Gastrointestinal Disorders
Section 6

Differential Diagnosis of Common GI Problems

Dyspepsia

- Pain or discomfort in upper abdomen
    - Occurs 25% of adults
    - Organic causes
        - Food intolerance – acute onset, self-limiting
        - Drug intolerance – common epigastric pain
            - NSAIDs, antibiotics, corticosteroids, digoxin, iron replacement drugs, sorbitol sweetener
        - GERD – 20% of dyspepsic patients
        - PUD - 20% of dyspepsic patients
        - Lactose intolerance – 50 million Americans
        - Giardia infection
        - H. pylori infection
        - Biliary tract and pancreatic disease

- Functional Dyspepsia
    - 50% of patients with no known organic cause
    - Onset and intensity related to psychosomatic stressors
        - Job changes, loss, grief, financial, anxiety
    - Differential diagnosis – organic vs. functional
        - Organic – older, may have smoking & alcohol history
    - Diagnosis
        - Same as for organic dyspepsia, with no lab findings
        - Rule out with CBC, liver enzymes, electrolytes, thyroid and calcium

Nausea & Vomiting

- Nausea that may not lead to vomiting
    - Motion sickness, Pregnancy, Renal failure
    - Hepatitis, Drug reactions, Food poisoning
    - CNS disorders
- Vomiting in early morning
    - Pregnancy, uremic poisoning, alcoholism, increased intracranial pressure
- Vomiting immediately after meals
    - Self-induced bulimia
    - Psychogenic causes
    - Stomach obstruction – vomiting 30 minutes after
- Vomiting with severe abdominal pain
    - Very suggestive of gallstones
    - Intestinal obstruction can cause intense pain and projectile vomiting
        - Obstructions can be due to tumors, Crohn's, inflammation, bowel twists and kinks

Nausea & Vomiting - continued

- Vomiting with vertigo
  - Caused by motion sickness, inner ear, migraines
- Vomiting with drugs or radiation
  - History with cancer patients
- Treatment of nausea & vomiting with antiemetics
  - Anticholinergic agents for motion sickness
    - Antivert, Dramamine, scopolamine skin patches
  - Dopamine antagonists
    - Compazine, Stelazine, Thorazine
  - Serotonin receptor antagonists
    - Used in chemotherapy and radiation
    - Ondansetron, Dolesteron
  - Corticosteroids
    - Decadron, Medrol
  - Cannabinoids are powerful antinausants

Hiccups

- Benign, self-limiting hiccups
  - Due to phrenic nerve hypersensitivity
  - Commonly caused by heightened emotion or intense laughing
  - Also caused by gastric distention from overeating, excessive air swallowing with eating, carbonated beverages, alcohol, sudden temperature changes in food
- CNS causes of hiccups
  - Head trauma, CNS infections, hydrocephalus, tumors
- Metabolic causes of hiccups
  - Uremic poisoning, low CO2 levels, vagus or phrenic nerve irritation, hyperventilation
  - Foreign body in the ear, thyroid goiter, hepatitis, pericarditis, esophagitis, pancreatitis, hepatomegaly, cholecystitis
- Treatment
  - Correction of underlying problem
  - Break the reverberating neurologic circuit
    - Breath holding, re-breathing, sudden startle, fright stimulus, Valsalva manuever, gag reflex, unilateral carotid artery massage
  - Drug treatment for severe cases
    - Thorazine, Valium, Dilantin, Tegretol

Obesity

- Definition
  - 20% above ideal body weight or BMI >30
  - Overweight = BMI 25-30
  - Body fat composition of women >30%
  - Body fat composition of men >25%

Obesity - continued

- Incidence
  - 1980 – 47% adults
  - 2000 – 61% adults
- Obesity health risks
  - Diabetes and all complications
  - Cancer
  - Menstrual problems
  - Gallstones & cholecystitis
  - CAD, strokes, arteriosclerosis, HTN
  - 300,000 deaths per year
- Treatment
  - Exercise
  - Diet – 1200-1500 calories per day
  - Surgery
    - Indicated for BMI >40
    - Gastric stapling, intestinal bypass

Constipation & Gas Problems

Differential Diagnosis of Constipation

- Consider fluid & fiber intake, diet, illness, bowel habits, medications
- Constipating medications
  - Antacid (Gellusil), Bismuth (Pepto),
  - Iron salts (Feosol), Narcotics, Tranquilizers
  - Sedatives, Antihypertensives, NSAIDs
- Fecal impaction
- Irritable bowel syndrome
- Clinical depression or anxiety syndromes
- Systemic diseases
- Rectal prolapse
- Diverticulosis

Diagnosis

- Careful history
- If over 50 or suspected organic basis, the following tests are considered
  - Stool exam for occult blood
  - Blood tests – CBC, TSH, calcium, electrolytes
  - Colonoscopy or sigmoidoscopy
  - Barium enema

Treatment

- Diagnose & treat organic cause
- Increased fiber & exercise
- Fiber laxatives & stool softeners
- Stimulant laxatives & enemas

Gastrointestinal gas

- The passage of gas comes from two sources
  - Aerophagia – swallowing air when eating
  - Bacterial fermentation of undigested CHO
- Flatus is primarily nitrogen and methane, which increases in malabsorption syndromes
- Treatment
  - Elimination of complex starches
  - Lactose free diet
  - Beano (alpha galactosidase) or activated charcoal

Diarrhea

- 90% of diarrhea cases are self-limiting
- Acute, non-inflammatory diarrhea
  - Loose or watery stools with no blood, pus, fever or abdominal pain
  - Caused by Norwalk virus, rotovirus, *Staphlococcus*, *E. coli*, and some protozoa
- Acute inflammatory diarrhea – all are red flag cases
  - Diarrhea with blood, pus, abdominal pain
  - Bleeding from colonic wall inflammation
  - Diagnosis – any diarrhea that does resolve in 24 hours should be considered – Dx with stool cultures
  - Causative agents
    - Viral, protozoa, bacterial
- Treatment of severe diarrhea
  - Rehydration with IVs
  - Oral hydration with orange juice & Gatorade
  - Bismuth (Pepto)
  - Immodium – do not use in inflammatory diarrhea as it may cause a perforation
  - Probiotics for viral diarrhea
  - Antibiotics for bacterial inflammatory diarrhea
- Major types of chronic diarrhea
  - Osmotic diarrhea
    - GI tract draws fluids into itself
    - Seen in lactase deficiency, laxatives or antacids
  - Secretory diarrhea
    - Blood vessels secrete water & salt into the stool
    - Due to toxins in the bloodstream
    - Also caused by castor oil

