Endoscopic Treatment of Chronic Pancreatitis Complications

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16 y/o female with chronic pancreatitis

- Episodic pain flares beginning at age 8
- Exocrine failure
- PRSS1 gene mutation
- Frequency of pain flares transitioned from 1-2/year to every 2 months
- Imaging obtained to examine for duct obstruction, stricture, etc.
MRCP vs. CT
Non-surgical treatment of chronic pancreatitis complications

- **Pancreatic duct obstruction**
  - ERCP
  - Extracorporeal shock wave lithotripsy (ESWL) with or without ERCP

- **Benign biliary strictures**
  - ERCP

- **Pancreatic fluid collections**
  - Endoscopic drainage procedures

- **Chronic pain**
  - EUS for celiac plexus block/neurolysis
Pancreatic duct obstruction

- **Main pancreatic duct stones**
  - Small stones (<5mm) are typically amenable to standard techniques including balloon or basket extraction
  - Large stones (>5mm) usually require other techniques
    - Extracorporeal shock wave lithotripsy (ESWL)
    - Electrohydraulic lithotripsy (EHL) appears to be effective but safety/efficacy data on use in PD is less robust
    - Mechanical lithotripsy in PD is associated with higher risks than CBD

- **Main pancreatic duct strictures**
  - Standard endoscopic therapies (stricture dilation and stenting) are highly successful

- **Side branch pancreatic duct stones/strictures**
  - Typically NOT amenable to endoscopic therapy or ESWL
Benign biliary strictures

- Estimated prevalence in adult CP ranges widely (3-46%) and less is known about pediatric prevalence.
  - Typically presents with jaundice, pruritus and pain
  - ~10% may develop cholangitis or biliary cirrhosis
- ERCP with stricture dilation and stenting is very effective but long term stenting is often required
Pancreatic fluid collections

• Pseudocysts develop in ~30% of adult CP patients
  • Rate of pseudocyst formation is higher than in the AP population (2-13%)
  • Acute necrotic collections and walled of necrosis are less common in the CP population compared to the AP population
• Infection or gastrointestinal obstruction are rare
  • <10% of CP fluid collections require drainage
• When drainage is necessary, endoscopic drainage is preferred
  • Equally effective as surgical drainage with fewer complications, shorter hospitalization and decreased cost
Chronic pain

- Multi-modal medical therapy continues to be standard of care
- EUS guided celiac plexus block
  - Injection of local anesthetic and steroid mixture at celiac plexus nerve bundle
  - Neurolysis with ethanol injection is typically done only in malignant disease
Adult outcomes

- Pancreatic duct obstruction
  - ERCP decompression improves pain in 65% of patients
  - ERCP stricture treatment is associated with immediate (65-95%) and long term (32-68%) pain improvement
- Benign biliary strictures
  - Reported response rates vary from 37-100% with SEMS or multiple plastic stents
- Pancreatic fluid collections
  - ~90% respond to transmural or transpapillary drainage
- Celiac plexus block
  - Short term benefit in 50-60% but repeat injections often do not yield additional benefits
Pediatric outcomes

- Very little data on ERCP outcomes in chronic pancreatitis. No systematic studies on CP fluid collection or celiac plexus block in children.

Case follow up

- Patient experienced ~6 months of decreased pain and improved quality of life after ESWL and ERCP.
- Worsening pain prompted repeat ERCP where no obstructing stones/strictures were found.
- Referred for TPIAT. Low islet yield.
- 18 months after surgery she is pain free and headed off to college this fall.
My opinion

• The potential short term benefits of ERCP/ESWL should be discussed with all patients who have duct obstruction and worsening CP symptoms.

• Avoid treating CP related pancreatic fluid collections whenever possible.

• Celiac plexus block should be approached cautiously in children.

• Endotherapy needs to be studied better in the pediatric CP population to assure it does not lead to worsened outcomes in patients destined for TPIAT.