



Chapter 34

Lower GI Disorders

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Lower Gastrointestinal Disorders

- Lower GI includes
 - Small intestine
 - Large intestine
 - Rectum
 - Anus

Constipation

- Fecal mass remains in rectum longer than *usual for patient*
- Repeatedly ignoring the urge, become insensitive to fecal mass presence
 - Increased absorption of water
 - Dry, hard feces
 - Difficult to pass
- Many causes
 - Pain associated with hemorrhoids/fissures
 - Metabolic/neurological conditions
 - Interfere with normal bowel innervation/function
 - Meds

Signs & Symptoms

- Abdominal pain
- Distention
- Indigestion
- Rectal pressure
- Intestinal rumbling
- Sensation of incomplete emptying

Complications

- Fecal impaction
- Megacolon
 - Grossly dilated loops of colon
 - Occurs proximal to fecal mass
 - Obstructs colon
 - Abdominal distention



Treatment

- Depends on cause
 - Fiber
 - Exercises to strengthen abdomen
 - Do not ignore urge to defecate, behavior changes. (set daily defecation time)
 - Increase fluids
 - Avoid laxative abuse
 - Bulk-forming agents & stool softeners
 - Metamucil, docusate sodium (Colace)

Diarrhea

- Rapid passage of fecal material
 - ↓ absorption of water, lytes and nutrients
 - Frequent watery stools
- Classification
 - Based on # of unformed stools/24hrs
- Large volume diarrhea
 - ↑ volume of feces
- Small-volume diarrhea
 - ↑ peristalsis without ↑ in fecal volume

Etiology/Pathophysiology

- Bacterial or viral infection (most common)
 - Overgrowth of normal flora (bacteria) *or*
 - Ingestion in contaminated food or water
 - Release toxins causing mucosa irritation
 - Increase mucous production
 - Hyperperistalsis until toxins excreted
 - Food allergies or intolerances
 - Additives – nutmeg or sorbital
 - Caffeine, milk products, meats, wheat, potatoes

Signs & Symptoms

- Foul smelling stools
- Blood, mucous or pus in stools
- Explosive diarrhea if food poisoning
- Abdominal cramping
- Distention
- Anorexia
- Thirst

Treatment

- Prevention is key
- Fluid and lyte replacement
 - po or IV
- Elimination diet
 - To identify food insensitivities
- Increase fiber and bulk
- Meds
 - Diphenoxylate (Lomotil)
 - Loperamide (Imodium)
 - Bismuth subsalicylate (Pepto-Bismol)
 - Lactinex
 - Antimicrobials

Inflammatory/Infectious Disorders

- **Appendicitis**
 - Inflammation of the appendix
 - Fingerlike projection attached to the cecum
 - Obstruction occurs easily
 - Due to size and location
 - Susceptible to infection

Signs & Symptoms

- Fever
- ↑ WBC
- Generalized ↑ abdominal pain
 - Localizing to RLQ
 - McBurney's point
- Nausea, vomiting
- anorexia

Physical Exam

- Slight abdominal muscular rigidity (guarding)
- Normal bowel sounds
- Local rebound tenderness
- Rovsing's sign
- Flexion of RLL
 - ↑ pain with extension

Treatment

- NPO
- Immediate surgery
 - Unless perforation or peritonitis
 - Surgery delayed for ~ 8hrs
 - IV fluid and antibiotic therapy
- Tylenol for fever
- Discharge the same day
 - If ruptured – admitted 5-7 days
 - Monitor for s/s of peritonitis or ileus

Complications

- Perforation
 - Severe pain
 - Temp ↑ 37.7 C (100 F)
- Abscess formation
- Peritonitis

Peritonitis

- Leakage of organ contents into the peritoneal cavity
 - Trauma, ischemia, tumor perforation
 - Ruptured appendix – most common cause
 - Rupture of peptic ulcer, gangrenous gallbladder or small intestine, diverticula, incarcerated hernia
 - Complication of peritoneal dialysis

Signs & Symptoms

- Generalized abdominal pain
 - Localized to area or perforation
- Exquisite tenderness
 - Aggravated by movement
- Rebound tenderness
- Rigidity
- Nausea and vomiting
 - Due to ↓ peristalsis
- Fever, ↑ WBC
- Tachycardia

