ACUTE PANCREATITIS

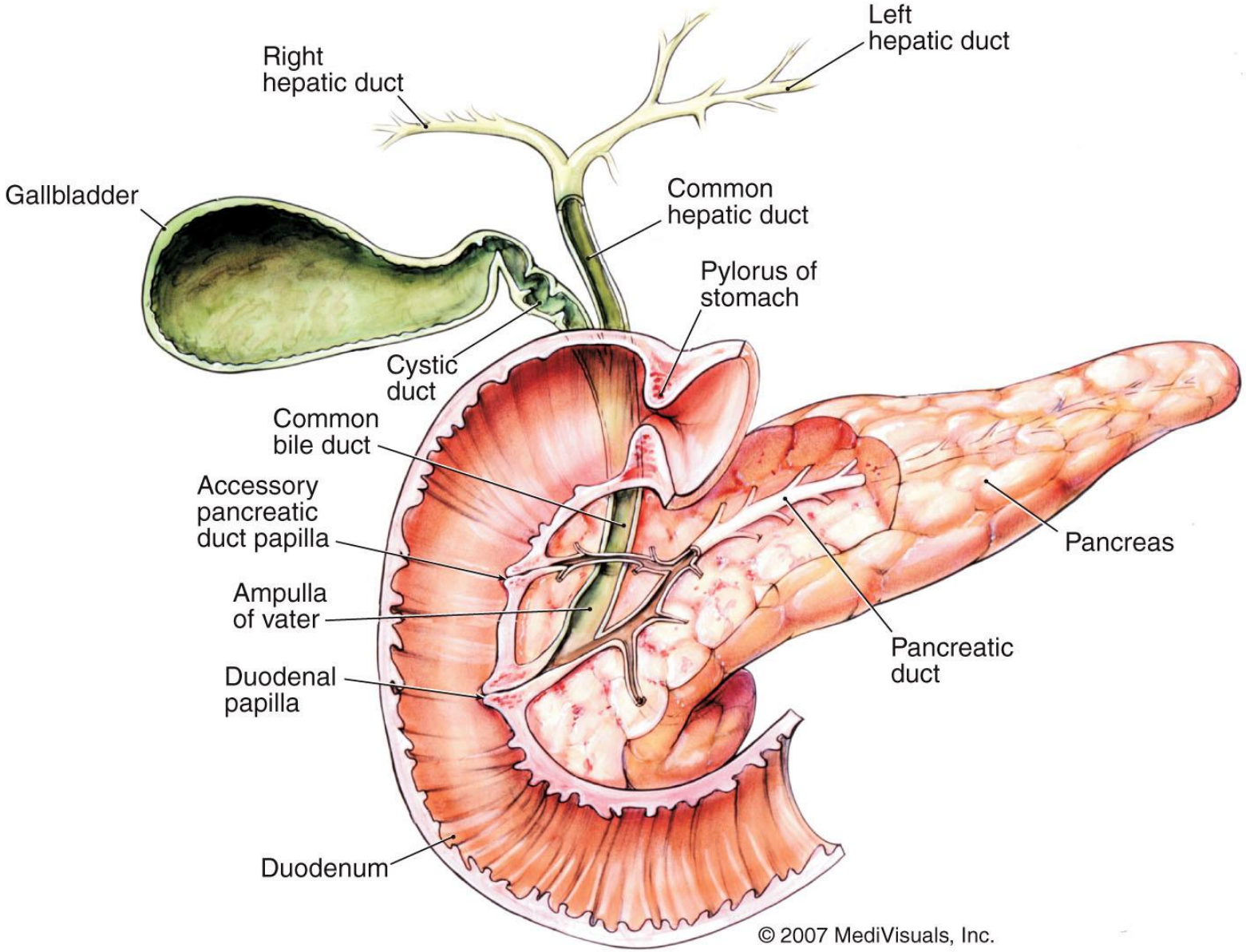
Learning outcomes

- **LO1: Definition of acute pancreatitis**
- **LO2: Causes of acute pancreatitis**
- **LO3: Pathophysiology of acute pancreatitis**
- **LO4: Clinical features of acute pancreatitis**
- **LO5: Diagnosis of acute pancreatitis**
- **LO6: Treatment of acute pancreatitis**
- **LO7:Complications of acute pancreatitis**

