Complications of Chronic Pancreatitis: Internal Pancreatic Fistulas

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Definitions

• Internal fistula between pancreatic duct and organ space resulting from pancreatic duct disruption or transection
  • Pancreatic pseudocyst
  • Free intraperitoneal ductal communication – pancreatic ascites
  • Retroperitoneal ductal communication – mediastinal and/or pleural fistula
  • Other sites: stomach, intestine, colon, bile duct, subcutaneous
• External pancreatic fistula is usually iatrogenic
Definitions

• IPF in setting of chronic pancreatitis are:
  • Rare (5-7%)
  • Usually a complication of alcoholic pancreatitis

• Diagnostic criteria
  • Presence of amylase and protein rich fluid in peritoneal or pleural cavity
    • Classically amylase ≥ 1000 IU/L
    • Classically protein ≥ 3 g/dL
  • Presence of ductal disruption or transection on ERCP/MRCP

Pancreatic ascites

Yoon et al., BJR, 2008
Diagnosis

- Interrogation of pancreatic ductal anatomy is critical for diagnosis and management of internal pancreatic fistula
- Endoscopy allows for both diagnostic and therapeutic maneuvers
- Body imaging (CT/MRI) to delineate pancreatic gland anatomy and surrounding organ space involvement

Courtesy of Dr Todd H Baron
Data Management

- Evidence pooled from studies among patients with non-iatrogenic pancreatic duct disruption with a resulting pancreatic fistula
- Acute pancreatitis is a more common cause of pancreatic duct disruption than chronic pancreatitis (not included in this analysis)
Main symptoms

- Goal of treatment should focus on symptom resolution
- Pancreatic ascites
  - Abdominal distention
  - Tense
  - Non-painful
- Pancreatic pleural fistula
  - Shortness of breath

Treatment strategies – PA and PPF

- Historically, medical therapy alone resulted in symptom resolution in 17-50% of the patients
  - Prolonged (≥ 3 week) treatment course
  - High rate of complications (infectious)
  - No longer first-line therapy
- Goal: relief of symptoms
  - resolution of ascites or pleural effusion
- Treatment of underlying chronic pancreatitis parenchymal disease is not necessary in the same clinical setting if symptom relief can be achieved by endoscopic therapy
Treatment strategies – PA and PPF

• ERCP
  • Endoscopic transpapillary stent for patients with partial duct disruption
    • Cicek et al., Surg Endosc, 2006 (success = 4/5 patients)
    • Bracher et al., Gastro Endosc, 1999 (success = 6/6 patients)
    • Brennan et al., Dig Surg, 2006 (success = 6/10 patients)
    • Chebli et al., J Clin Gastro, 2004 (success = 4/4 patients)
    • Gomez-Cerezo et al., Am J Gastro, 2003 (success = 6/7 patients)
  • Total: 30 of 36 patients with symptom resolution

• Level of evidence 4
• Recommendation C

Treatment strategies – PA and PPF

• ERCP
  • Endoscopic transpapillary nasopancreatic stent for patients with partial duct disruption
    • Bhasin et al., J Gastro and Hep, 2006 (success = 10/10 patients)

• Level of evidence 4
• Recommendation C
Treatment strategies – PA and PPF

• Operative strategies
  • Both pancreatic resection and pancreatic drainage procedures can be used successfully in management of PA/PPF in patients who
    • Failed endoscopic therapy
    • Complete ductal transection
    • King et al., Surgery, 2010 (n=43/46 patients)
    • Murage et al., Surgery 2010 (success = 14/17 patients)
    • Gomez-Cerezo et al., Am J Gastro, 2003 (success = 34/39 patients)
    • Chebli et al., J Clin Gastro, 2004 (success = 2/2 patients)
  • Total: 93 of 104 patients with symptom resolution

• Level of evidence 4
  • Recommendation C
Summary

1. PA and PPF are rare (~5%) among patients with chronic pancreatitis
2. Amylase rich fluid is present in peritoneal and/or pleural cavities
3. Characterization of anatomy with cross-sectional and ductal imaging is mandatory
4. Conservative therapies have a high failure rate
5. Endoscopic stenting is first line therapy 
   *(Grade C)*

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Summary

6. Pancreatic drainage and resection can be used successfully to treat complete duct disruption 
   *(Grade C)*
7. Operative strategy should be based on ductal anatomy and surgeon experience 
   *(Grade D)*
8. Surgery for
   - Complete disruption
   - Inability to decompress PD
   - Failure of stenting