Advanced Endoscopy Panel Discussion

American Society for
Gastrointestinal Endoscopy

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DISCLOSURES

No financial relationships to disclose

RH56 Case Discussion - History

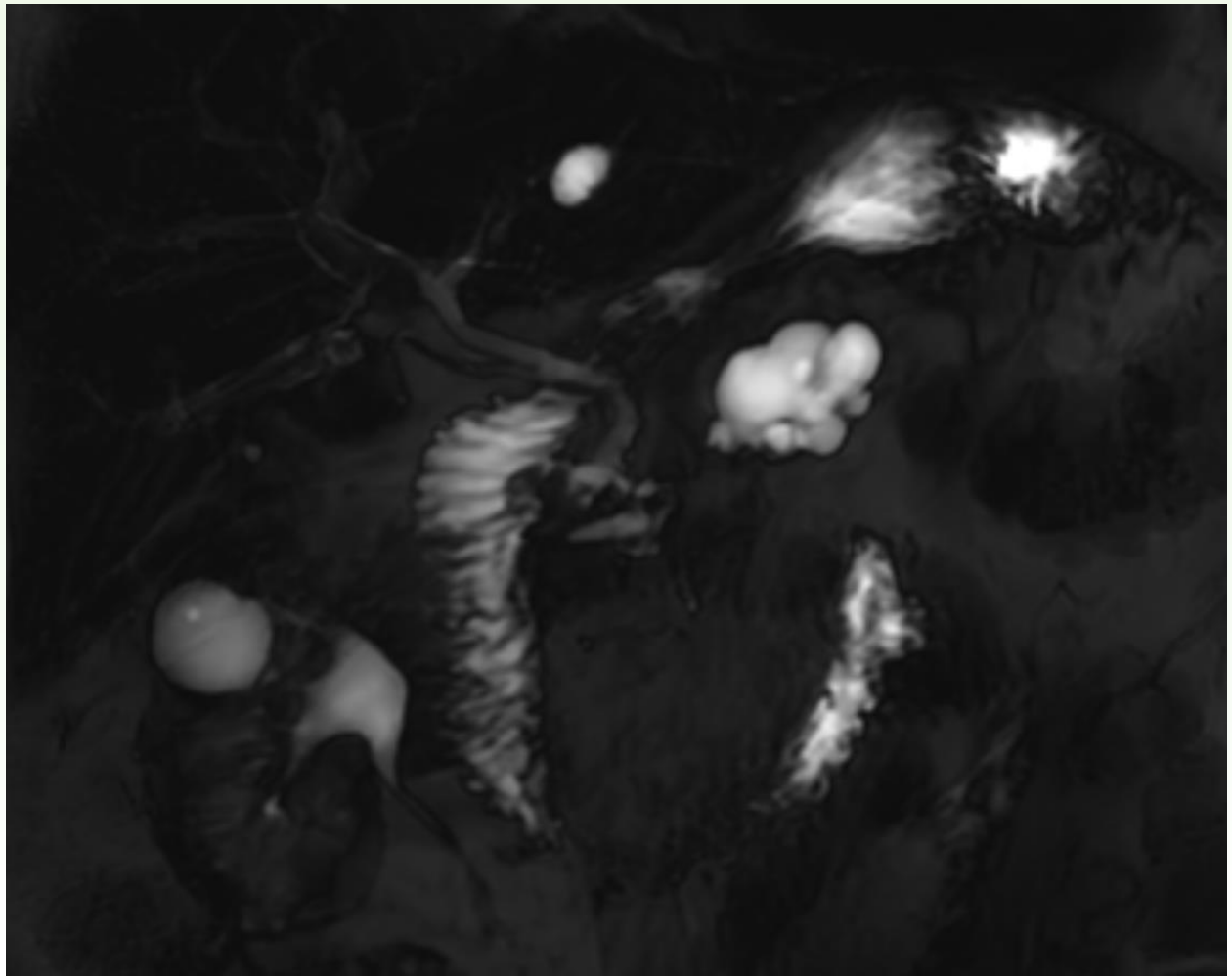
66yo WM presented with persistent cough