Major types of chronic diarrhea

- Malabsorption syndromes
  - Celiac disease, pancreatic insufficiency
  - Malabsorption following GI cancer, obesity, Crohn's disease, GI surgeries
- Exudative diarrhea
  - Inflammation, engorgement and ulceration of intestinal lining
  - Caused by ulcerative colitis, Crohn's, TB, lymphoma
- Rapid-transit diarrhea
  - Caused by certain drugs
    - Magnesium, caffeine, serotonin, prostoglandins
  - Caused by gastric surgery
- Bacterial or fungal overgrowth diarrhea
  - Can happen after broad-spectrum antibiotics
  - Candida overgrowth is classic example

Diagnosis of chronic diarrhea

- DD between the six causes of chronic diarrhea
- History and physical findings
- 24-hour stool volume and stool cultures
- Possibly, sigmoidoscopy or colonoscopy, with biopsy of mucosa

Treatment

- Remove the cause
  - Coffee, wheat products, magnesium, etc.
- Antibiotics
- Opioid antidiarrheals (Imodium)
- Bulking agents (psyllium, Kaopectate) can bulk the stools and reverse diarrhea

GI Bleeding

GI Bleeding Definitions

- Hematemesis – vomiting blood
- Melena - refers to the black feces
  - Associated with gastrointestinal hemorrhage
  - The black color is caused by oxidation of the iron in hemoglobin passing through colon
- Hematochezia – bloody stool
- Rectal bleeding
  - Usually bleeding hemorrhoids

Acute Upper GI Bleeding

- Occurs in 350,000 hospitalizations
  - 10% mortality, not from the bleeding, but from the disease that caused the bleeding
- Peptic ulcer accounts for half of al UGI bleeds
- Portal HTN with bleeding esophagus or gastric varices accounts for 20% of UGI bleeds.
  - 40% of these die, usually from heavy drinking
- Vascular anomalies are common in seniors
- Erosive gastritis
  - NSAID use, alcohol abuse, severe stress, steroid use
- Upper GI Diagnosis
  - Endoscopy
- Upper GI Treatment
  - Stabilize patient and replace blood
  - IV infusion
  - NG tube to aspirate contents
  - CBC and cross match for blood units
  - Emergency gastroscopy and cauterization
  - IV proton pump inhibitors for ulcers
  - Octreotide infusion with liver disease

Acute Lower GI Bleeding

- Causes
  - Diverticulosis – 50% of cases
    - Maroon painless bleeding over 50 years-old
  - Vascular malformations
    - Common over 70 from folding over capillaries
  - Neoplasms
    - Benign polyps and carcinomas
  - Inflammatory bowel disease
    - Ulcerative colitis and Crohn's disease
  - Ischemic colitis
    - In older patients & after surgery
    - Also seen in young, long-distance runners
- Diagnosis of Acute Lower GI Bleeding
  - Colonoscopy
  - Nuclear scans & angiography
- Treatment of Lower GI Bleeding
  - Stop NSAID
  - Therapeutic colonoscopy
  - Treat bleeding area with gelfoam to plug source
  - Emergency surgery if bleeding more than 6 units in 24 hours or 10 units during hospitalization

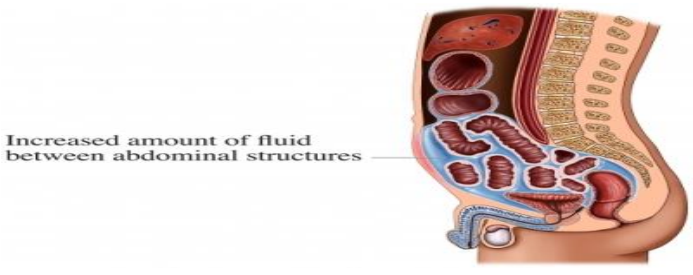
Chronic or occult GI bleeding

- Slow bleeding from upper or lower
  - Usually normal stools with a lab test to confirm the presence of blood
  - Sources of bleeding
    - 55% upper GI bleed
    - 30% lower GI bleed
    - 10% GI malignancy
  - Causes – neoplasms, vascular malformations, portal HTN, ulcers, NSAID, inflammatory bowel
- Diagnosis
  - Endoscopy & small bowel x-rays
- Treatment
  - Based on diagnosis

Ascites & Peritonitis

Ascites

- Accumulation of fluid in the peritoneal cavity
- Causes of ascites with a normal peritoneum
  - Liver disease with cirrhosis is most common
  - CHF and Malignancy
  - Hypoalbuminemia from severe malnutrition
- Causes of ascites with an inflamed peritoneum
  - Bacterial peritonitis
    - From ruptured appendix, cholecystitis or diverticulitis causing pus in the abdomen
  - TB peritonitis
- Diagnosis of ascites
  - US, WBC, aspiration of fluids
- Treatment of ascites
  - Removal of fluid by paracentesis
  - Treatment of underlying cause
  - Systemic antibiotics
  - Treatment of CHF
    - Beta blockers and digitalis
  - Treatment of portal hypertension
    - Aldactone



Mouth disorders

Inflammatory conditions of mouth

- Cheilitis – due to allergic reactions
- Glossitis – tongue inflammation
- Stomatitis – lining of mouth
- Gingivitis – gums
- Parotitis – mumps
- Adenitis – gland inflammation
- Cellulitis – soft tissue skin and mucous membrane
- Other conditions of the mouth & throat
    - Sinusitis, tonsillitis, pharyngitis, laryngitis

