Lower GI Problems

N123: Medical Surgical Nursing
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Objectives

- Describe causes, pathophysiology, manifestations, complications and nursing/collaborative care for common lower GI problems
- Identify educational needs of patients with lower GI problems

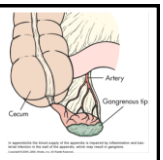
Common Intestinal Problems

- Appendicitis
- Peritonitis
- Inflammatory Bowel Disease
  - Crohn's disease
  - Ulcerative colitis
- Irritable Bowel Syndrome
- Diverticulitis
- Intestinal obstruction
  - Mechanical
  - Neurogenic
- Colon cancer
- Hemorrhoids

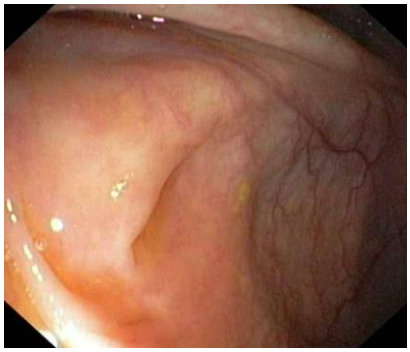
Lower GI - Diagnostic Tests

- Colonoscopy
- Flex sigmoidoscopy
- Barium enema
- Labs: electrolytes, Hgb, Hct, WBC, BUN, sed. rate, FOB

Appendicitis



- Inflammation of the appendix
- Possible rupture if not removed
- Rupture ⇒ peritonitis
- Leading cause of emergency abd. surgery
- Most common in people ages 10 –30 yrs

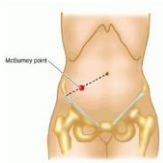


Appendicitis (cont.)

- Caused by obstruction of appendiceal lumen ⇒ mucus backs up in lumen ⇒bacteria multiply ⇒appendix swells ⇒infection ⇒gangrene ⇒perforation
- Sources of obstruction: stool, parasites, growths, Crohn's, UC, trauma, infection, enlarged lymph tissue

Appendicitis (cont.)

- Pain – 1st symptom
  - Periumbilical > RLQ >McBurney's point
  - Rebound or RLQ tenderness, guarding
- N/V
- Anorexia
- Diarrhea/constipation
- Fever
- Perforation
- Peritonitis
- Sepsis
- Abscesses



Appendicitis – Diagnostic Tests

- Labs: CBC, UA, Urinary beta-hCG
- Ultrasound, CT w/ oral contrast
- Physical exam:
  - Rovsing's sign

Appendicitis – Collaborative Care

- NPO
- IV access/fluids
- Analgesics/antiemetics for comfort
- **No** laxatives/enemas/hot packs
- Pre-,post-appendectomy care

Peritonitis

- Inflammation of the peritoneum
- Fluid shift into abdominal cavity

- Causes:
  - Organisms
  - Cirrhosis w/ ascites
  - Pancreatitis
  - GI obstruction
  - GI perforations d/t appendicitis, PUD, diverticulitis, abdominal trauma
  - Post-op complications

Peritonitis (cont.)

- Abdominal pain, rebound tenderness
- Muscular rigidity, distention, spasm
- Fever, tachycardia, tachypnea, n/v

Complications:

- Hypovolemic shock, acute resp. distress
- Sepsis, paralytic ileus, abscess formation

Peritonitis- Diagnostic Tests

- Paracentesis
- Labs: CBC, electrolytes, ABG, BUN, creatinine, UA
- Ultrasound
- CT scan

Peritonitis- Collaborative Care

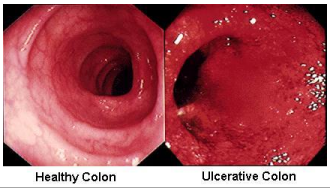
- Fluid/electrolyte replacement
- IV antibiotics
- Continual assessment
- Prevent hypovolemic shock
- NGT
- Laparotomy
- Post-surgical care

Inflammatory Bowel Disease

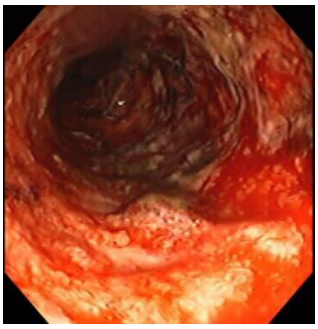
- Idiopathic disease caused by dysregulated immune response to host intestinal microflora
  - Other causes for inflammation need to be ruled out
- Periods of remission alternate w/ exacerbations
  - Ulcerative colitis (UC)
  - Crohn's disease