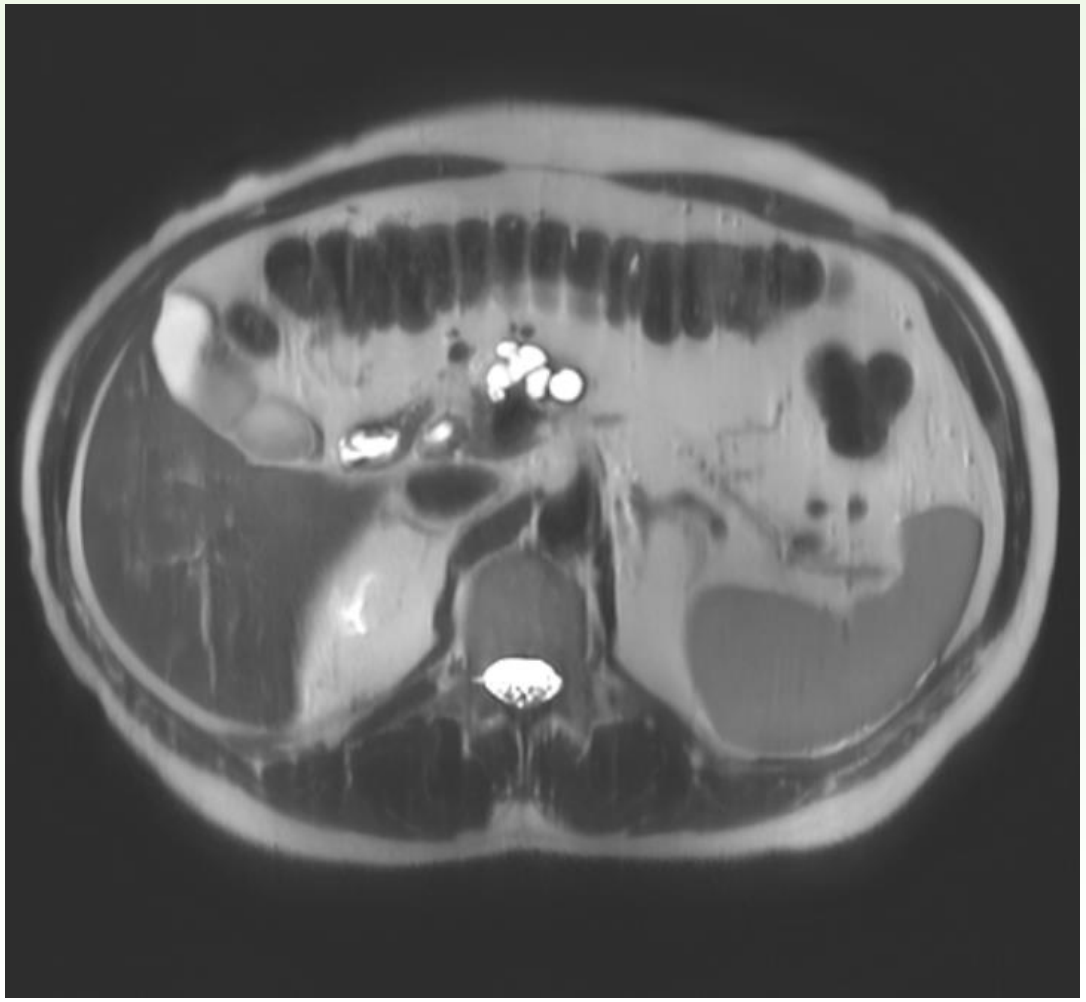
- HPI - chest CT demonstrated pancreatic cyst measuring 2cm
  - No abd pain, diarrhea, wt loss
  - No prior Hx pancreatitis/FamHx recurrent pancreatitis or AI dz
  - Daily wine intake, No tobacco / NSAID use
  - Labs - CBC/CMP/lipase/CA 19-9 WNL

Question: best next step for further characterization:

