Biliary & Pancreatic Disorders

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Introduction

- The majority of disorders of the biliary tree and pancreas are a result of the influence of gallstones or alcohol
- Inflammatory conditions
- Obstructive phenomena
- Malignant
- Congenital

Gallbladder

- Cholelithiasis
  - asymptomatic
  - symptomatic
- Acalculous cholecystitis
- Biliary dyskinesia
- Polyps
- Cancer

Complications of Gallstones

- Biliary colic
- Acute cholecystitis
- Empyema / perforation
- Hydrops of the gallbladder
- Choledocholithiasis
  - ascending cholangitis
  - gallstone pancreatitis
- Gallstone ileus

Complications of Gallstones

- Biliary colic – a stone gets temporarily impacted in the neck of the gallbladder; pain results from forceful contraction after eating a fatty meal
- Acute cholecystitis – if the obstruction is unrelieved, inflammation will result causing more constant pain, fever, and leukocytosis

Treatment of Symptomatic Cholelithiasis

- 80% of patients with asymptomatic gallstones will remain asymptomatic
- Those with symptoms will continue with their present symptoms or progress to more serious complications
- Best treatment is cholecystectomy; antibiotics, no for acute cholecystitis if not surgical candidate
Complications of Gallstones

- Empyema / perforation – an obstructed gallbladder may become infected, and even perforate if left untreated
- Hydrops – an uninfected obstructed gallbladder will eventually become distended with clear fluid (mucus) as the bile is resorbed.

Treatment of Empyema / Hydrops

- Empyema / perforation
  - IV fluids / antibiotics / treat sepsis
  - emergent cholecystectomy or cholecystostomy
- Hydrops
  - usually subacute presentation
  - lap chole

Complications of Gallstones

- Choledocholithiasis
  - signs of obstruction: jaundice, bilirubinuria, acholic stools, elevated LFTs, amylase, dilated biliary tree, stone in duct imaging studies
  - may cause cholangitis if infected and obstructed: RUQ pain, fever and jaundice (Charcot’s triad) elevated LFTs, WBC
  - may cause pancreatitis even if stone has passed

Treatment of Choledocholithiasis

- Choledocholithiasis
  - lap chole with cholangiogram, bile duct exploration, +/- ERCP/MRCP
- Cholangitis
  - IV fluid and electrolyte resuscitation, IV antibiotics, NG decompression, urgent ERCP/PTC, delayed surgery (immediate cholecystostomy/T-tube if ERCP/PTC unsuccessful)

Pancreatitis

- assessment of severity
- fluid and electrolyte resuscitation, + antibiotics if severe, resp support
- lap chole with cholangiogram, poss bile duct exploration once pancreatitis is resolved (usually done prior to discharge)
- ?role for early ERCP - debated

Gallstone ileus

- left untreated, a large stone(s) may penetrate through gallbladder wall into adjacent duodenum and cause intermittent obstruction usually at ileocecal valve
- clinical presentation may be unclear, pt. often unable to give history
- may see stone in RLQ and pneumobilia on XR
Acute Pancreatitis

- **Etiology:** alcohol, gallstones, drugs, trauma, hyperlipidemia, hypercalcemia, idiopathic, congenital anomalies
- **Symptoms:** gradual onset of midepigastric pain, constant in nature, may radiate to mid-back, nausea, vomiting, anorexia
- **Signs:** fever, tachycardia, tachypnea, tender abdomen, Cullen’s, Grey-Turner’s signs

Acute Pancreatitis

- **Ranson’s criteria**
  - initial: WBC>16K, age>55, AST>250, glc>200, LDH>350
  - delayed: fluid sequestration>6L, pO2<60, base deficit>4, BUN increase>5, Ca<8, Hct fall>10
- **Prognosis**
  - >6=up to 100% mortality; 5-6=40% mortality; 3-4=16% mortality; <3=1% mortality (from original study)

Acute Pancreatitis

- **Labs:** lytes, ABG, CBC, LFTs, amyl, lipase
- **IV fluid and electrolyte resuscitation, + antibiotics if severe, respiratory support / O2, NG decompression, npo, nutritional support if severe, prolonged
- **Ultrasound to R/O gallstones and evaluate for duct size, free fluid or mass
- **Rx etiology, substance abuse referral prn

Complications of Acute Pancreatitis

- Pseudocyst
- Pseudoaneurysm, hemorrhage, splenic vein thrombosis and gastric varices
- Abscess
- Necrosis
- Pancreatic ascites, fistula
- Chronic pain, bile duct stricture

Differential Diagnosis

- Acute pancreatitis may be confused with many other disorders which require different therapy or emergent surgery, such as ischemic bowel, perforated ulcer, small bowel obstruction, etc.
- Hyperamylasemia with abdominal pain may or may not = pancreatitis

Treatment of Acute Pancreatitis

- Severe acute pancreatitis may be hemorrhagic or necrotic, +/- infected, and may require aggressive, repeated surgical debridement in addition to supportive Rx
- Pancreatic abscess may develop which may be treated by percutaneous or surgical external drainage
Treatment of Acute Pancreatitis
- Pseudocyst may develop as a complication
- Most <6cms will resolve within 6wks
- If large, infected, or persistent, will need treatment:
  - percutaneous – high rate of fistula formation
  - ERCP stent – may result in infected pseudocyst
  - cystenterostomy or resection – may also bx wall to r/o cystic neoplasm; treat stricture if present

Complications of Pseudocyst
- May become infected = percutaneous drainage
- May hemorrhage / erode into splenic artery = angiographic embolization or surgical ligation
- May cause early satiety, weight loss, due to compression of stomach / pylorus by a large pseudocyst = stent or surgical therapy

Chronic Pancreatitis
- Most commonly due to alcohol
- Treat acute exacerbations as acute pancreatitis
- For chronic or recurrent, need to evaluate pancreatic anatomy – look for strictures, duct stones, altered anatomy: MRCP / ERCP
- Treatment may involve stent placement, sphincterotomy, or surgical bypass

Chronic Pancreatitis
- Malabsorption syndromes – steatorrhea, weight loss, malnourished = pancreatic enzyme replacement may benefit
- Chronic pain / narcotic use – pancreatic enzymes help to suppress pancreas
- Endocrine insufficiency rare, but occurs in severe disease

Conclusions
- Most benign biliary disease is caused by gallstones, but the presence of gallstones does NOT mandate surgery
- Pancreatitis causes hyperamylasemia but amylase is a nonspecific finding
- Alcoholics can also get gallstone pancreatitis – they must be evaluated as any other patient