Ulcerative Colitis (UC)

- Inflammation limited to colon
  - Usually confined to rectum and sigmoid
  - Begins in rectum, progresses proximally
  - Involves mucosa and submucosa



Ulcerative Colitis (UC)



UC - Manifestations

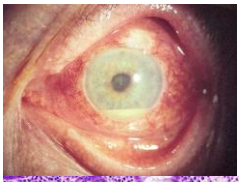
- Varies by extent of disease
- Common:
  - Bloody diarrhea (<4, >10-20)
  - Rectal mucous discharge
  - Pain- mild LLQ and/or rectal, cramping
- Severe:
  - Fever, tachycardia, weight loss

UC - Complications

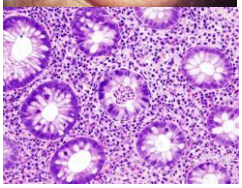
- Toxic megacolon
- Hemorrhage
- Crypt abscesses
- Obstruction
- Perforation

- Increased risk for:
  - Colon cancer
  - Extraintestinal manifestations
    - Uveitis
    - Hepatitis
    - Pyoderma gangrenosum
    - Arthritis

Uveitis



Pyoderma gangrenosum

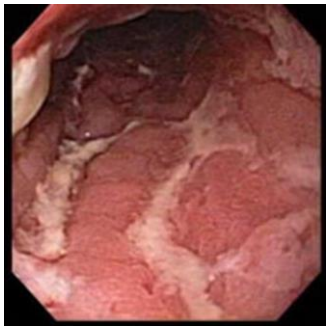


Crypt Abscesses

Toxic Megacolon

Crohn's Disease

- Transmural inflammation
- Potential inflammation mouth to anus
  - Most common: terminal ileum
- Segmental/asymmetric/skip lesions
- No cure



Crohn's Disease (cont.)

- Potential causes:
  - Infectious, immunologic and genetic
- Possible contributing factors:
  - Dietary, environmental, smoking, psychosocial
- Highest risk factors:
  - Jewish descent
  - Caucasian
  - Urban setting
  - Ages 15-30
  - Familial association

Crohn's - Manifestations

- Diarrhea (fewer bowel movements than UC)
- Abdominal pain:
  - commonly intermittent/colicky, crampy, RLQ
- Colon involvement:
  - diffuse pain, blood/pus/mucus
- General:
  - lo-grade fever, wt loss, fatigability

Crohn's - Complications

- Fistulas
- Localized abscesses
- Perforation
- Obstruction
- Toxic megacolon
- Extraintestinal manifestations
- Malabsorption of bile salts and Vit B12

IBD - Diagnostic Tests

- Labs: CBC, CMP, ESR, C-reactive protein, stool cultures & FOB
- Serologic markers: ANCA, ASCA
- Sigmoidoscopy/colonoscopy w/biopsy
- Barium enema

<u>Crohn's</u>

- CT, MRI, EGD, sm.bowel endoscopy, EUS, folic acid

IBD

Ulcerative Colitis	Crohn Disease
Only colon involved	Panintestinal
Continuous inflammation extending proximally from rectum	Skip-lesions with intervening normal mucosa
Inflammation in mucosa and submucosa only	Transmural inflammation
No granulomas	Noncaseating granulomas
Perinuclear ANCA (pANCA) positive	ASCA positive
Bleeding (common)	Bleeding (uncommon)
Fistulae (rare)	Fistulae (common)

IBD-Collaborative Care

- Goal of care: decrease symptoms, improve quality of life
- Therapeutic interventions:
  - Medications
  - Dietary modification
  - Supportive care during flares
  - Surgery

IBD-Collaborative Care (cont.)

- ↑protein, ↑calorie, ↓residual diet w/ vitamins & iron
- Severe cases – NPO, EEN, TPN
- Avoid raw fruits/vegetables, irritating foods

Smoking

IBD – Collaborative Care (cont.)

- 5-ASA derivative - (mesalamine)
- Antimicrobials
- Corticosteroids - (prednisone)
- Immunosuppressants - (6-mercaptopurine)
- Anti-metabolite - (methotrexate)
- TNF inhibitors - infliximab (Remicade), adalimumab (Humira)
- Antidiarrheals

IBD-Collaborative/Nursing Care

- Daily wt, I & O's
- Allow pt to express fears, anxieties, possibility of surgical intervention
- Pre-, post-procedural and operative care

Surgery:

UC: 25-30%

CD: 70% require 1 or more surgeries

IBD-Teaching

- Rest and diet
- Perianal care
- Medications – actions, s/e
- Symptoms of recurrence
- Medical care - when to seek out
- Stress reduction techniques

Irritable Bowel Syndrome (IBS)

- Functional disorder of the large bowel
  - Altered bowel habits
  - Abdominal pain
  - Abdominal distention
- Painful but no damage to colon
- Theorized causes: altered GI motility, visceral hyperalgesia, psychopathology, altered intestinal biome

IBS – (cont.)

