Care of the Patient with a Gastrointestinal Disorder

Quick overview of A&P

- Digestive tract
  - a muscular tube: mouth – anus
- Accessory organs assist in digestion
Location of digestive organs.


- Which is the largest and heaviest GI organ?
  - Liver – weighs 3 - 4 lbs.
  - Small intestine – 20 feet long
  - Stomach - @ size of a football
  - Pancreas – 6-9 inches long

Overview of the Digestive System aka Alimentary canal

- Digestive system
  - Tongue & teeth break down food
  - Salivary glands –amylase –enzyme / starch
  - Mouth: digestion starts here
  - Stomach: churn and mix contents with gastric juices producing CHYME
  - Digestion of PROTEIN begins here
  - Small intestine: (@20’ long) most digestion occurs here
  - Up to 90% of digestion occurs here
  - villi
villi

A&P overview

• Large intestine:
  • 5-6' long
  • 80% of water absorbed, forms and expels feces
  • Main function is reabsorption of water
  • Rectum: @ 8” - stores and expels feces
  • Anus is a sphincter

Accessory Organs and their functions

Liver

• Produces bile; necessary to digest fat
  • Stores it in the gallbladder
• Manages blood coagulation
• Metabolizes PRO, fats, CHO
• Manufactures cholesterol & albumin
• Detoxifies poisons (alcohol, nicotine, drugs)
• Converts ammonia to ure
**Gall bladder & Pancreas**
- GB: connected to underside of liver
- Stores bile – ejects bile into duodenum
- Emulsification
- Pancreas: produces pancreatic enzymes to aid digestion of CHO, PRO & fats
- Secretes sodium bicarbonate to neutralize stomach acid
  - Exocrine function
  - Endocrine function – blood glucose regulation

**A&P review**
- Regulation of food intake
  - Hypothalamus
    - One center stimulates eating and another signals to stop eating

**The Pituitary & Hypothalamus**
Disorders of the GI system

- There are some visually disturbing photos.
- Please remember your professionalism while viewing.

Disorders of the Mouth

- Candidiasis
  - Infection caused by *Candida albicans*
  - *Fungus* normally present in the mouth, intestine, vagina, and on the skin
  - Also referred to as *thrush*
  - Clinical manifestations/assessment
    - Small *(painful)* white patches on the mucous membrane of the mouth
  - Nursing Dx: Impaired Oral Mucus Membrane
  - TX: antifungal meds

![Image of mouth with candidiasis](image-url)
Carcinoma of oral cavity

HX: ETOH, tobacco, HPV
s/s: difficulty chewing, swallowing, speaking, earache, facial pain, toothache

Disorders of the Esophagus

• Gastroesophageal reflux disease: GERD
  • Backward flow of stomach acid into the esophagus
  • Clinical manifestations/assessment
    • Heartburn 20 min – 2 hrs after eating
    • Regurgitation
    • Dysphagia
    • Eructation

Disorders of the Esophagus

• GERD disease: Gastroesophageal reflux
• Medical management/nursing interventions
• Histamine H2 receptor blockers – acid blockers
  – ranitidine - Zantac
  – famotidine - Pepcid
• Proton Pump Inhibitor
  – omeprazole – Prilosec
  – lansoprazole – Prevacid
  – Decrease Ca++ absorption, ↑ risk of C.diff,
  – ↑ risk of pneumonia in elders/immune compromised
• metoclopramide – Reglan ↑ motility stomach, duodenum, jejunum (↑ risk Tardive dyskinesia)
GERD

- Diet: 4-6 small meals/day, low fat, adequate protein, remain upright for 1-2 hours after eating
- Lifestyle: eliminate smoking, avoid constrictive clothing, HOB up at least 6-8 inches for sleep
- Risk factor for Barrett’s Esophagus - CA

Esophageal varices

- Secondary to liver failure
- Alcoholics
- Bulems
Disorders of the Stomach

- Gastric ulcers and duodenal ulcers
  - Most commonly occur in the stomach and duodenum
  - Result of acid and pepsin imbalances
  - *H. pylori*
    - Bacterium found in 70% of patients with gastric ulcers and 95% of patients with duodenal ulcers

- Clinical manifestations/assessment
  - Pain: Dull, burning, boring, or gnawing, epigastric
  - Dyspepsia
  - Hematemesis

- Diagnostic tests
  - Esophagastroduodenoscopy (EGD)
  - Breath test for *H. pylori*
Disorders of the Stomach