Treatment

- NPO
- Fluid and lyte replacement
- NG tube with suction
- Large doses of antibiotics
- Surgical repair by excision and drainage
 - Ostomy may be done to rest bowel
- Pain control
- Total parenteral nutrition (TPN)

Complications

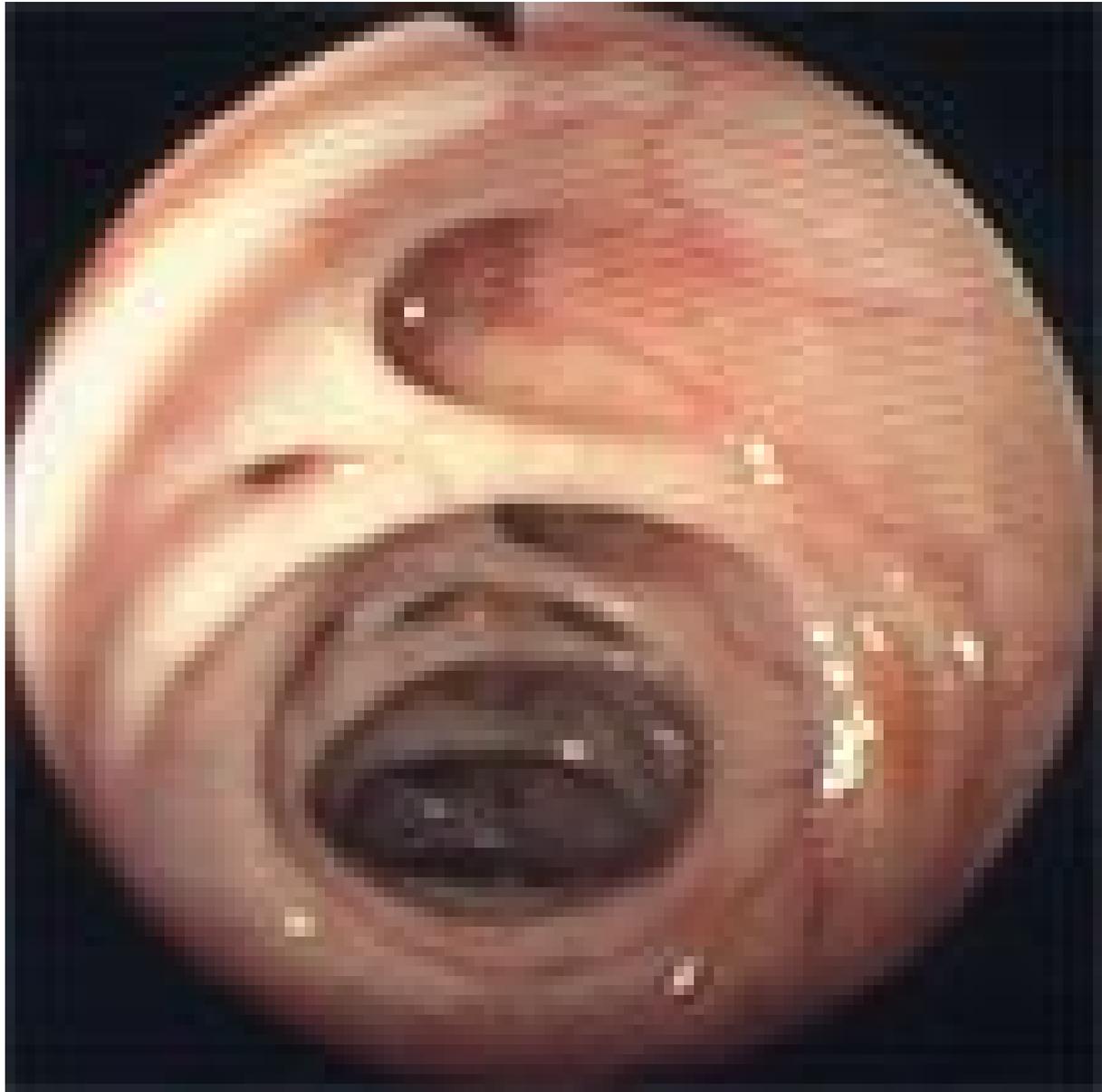
- Intestinal obstruction
- Hypovolemia
 - Due to fluid shift from vascular space to abdomen
- Septicemia
 - Bacteria entering blood
- Shock
- Death