- R/o other cause of symptoms
- Rome III criteria
- Diet should be individualized:
  - Avoid fatty foods, milk products, alcohol, caffeine
  - Low FODMAP diet
  - Small meals
- Stress relief
- Medications: bulk laxatives, antispasmotics, antidepressants, antidiarrheals

Diverticular Disease

- Characterized by small pouches created by herniation of the mucosa into colon wall
- Affects 33-50% adults >age 50
- Most common site: sigmoid colon
- Associated w/ low-fiber diet, constipation, obesity
- Diverticulosis: uncomplicated, may be asymptomatic

Diverticulitis

- Inflammation of one or more diverticula
- Manifestations: LLQ pain, fever, possible n/v, constipation
- Complications:
  - Bleeding
  - Rupture of inflamed diverticulum ⇒peritonitis
  - Abscess formation
  - Vesicocolonic, colovaginal fistula formation

Diverticulitis - Diagnostics

- Labs: CBC, FOB, UA
- CT
- Barium enema
- X-ray
- Colonoscopy, sigmoidoscopy

Diverticulitis – Collaborative Care

- High-fiber diet
- Exercise
- Bulk-forming laxatives
- Wt loss
- Decrease straining, intraabdominal pressure
- Acute diverticulitis:
  - Bed rest / Bowel rest
  - Antibiotics, analgesics
- Surgical intervention
  - Obstruction, abscess
  - Colon resection, temporary diverting colostomy

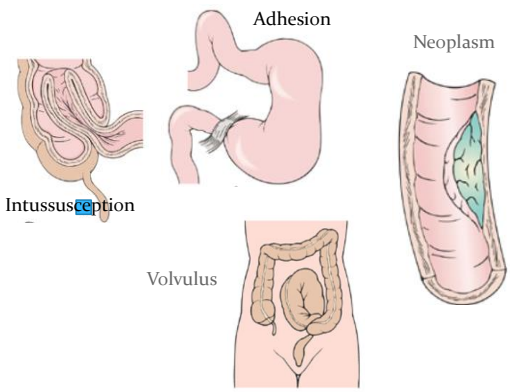
Intestinal Obstruction

- When GI content can not pass through
- May occur in large or small intestine
- May be mechanical or non-mechanical
  - Mechanical – detectable occlusion
  - Neurogenic – pseudo-obstruction, no mechanical blockage
  - Vascular – when blood supply to bowel is interrupted

Obstruction- (cont.)

Causes:

- Polyps, tumors, feces (intraluminal)
- Stricture or pyloric stenosis (intramural)
- Post-op adhesions or hernias (extrinsic)
- Paralytic ileus



Obstruction- Manifestations

- Nausea/Vomiting
- Abdominal pain/cramping
- Distention
- High pitched or absent BS
- Inability to pass flatus
- Constipation ⇒ obstipation
- Signs of dehydration/ fluid shifts

Obstruction – Collaborative Care

- Regulate F/E imbalances
- Decompress GI tract (NGT)
- Meds: promotility drugs (non-mechanical), antibiotics, analgesics
- Restoring bowel patency
  - Endoscopically – dilatation, polypectomy
  - Surgically – resection w/ anastomosis, colectomy, colostomy, ileostomy

Obstruction – Nursing Care

- Assess:
  - Distention/girth
  - BS
  - Pain
  - S/s f/e imbalance
  - S/s shock
- NPO (ice chips)
- IV fluids w/ KCl
- Elevate HOB
- Assist OOB and ambulate
- Oral/nasal care

Colorectal Cancer (CRC)

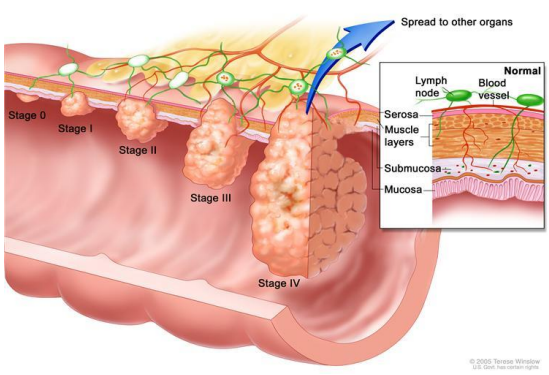
- Second leading cause of cancer related deaths
- Early detection is essential to survival
- 5-year survival rates (avg. 61%):
  - 93% - localized to bowel wall
  - 64% - lymph involvement
  - 8% - disseminated

