Medical Student Surgical Clerkship

Pancreatic disease seminar

Raymond J. Joehl, M.D.
Loyola University Medical Center

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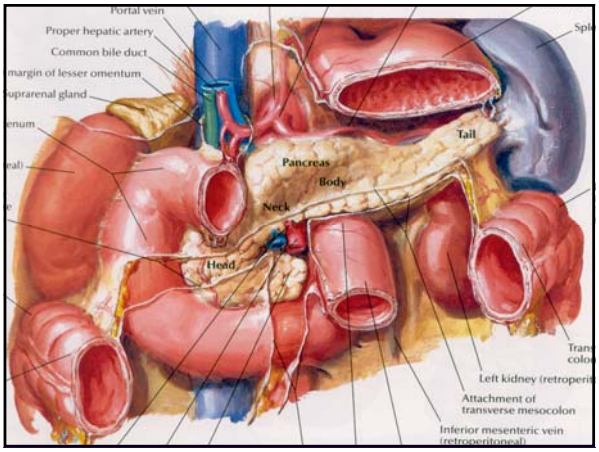


Acute pancreatitis

- Range from self-limiting to severe MSOF (10%)
- Dx: clinical signs, labs, & imaging (US/dynamic CT)
- Predictive factors: Ranson's, ISS, APACHE II, etc.
- Post-op pancreaitits with high M&M
- TPN essential to improve N_2 balance and outcome
- Macro findings: edema, phlegmon, sterile necrosis/infected necrosis, & abscess

Etiology: acute pancreatitis

- **Gallstones**
- **Ethanol abuse**

- Pancreas divisum
- Autoimmune disease
- Hyperlipidemia (I & V)
- Familial pancreatitis
- Traumatic
- Hyperparathyroidism

- Ischemic (CABG)
- Renal failure
- Postoperative
- Scorpion sting
- Viral infections
- Drugs (anti-virals)

Acute pancreatitis severity
Ranson's criteria

At admission/diagnosis

- **Age > 55 years**
- **WBC > 16,000 cells/mm^3**
- **FBS > 200 mg/dl**
- **LDH > 350 IU/l**
- **SGOT > 250 IU/l**

During initial 48 hours

- **Hct drop > 10%**
- **BUN rise > 5 mg/dl**
- **Serum calcium < 8 mg/dl**
- **PaO_2 < 60 mm Hg**
- **Base deficit > 4 mEq/l**
- **Fluid sequestration > 600 ml**

Ranson's criteria - Mortality

- **< 3 signs predicts a mortality of 1 - 2%**
- **3 - 4 signs predict a mortality of 15%**
- **5 - 6 signs predict a mortality of 40%**
- **7 or more signs → nearly 100%**

Acute pancreatitis
Surgical indications

- Exploration to R/O acute abdomen - rare
- Pancreatic abscess or Infected pancreatic necrosis
  - Determined by CT scanning and C&S aspiration
  - Assess the degree of pancreatic avascularity
  - Pancreatic debridement and drainage needed
- Clinical deterioration in acute pancreatitis (?)
- Complications: Colon ischemia
- Biliary pancreatitis - Cholecystectomy +/- CBDE

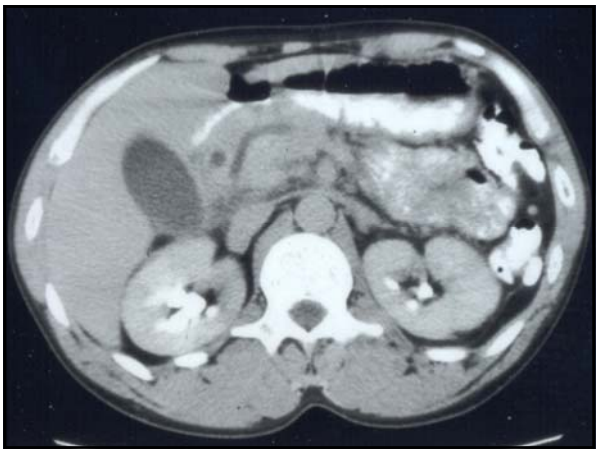
Pathogens & pancreatic infection

- Klebsiella
- E. coli
- Proteus
- Enterobacter
- Streptococcus
- Candida
- Enterococcus
- Serratia
- Pseudomonas
- Anaerobes
- Staphylococcus

Chronic pancreatitis

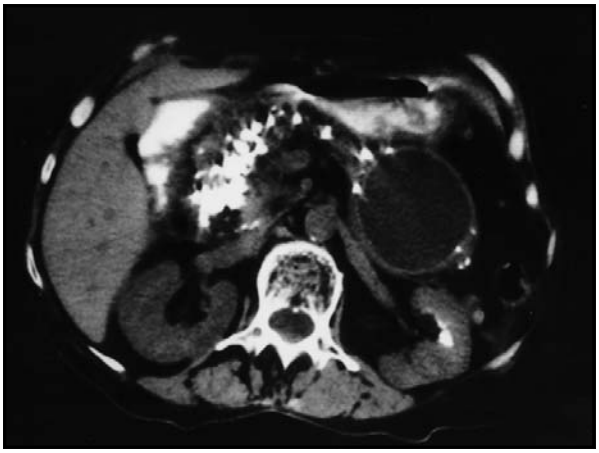
Complications

- Incapacitating pain
- Pancreatic, biliary, & GI obstruction
- Pseudocyst formation
- Pancreatic fistula & ascites
- Splenic vein thrombsis
- Pancreatico-enteric fistula
- Differentiation from carcinoma