- **CT panc protocol**
- **MRI-MRCP**
- **EUS**

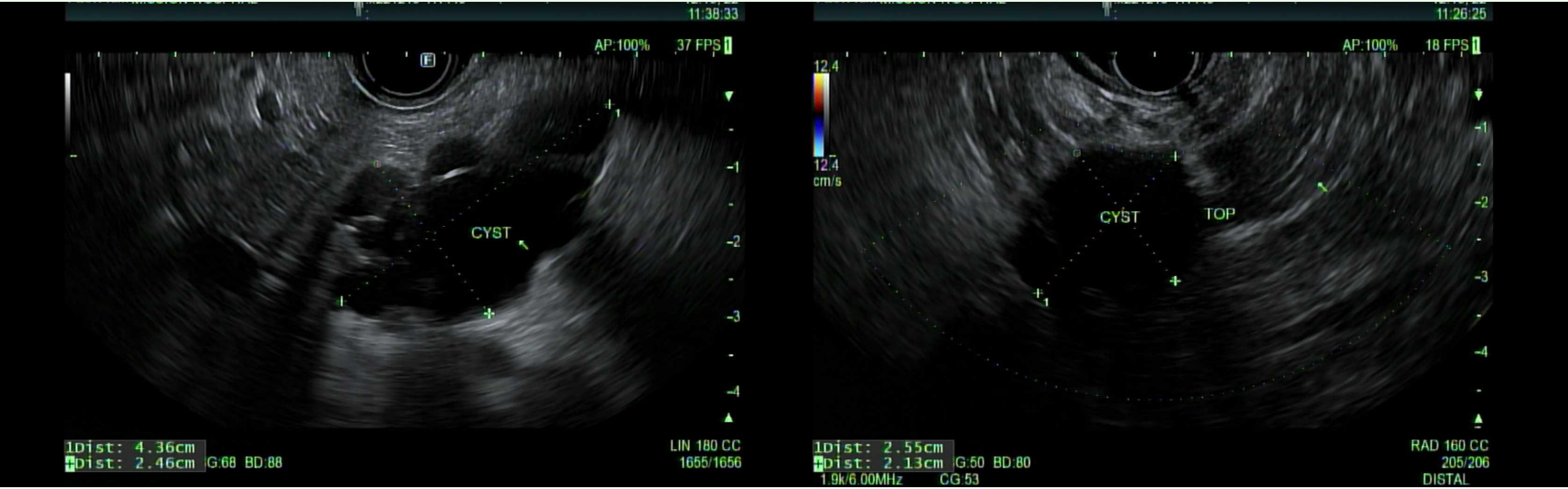
RH56 Case Discussion - MR Imaging





- 3.8 x 1.7cm complex separated non-enhancing cystic lesion prox BOP
- 2.3 x 1.9cm complex non-enhancing cystic lesion TOP

RH56 Case Discussion - Endosonography



- 4.3 x 2.6cm septated cyst in BOP; 2.5 x 2.1cm septated cyst in TOP;
- no assoc mass, mural nodule or internal debris; no obvious PD communication / dilation
- Parenchymal changes s/o mild-mod chronic pancreatitis

Question: surveillance MRI or proceed with FNA for fluid analysis

RH56 Case Discussion - Cyst Fluid Analysis

FNA performed

- 8ml clear serous slightly viscous fluid aspirated

Cyst fluid analysis

- Amylase: < 3
- Glucose: 2
- CEA: 6065
- Cytology: neoplastic mutinous cyst with low grade atypia

Question: Surveillance vs Resection vs repeat EUS for FNA of TOP cyst

RH56 Case Discussion - Surgical Findings

Open extended distal pancreatectomy and splenectomy

- Severe inflammatory reaction from dominant IPMN over portal vessels consistent with pancreatitis
- Distal lesion appeared necrotic with severe inflammatory reaction extending to the posterior stomach and along the celiac axis
- No evidence of gross malignancy

Histological findings

- 4.1cm IPMN,
- branch duct type with gastric type epithelium
- Low grade dysplasia, no carcinoma; LN negative for malignancy

