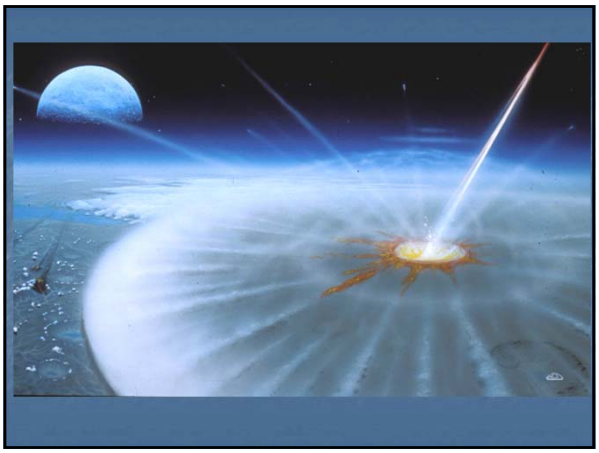
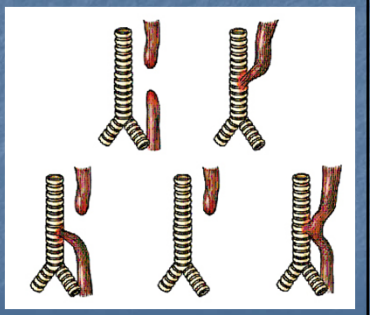


Gastrointestinal Disorders

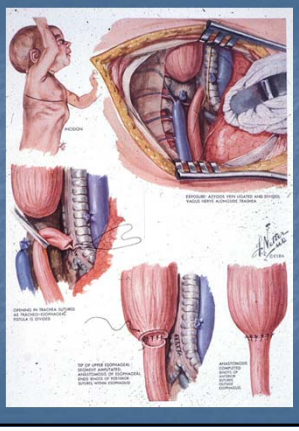
Disorders of the Esophagus

Congenital Abnormalities

- Types
  - Stenosis
  - Atresia
  - Fistula
- Newborn aspirates while feeding.
- Pneumonia

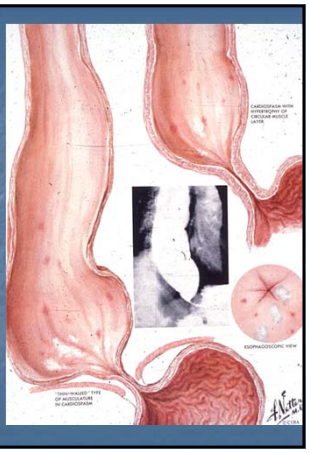


Not an easy repair



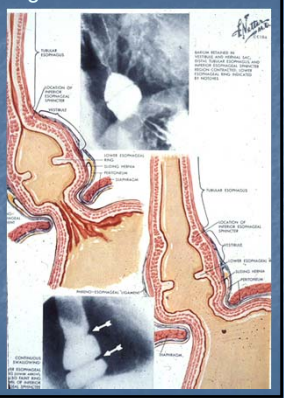
Achalasia

- Lack of relaxation of cardiac sphincter
  - The default condition is contraction
- Inflammation leads to
  - Scarring and
  - Loss of ganglia cells
- Decreased innervation means no relaxation
- Leads to retention of food, inflammation and more scarring



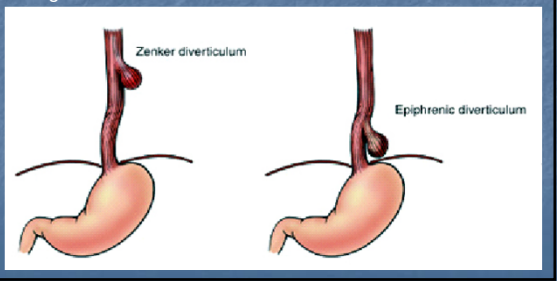
Esophageal Scarring and Ring formation

- Inflammation leads to
  - Scarring and
  - Loss of ganglia cells
- Decreased innervation means no relaxation
- Leads to retention of food, inflammation and more scarring



Esophageal Diverticulae

- Traction
- Pulsion
- Magicians

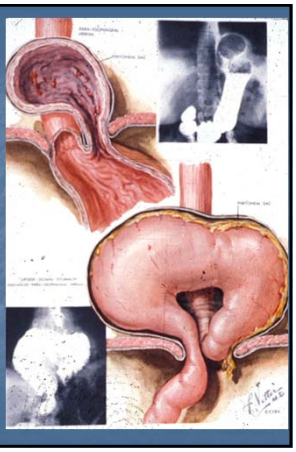


Hiatal Hernia

- Incompetence of diaphragmatic opening
- Portion of stomach is in thorax
- 'Sliding' type ->
- Leads to
  - Regurgitation of food
  - Acid reflux
  - Ulceration