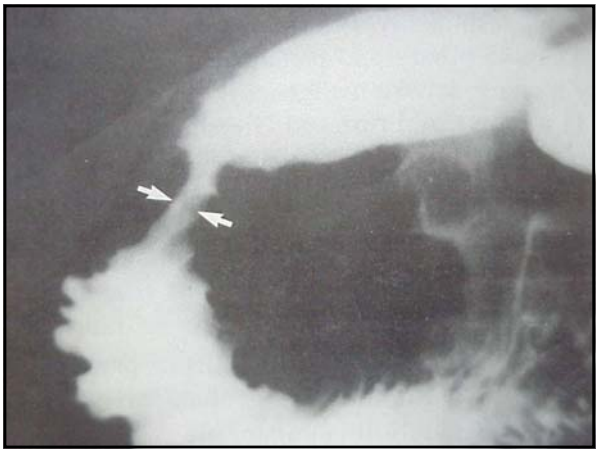
Chronic pancreatitis and pain

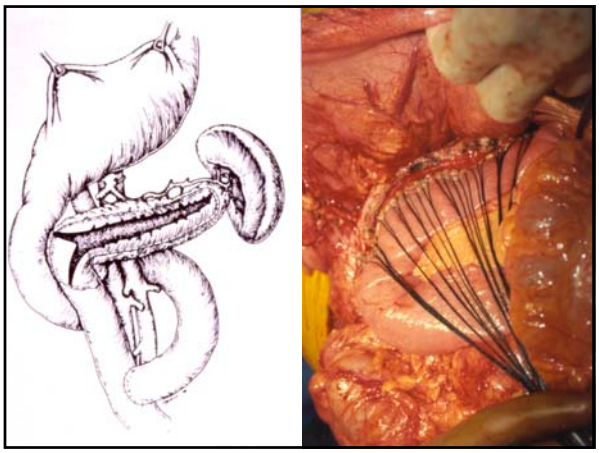
- Chronic pancreatic duct obstruction
- Stimulation of afferent sympathetic nerves
- Medical treatment options are limited
  - Analgesics and narcotics
  - Oral pancreatic enzyme replacement
  - Eliminate EtOH consumption
  - Somatostatin not reliably effective
  - Celiac plexus nerve block
- Surgical intervention



“Chain of Lakes” ERCP

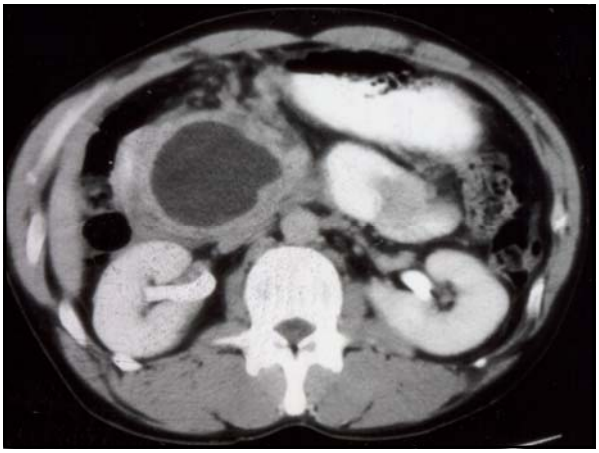
Chronic pancreatitis with biliary obstruction



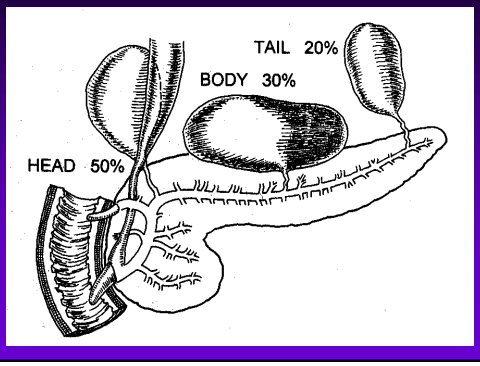


Pancreatic pseudocyst

- Localized collection of pancreatic juice enclosed by a wall of fibrous or granulation tissue
- Persistent or recurrent abdominal pain after pancreatitis, jaundice, gastric outlet obstruction, etc.
- Detection and diagnosis by US or dynamic CT



Origin of pancreatic pseudocysts



Pancreatic pseudocysts

- 10 - 20% of AP patients will develop a pseudocyst
- Spontaneous resolution: acute > chronic
- 6-12 week waiting period (resolve acute process)
- Observation is safe for small asymptomatic cysts < 4-5 cm
- Role of ERCP in management decisions to determine status of duct/connection to cyst

(with no pancreatic duct connection)

- Endoscopic drainage
- Percutaneous CT-guided aspiration and drainage