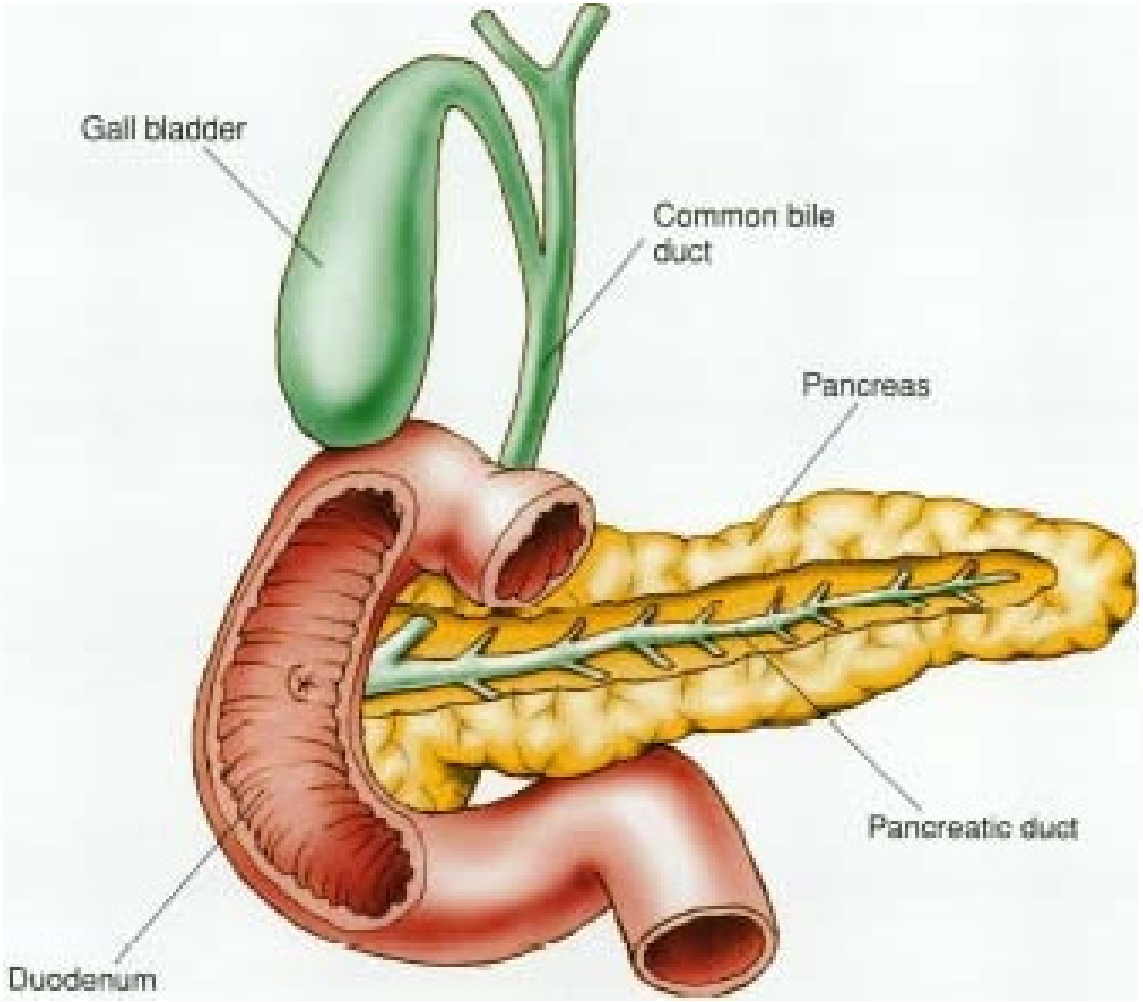
PANCREATITIS



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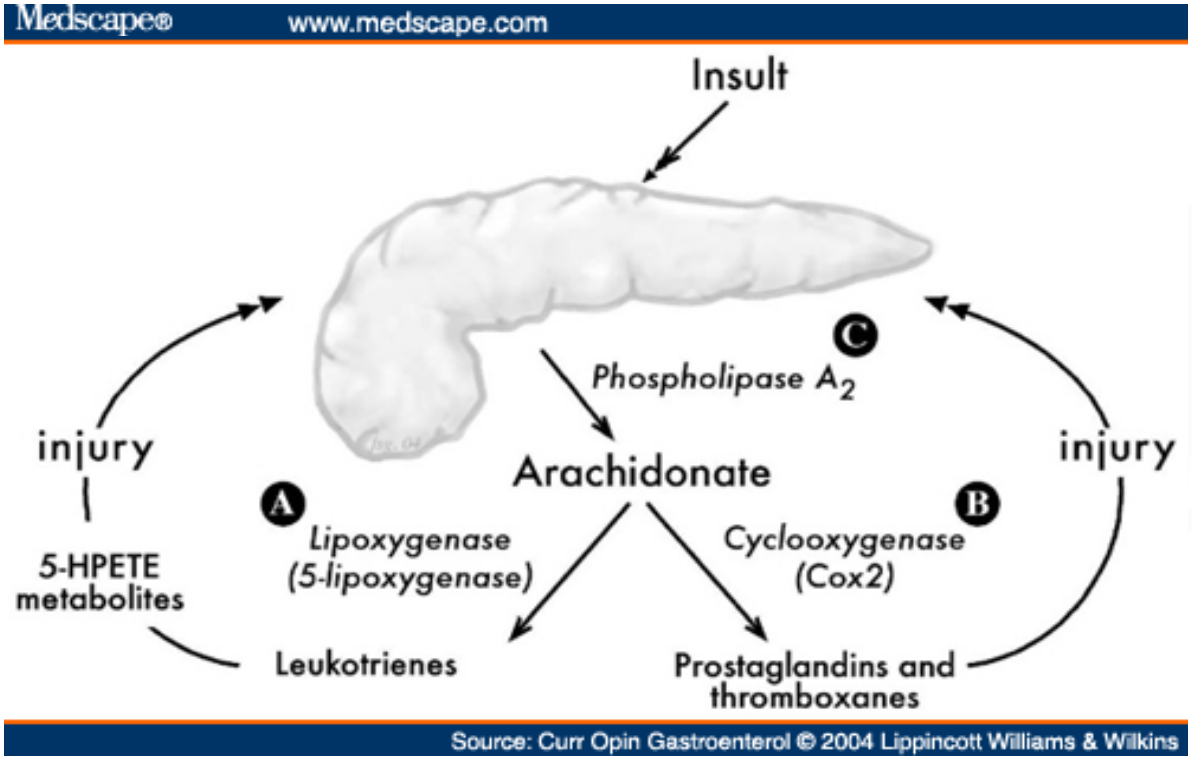
Acute pancreatitis

- Pathophysiology - insult leads to leakage of pancreatic enzymes into pancreatic & peripancreatic tissue leading to acute inflammatory reaction