Diverticulosis/Diverticulitis

- Herniation or outpouching
 - Mucous membrane of bowel
 - Defect in muscle layer
- Diverticulosis
 - No inflammation
- Diverticulitis
 - Inflammation and infection

Etiology

- Chronic constipation
- Decreased dietary fiber
- Most common in the sigmoid colon
- ~ 20% of all pts with diverticulosis will develop diverticulitis at any one time
- Most common > 60 yrs of age



Signs & Symptoms

- Asymptomatic with diverticulosis
- Diverticulitis
 - Bowel changes
 - Alternating constipation and diarrhea
 - Crampy LLQ pain
 - Most common symptom

Treatment

- **Diverticulosis**
 - Prevention of constipation
 - ↑ fluid and fiber
- **Diverticulitis**
 - Oral antibiotics
 - Mild tranquilizers
 - Antispasmodics
 - **If severe pain**
 - IV antibiotics and pain control
 - NPO, NG tube

Inflammatory Bowel Disease

- CROHN'S DISEASE
 - Aka regional enteritis
 - Can involve *any* part of the bowel (terminal ileum)
 - Intestinal mucosa inflammation
 - Formation of abscesses, fistulas, and fissures
 - Disease progression
 - Obstruction
 - Narrowed lumen – chronic inflammation & scarring

Etiology

- Exact cause unknown
- Most common dx' ed between 15 -30 yrs
- More common in women
- Heredity? Infection? Immune disease?
- Environmental agents may precipitate onset
 - Pesticides, tobacco, radiation, food additives
- Periods of exacerbations & remissions

Signs & Symptoms

- Crampy abdominal pain
 - Not relieved by defecation
- Weight loss/malnutrition
- Diarrhea
 - Fluid and lyte imbalance
- Non GI symptoms
 - Arthritis
 - Skin lesions
 - Inflammatory disorders of the eyes
 - Liver function abnormalities

Complications

- Malnutrition
- Perforation of inflamed intestine
 - Intra-abdominal or anal fissures
 - Abscess
 - Fistulas
 - Enterovaginal (small bowel to vagina)
 - Enterovesicle (small bowel to bladder)
 - Enterocutaneous (small bowel to skin)
 - Enteroentero (small bowel to small bowel)
 - Enterocolonic (small bowel to colon)

Diagnosis

- Endoscopy (colonoscopy or sigmoidoscopy w/ biopsies) - Most conclusive test
- Barium study
 - Classic “**cobblestoning**” effect
 - “string sign” as disease progresses
- Sed rate
 - elevated

Treatment

- Aimed at achieving remission and maintaining (No Cure)
- Relief of symptoms & their effects
 - Inflammation and diarrhea
 - Dehydration and malnutrition
- Medications used:
 - Aminosalicylates
 - Corticosteroids
 - Nonsystemic steroids
 - Immunomodulators/Immunosuppressants
 - Biologics
 - Antidiarrheals
 - Antibiotics
 - Bulk forming laxatives

Treatment Continued

- **Surgery**

- Surgery is indicated if obstruction, stricture, fistula or abscess formation is present
- Does not cure, recurs anywhere in intestines

- **Healthy Diet**

- Increase vitamins/minerals
- Avoid irritating foods
- May need G-tube or TPN

Ulcerative Colitis

- Similar to Crohn's disease
- Occurs only in the large colon or rectum
- Pathophysiology
 - Epithelial lining of colon is lost
 - Results in multiple ulcers/inflammation
 - Superficial mucosa of colon
- ***Increased risk of colorectal cancer!***

Etiology

- Again similar to Crohn's dx
 - Inherited? Allergy? Infection? Autoimmune?
- Begins between ages of 15 and 40
- Psychological stress may trigger an attack – but not the cause!
- Environmental Factors

Signs & Symptoms

- Abdominal pain
- Diarrhea (~5-20 X's/day)
- Straining, rectal bleeding/pain
- Fecal urgency
- Anorexia, weight loss
- Cramping, vomiting
- Fever, dehydration

Complications

- Malnutrition
- Hemorrhage
- Bowel obstruction
- Perforation & peritonitis
- Colon cancer