Role of EUS for Evaluation of Pancreatic Cystic Lesions

PEARLS FOR PRACTICE

Pancreatic Cystic Lesions
Pearls for Practice

Primary tool for characterization/prognosis of pancreatic cystic lesions = MRI

- Non-invasive / Lack of radiation
- Assessment of main pancreatic duct
  - communication with cyst
  - size/caliber change of MPD
- Characterization of cyst
  - septations
  - Enhancement
  - Mural nodularity
- Dx Accuracy
  - Malignant vs non-malignant lesions: 73 - 91%
  - IPMNs vs other cystic lesions: 97% sensitivity, 90% specificity

Pancreatic Cystic Lesions
Pearls for Practice

Determination if EUS is warranted

- Assessment of risk factors & signs/symptoms
    - Family Hx panc CA, Per Hx chronic panc,
    - Acute pancreatitis, jaundice, elevated CA 19-9
- Determination of imaging characteristics
    - Size of cyst (> 3cm) or increase of cyst size > 3mm/yr
    - Change in duct caliber focally/upstream
    - Mural nodule or solid component of adjacent parenchyma
- Surgical candidacy

Pancreatic Cystic Lesions
Pearls for Practice

Need to Needle ?

- FNA warranted
  - if dx uncertain
  - If will affect management
  - If mucinous lesion
    - Jaundice / Pancreatitis / Elevated CA 19-9
    - Mural nodule / MPD > 5mm / size > 3cm / abrupt MPD caliber change
- FNA unwarranted
  - If clear dx of benign etiology (PC or SCN)

Pancreatic Cystic Lesions
Pearls for Practice

FNA Risk Assessment

- Incidence(<1%)

FNA Adverse Outcomes

- Infection: peri-operative antibiotics x 3-5 d advised per ASGE for FNA of panc cyst
- Hemorrhage: doppler u/s to exclude intervening vasculature
- Perforation
- Needle tract seeding
- Pancreatitis
  - Higher if more manipulation (scraping / biopsy) of the cyst wall
  - Current RCT to assess role of rectal indomethacin

Pancreatic Cystic Lesions
Pearls for Practice

Needle Choice

- 25Ga needle insufficient caliber
- 19Ga
  - difficult in transduodenal approach / penetrating gastric wall
  - necessary for TTN forceps/brush
- 22Ga " sweet spot

Additional Tools

- Through-the-needle forceps (Steris)
- EchoBrush (Cook Medical)

Pancreatic Cystic Lesions
Pearls for Practice

Mural Nodularity

- Intracystic mucus: smooth well-defined hyperechoic rim with hypoechoic center
- Epithelial nodules: ill defined borders and a hyperechoic center

Comprehensive evaluation

- Thorough exam of remainder of pancreas imperative
- Normal parenchyma or changes of chronic pancreatitis

Pancreatic Cystic Lesions
Pearls for Practice

Cyst Fluid Analysis

- Gross appearance - viscous v. thin, clear v. opaque/turbid, bloody v. non-bloody
- CEA / amylase / glucose / mucin stain / cytology
- Molecular markers if preliminary analysis inconclusive: KRAS / GNAS