LO1:Definition

- **A group of reversible lesions characterized by inflammation of the pancreas**

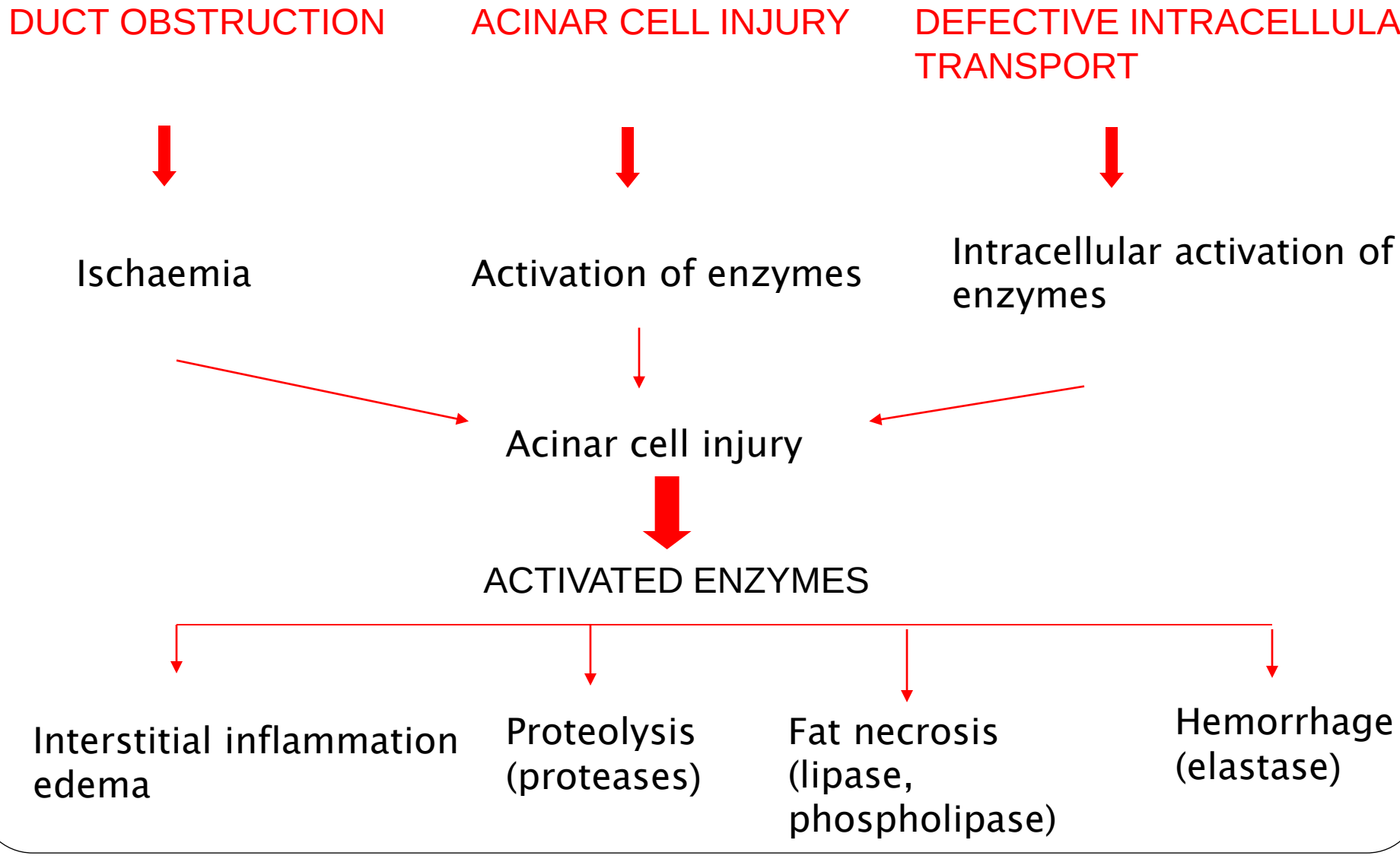
The Biliary Tree



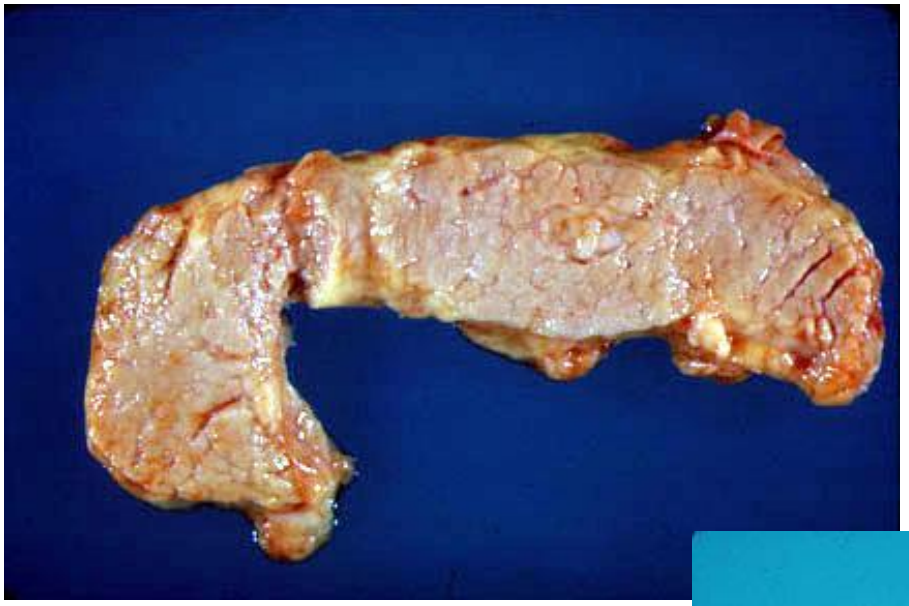
LO2: Causes

- **Non-traumatic(75%)**
  - **Biliary tract diseases**
  - **Alcohol**
  - Viral infection(EBV, CMV, mumps)
  - Drugs(steroid, thiazide, furosemide)
  - Scorpion bites
  - Hyperlipidemia
  - Hyperparathyroidism
- **Traumatic (5%)**
  - Operative trauma
  - Blunt/penetrating trauma
  - Lab test(ERCP / angiography)
- **Idiopathic(20%)**