Canker sores

- Aphthous ulcers from herpes 6 virus
- Treat with Blistex or topical ointment

Oral herpes

- “Cold sores”
- Treat with Acyclovir ointment & oral Valtrex

Monilial stomatitis

- “Thrush” – candida fungus
- Treatment with micostatin mouthwash or oral ketoconazole

Trench mouth

- Necrotic foul-smelling infection of mucous
- Treatment of hydrogen peroxide mouthwash and IV antibiotics

Leukoplakia

- White patches in mouth or on tongue
- Precancerous and must refer to oral surgeon

Gingivitis

- Bacterial problems with the gums can have serious complications
- Can be caused by meds, such as Dilantin and cyclosporine

TMJ problems

- Common in women 20-50
- Treatment with dental, medical and psychological care
- PT with ultrasound, biofeedback, TENS units and spray and stretch

Esophagus, Stomach & Duodenal disorders

Dysphagia - Trouble swallowing food

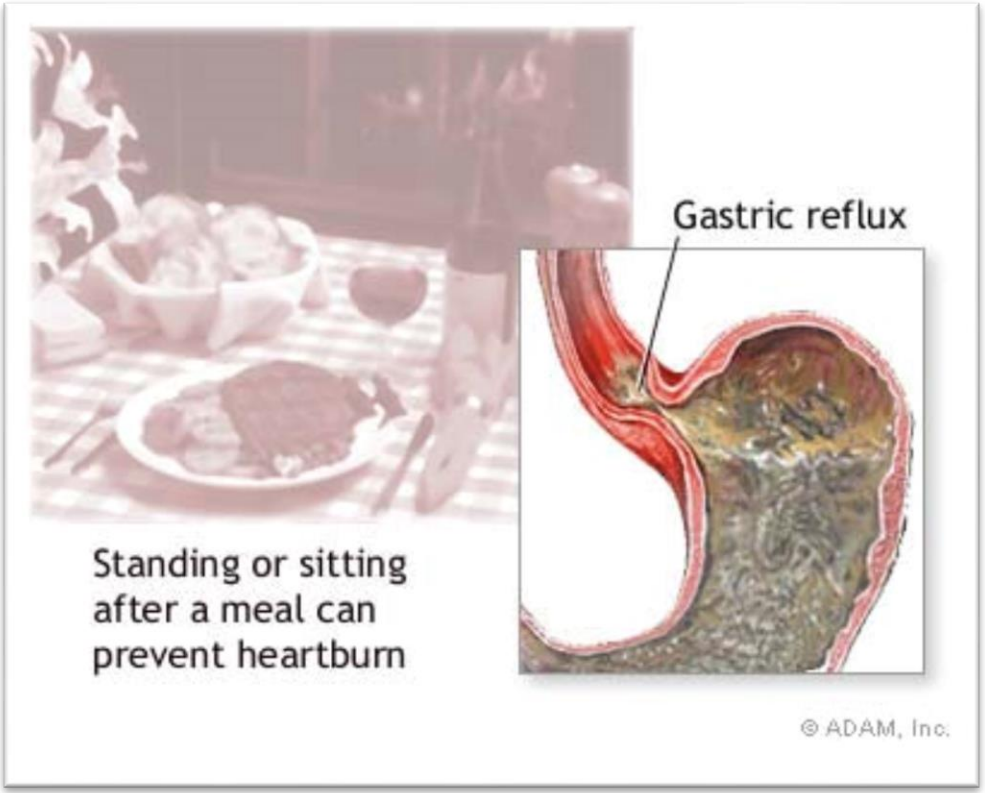
- Half of time is psychological with no improvement
- Actual dysphagia causes
    - Acid reflux, throat infections, tumors, chemical injuries, esophageal muscular disorders
- Achalasia
    - Lower esophagus lacks nerve supply to swallow

Esophageal varices

- Diagnosis – 90% from alcoholic cirrhosis
- Treatment – surgery with portocaval shunt
    - Connects the portal vein to the inferior vena cava bypassing liver

GERD

- GERD is a term used to label the symptoms associated with reflux of stomach contents into the esophagus
- Symptoms may be experienced daily or multiple times per week
- GERD is a great imitator of other diseases with presentations of nocturnal cough, atypical chest pain, recurrent pneumonia and persistent hoarseness.
- GERD is a relatively common problem in primary care
- More common in women, elderly and pregnancy
- 10% of patients with GERD have daily symptoms
- GERD Treatment
    - Elevation of the head
    - Avoid recumbent position 2 hours after meals
    - Avoid eating for at least 2 hours before bedtime
    - Antacids – Gaviscon
    - Cholinergic (parasympathetic meds)
    - Scheduling small, frequent meals
    - Weight loss if needed
    - Avoidance of tight, restrictive clothing
    - Smoking cessation
    - Surgery as a last resort
    - Lifting a portion of the stomach and tightening esophagus



Esophageal carcinoma

- Occurs between 50-70 often in alcohol abuse
- Also seen with smoking and in GERD
- Very fatal with < 15% five-year survival rate

Gastritis

- S & S - UGI bleeding, pain, bloating, loss of appetite
- Diagnosis – endoscopy
- Fatalities
    - NSAID gastritis with severe bleeding results in 25,000 deaths per year out of 100,000 admissions
- Treatment
    - IV proton pump antagonists

When is "heartburn" a red flag symptom and should refer to GI specialist:

- Awakens the patient from sleep
- Occurs daily
- If associated with trouble swallowing
- If it persists with medication
- Associated with loss of voice or change of voice
- Associated with weight loss
- Associated with wheezing

When is "heartburn" possible cardiac:

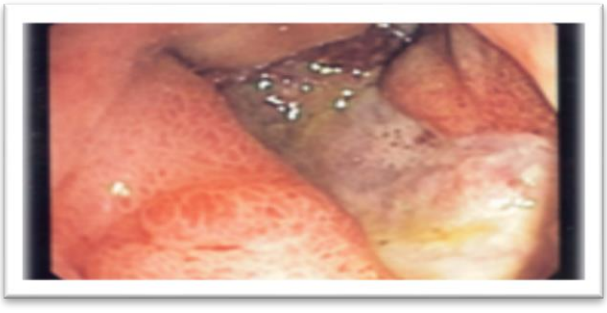
- With chest pain or tightness
- Pain radiating into jaw, left arm & shoulder
- SOB, diaphoresis
- Prior cardiac history
- If discomfort is relieved by nitroglycerin