Interpretation

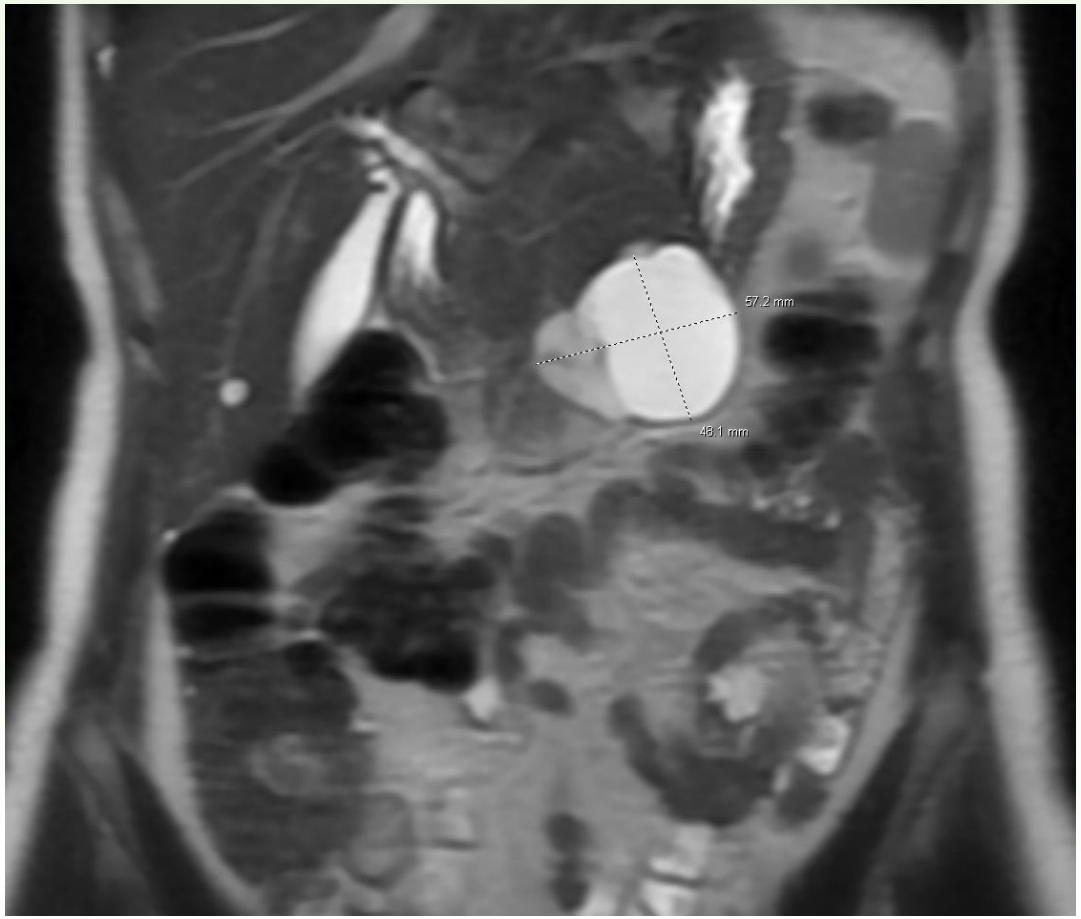
- Glucose - improves dx accuracy for compared to CEA alone
  - Glucose < 50 and/or CEA is > 192 likely to be mucinous cyst
- CEA < 5 negligible chance of a mucinous cyst
- Amylase < 250 unlikely to be PC
- KRAS & GNAS: dx accuracy together 97% compared to CEA alone