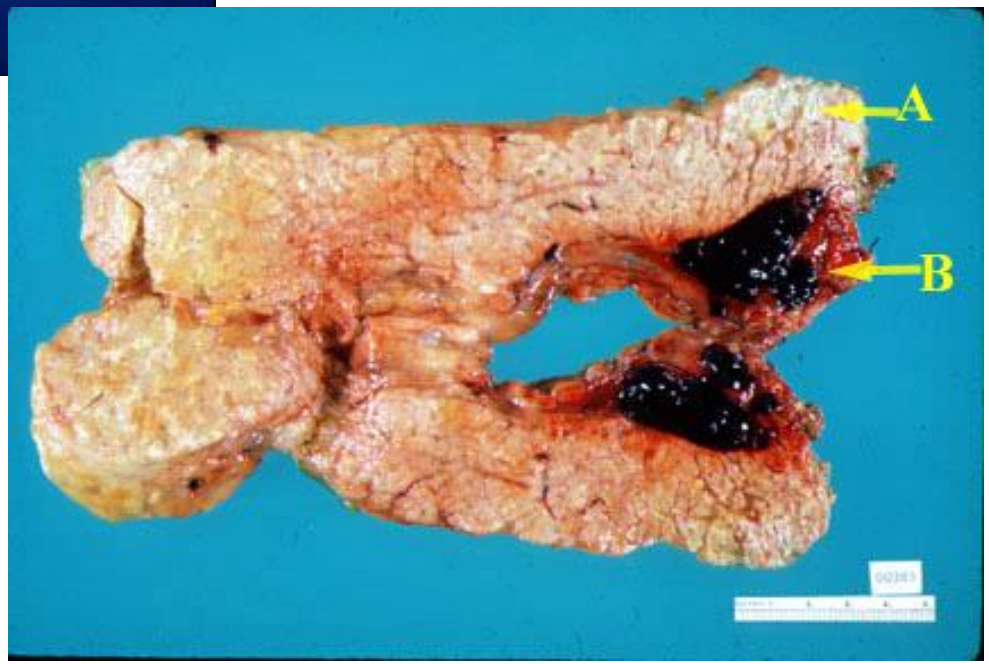
LO3: Pathogenesis of acute pancreatitis



Normal pancreas



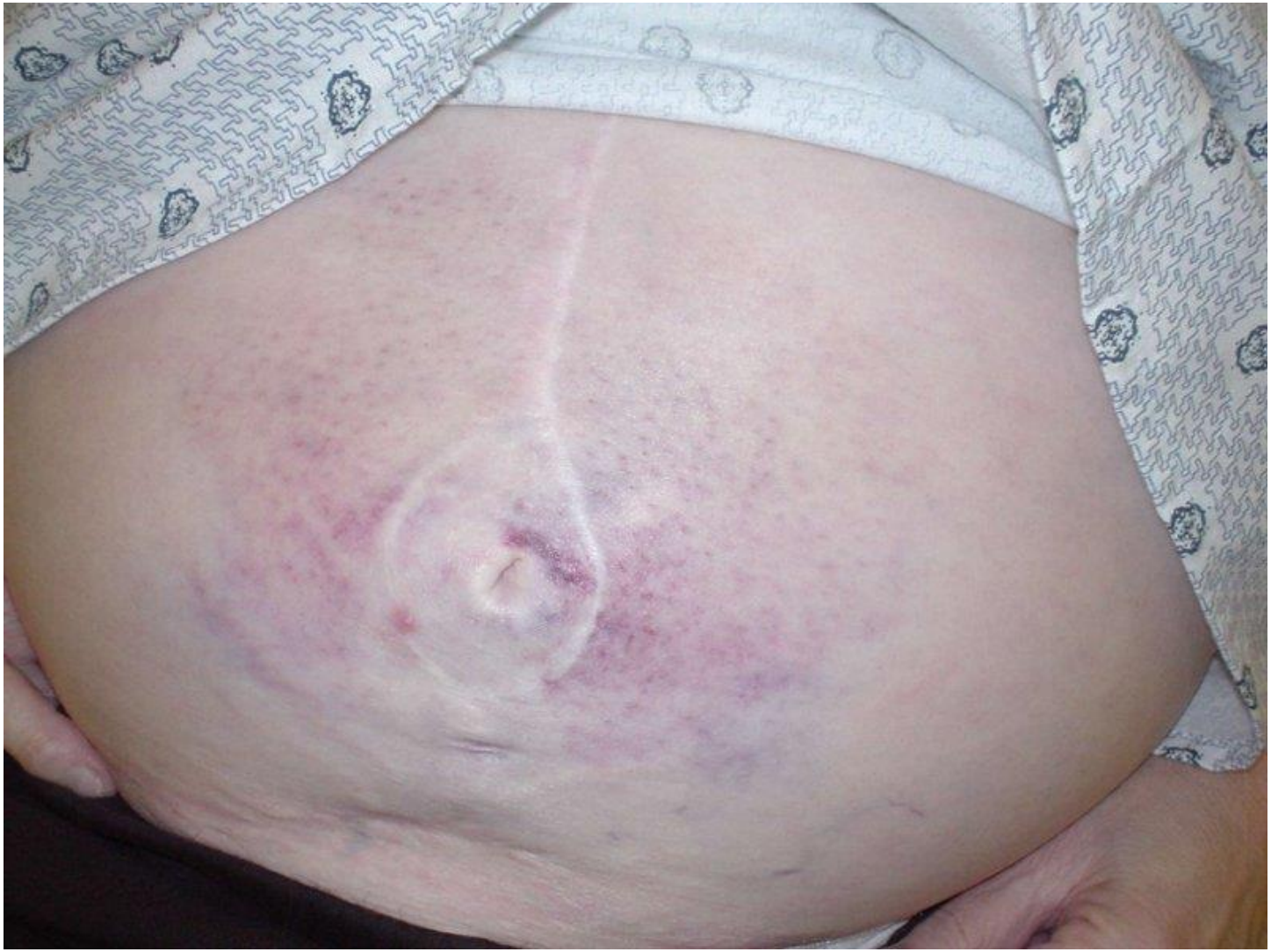
Acute pancreatitis



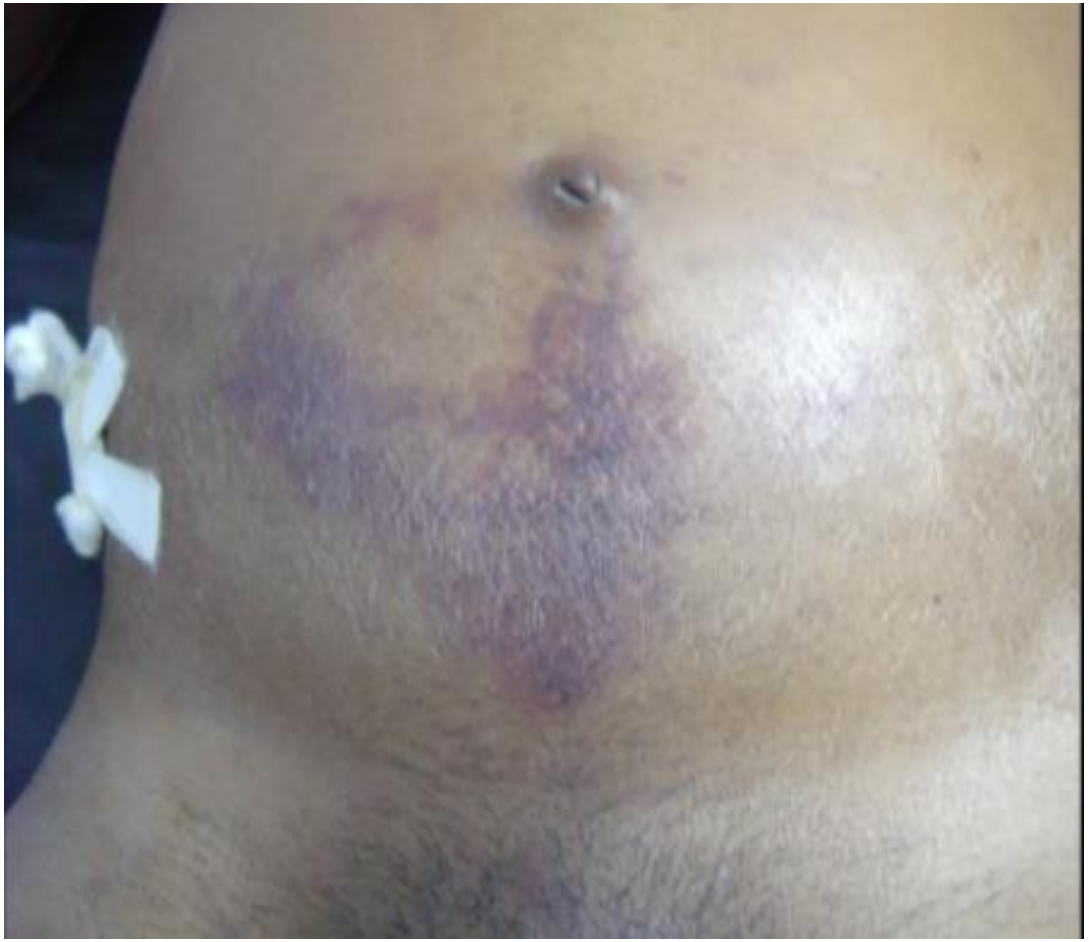
LO4: Clinical features

- **The most common symptoms and signs include:**
  - **Severe epigastric pain radiating to the back, relieved by leaning forward**
  - **Nausea, vomiting, diarrhea and loss of appetite**
  - **Fever/chills**
  - **Hemodynamic instability, including shock**
  - **In severe case may present with tenderness, guarding, rebound.**
- **Signs which are less common, and indicate severe disease, include:**
- **Grey-Turner's sign (hemorrhagic discoloration of the flanks)**
- **Cullen's sign (hemorrhagic discoloration of the umbilicus)**