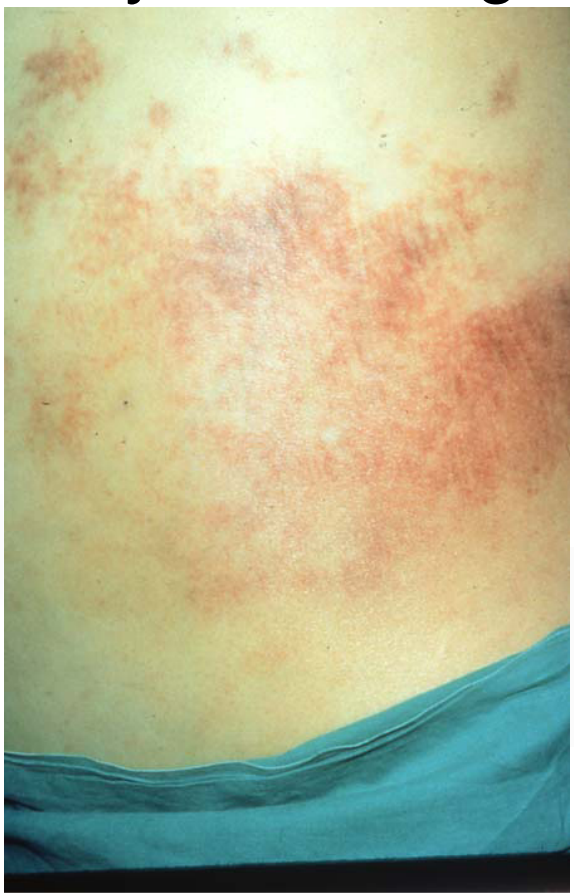
Acute pancreatitis

- Etiologies
  - Idiopathic
  - Gallstones
  - Alcoholism
  - Trauma
  - Steroids
  - Mumps (& other viruses: CMV, EBV)
  - Autoimmune
  - Hyper TG
  - ERCP
  - Drugs (thiazides, sulfonamides, ACE-I, NSAIDS, azathioprine)