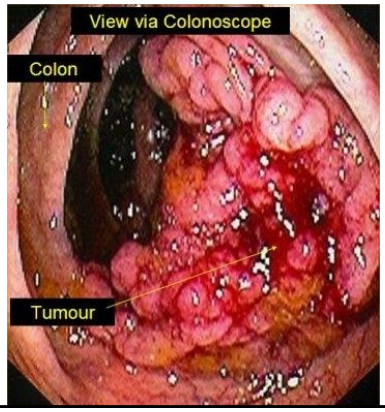
CRC– Risk Factors

- Increasing age
- Hereditary familial syndromes:
  - Familial Adenomatous Polyposis (FAP)
  - Lynch Syndrome/ Hereditary Nonpolyposis Colorectal Cancer (HNPCC)
- Hx of polyps
- UC for more than 7 yrs
- Genital cancer or breast cancer

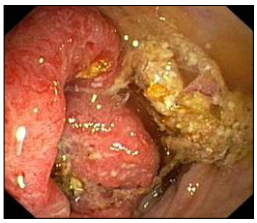
CRC– Lifestyle Risk Factors

Risk Factor	Evidence	Magnitude of Effect
Increases:		
Red Meat	++	↑↑↑
Alcohol	++	↑↑
Smoking	++	↑↑(early)/↑(late)
Decreases:		
Physical activity	++	↓↓↓
Fiber	+	-/↓
Folate	++	↓↓↓
Calcium/Vitamin D	+++	↓↓
Hormones	+++	↓↓↓
Aspirin/NSAID	+++	↓(lo dose)/↓↓↓(hi dose)





Colon Cancer



CRC - Manifestations

Right sided tumor:
- Melenic stools
- Dull abdominal pain
  - Referred to upper abd and back
- Anorexia/wt loss
- Malaise, lethargy, weakness

Left sided tumor:
- Δ bowel habits
- Ribbon or pencil shaped stool
- Abdominal distention
- Constipation
- Cramping
- Rectal pressure
- Hematochezia

CRC – Complications

- Mets to liver ⇒ lungs, bones, brain
- Bowel obstruction
- Bleeding
- Perforation
- Peritonitis

CRC – Diagnostic/Screening Tests

- **Colonoscopy** or sigmoidoscopy
  - with biopsy, cytology, polypectomy
- Barium enema – double contrast
- Stool – FOB, FIT, sDNA
- Labs - Serum carcinoembryonic antigen test (CEA), CBC, LFT, Epi proColon (Epigenomics AG)
- MRI, CT scan

CRC – Collaborative Care

- Endoscopic/surgical polypectomy
- Curative or palliative surgery:
  - Hemicolectomy
  - Colectomy
  - Sigmoid Colectomy
- Chemotherapy (FOLFOX)
- Biologic agents
- Radiation therapy

CRC – Nursing Care

- Promote screening @ age 50
- Colonoscopy prep
- Pre-, post-op care
- Patient goals:
  - Normal bowel elimination patterns
  - Quality of life
  - Relief of pain
  - Feelings of comfort and well-being

Ostomy Care/ Pt Education

- Collaborate with ET nurse, dietitian, physician, financial/social worker, chaplain
- Skin/stoma care
- Irrigation
- Hydration
- Low-odor, gas, diarrhea causing diet

Hemorrhoids

- Dilated veins in the anal canal
  - Internal – above internal sphincter
  - External – below external sphincter
- Causes:
  - Straining
  - Pregnancy
  - Aging
  - Chronic constipation or diarrhea
  - Prolonged standing/sitting
  - Anal intercourse
  - Portal HTN

Hemorrhoids - Manifestations

- Hematochezia – most common
- Prolapsed hemorrhoids become irritated, causing pain
- Painful swelling
- Itching
- Burning
- Bleeding

Hemorrhoids – Nursing and Collaborative Care

- Diet: high-fiber, fluids
- OTC drugs, analgesic ointments, sitz bath, ice packs
- Pre-, post- procedure care (internal)
  - "Banding"/ligation, infrared photocoagulation
- Pre-, post -op care (external)
  - Hemorrhoidectomy, hemorrhoid stapling