Noncalculous Biliary Disease
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Cholestasis

• Biochemical hallmark
• Impaired bile flow from liver to small intestine
• Alkaline phosphatase is primary marker
• Hyperbilirubinemia and mild AST/ALT elevations when advanced
Alkaline Phosphatase

- Present in liver, bone, intestine
- Isolated elevation may or may not be due to hepatobiliary process
- Prompts need for corroboratory marker
  - 5’Nucleotidase
  - Gamma Glutamyl Transferase/GGT

GGT

- Highly sensitive, highly nonspecific
- Elevated in chronic alcoholism, but may increase after limited intake
- Drug-induced
  - Dilantin, phenobarbital, tegretol, valproate, methotrexate, estrogens, tagamet, lasix
- CHF, hypertension, fatty liver
Imaging Studies

- More helpful in obstructive than nonobstructive biliary disease
- Ultrasound
- CT
- MRCP
- ERCP

Specific Biliary Diseases

- Don’t forget, Cholelithiasis is statistically the leading cause of biliary tract disease in the U.S.
Primary Sclerosing Cholangitis

- Idiopathic chronic cholestatic hepatobiliary tract disease
- Inflammation and Fibrosis of bile ducts
  - Intrahepatic
  - Extrahepatic
  - Small duct variant
- Radiographic appearance of multifocal beading and strictures on imaging

PSC on ERCP
• 66-80% of PSC patients have or will develop IBD
• Ulcerative colitis more commonly than Crohn’s disease
• Pancolitis more commonly than limited disease
• 5% of UC patients have PSC, majority males

PSC Signs and Symptoms

• Asymptomatic persistent AP elevation
• Advanced PSC presentation includes
  • Pruritus
  • Jaundice
  • Ascites
  • Variceal bleeding
  • Recurrent bacterial cholangitis
  • Cholangiocarcinoma
PSC diagnosis

- Clinical suspicion of persistent AP elevation, especially in known IBD or setting of diarrhea/hematochezia
- US and CT likely to be normal
- MRCP gold standard unless isolated small duct disease
- Liver biopsy supportive rarely pathognomonic
- Autoantibodies ANCA, ASMA, ANA

Classic “onion skin” lesion of periductal fibrosis is rare
**PSC Treatment**

- UDCA 20 mg/kg controversial, higher doses harmful
- Steroids useful only in subset with high IgG4 levels
- No role for immunosuppressants
- Interventional ERCP for dominant strictures—high risk
- OLT for decompensated MELD>14

**PBC**

- Primary Biliary Cirrhosis, misnomer
- New name Primary Biliary Cholangitis since cirrhosis occurs only late stage
- Chronic disease marked by progressive inflammatory destruction of intrahepatic bile ducts
- Far more prevalent than PSC
PBC

• 90% women
• Presents in middle age 35-60
• Persistent AP elevation
• 90-95% have mitochondrial antibody (AMA) positivity
• US, CT, MRCP likely negative or nonspecific evidence of cirrhosis
• Liver biopsy is diagnostic, but not for stage

PBC

• Commonly associated with other autoimmune disorders
  • Sjogren’s/Sicca syndrome
  • Autoimmune thyroiditis
  • Celiac disease
• Xanthomas/Xanthelasmas
Xanthelasma

Complications include:
- Pruritus
- Ascites
- Variceal bleeding
- Cholelithiasis
- Osteoporosis
- Steatorrhea with malabsorption of fat soluble vitamins (A, D, E, K)
- Hepatocellular carcinoma

PBC
**PBC Treatment**

- UDCA 15 mg/kg/day reduces AP and improves histology in 50% patients
- Obeticholic Acid/Ocaliva now FDA approved as of 5/31/16 for combination or single agent therapy in those with inadequate response or intolerant of UDCA
- OLT for advanced disease

**Obstructive Cholangiopathy**

- Distal site
  - Ampullary neoplasm or inflammation
  - Pancreatic carcinoma
  - Chronic fibrotic pancreatitis
  - Cholangiocarcinoma
- Mid level cholangiocarcinoma or benign stricture
- Hilar cholangiocarcinoma or portal mets
- Intrahepatic mets or multicentric CCA
Obstructive Cholangiopathy

- US and CT very useful.
- CT should be ordered as "pancreatic mass protocol" for diagnosis/staging.
- ERCP favored over MRCP for stenting and possible tissue diagnosis.

ERCP Pancreatic Cancer with obstruction
ERCP with Wallstent for Pancreatic Cancer

Wallstent
Case Studies

• 40 year old male with universal ulcerative colitis s/p proctocolectomy with ileostomy presents with fresh blood in ileostomy bag, normal BUN, AP 220

Case Studies

• 35 year old female with chronic universal ulcerative colitis and chronic PSC develops painless jaundice without fevers/chills/rigors.
Case Studies

• 45 year old women in for routine yearly examination, no complaints, noted to have slowly rising AP over past three years. US is negative for biliary dilation. What tests would you order?

Case Studies

• 60 year old with painless jaundice, dark urine, light stool over several weeks, intense pruritus, mild weight loss. US shows intra- and extra-hepatic biliary dilation, but no stones. What do you order next?
Case Studies

• 32 year old new father applies for life insurance, comes to you because of GGT elevation on testing. What questions do you ask?

Bonus Case

• Healthy 28 year old comes for first physical after obtaining health insurance. CMP reveals TB 3.5.
• CBC normal
• What is most likely diagnosis?