Signs & Symptoms

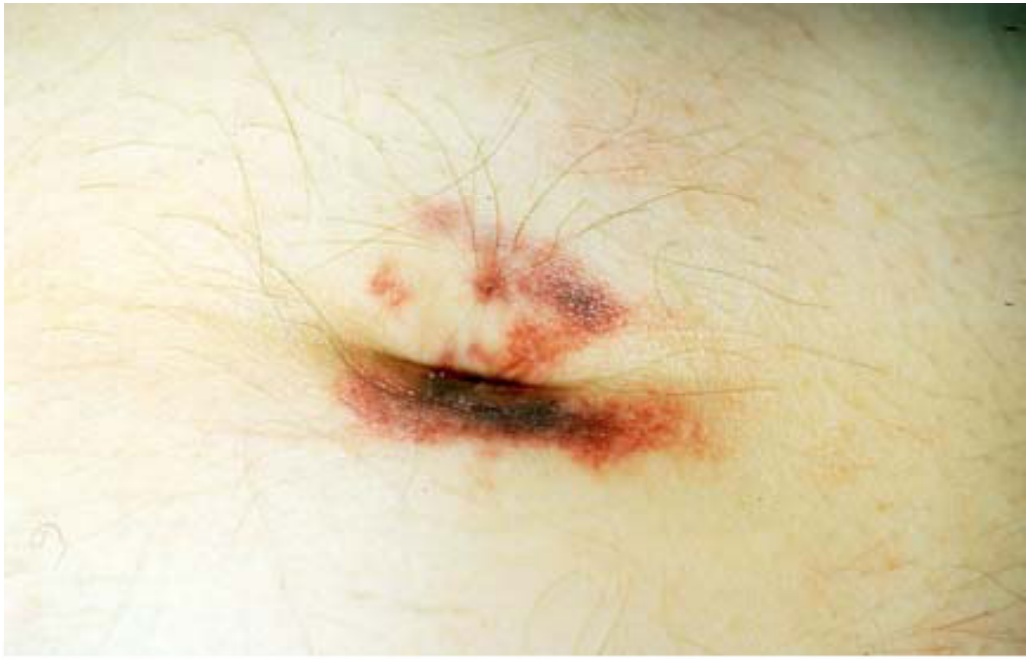
- Severe epigastric abdominal pain - abrupt onset (may radiate to back)
- Nausea & Vomiting
- Weakness
- Tachycardia
- Fever
- Hypotension or shock
  - Grey Turner sign - flank discoloration due to retroperitoneal bleed in pt. with pancreatic necrosis
  - Cullen's sign - periumbilical discoloration

- Grey Turner sign



Source: Lichtman MA, Shafer MS, Felgar RE, Wang N:
Lichtman's Atlas of Hematology: http://www.accessmedicine.com

- Cullen's sign



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Differential

- Biliary disease
- Intestinal obstruction
- Mesenteric Ischemia
- MI (inferior)
- Abdominal aortic aneunism
- Distal aortic dissection
- Peptic Ulcer Disease

Evaluation

- ↑ **amylase**…Nonspecific !!!
  - Amylase levels > 3x normal very suggestive of pancreatitis
    - May be normal in chronic pancreatitis.
  - False (+): other abdominal or salivary gland process