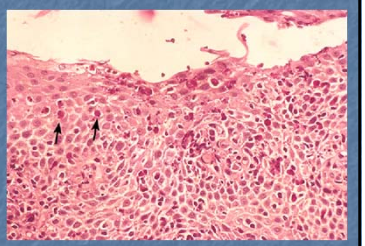
Hiatal Hernia

- "Rolling type
- May lead to gastric mucosal ischemia.
- Ulceration
- GI bleeding



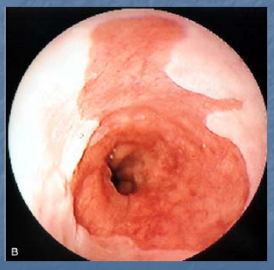
Esophagitis

- Inflammation of mucosa
- Lots of causes
  - Reflux of stomach acid ->
  - Infectious agents
    - Bacteria
    - Viral (HIV)
    - Fungal (HIV)
  - Cytotoxic agents
  - Autoimmune

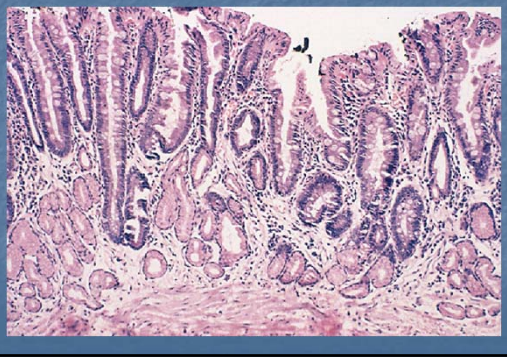


Barrett's Change

- Metaplasia of squamous epithelium
  - Columnar epi
  - Repeat injury
    - Reflux
  - Indicates serious or prolonged damage
  - Cancer risk?

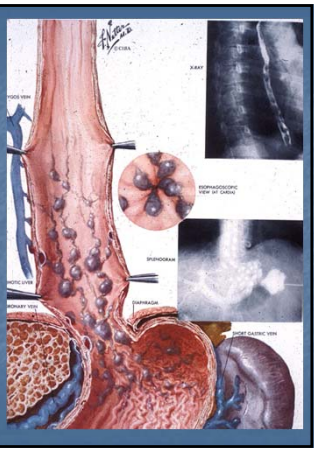


Barrett's Change



Esophageal Varices

- Dilation of esophageal veins, distal 1/3.
- Increased venous portal pressure.
  - Cirrhosis
- Life threatening hemorrhage



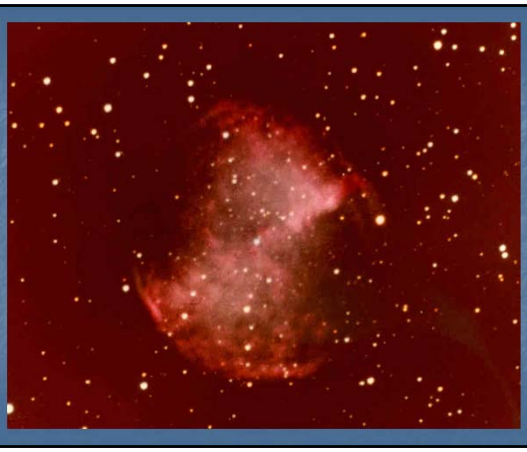
Esophageal Varices

Esophageal Varices

Esophageal Cancer

- Squamous cell
- Repeat irritation
- Tobacco
- Invasive
- Barrett's change
  - Adenocarcinoma

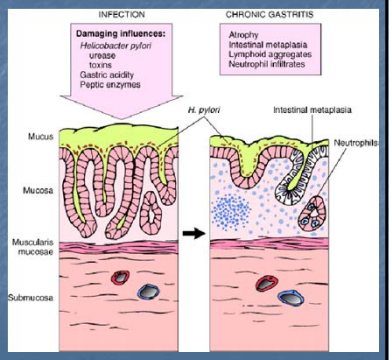
Esophageal Cancer



Disorders of the Stomach

Gastritis

- Acute
  - Polys
  - ETOH
  - H. pylori
  - Pain
  - Bleeding
- Chronic
  - Mucosal atrophy
  - Mucin cell hyper
  - Lymphocytes
  - Autoimmune
  - B-12 deficiency