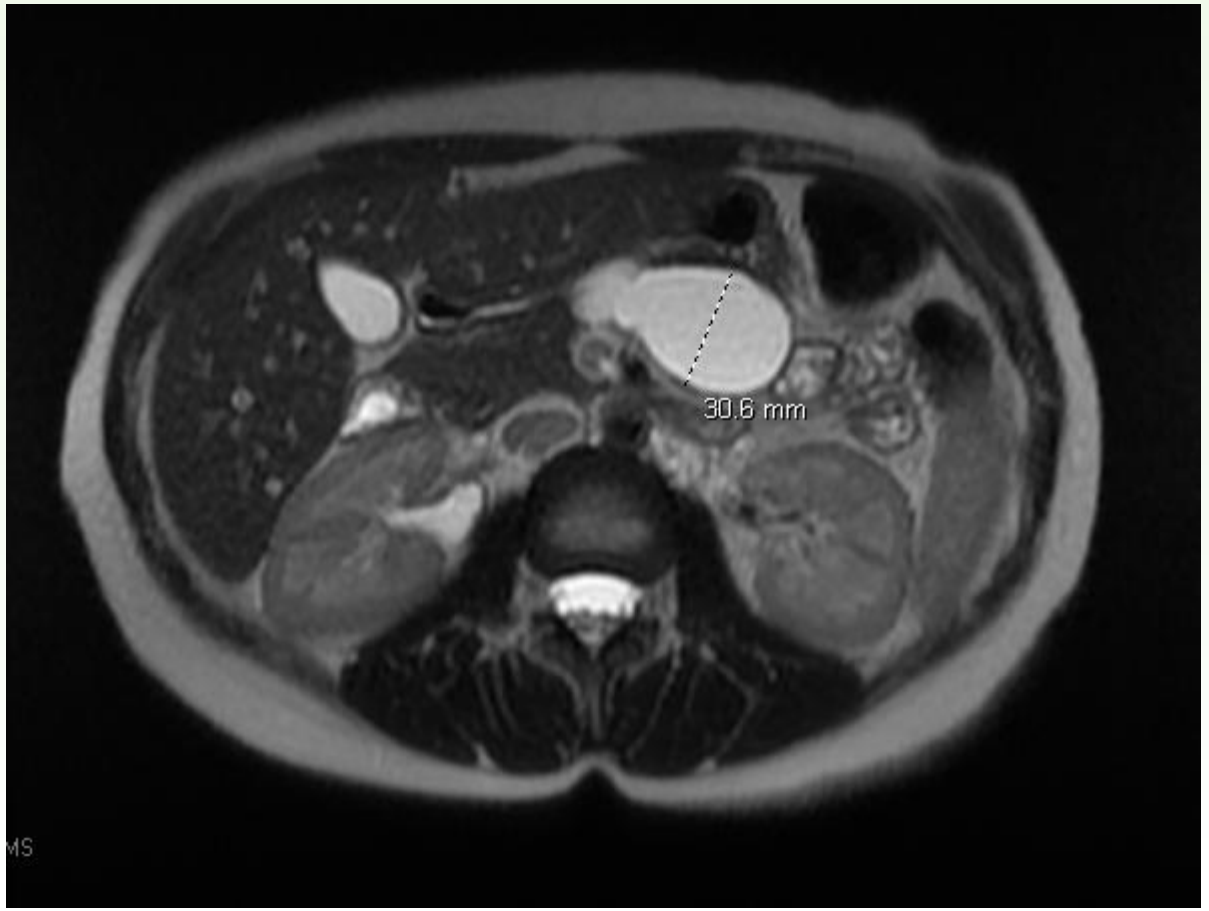
MR90 Case Discussion - History

- 29yo WF with CC of nausea
- HPI: n/v/d 6 mo ago; now intermittent nausea/satiety, diffuse abd pain
- PMH: EDS, MCAS, IC, Anxiety/Depression
- Neg HPsAg; nml IgA, tTG IgA, EGD/SBFT - unremarkable
- Abd U/S: 4.7 x 3.6 x 2.3cm septated cystic mass adjacent to TOP
- MRI: 3.5 x 2.5 x 4.9cm cystic mass b/n panc and gastric body; no PD communication; Ddx = duplication cyst, mesenteric cyst. Lymphatic malformation (less likely PC or cystadenoma)
- Abd U/S (2yrs later): 5.9 x 3.4 x 5.4cm complex cystic lesion of BOP/TOP