Diagnosis

- Examination of stool
- CBC, Sed rate
- Complete metabolic panel (CMP)
- Sigmoidoscopy
- Barium enema
- Biopsies

Treatment

- Meds used first
- Avoidance of aggravating foods
 - High-fiber foods, caffeine, spicy foods, milk products
- Surgery(cures ulcerative colitis)
 - Proctocolectomy
 - Ileostomy
 - Restorative proctocolectomy

Irritable Bowel Syndrome

- Colon does not contract normally
- Leads to diarrhea alternating with constipation
- Intestinal mucosa normal
- Not disease but a functional problem
- Symptoms exacerbated by psychological stress or food intolerance (nerves in bowel overly sensitive)
- More common in women(young to mid-age)
- Flareups caused by other illnesses, infections, or menses

Signs & Symptoms

- Subjective complaints
 - Gas
 - Bloating, abdominal pain
 - c/o feeling of incomplete evacuation
- Weakness, faintness or palpitations
- Depression/Anxiety
- Constipation/Diarrhea
 - May alternate

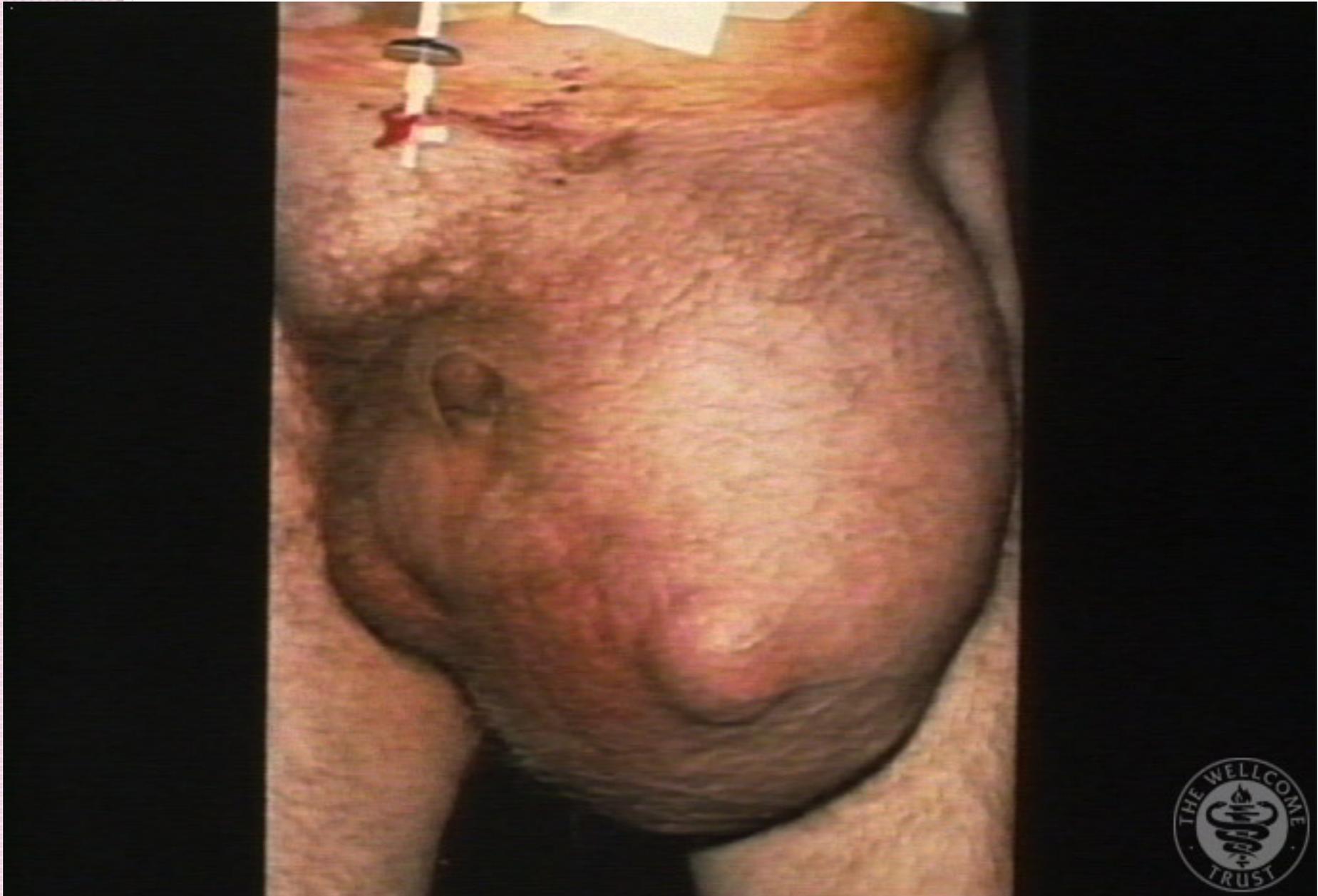
Treatment

- Symptom control
 - High fiber-high bran foods
 - bulk forming preparations
 - i.e., psyllium *Metamucil)
 - Avoid gas forming foods
 - Small frequent meals
 - Stress management/exercise
 - Antidepressants
 - Antispasmodics

Abdominal Hernias

- Abnormal protrusion of an organ, stricture through the wall of the cavity that normally contains it (abd wall)
- Cause is combined:
 - Weakness of abdominal musculature
 - Sustained ↑ intra-abdominal pressure
 - Coughing, straining, heavy lifting
 - Obesity, pregnancy, poor wound healing