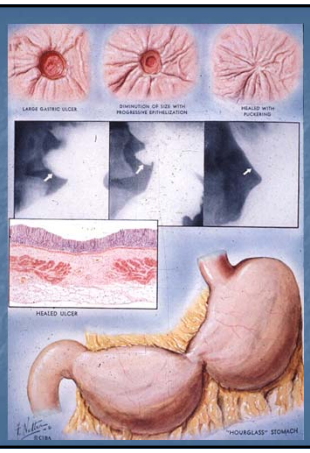
Chronic Gastritis

Helicobacter pylori

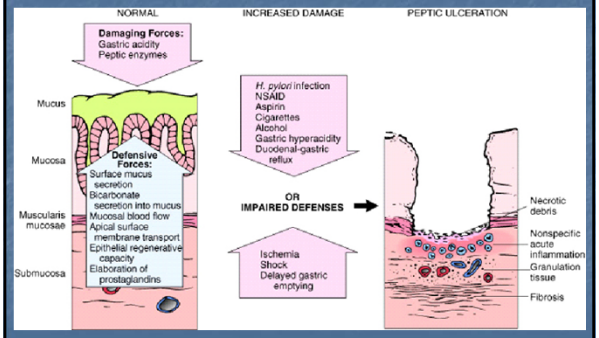
- Gram negative rod
- Lives on the epithelial surface.
- Urease destroys mucus
- Increases acid secretion
- Reduces duodenal bicarb
- Intensifies inflammatory response
- Immunogenic

Peptic Ulcer

- Action of digestion
- Balance between good and evil
- H. pylori
- NSAIDs
  - Aspirin
- Complications
  - Bleeding
  - Perforation
  - Penetration
  - Scarring
- Zollinger-Ellison
  - Gastrin secreting tumor

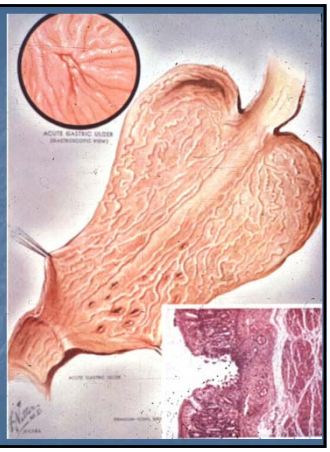


Good and Evil



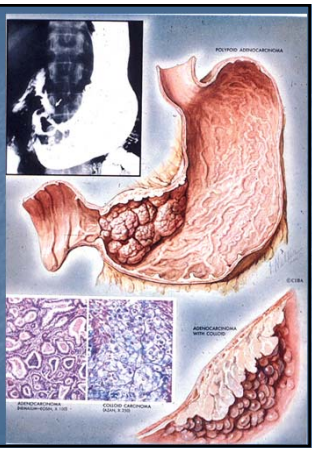
Stress Ulcers

- This means stress, not surprise (pop quiz)
- Trauma
  - Major
  - Head injury
  - Burns
- Vascular mediated
  - Rearranged blood flow
- Multiple 'erosions'
- Confined to mucosa
- Can bleed seriously

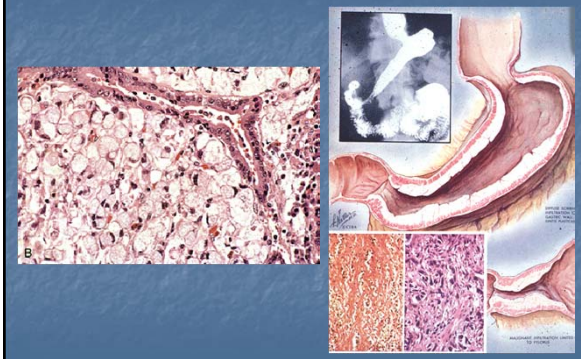


Gastric Cancer

- Adenocarcinoma
- Risk factors
  - Nitrites
  - Smoked foods
  - Chronic gastritis with H. pylori