Question: next step in evaluation: EUS vs MRI vs resection

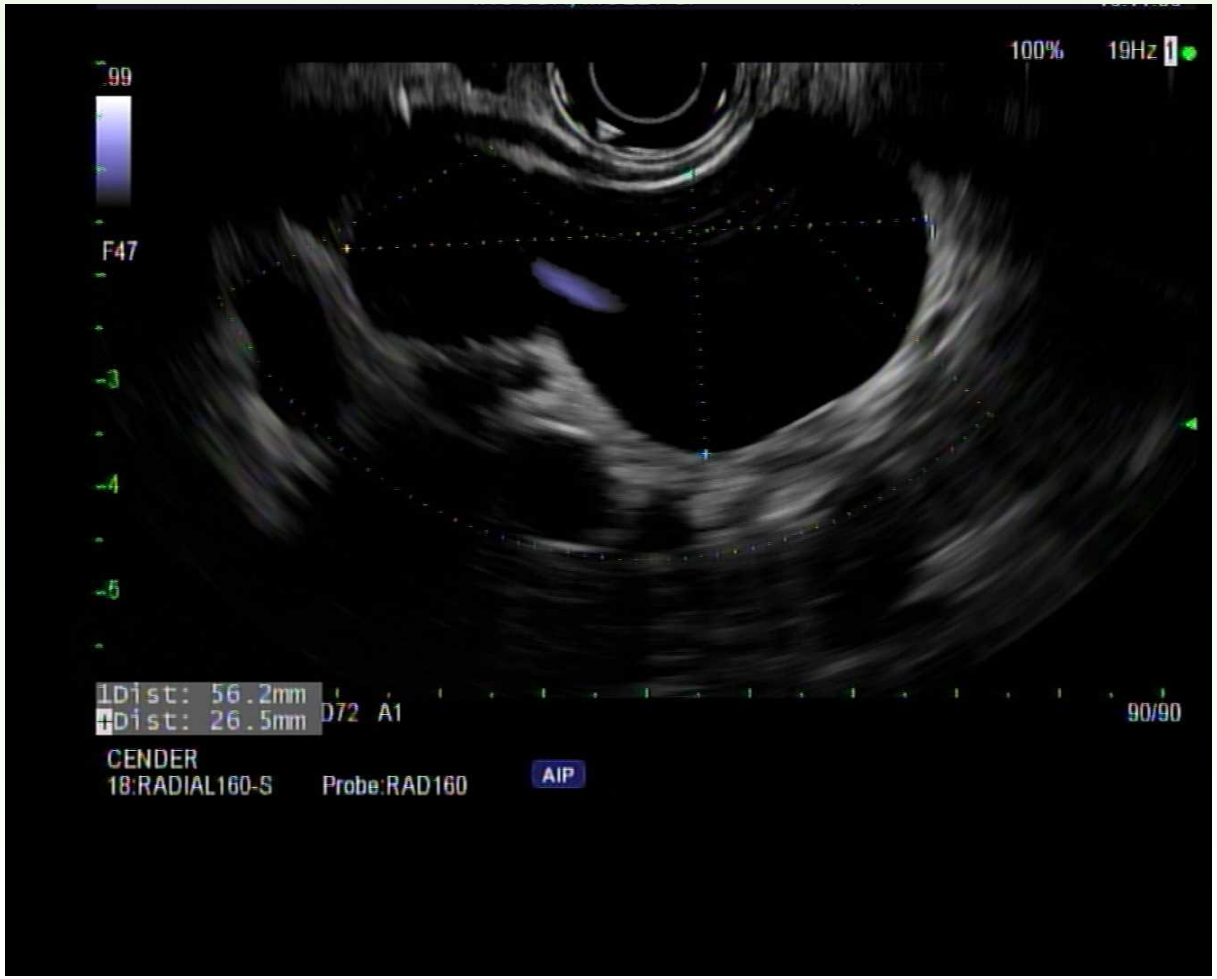
MR90 Case Discussion - MR Imaging

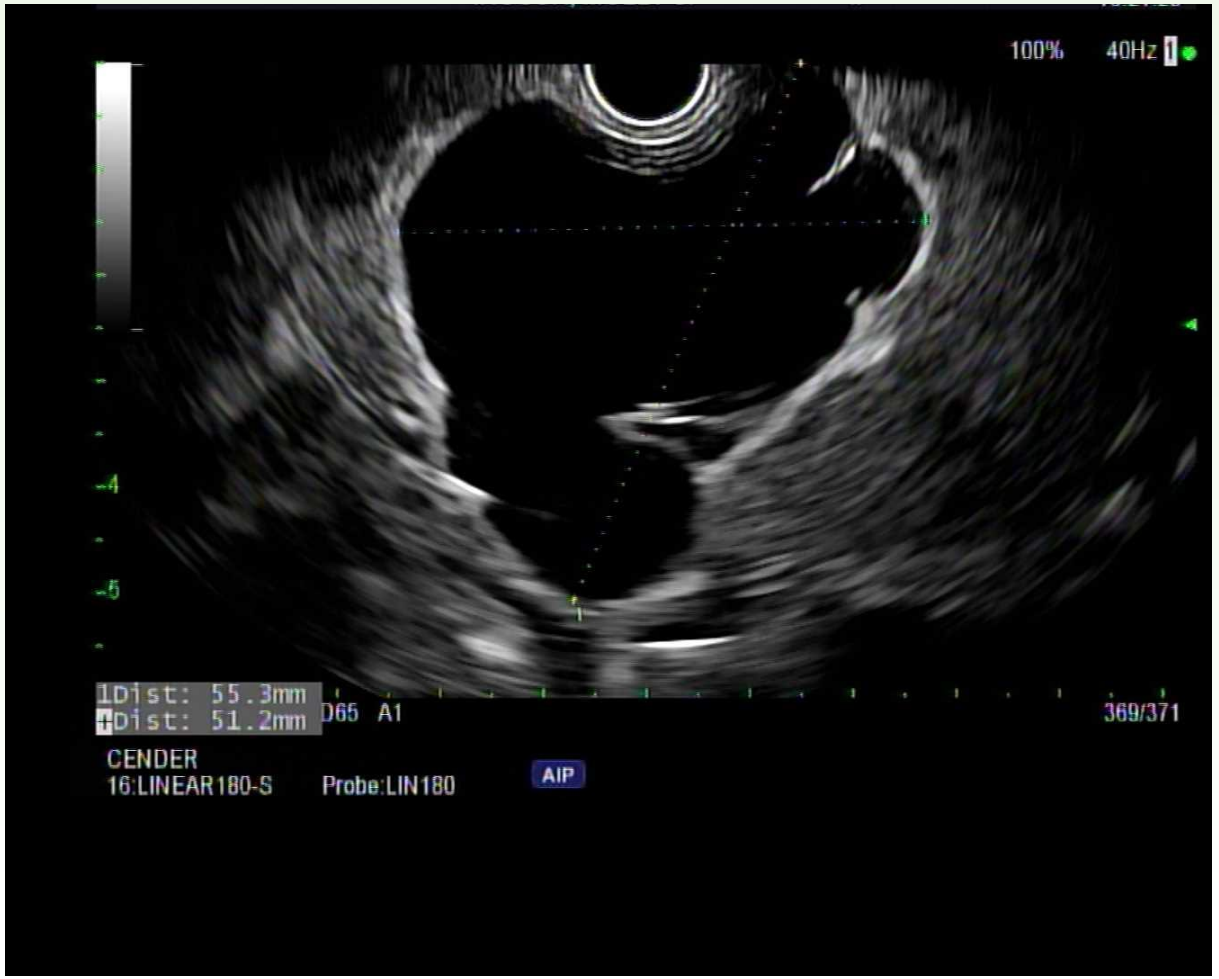




MRI: 5.7 x 4.8 x 3.1cm septated cystic mass contiguous with inferior pancreas; no PD comm

MR90 Case Discussion - Endosonography





EUS: 5.5 x 5.1cm septated cyst of distal BOP, no PD comm/dilation; no internal debris; no assoc mass

MR90 Case Discussion - Endosonographic Data

Diagnostic considerations

- Pseudocyst
- Mucinous cystadenoma
- Duplication cyst
- Solid pseudopapillary neoplasm
- IPMN
- Cystic endocrine neoplasm
- Ductal adenocarcinoma with cystic degeneration

Question: Next steps: FNA for fluid analysis vs surveillance with MRI vs resection

MR90 Case Discussion - Cyst Fluid Analysis

- FNA perfomed with 30ml opaque viscous fluid aspirated
- Cyst fluid analysis
  - Amylase: 141
  - CEA: 0.8
  - Cytology: no dysplasia/neoplasia; hypocellular specimen with few lymphocytes and RBCs

Question: Next step(s) for evaluation / management ?

MR90 Case Discussion - Cyst Fluid Analysis

Cyst fluid analysis (cont)

- Triglyceride level: 3175

Dx: Lymphangioma

Plan:

- no f/u vs
- surveillance vs
- resection

MR90 Case Discussion - Surgical Intervention

Surgical Findings

- Retroperitoneal / peripancreatic cystic mass

Histologic Findings

- Lymphangioma