- Gastric and duodenal ulcers
- Medical management/nursing interventions
  - Antibiotics
  - Diet: high in fat and carbohydrates; low in protein and milk products; small frequent meals; limit coffee, tobacco, alcohol, and aspirin use
  - Gastrectomy? At risk for what dietary deficiencies?
Disorders of the Intestines

• Infection
  — Etiology/pathophysiology
  • Invasion of the alimentary canal by pathogenic microorganisms
  • Most commonly enters through the mouth in food or water
  • Person-to-person contact
  • Fecal-oral transmission
  • Long-term antibiotic therapy can cause an overgrowth of the normal intestinal flora (C. difficile)

Disorders of the Intestines

• Infections
  • Clinical manifestations/assessment
  • Diarrhea
  • Nausea and vomiting
  • Abdominal cramping
  • Fever

Disorders of the Intestines

• Diagnostic tests
  • Stool culture: deliver specimen to lab within 30 minutes
  — Medical management/nursing interventions
  • Antibiotics
  • Fluid and electrolyte replacement
    — Coca-Cola - sodium, Pepsi - potassium
  • Kaopectate - loperimide
  • Pepto-Bismol – bismuth subsalicylate
    — black tongue, stool
Ulcerative Colitis

- **Etiology/pathophysiology**
  - Ulceration of the mucosa and submucosa of the colon
  - Tiny abscesses form which produce purulent drainage, slough the mucosa, and ulcerations occur

  - Clinical manifestations/assessment
    - Diarrhea—pus and blood; 15-20 stools per day
    - Abdominal cramping
    - Involuntary leakage of stool

ULCERATIVE COLITIS

- **Diagnostic tests**
  - Barium studies, **colonoscopy**, stool for occult blood

- **Medical management/nursing interventions**
  - Medications
    - Azulfidine, Dipentum, Rowasa, corticosteroids, Imodium
  - Diet: No milk products or spicy foods; high-protein, high-calorie; total parenteral nutrition
Disorders of the Intestines

- Ulcerative colitis
- Medical management/nursing interventions
  - Surgical interventions
    - Colon resection
    - Ileostomy
- Increased risk for Colon CA

Disorders of the Intestines

- **Crohn’s disease**
  - Etiology/pathophysiology
    - Inflammation, fibrosis, scarring, and thickening of the bowel wall
    - Segments – cobblestone appearance
    - Malabsorption is a major issue
  - Clinical manifestations/assessment
    - Weakness; loss of appetite
    - Diarrhea: 3-4 daily; contain mucus and pus
    - Right lower abdominal pain
    - **Steatorrhea**

Crohn’s disease

Medical management/nursing interventions

- Diet
  - Avoid lactose-containing foods, brassica vegetables, caffeine, beer, monosodium glutamate, highly seasoned foods, carbonated beverages, fatty foods
  - High-protein
  - Hyperalimentation:
    » artificial supply of nutrients
Crohn’s disease

- Medical management/nursing interventions
  - Medications
    - Corticosteroids
    - Antibiotics
    - Anti-diarrheal; antispasmodics
    - Enteric-coated fish oil capsules
    - B₉ replacement
  - Surgery
    - Segmental resection of diseased bowel

Surgical resection

Disorders of the Intestines

- Appendicitis
  - Etiology/pathophysiology
    - Inflammation of the vermiform appendix
    - Lumen of the appendix becomes obstructed
     *E. coli* multiplies, and an infection develops
  - Clinical manifestations/assessment
    - Rebound tenderness over the right lower quadrant of the abdomen (McBurney’s point)
    - Vomiting
    - Low-grade fever
    - Elevated WBC
Right lower Quadrant Pain – McBurney’s point

Disorders of the Intestines
- Appendicitis
  - Diagnostic tests
    - WBC
    - x-ray
    - Ultrasound
    - Laparoscopy
  - Medical management/nursing interventions
    - Appendectomy
Disorders of the Intestines

• **Diverticular disease**
  – Etiology/pathophysiology

• **Diverticulosis**
  – Pouch-like herniations through the muscular layer of the colon

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**Diverticular disease**

• **Clinical manifestations/assessment**

  • **Diverticulosis**
    – May have few, if any, symptoms
    – Constipation, diarrhea, and/or flatulence
    – Pain in the left lower quadrant

  • **Diverticulitis**
    – Mild to severe pain in the left lower quadrant
    – Elevated WBC, low-grade fever
    – Abdominal distention
    – Vomiting
    – Blood in stool
Diverticular disease

• Medical management/nursing interventions
  • Diverticulosis with muscular atrophy, narrowing or sclerosing of the colon wall
    – Low-residue diet;
      » designed to reduce the frequency and volume of stools while prolonging intestinal transit time
    – stool softeners
    – Bedrest

