Pancreatic Adenocarcinoma of the Body

- Focal hypoechoic mass arising in the parenchyma
- Adjacent to the splenic vein
- Irregular borders
IPMN and Recurrent Pancreatitis

► 30 patients with IPMN (resected)

► The most frequent symptom was acute pancreatitis (37%). The onset of symptoms preceded the diagnosis by 2.5 years.

► Diabetes and diarrhea were respectively detected in 33 and 23%

► Actuarial 2-year survival rate was 43% in patients with malignant tumors.

Main Duct IPMN
► Important etiology of recurrent pancreatitis
► MRCP: dilated PD
► EUS: duct aspiration
► ERCP: duct brushings and biopsy

Detection of Early Pancreas Cancer
Minor papilla endoscopy for Pancreas Divisum

- 57 pts with pancreatitis + PD
- Successful MPE occurred in 49 of 57 pts (86%).
- 28/48 pts (58%) with successful MPE improved
- 16/21 (76%) with RAP, 8/19 (42%) with CP, and 2 of 6 (33%) with pain alone -- responded.
- CONCLUSIONS: MPE is most effective in pts with pancreas divisum and with RAP


Technique of Minor Sphincterotomy

- MRCP diagnosis
- General anesthesia
- Glucagon
- Wire cannulation
- 3 o’clock sphincterotomy
- 3cm 5Fr stent
- Rectal indomethacin
Pancreatic Duct Stones

- Associated with duct stasis
  - Chronic pancreatitis
  - Strictures
  - Main duct IPMN
- MRCP: low detection rates
- EUS: most sensitive test

Pancreatic Duct Stone Extraction Techniques

- Wire cannulation
- Contrast injection
- Pancreatic duct sphincterotomy
- Balloon extraction
- Biliary baskets not appropriate
- Pancreatography with EHL
Algorithm

CT Scan → Inflammation, cyst, mass
ERCP → CBD or PD stone
MRCP → Chronic pancreatitis
EUS → Malignancy

Conclusions

1. Relapsing pancreatitis should be evaluated
   - Initially with CT, MRCP
2. Steroid trial for AIP
3. Endoscopy
   - ERCP for suspected stenosis, stones
   - EUS for cystic lesions, dilated PD
   - Stone extraction