Gastric carcinoma

- Most common cancer worldwide after skin cancer
- Presents with severe epigastric pain
- Poor prognosis with 10% five-year survival rate
- S & S – usually asymptomatic until it is to advanced for any treatment
- Diagnosis with endoscopy
- Treatment
    - Total gastrectomy and total lymph node dissection only if caught early

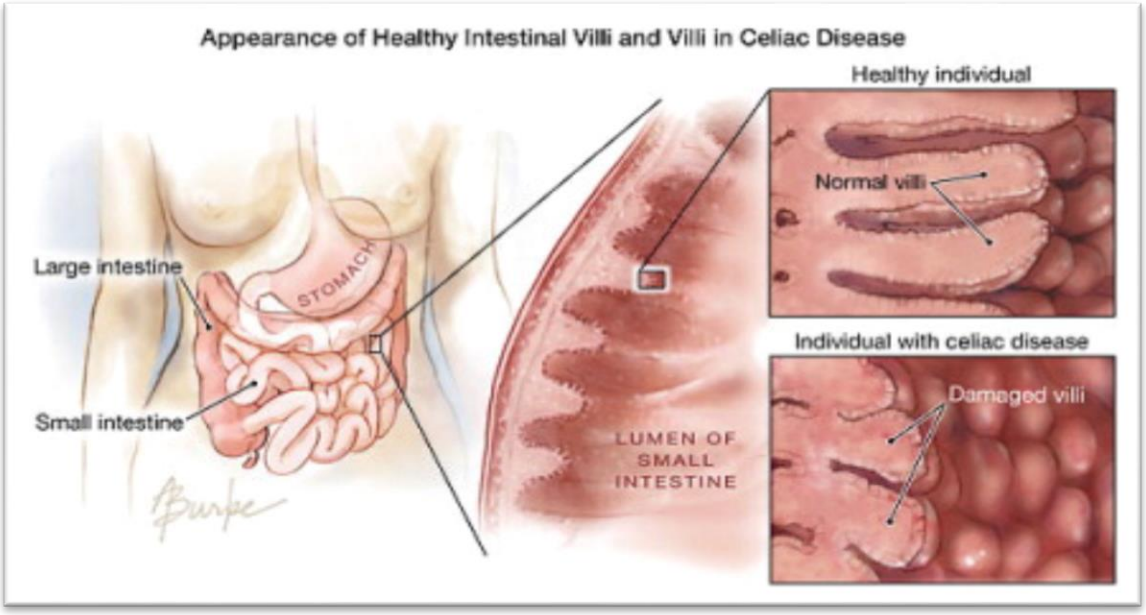
Peptic Ulcer Disease

- Pathophysiology
    - Peptic ulcer disease (PUD) can be understood as an imbalance between mucosal protective factors and aggressive factors.
- The American College of Gastroenterology states “In the past, ulcers were incorrectly thought to be caused by stress. We now know that there are two major causes of ulcers, infection (H. pylori) and NSAID usage”
- 80% of people with infections of H. pylori are asymptomatic. The etiology of PUD is multifactoral and warrants and integrative approach.
- Risk factors
    - NSAID usage increases risk 40X
    - Tobacco use
    - Alcohol abuse
    - Sleep deprivation
    - Localized vascular insufficiency
    - Chemotherapy
- PUD Complications
    - Bleeding
    - Obstruction of the gastric outlet with regurgitation
    - Inability to keep food down
    - Ulcer perforation through the stomach or duedenum
- Diagnosis
    - Gastroscopy and upper GI series
- Treatment
    - Triple therapy – Prilosec, Prevacid, Flagyl, antibiotics, Biaxin
    - Quadruple therapy – Pepto, Tetracycline, Nexium, Metronidazole



Small Intestine Disorders

- Malabsorption syndromes
  - Due to defective digestive absorption
  - Symptoms
    - Bulky, light-colored stools
    - Diarrhea, weight loss, malnutrition, edema
    - Muscle wasting, bone pain, bleeding tendencies
    - Iron deficiency anemia, paresthesias
  - Celiac disease
    - Gluten enteropathy
    - Needing gluten removal from diet
  - Short bowel syndrome
    - Seen after surgery
  - Crohn's disease
    - Lifelong illness thought to be an autoimmune inflammatory disease
    - S & S
      - Pain, cramping, fever, malaise, weight loss, frequent bowel movements
      - 50% involve small & large intestine, 35% involve small intestine only, 15% involve only large bowel
    - Diagnosis
      - Clinical history with x-ray findings
    - Treatment
      - Strict nutritional program with low lactose, low fiber, vitamin and mineral supplements
      - Corticosteroids (Prednisone)
      - Antibiotics (Flagyl)
      - Immunosuppressant drugs (Imuran)