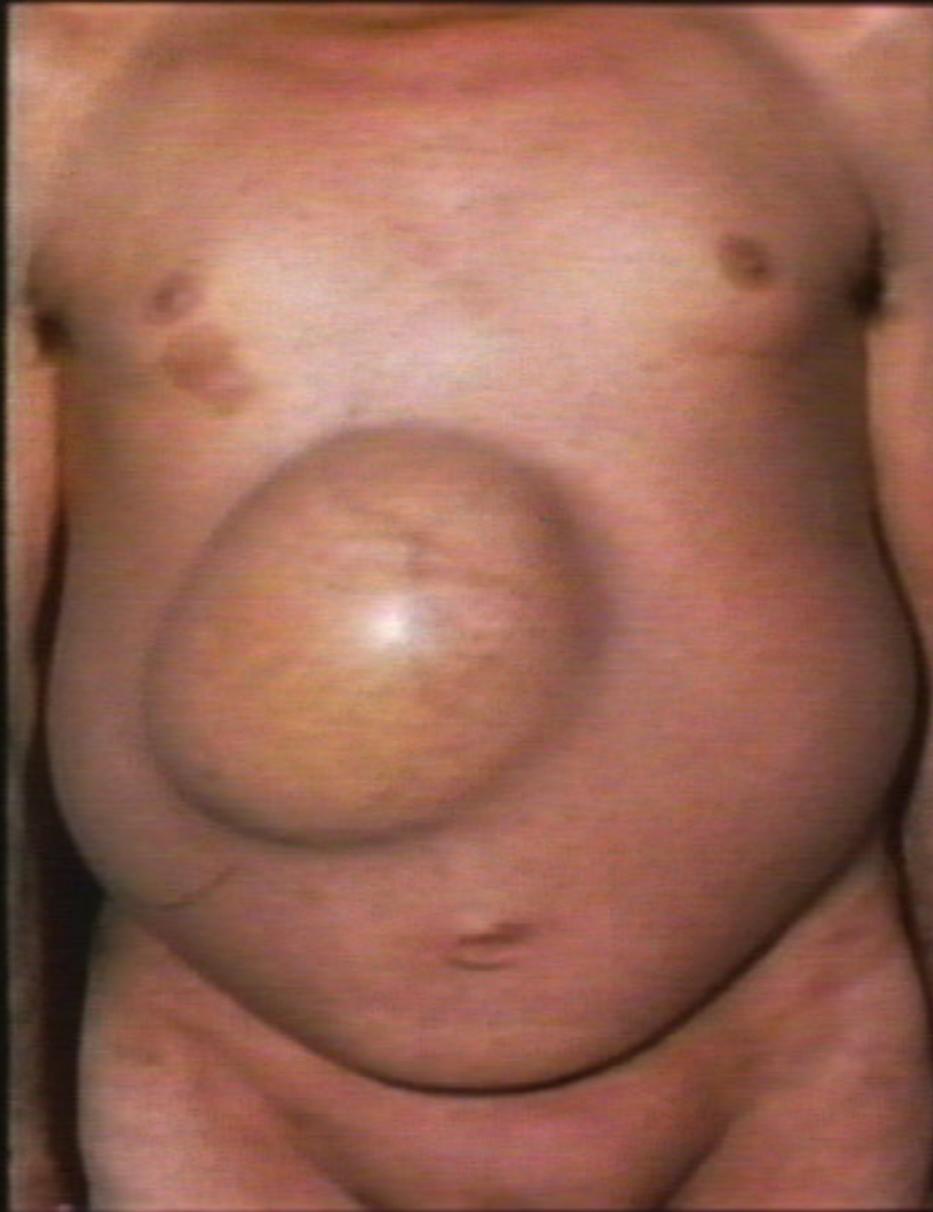












Signs & Symptoms

- **Abnormal bulging**
 - Esp. w/straining or coughing
- **Reducible**
 - Can be manually placed back into abdominal cavity
- **Irreducible or incarcerated**
 - Adhesions or edema occur between sac & contents
 - Herniated bowel trapped
 - Cannot return to cavity

Complications

- Incarcerated hernia
 - Can become strangulated
 - Blood and intestinal flow stop