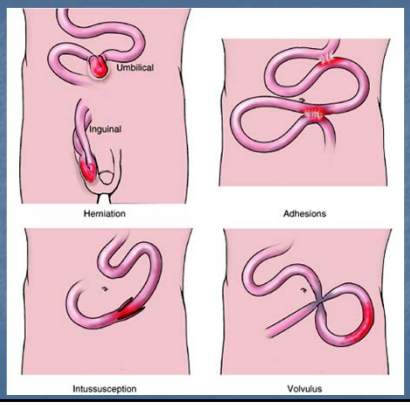


Linitis Plastica

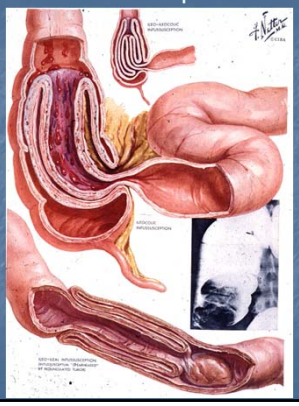


Small Bowel Disease

Mechanical Problems



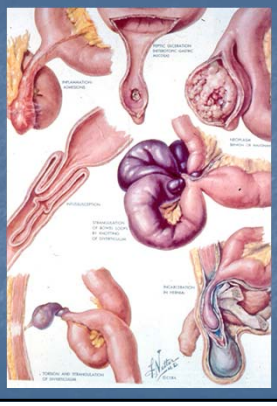
Intussesception



Meckle's Diverticulum

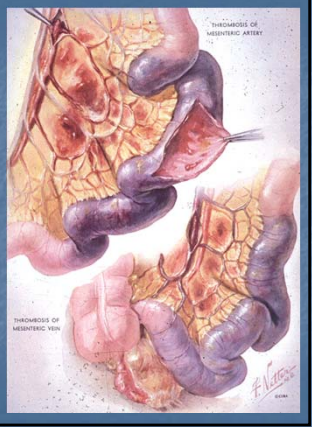
- Congenital diverticulum of the distal small bowel.
  - 2 kinds of mucosa
  - 2 feet from the ileocecal valve.
  - 2 inches in size.
  - Twice as common in males

Problems with a Meckle's



Vascular Related

- Bowel infarction
- Hemorrhagic
  - Venous
  - Arterial
- Septic shock
- Very painful



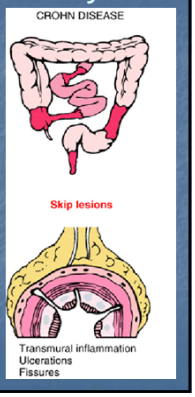
Bowel infarction

Infectious Enteritis

- Many agents infect the small bowel.
  - Viral
  - Bacteria
    - Salmonella
  - Parasites
    - Unicellular
      - Giardia
    - Multicellular
      - Worms

Non-infectious Inflammatory

- Crohn's disease
  - Granulmatous enteritis
  - Transmural inflammation
  - No known infectious agent
  - Granulomas in about 40%
  - Fistula formation
  - Relapsing
  - Small bowel or colon
  - Ethnicity
  - No significant increased risk of cancer (minimal at best)



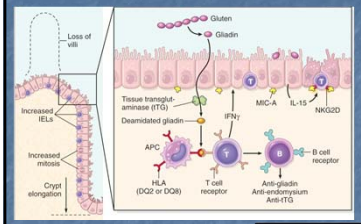
Crohn's Disease

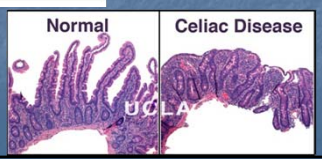
- Transmural inflammation
- Scarring and stricture formation
- Fistulae

Crohn's Microscopic

- Granulomas about 40% of the time.
- Transmural all the time

Gluten Enteropathy

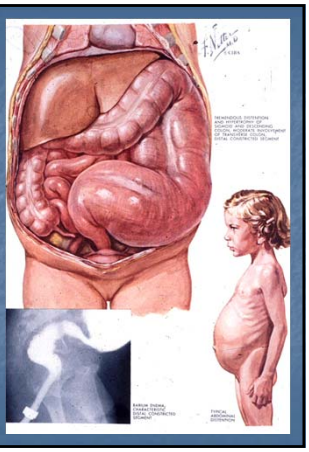




Colonic Disease

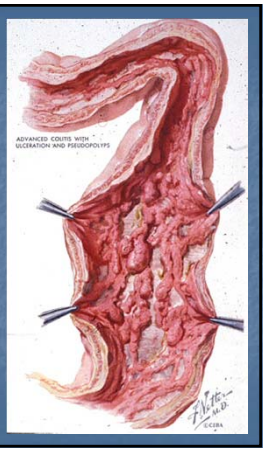
Hirschprung's Disease

- Aganglionic segment
- Peristalsis stops
- Dilation of colon back stream of the defective segment.
- Remove distal portion that looks healthy.
- Look for ganglia.