Large Intestine Disorders

Irritable Bowel Syndrome

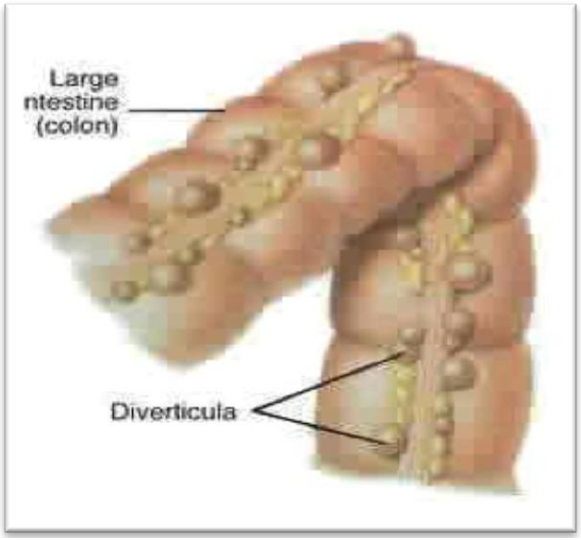
- The most common GI disease seen in clinical practice and the reason for 30% to 50% of referrals to gastroenterologists
- Characterized by recurrent bowel symptoms that are not readily explained by structural or biochemical abnormalities
- Diagnosis when the patient has abdominal pain or discomfort of at least 3 months duration that is relieved with bowel movements or is associated with a change in frequency or consistency of stool
- Symptoms of IBS
    - Symptoms of IBS may include constipation and or diarrhea (often alternating), abdominal pain, mucus stools, nausea, gas, bloating, anorexia and intolerance to certain foods
    - Pain is often triggered by eating, and may be relieved by a bowel movement
    - Whether or not a person with IBS eats normally, malnutrition may result as nutrients are not absorbed properly
- IBS Pathophysiology
    - In IBS, the normally rhythmic contractions of the GI tract become irregular and uncoordinated. This interferes with the normal movement of food and waste material, and leads to the accumulation of mucus and toxins in the intestine.
    - This accumulated material sets up a partial obstruction of the digestive tract, trapping gas and stools, which in turn causes bloating, distention, and constipation. IBS may affect the entire GI tract, from the mouth through the colon.
    - IBS is identified as a result of altered motility, enhanced visceral sensitivity, and brain-gut dysregulation, as modified by psychosocial influences.
    - Therefore, an integrated approach to patient care that incorporates nutrition, medications, and behavioral modalities, as well as other therapies.
- IBS Red Flags
    - Fever, weight loss, bloody stools or nocturnal diarrhea
    - Sudden, severe onset of pain in older patient
    - Family history of cancer, inflammatory bowel, or celiac disease
- IBS treatment
    - Dietary considerations
    - Avoid flatulent foods
    - Avoid laxatives
    - High fiber diet
    - Stress management
    - Tricyclic antidepressants

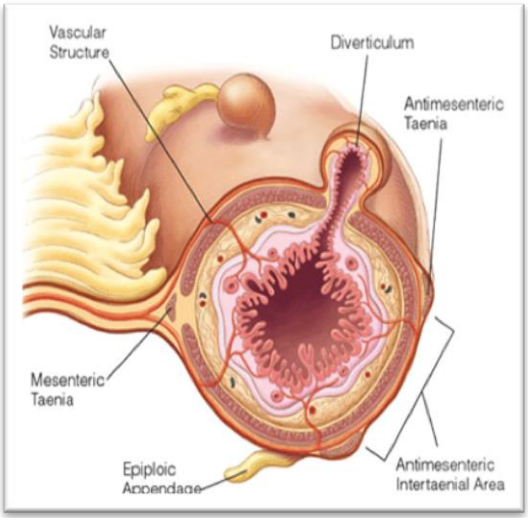
Ulcerative colitis

- Lifetime inflammatory auto-immune disorder
- Confined to the colon only
- S & S
    - Severe disorder with bloody diarrhea, cramping, and abdominal pain
    - Fecal urgency 5-10 x per day, with blood & mucus
    - Weight loss, anemia, low-grade fever
- Diagnosis
    - Sigmoidoscopy with mucosal biopsy
- Treatment
    - High fiber diet
    - Imodium
    - Corticosteroids
    - Mesalamine suppositories
- Prognosis
    - High risk of colon cancer

Diverticulosis

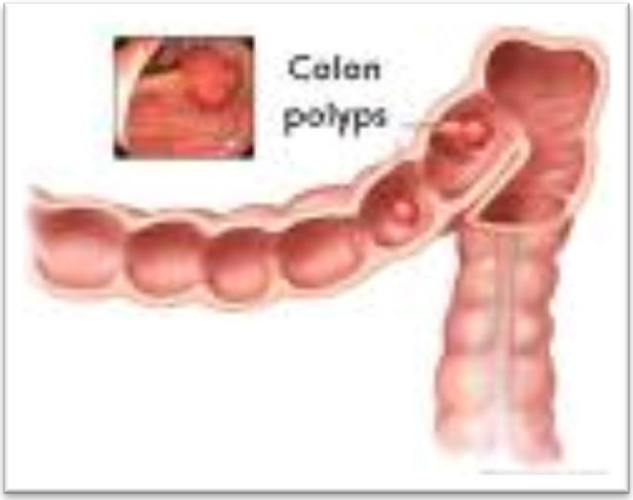
- Incidence 5% under 40, 30% at 60, 50% at 80
- S & S
    - 2/3 are asymptomatic, 1/3 develop lower GI complications
    - "Reverse appendicitis" – severe abdominal pain, fever, tenderness left lower quadrant
- Diagnosis
    - Colonoscopy & barium enema
- Treatment
    - Broad spectrum antibiotics
    - Surgery if signs of abscess or peritonitis