- ↑ **lipase**
  - More sensitive & specific than amylase

Evaluation

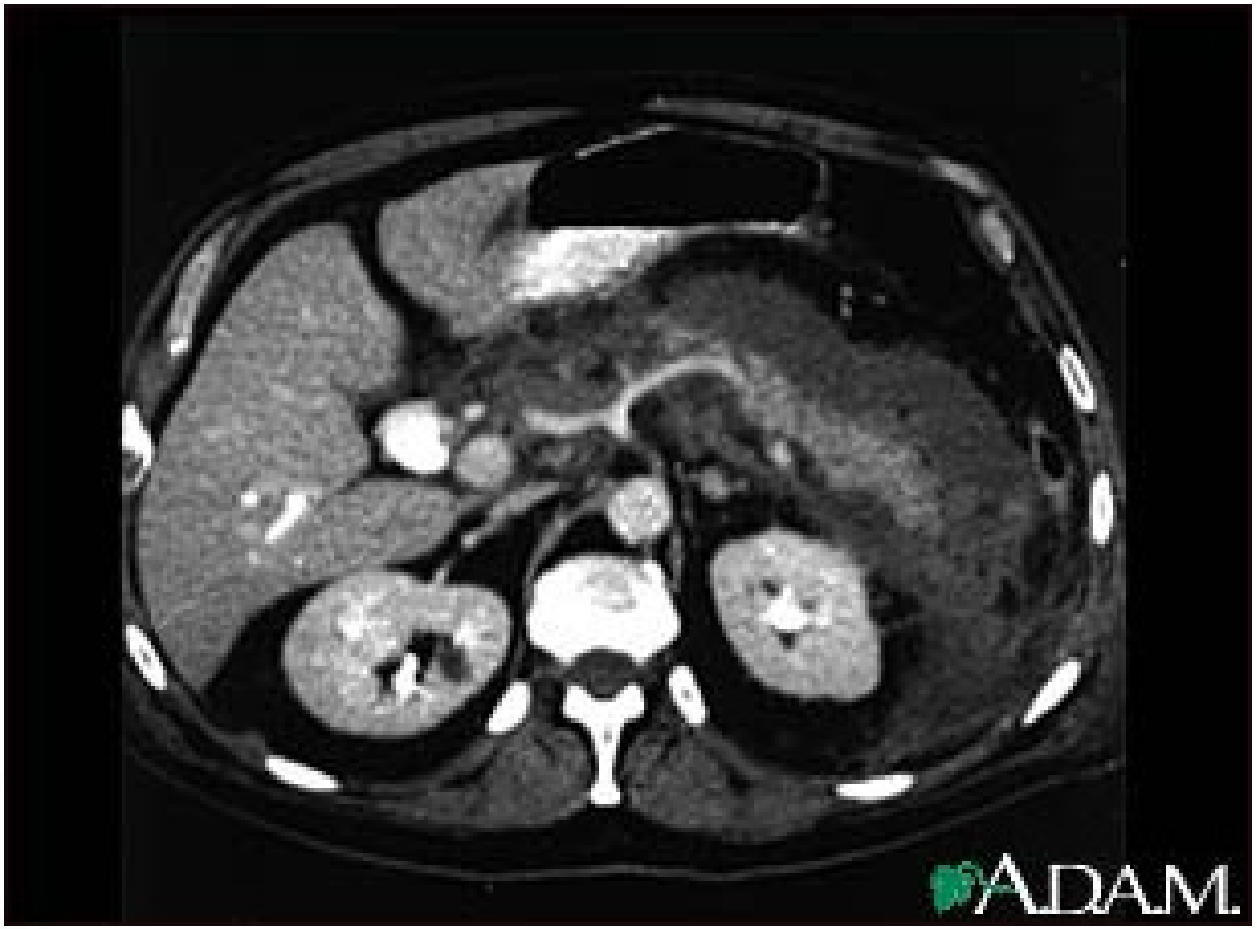
- Other inflammatory markers will be elevated
  - C - Reactive Protein
- ALT > 3x normal → gallstone pancreatitis
- Depending on severity may see:
  - ↓ Calcium
  - ↑WBC
  - ↓ Hct (PCV)
  - ↑ Glucose