 - Intestinal obstruction
 - Possible gangrene and perforation
 - Pain at site, n/v, colicky abdominal pain
 - Emergency surgery

Treatment

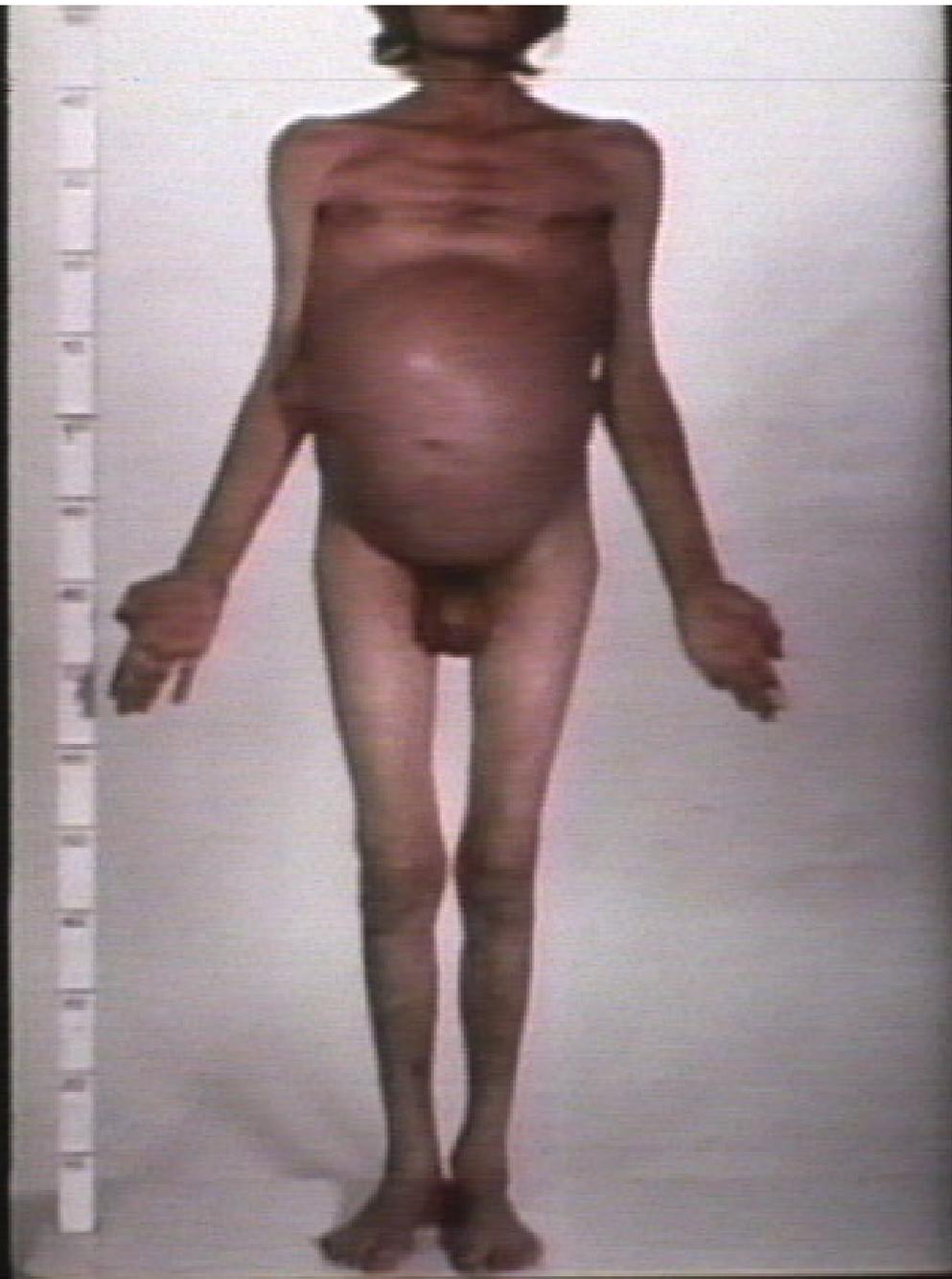
- Diagnosed with physical exam
 - Can have no tx, observe hernia, support, surgery
- Truss or binder if reducible
- Surgery
 - Replaces hernia in abdomen
 - Reinforcement w/wire, fascia or mesh
 - Strangulated hernia
 - May require bowel resection w/temporary colostomy