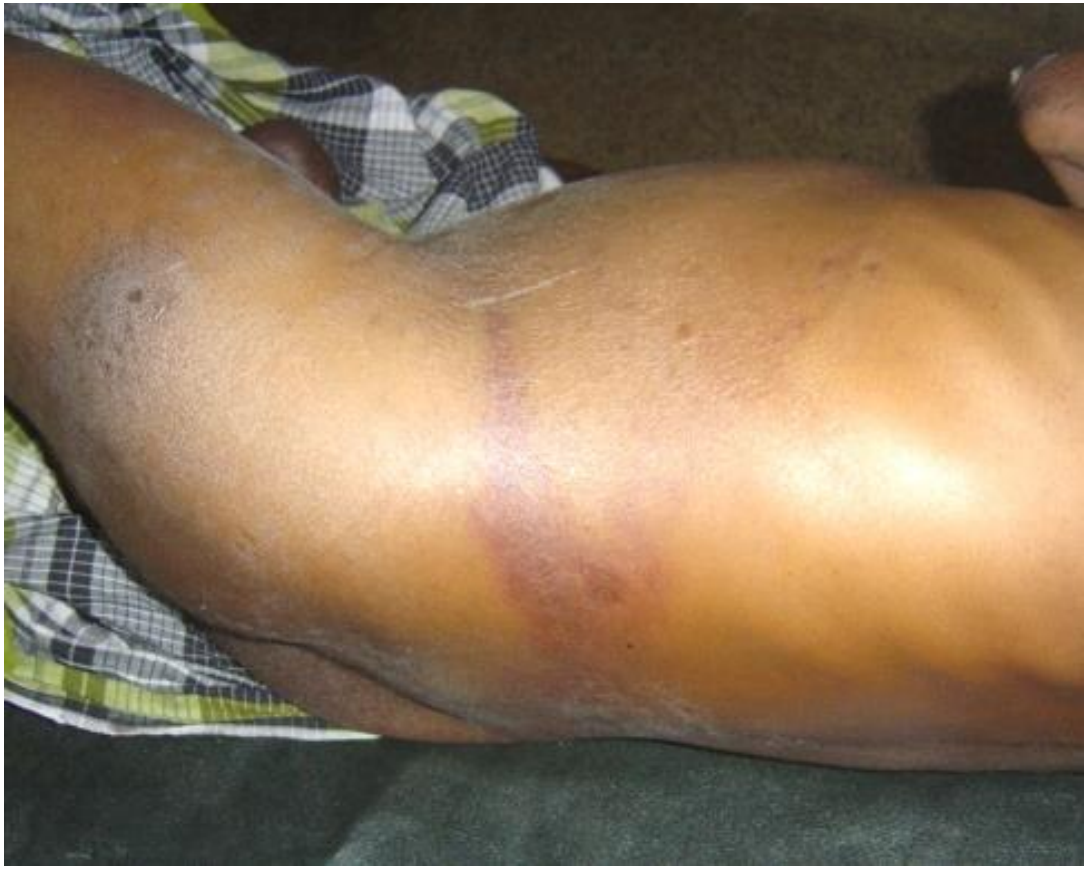
Cullen sign – discolouration around umbilicus



Cullen sign



Grey-Turner sign- discolouration in the flanks



LO5: Diagnosis

- **Full blood count: neutrophil leukocytosis**
- **Electrolyte abnormalities include hypokalemia, hypocalcaemia**
- **Elevated LDH in biliary disease**
- **Glycosuria (10% of cases)**
- **Blood sugar: hyperglycemia in severe cases**
- **Ultrasound look for stones in biliary tract diseases.**
- **Abdominal CT scan may reveal phlegmon(inflammatory mass), pseudocyst or abscess(complications of acute pancreatitis)**

LO5:

Amylase and lipase

- **Elevated serum amylase and lipase levels, in combination with severe abdominal pain, often trigger the initial diagnosis of acute pancreatitis.**
- **Serum lipase rises 4 to 8 hours from the onset of symptoms and normalizes within 7 to 14 days after treatment.**
- **Marked elevation of serum amylase level during first 24 hours**
- **Reasons for false positive elevated serum amylase include salivary gland disease (elevated salivary amylase) and macroamylasemia.**
- **If the lipase level is about 2.5 to 3 times that of Amylase, it is an indication of pancreatitis due to Alcohol or gallstone**
- **The degree of amylase/lipase elevation does not correlate with severity of acute pancreatitis.**

LO5: Ranson Score

predicting the severity of acute pancreatitis

At admission

- **age in years > 55 years**
- **white blood cell count > 16000 cells/mm3**
- **blood glucose > 11 mmol/L (> 200 mg/dL)**
- **serum AST > 250 IU/L**
- **serum LDH > 350 IU/L**