Low residue * High fiber

• Residue refers to undigested food including fiber that make up stool
• Crackers vs. whole grain bread
• No seeds or nuts
• Cooked vegetables vs raw
• Avoid some vegetables broccoli, cabbage, corn, onions, cauliflower and baked beans
• Avoid or limit caffeine
• Avoid dried fruits, popcorn, tough meats

Surgical interventions

• Diverticular disease
• Medical management/nursing interventions
  Surgery
    – Hartmann’s pouch
    – Double-barrel transverse colostomy
    – Transverse loop colostomy
Stoma care

- Pink/red
- Slightly edematous
- Skin barrier / pouch

- Documentation “Stoma pink and viable”
- Promote independence and self care
Psych Nursing Interventions

• The patient complains that he will never adjust to his colostomy. What should the PT do?

Peritonitis

– Etiology/pathophysiology
  • Inflammation of the abdominal peritoneum
  • Perforation, abscess, hemorrhage
  • Bacterial contamination of the peritoneal cavity from fecal matter or chemical irritation

– Clinical manifestations/assessment
  • Severe abdominal pain; nausea and vomiting
  • Abdomen is tympanic; absence of bowel sounds
  • Chills; weakness
  • Weak rapid pulse; fever; hypotension

Peritonitis

• Diagnostic tests
  • Flat plate Xray of the abdomen
  • CBC with differential

– Medical management/nursing interventions
  • Position patient in semi-Fowler’s position
  • Surgery
    – Repair cause of fecal contamination
    – Removal of chemical irritant
  • Parenteral antibiotics
  • NG tube to prevent GI distention
  • IV fluids
Hernias

– Etiology/pathophysiology
  • Congenital or acquired weakness of the abdominal wall or postoperative defect
    – Abdominal
    – Femoral or inguinal
    – Umbilical

Hernias

• Clinical manifestations/assessment
  • Protruding **visc**us mass or bulge around the umbilicus, in the inguinal area, or near an incision
  • Reducible or irreducible
  • Incarceration: trapped - obstruct intestinal flow
  • Strangulation: occludes blood supply & intestinal flow

  – Diagnostic tests
  • Radiographs
  • Palpation
Hernias

• Medical management/nursing interventions
  • If no discomfort, hernia is left unrepaired, unless it becomes strangulated or obstruction occurs

Hiatal hernia

– Etiology/pathophysiology
  • Protrusion of the stomach and other abdominal viscera through an opening in the membrane or tissue of the diaphragm
  • Contributing factors: obesity, trauma, aging
– Clinical manifestations/assessment
  • Most people display few, if any, symptoms
  • Gastroesophageal reflux
Figure 5-12


What is a transthoracic fundoplication?

fundoplication

Hiatal hernia

• Medical management/nursing interventions
  • Head of bed should be slightly elevated when lying down

Intestinal obstruction

– Etiology/pathophysiology
  • Intestinal contents cannot pass through the GI tract
  • Partial or complete
– Clinical manifestations/assessment
  • Vomiting feces - dehydration
  • Abdominal tenderness and distention
  • Constipation and diarrhea – oozing diarrhea
  • Potential death

General GI nursing interventions

– Assess / auscultate for return of bowel sounds
– Ambulation to enhance peristalsis

• This is what students look like when they see this on the test!!!
Nursing interventions

• GoLYTELY bowel prep
• Physician order prior to surgery
• Time frame
• Bedside commode?

Nursing interventions

• If a patient had a Barium enema study, what teaching should the nurse/PT provide?
  • Laxatives?
  • Fluids?
  • Monitor BMs?

Hemorrhoids
  – Etiology/pathophysiology
    • Varicosities (dilated veins)
      – External or internal
    • Contributing factors
      – Straining with defecation, diarrhea, pregnancy, CHF, portal hypertension, prolonged sitting and standing
  – Clinical manifestations/assessment
    • Varicosities in rectal area
    • Bright red bleeding with defecation
    • Pruritus
    • Severe pain when thrombosed
**Hemorrhoids**

Medical management/nursing interventions

- Bulk stool softeners; hydrocortisone cream
- Analgesic ointment
- Sitz baths
- Ligation
- Sclerotherapy; cryotherapy
- Infrared photocoagulation
- Laser excision
- Hemorrhoidectomy

**Vocabulary**

- Achalasia
- Perforation
- Gastric gavage
- Gastric lavage
- Anastomosis
- Evisceration
- Dehiscence
- Celiac Sprue
- Stoma
- Dumping Syndrome
- Guiac test
- Bolus
- Cachexia
- Hematemeses
- Melena
- leukoplakia
The End