Absorption disorders

- GI system not able to absorb one or more major nutrients
 - Carbohydrates
 - Fats
 - Proteins
- Primary malabsorption disorders
 - Tropical sprue
 - Adult celiac disease
 - Lactose intolerance

Signs & Symptoms

- Malabsorption
 - Weight loss, malnutrition
 - Weakness, general malaise
- Sprue
 - Frequent loose, bulky, foul stools
 - Gray w/increased fat content – **steatorrhea**
- Lactose intolerance
 - Abdominal cramping
 - Excessive gas
 - Loose stools after ingesting milk products



Treatment

- Tropical sprue
 - Folic acid
 - Broad spectrum antibiotics
- Celiac disease
 - Eliminating gluten from diet(avoid wheat, rye, barley, oats)
- Lactose intolerance
 - Avoid milk products
 - Lactaid – OTC lactase substitute to help digest milk products

Intestinal obstructions

- Two types
 - Mechanical
 - Paralytic
- Partial
- Complete

Small Bowel Obstruction

- Proximal to obstruction
 - Collection of intestinal contents, gas, fluid
 - Distention
 - Stimulates gastric secretion
 - Decreased fluid absorption
 - Decreased venous & arterial capillary pressure
 - Edema, necrosis
 - Perforation of intestine

Etiology

- Adhesions
- Hernias
- Neoplasm
- Inflammatory bowel disease
- Foreign bodies
- Strictures
- ***Volvulus***
- ***Intussusception***

Signs & Symptoms

- Wavelike pain, vomiting
- BM of blood and mucous
 - No feces or flatulence
- Fecal vomiting
- Sharp, sustained pain
 - Indicate perforation
- Change of bowel sounds

Diagnosis

- X-ray
 - Dilated loops of bowel
- Leukocytosis
 - Evident with strangulation or perforation
- Elevated Hct
 - Dehydration
- Decreased lytes

Treatment

- NPO
- NG tube
 - Bowel decompression
- IV therapy
 - Correct electrolyte imbalance
- IV antibiotics if needed
- Surgery
 - Complete obstruction

Large Bowel Obstruction

- Not as severe as a small bowel obstruction because:
 - Colon absorbs its fluid content
 - Can distend beyond its normal capacity
 - Dehydration occurs more slowly
- If obstruction cuts off blood supply
 - Strangulation and necrosis of colon
 - w/o tx pt can die

Etiology

- Usually affect the sigmoid colon

Causes:

- Carcinoma
- Inflammatory bowel disease
- Diverticulitis
- Benign tumors
- Stool impaction

Signs & Symptoms

- Develop and progress slowly
- Depend on location
 - Rectum or sigmoid
 - Constipation
- Crampy lower abdominal pain
- Outline of bowel w/inspection of abd
- Fecal vomiting
- High pitched tinkling bowel sounds
- Perforation and peritonitis w/o tx