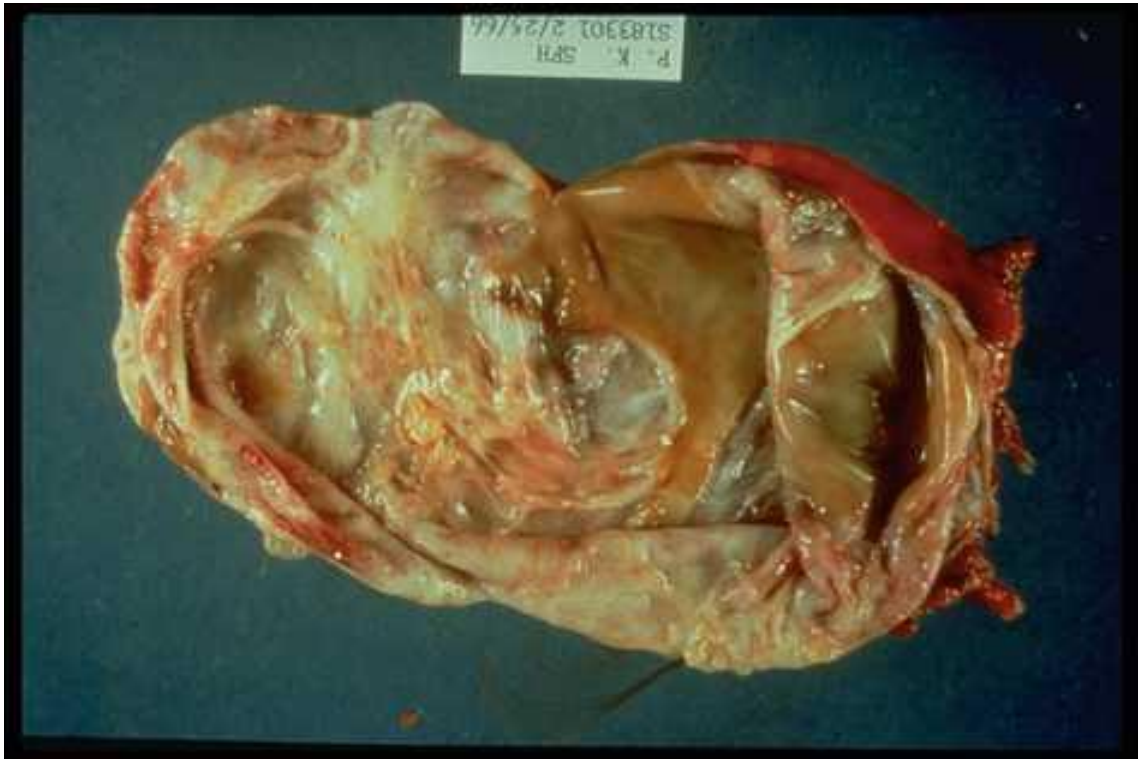
At 48 hours

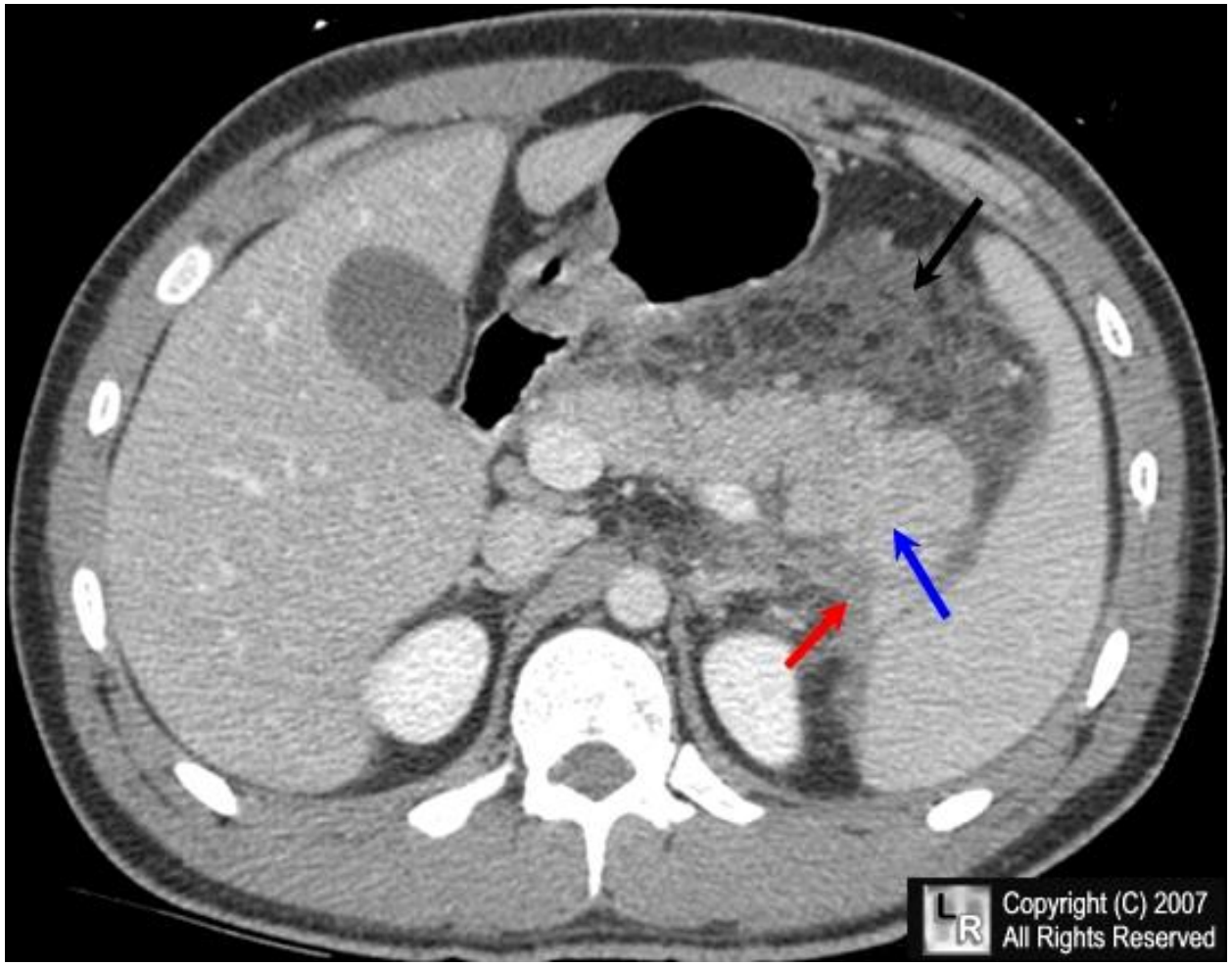
- **Calcium (serum calcium < 2.0 mmol/L (< 8.0 mg/dL)**
- **Hematocrit fall > 10%**
- **Oxygen (hypoxemia PO2 < 60 mmHg)**
- **BUN increased by 1.8 or more mmol/L (5 or more mg/dL) after IV fluid hydration**
- **Base deficit (negative base excess) > 4 mEq/L**
- **Sequestration of fluids > 6 L**

LO6: Complications

- **Immediate**
  - **Shock**
  - **DIC**
  - **ARDS**
- **Late**
  - **Pancreatic pseudocyst**
  - **Pancreatic abscess**
  - **Pancreatic necrosis**
  - **Progressive jaundice**
  - **Persistent duodenal ileus**
  - **GI bleeding**
  - **Pancreatic ascites**

Pseudocyst of pancreas





Acute pancreatitis. The pancreas is enlarged (blue arrow) with indistinct and shaggy margins.
There is peripancreatic fluid (red arrow) and extensive peripancreatic infiltration of the surrounding fat (black arrow).

LO7: Treatment

- **Iv fluid replacement(normal saline)**
- **Bowel rest (NG tube, NPO) in severe case**
- **Administration of Meperidine/ Pethidine as pain killer.**
- **Antiemetic if necessary**
- **Monitor and correct electrolytes.**
- **Prevent infection by antibiotic prophylaxis.**
- **Determine and treat specific etiology(avoid alcohol)**
- **Indication to surgery if pancreatitis not respond to treatment.**

Thank you..