Radiographic Evaluation

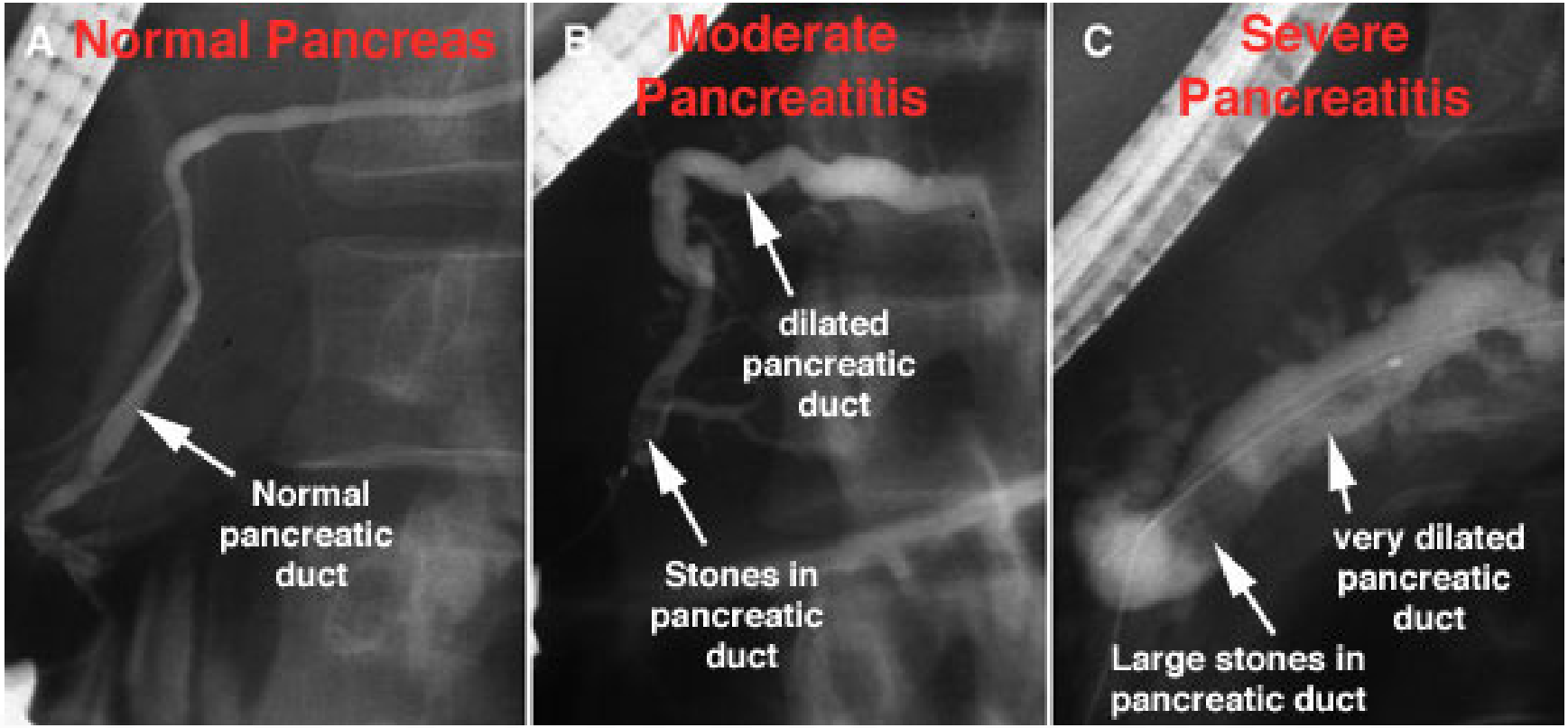
- Ultrasonography or CT-Scan
  - Enlarged pancreas
  - Abscess
  - Fluid collections
  - Hemorrhage, necrosis or pseudocyst
- MRI or MRCP**(Magnetic Resonance Cholangiopancreatography)**
- ERCP **(Endocopic Retrograde Cholangiopancreatography)**

CT Scan of acute pancreatitis

- CT shows significant swelling and inflammation of the pancreas



Gall stone pancreatitis by ERCP



Prognosis

- Many different scoring systems
  - Ranson
  - APACHE II
  - CT severity Index
- Atlanta Classification used to help compare various scores (clinical research trials)

Ranson Criteria

- During Admission
  - Age > 55
  - WBC > 16,000
  - Glucose > 200
  - LDH > 350
  - AST > 250
- During first 48 hours
  - Hematocrit drop > 10%
  - Serum calcium < 8
  - Base deficit > 4.0
  - Increase in BUN > 5
  - Fluid sequestration > 6L
  - Arterial PO2 < 60

5% mortality = <2 signs
15-20% mortality = 3-4 signs
40% mortality = 5-6 signs
99% mortality = >7 signs

CT Severity Index

- CT Grade
  - A is normal (0 points)
  - B is edematous pancreas (1 point)
  - C is B plus extrapancreatic changes (2 points)
  - D is severe extrapancreatic changes plus one fluid collection (3 points)
  - E is multiple or extensive fluid collections (4 points)
- Necrosis score
  - None (0 points)
  - < 1/3 (2 points)
  - > 1/3, < 1/2 (4 points)
  - > 1/2 (6 points)
- TOTAL SCORE = CT grade + Necrosis

0-1 = 0% mortality
2-3 = 3% mortality
4-6 = 6% mortality
7-10 = 17% mortality

Therapy

- Remove offending agent (if possible)
- Supportive !!!