Treatment

- Removal of impaction
 - Enemas
 - Manually if necessary
- Surgical resection
 - Temporary colostomy – rest bowel
 - Ileoanal anastomosis may be done
 - Cecostomy
 - Poor risk pts

Anorectal Problems

- Hemorrhoids
 - Varicose veins in the anal canal
 - Caused by ↑ pressure in the veins
 - Usually ↑ abdominal pressure
 - Internal
 - Above internal sphincter
 - External
 - Below external sphincter

Treatment

- Prevent constipation, avoid straining
- Good personal hygiene
 - Astringents (i.e., witch hazel)
 - Sitz baths - ↑ circulation, offer comfort
- Stool softeners
- Anti-inflammatory drugs
 - Steroid creams/suppositories
- Alternating ice/heat
 - Relieve pain w/thrombosed hemorrhoids
- Surgery

Anal Fissures

- Cracks or ulcers
 - Lining of anal canal
- Associated w/constipation, often w/Crohn's dx
- S/S
 - Bright red bleeding
 - Severe pain – pt may try to avoid BM's
- Treatment
 - Measures to soften stool
 - Surgical excision if conservative measures fail

Typical fissure in ano located in posterior midline



Anorectal Abscess

- Collection of pus in perianal area
- Symptoms
 - Pain, redness
 - Swelling, drainage, fever
- Treatment
 - Antibiotics
 - I & D w/packing

Lower GI Bleeding

- Etiology
 - Diverticulitis
 - Polyps
 - Anal fissures
 - Hemorrhoids
 - Inflammatory bowel disease
 - cancer

Signs & Symptoms

- ***Melena***

- Black tarry stools
- In GI tract for > 8 hrs in contact w/HCL
- Usually indicated bleeding above or in small bowel

- ***Hematochezia***

- Bleeding from colon or rectum
- Bright red

Diagnosis

- CBC - ↓ Hct & Hgb
- ↑ BUN – due to protein breakdown in blood by GI tract
- + stool for occult blood if not visible
- Digital exam and Sigmoidoscopy/colonoscopy

Colorectal Cancer

- Originates in the epithelial lining
- Occurs anywhere in large intestine
- High risk patients
 - Family or personal hx of ulcerative colitis, colon cancer, polyps in rectum or lg. intestine
 - Hx of past gallbladder removal
 - Dietary carcinogens
 - Lack of fiber in diet
 - High dietary fat

Signs & Symptoms

- Change in bowel habits
 - **Most common symptom**
- Blood in stool
- Mucous in stool
- Abdominal or rectal pain
- Weight loss
- Anemia
- Obstruction / perforation

Diagnosis

- Home screening
 - Contact doctor if blood is found for follow up
- Most identified by biopsy during endoscopy
- CT Scan- virtual colonoscopy
- PE of rectum and abdomen
- Fecal occult blood testing
- Carcinoembryonic antigen (CEA) levels

Treatment

- **Surgery**
 - Resects large tumors
 - Anastomose bowel or fecal diversion with ostomy
 - See Table 34.9 (Intestinal surgeries)
 - Rectal CA- A&P resection done
 - Permanent end colostomy
 - **Combination Therapy**
 - Radiation, chemotherapy and surgery
 - Increased survival rates

Complications

- Bleeding
- Complete obstruction
- Perforation and/or peritonitis
- Metastasis
 - Lymphatic system
 - liver

Ostomy and Continent Ostomy Management

- **Ostomy-** surgically created opening
 - Diverts stool/urine to outside of body
- **Continent Ostomy**
 - An internal reservoir to collect stool
- **Types of abdominal ostomies**
 - Ileostomy
 - Colostomy
 - Urostomy
- **Stomas can be end, loop, double barrel**

Ileostomy

- Opening in ileum
 - Stoma of terminal ileum
 - After surgical removal of colon (colectomy)
 - 2 types
 - Conventional ileostomy
 - Continent ileostomy
 - Ileoanal anastomosis
 - Avoids need for a permanent stoma
 - J, S, W, H pouch formed

Colostomy

- Named based on where formed
 - ascending, transverse, descending, sigmoid
- Drainage(Effluent) Table 34.10
 - Depends on location
 - Liquid more proximal GI tract
 - Solid more distal GI tract
- End Stoma
- Loop Stoma
- Double Barrel Stoma- often temporary