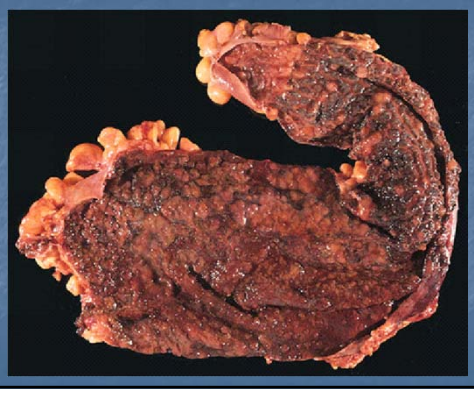


Ulcerative Colitis

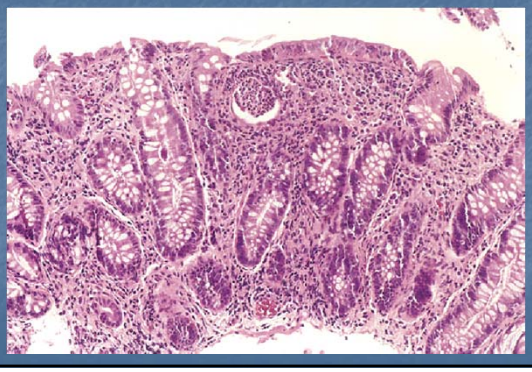
- Mucosal
  - Crypt abscesses
- Autoimmune element?
- Starts in rectum and works its way back.
- Pseudopolyps
- Toxic megacolon
- Increased cancer risk