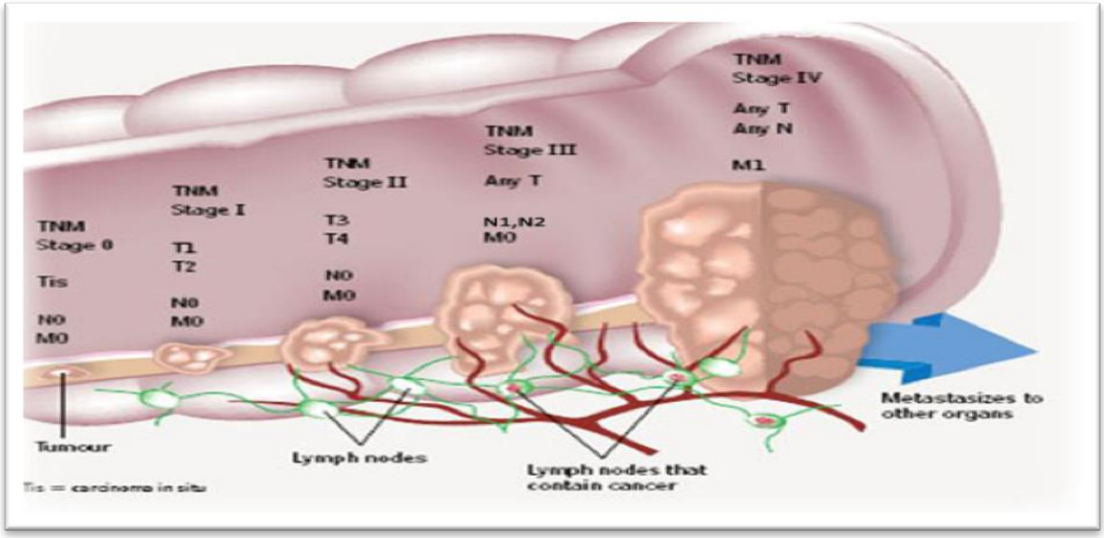
Intestinal polyps

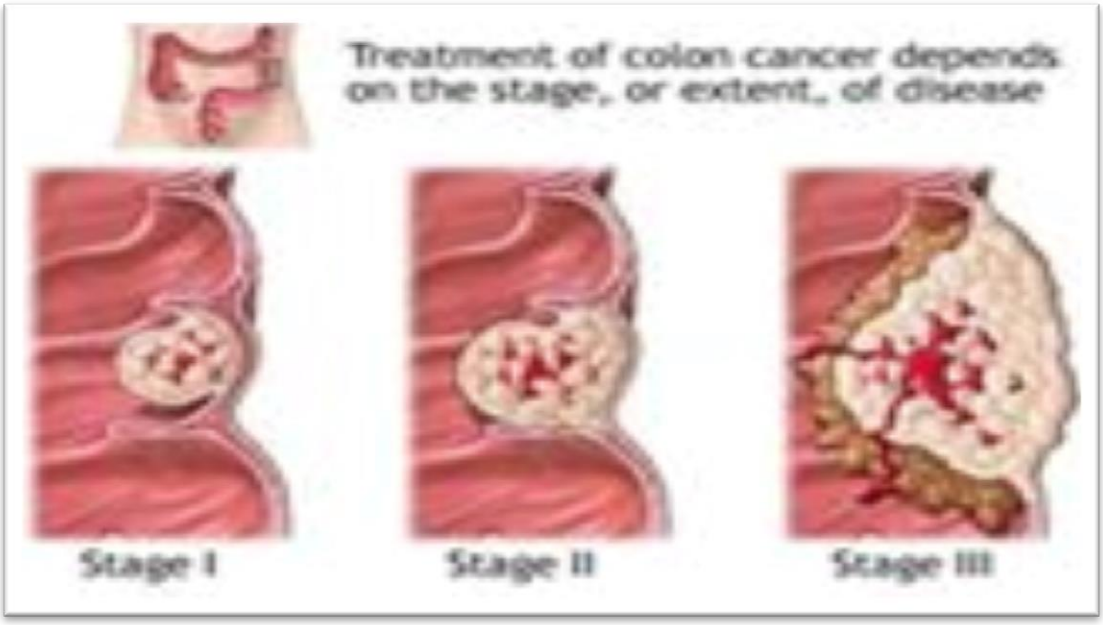
- Can be inflammatory or adenomas, must be biopsied to make differential
- S & S
  - Can be asymptomatic or they may bleed
- Diagnosis
  - Colonoscopy with biopsies
- Treatment
  - Surgical removal is only treatment



Colorectal cancer

- Second leading cause of cancer death
  - 135,000 yearly cases with 55,000 cases
  - 25% family connection
- S & S
  - Blood streaked stools, ribbon shaped stools
  - Rectal & lower abdominal pain, weakness, weight loss
- Diagnosis
  - Colonoscopy with barium enema
- Colorectal cancer treatment
  - Surgical resection, chemotherapy, radiation
- Staging
  - Stage 0 – confined to inner lining
  - Stage I – in layers of colon, but not through wall
  - Stage II – through colon wall, but not into nodes
  - Stage III – spread to nearby nodes
  - Stage IV – spread to distant organs





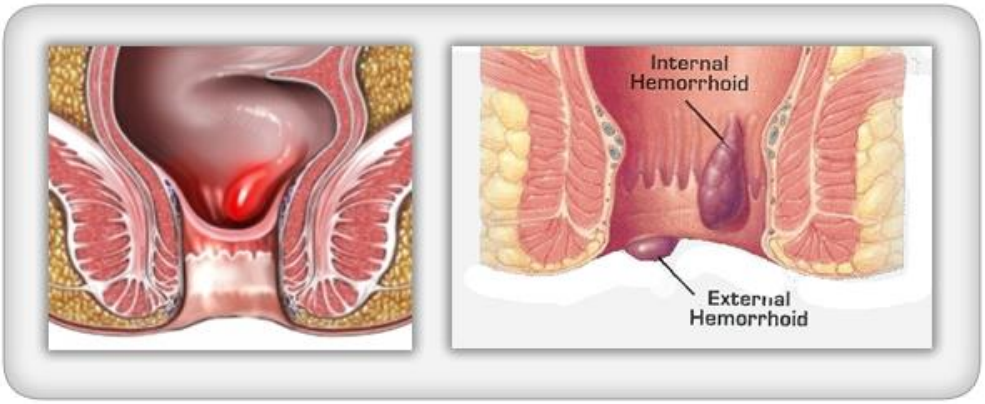
Anorectal Lesions

Hemorrhoids

- Internal
  - Can erode and bleed with bright red blood
  - Usually painless unless large and prolapsed
- External
  - Straining can cause blood clots with exquisite pain and tenderness
  - May actually have nerve endings
  - Common in pregnancy and usually resolves
- Treatment
  - Sitz baths
  - Surgical drainage of thrombosed external hemorrhoids

- **Anorectal infections**
  - Proctitis – inflammation or infection of the rectum with pain, constipation, spasm, pus
  - Usually STD related
  - Treatment with antibiotics & sitz baths

- **Anal fissures**
  - Linear ulcers or splits in the anal mucosa
  - Extremely tender and painful with bowel movements
  - Caused by excessive straining
  - Treatment with Sitz baths, ointment, high fiber
    - Also treated with botox injection into spinchters