1- NBM (until pain free)
   - Naso-Gastric suction for patients with ileus or emesis
   - TPN

2- Volume repletion intravenously

3- Narcotic analgesics
   - usually necessary for pain relief

Therapy continued

4- Urgent ERCP and biliary sphincterotomy

- within 72 hours improves outcome of severe gallstone pancreatitis
- Reduced biliary sepsis

5- Proton pump inhibitor

6- Somatostatin or Octreotide intravenous infusion

- Decrease gastic – duedenal secretion

7 Prophylactic antibiotics

- Cephalosporin

Complications

- **Necrotizing pancreatitis**
- **Pseudocysts**
- **Infection**
  - **Abscess**
- **Renal failure**
- **Pulmonary**
  - **Pleural effusion, Pneumonia ,ARDS**
- **Metabolic disturbances**
  - **Hypocalcemia, Hypomagnesemia, Hyperglycemia**
- **G.I. Track**
  - **G.I. bleeds**
  - **Stress gastritis**

Prognosis

- 85-90% = mild, self-limited
  - Usually resolves in 3-7 days
- 10-15% severe requiring ICU admission
  - Mortality = 50% in severe cases

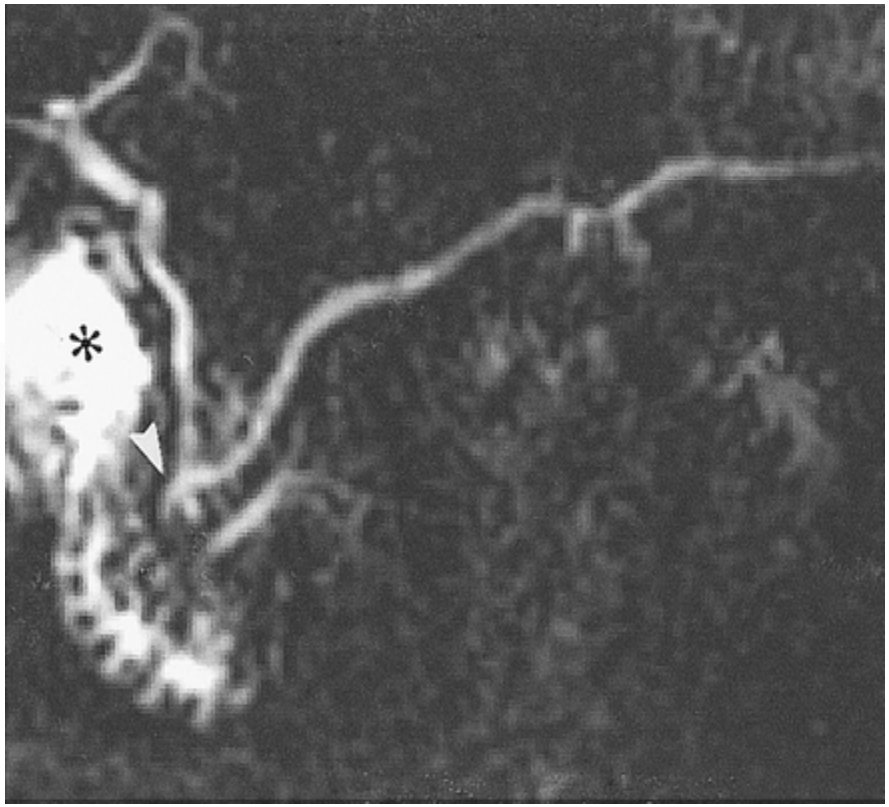
Chronic pancreatitis

- Pathophys - irreversible parenchymal destruction leading to pancreatic dysfunction
- Persistent, recurrent episodes of severe pain
- Anorexia, nausea
- Constipation, flatulence
- Steatorrhea
- Diabetes

Chronic pancreatitis

Etiology

- Chronic alcoholic (90%)
- Gallstones
- Hyperparathyroidism
- Congenital malformation
- Idiopathic



Evaluation

- ↑ or normal amylase and lipase
- Plain AXR / CT = calcified pancreas
- Pain management critical
  - EtOH cessation may improve pain
  - Narcotic dependency is common

Complications

- Weight loss
- Steatorrhea
  - Manage with low-fat diet and pancreatic enzyme supplements (Pancrease, Creon)
- *Endocrine insufficiency*
  - Diabetes