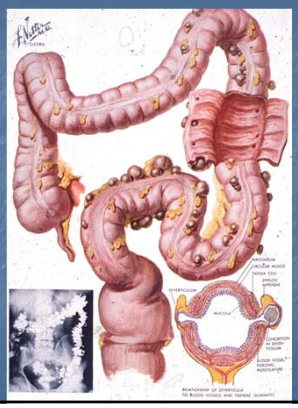
Ulcerative Colitis



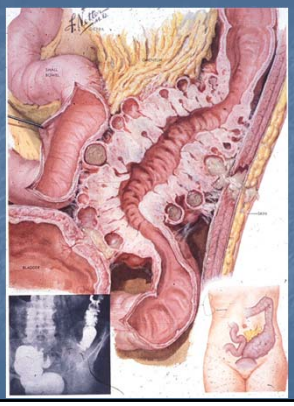
Crypt Abscess



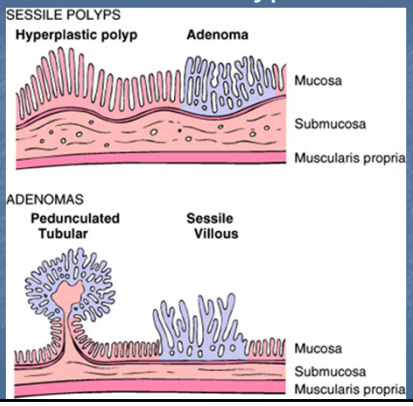
Diverticulosis



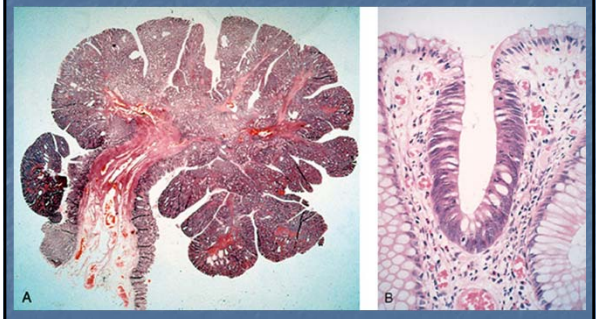
Diverticulitis



Colonic Polyps

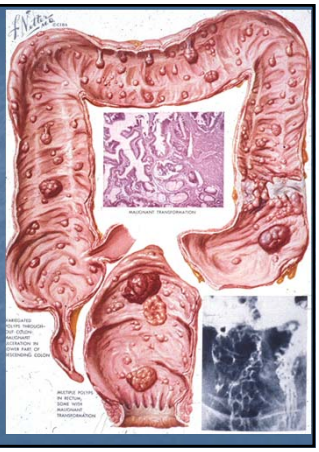


Colonic Polyps



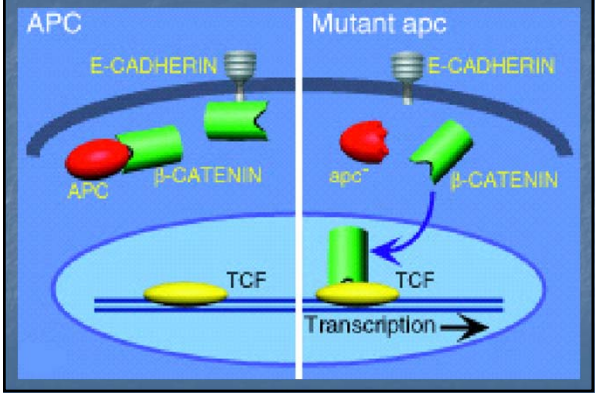
Familial Polyposis

- Millions of adenomatous polyps
- Genetic predisposition
- 100% of chance of cancer



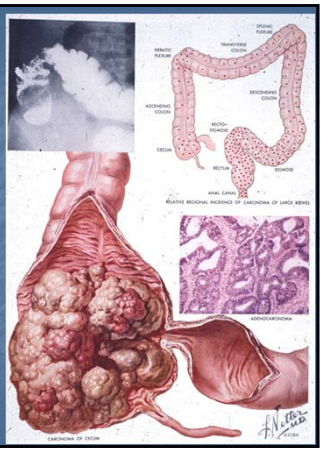
Familial Polyposis

Familial Polyposis

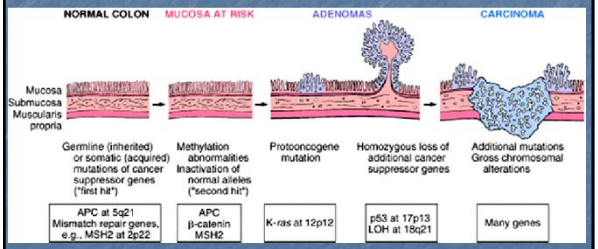


Colon Cancer

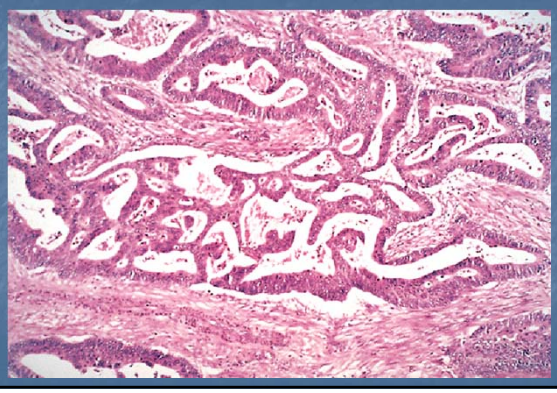
- Right and left side have different presentations
  - Right = anemia
  - Left = bowel changes
- Contributing factors
  - Genetics
  - Dietary fiber
  - Dietary fat
- Spread
  - Liver
  - Lymph nodes



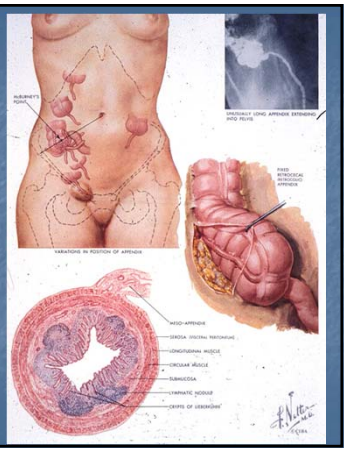
Genetics of Colon Cancer



Colon Cancer



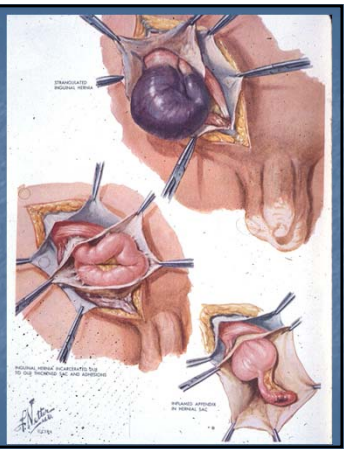
Appendicitis



Appendicitis

- Obstruction of mouth of appendix
  - Fecolith
  - Enlarged lymph nodes
- Bacteria proliferate and invade wall.
- Rupture
  - Peritonitis
  - Abscess

Inguinal Hernia



Direct Abdominal Hernia