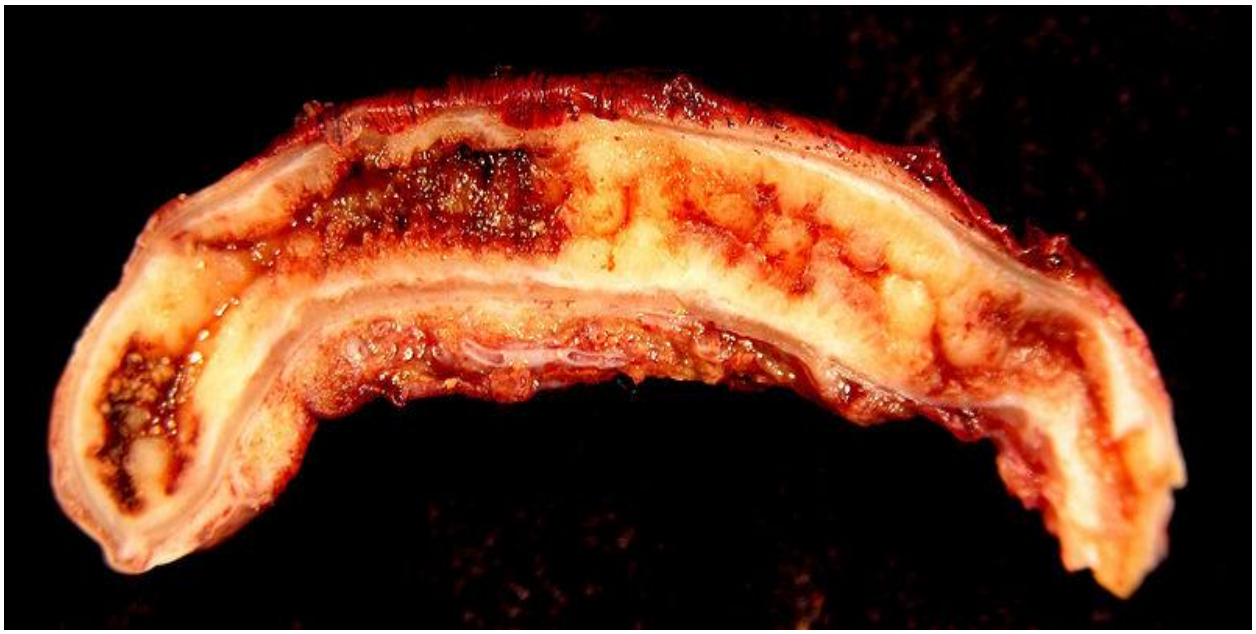
Appendicitis and the Acute Abdomen

The acute abdomen

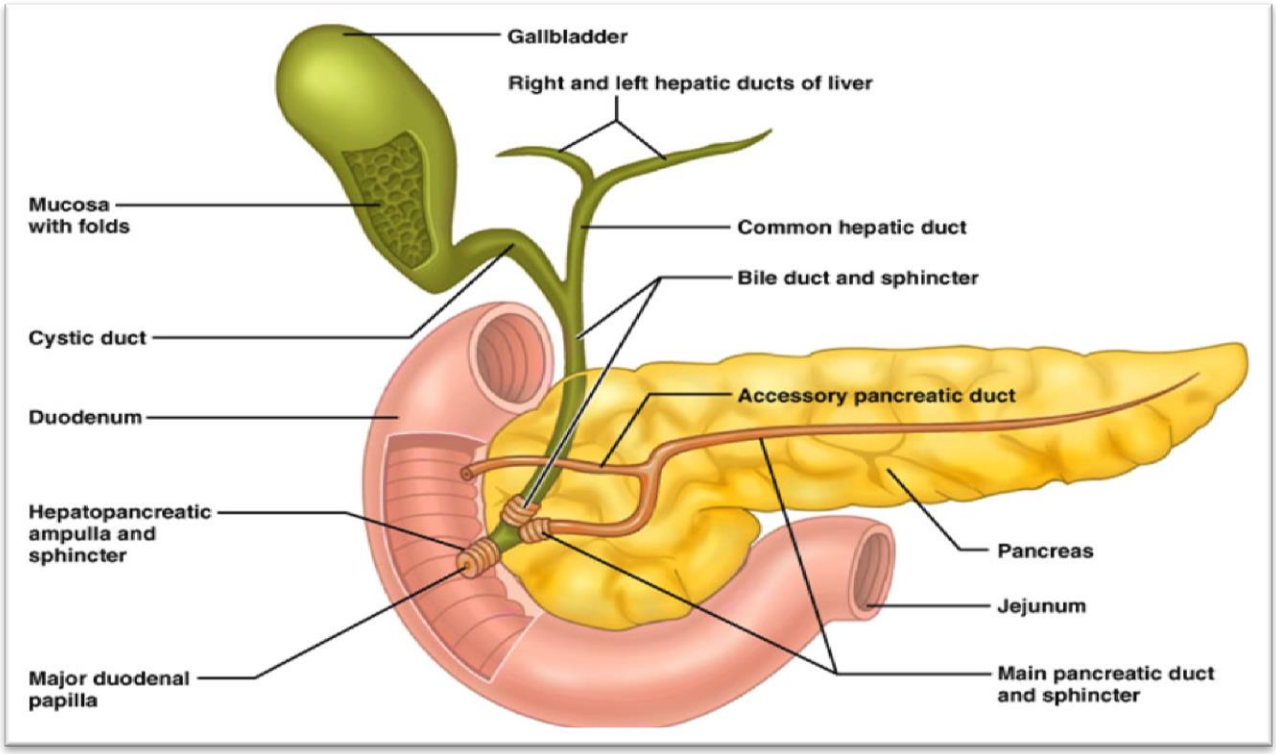
- Causes include:
    - Ruptured appendicitis
    - Ruptured ectopic pregnancy
    - Ruptured tubal-ovarian abscess
    - Ruptured gall bladder
    - Perforated gastric or duodenal ulcer
    - Acute pancreatitis
    - Intestinal perforation
    - Ruptured aortic aneurysm
    - Rupture of spleen
    - Liver abscess
- Almost always life-threatening and potentially fatal

Appendicitis

- Most common surgical emergency
- Occurs between 10-30
- Caused by fecalith or foreign body obstructing the appendix opening
- S & S
    - Early peri-umbilical pain starting mild and becoming more severe
    - McBurney's tenderness
    - Low-grade fever and leukocytosis
- Diagnosis
    - History, low-grade fever, McBurneys tenderness, US, CT
- Treatment
    - Appendectomy with antibiotics



Liver & Gallbladder Disoders



Cholelithiasis - Gallstones

- Pathophysiology
  - After eating a fatty meal, the gallbaldder empties into the duodenum. Bile concentrations in the gallbladder and the ducts lead to stones.
- High risk – four F's
  - Female
  - Fair
  - Fat
  - Forty-ish
- S & S
  - 2/3 are asymptomatic – usually discovered incidentally during an imaging study
  - When stones migrate into the gallbladder neck, cystic duct, or common bile duct can cause RUQ pain with fatty food ingestion
- Diagnosis
  - US reveals 95% of stones, cystogram will reveal the remaining 5%
- Treatment
  - Low-fat diet
  - Cholecystectomy recommended because of the risk of developing into cholecystitis

Acute Cholecystitis

- Pathophysiology
  - Stone blockage of the cystic duct causes gallbladder inflammation, which can become gangreanous and perforate
  - Stones in the common bile duct can cause obstructive jaundice
- Diagnosis
  - US and radioactive liver scan
    - HIDA – hepato-iminodiacetic acid scan
- Treatment
  - Hospitalization with IV fluids & antibiotics
  - Laparoscopic cholecystectomy
- Lab Evaluations & Dx Tests
  - Liver function blood tests
    - Alkaline phosphatase
    - Alanine transaminase (ALT)
    - Aspartate transaminase (AST)
    - Lactic dehydrogenase (LDH)
    - Bilirubin, albumin and prothrombin time
  - Other tests
    - US – detects 95% of stones
    - HIDA scan – for cholecystitis
    - CT scan
    - ERCP – endoscopic retrograde cholangio-pancreatography
    - Radioactive liver scan
    - Liver biopsy

Major Problems in Medical Practice

- Hepatomegaly
  - Can be CHF, hepatitis, alcoholism, mononucleosis
- Jaundice
  - High levels of bile in the blood
  - Three types
    - Pre-hepatic, hepatocellular, bile obstruction
- Ascites
  - Liver disorders are the most common cause
    - CHF, liver cancer, cirrhosis & portal hypertension
- Liver encephalopathy
  - When liver is diseased, toxins do not get detoxified and go directly to the brain
- Portal hypertension
- Infection of the liver – hepatitis
  - Hepatitis A (infectious), B (viral), C (transfusions)
- Hepatic tumors
  - Hepatocellular adenoma
    - Common benign liver tumor
  - Hepatoma – hepatocellular carcinoma
    - Extremely fatal cancer

Pancreas Disorders

Acute pancreatitis

- Very dramatic and severe disease
- S & S
  - Acute abdominal pain worse with laying down and improved with sitting up or leaning forward
  - Epigastric and sternal pain radiating to back
  - Nausea, vomiting, fever and prostration
  - Sweaty, weak and anxious
  - Reduced levels of consciousness
- Diagnosis
  - Suspect history of gallstones, mumps, alcoholism
  - Can be caused by severe trauma
  - Epigastric tenderness and high serum amylase
- Prognosis
  - Patient is very ill & usually hospitalized
  - Pancreas can become and can start dissolving itself from the pancreatic enzymes present

Acute pancreatitis - continued

- Treatment
  - Strict NPO diet and feeding with IV fluids
  - NG tube to remove all gastric secretions
  - Maintain blood volume and oxygen therapy
  - Surgery needed if patient goes into shock
    - If pancreas removed the patient will require enzyme replacement and insulin for life

Chronic pancreatitis

- Most common cause is alcoholism
  - In temperate developing countries, often caused by unknown fungus, virus or parasite
- Leads to diabetes, chronic pain, malabsorption and nutritional deficiencies
- Chronic pancreatitis may lead to cyst formation in the pancreas
- Must be drained or surgically opened

Pancreatic adenocarcinoma

- Extremely fatal prognosis
  - 5-year survival rate is 2%
  - Tends to slowly grow until it is to late
- S & S
  - Abdominal pain radiating into the back
  - Weight loss, jaundice
- Diagnosis
  - CT, MRI
- Treatment
  - Surgical removal

Acute GI Red Flags

- Projectile vomiting
- Obstipation (no bowel movement for days)
- Acute inflammatory diarrhea
- Any severe diarrhea not resolving in 48 hours
- Acute upper or lower GI bleeding
- S & S of peritonitis
- Severe mouth infections
- External hemorrhoids
- Anal fissures or fistulae
- Acute cholecystitis or cholangitis
- Obstructive jaundice
- Acute hepatitis
- Acute liver failure
- Acute pancreatitis
- Acute dental problems
- S & S of acute abdomen

Subacute GI Red Flags

- PUD, GERD, gastritis
- Dyspepsia
- Nausea and vomiting, not resolving in 24 hours
- Hiccups, not resolving in 24 hours
- S & S of metabolic syndrome
- Rectal prolapse, not yet evaluated
- Chronic diarrhea, not yet diagnosed
- Chronic upper or lower GI bleeding
- Ascites
- Mouth infections or ulcers
- S & S of cancer of mouth
- Dysphagia, not yet diagnosed
- Painful swallowing
- S & S of gastric or esophageal cancer
- Malabsorption, not yet diagnosed
- S & S of Crohn's disease or ulcerative colitis
- IBS, not responding to treatment
- Diverticulitis
- Colon fistulas to bladder or vagina
- Bloody stools or change in shape of stools
- Severe internal hemorrhoids
- Chronic pancreatitis