



GHAPP

Gastroenterology & Hepatology
Advanced Practice Providers

2020 Third Annual National Conference

November 19-21, 2020

Red Rock Hotel – Las Vegas, NV



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Advanced Practice Providers

Chronic Constipation: Case Study

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Disclosures

All faculty and staff involved in the planning or presentation of continuing education activities provided by the Annenberg Center for Health Sciences at Eisenhower (ACHS) are required to disclose to the audience any real or apparent commercial financial affiliations related to the content of the presentation or enduring material. Full disclosure of all commercial relationships must be made in writing to the audience prior to the activity. Staff at the Annenberg Center for Health Sciences at Eisenhower and Gastroenterology and Hepatology Advanced Practice Providers have no relationships to disclose.

Disclosures

Rick Davis, PA-C

No financial relationships to disclose

Case Study:

- 78-year-old woman with 15+ year history of chronic constipation
- Complains of 3-4 hard stools/week w/o urge for bm, straining, and sense of incomplete evacuation. Weight stable. Takes docusate daily
- Last colonoscopy at age 75 without polyps but 2-day prep needed; no FH colon cancer/polyps
- G3P3, vaginal deliveries, s/p TAH + BSO
- Medications: atorvastatin, amlodipine, HCTZ, diphenhydramine at hs, vit D/calcium suppl, MVI

Case Study:

- PMH: Hypertension, hyperlipidemia, osteopenia
- PSH: TAH + BSO, appy
- FH: no known h/o colon cancer/polyps
- SH: widowed, lives alone, non-smoker, social glass of wine
- Previous evaluation:
 - Colonoscopy at age 75 w/o polyps
 - Labs: CMP and CBC normal

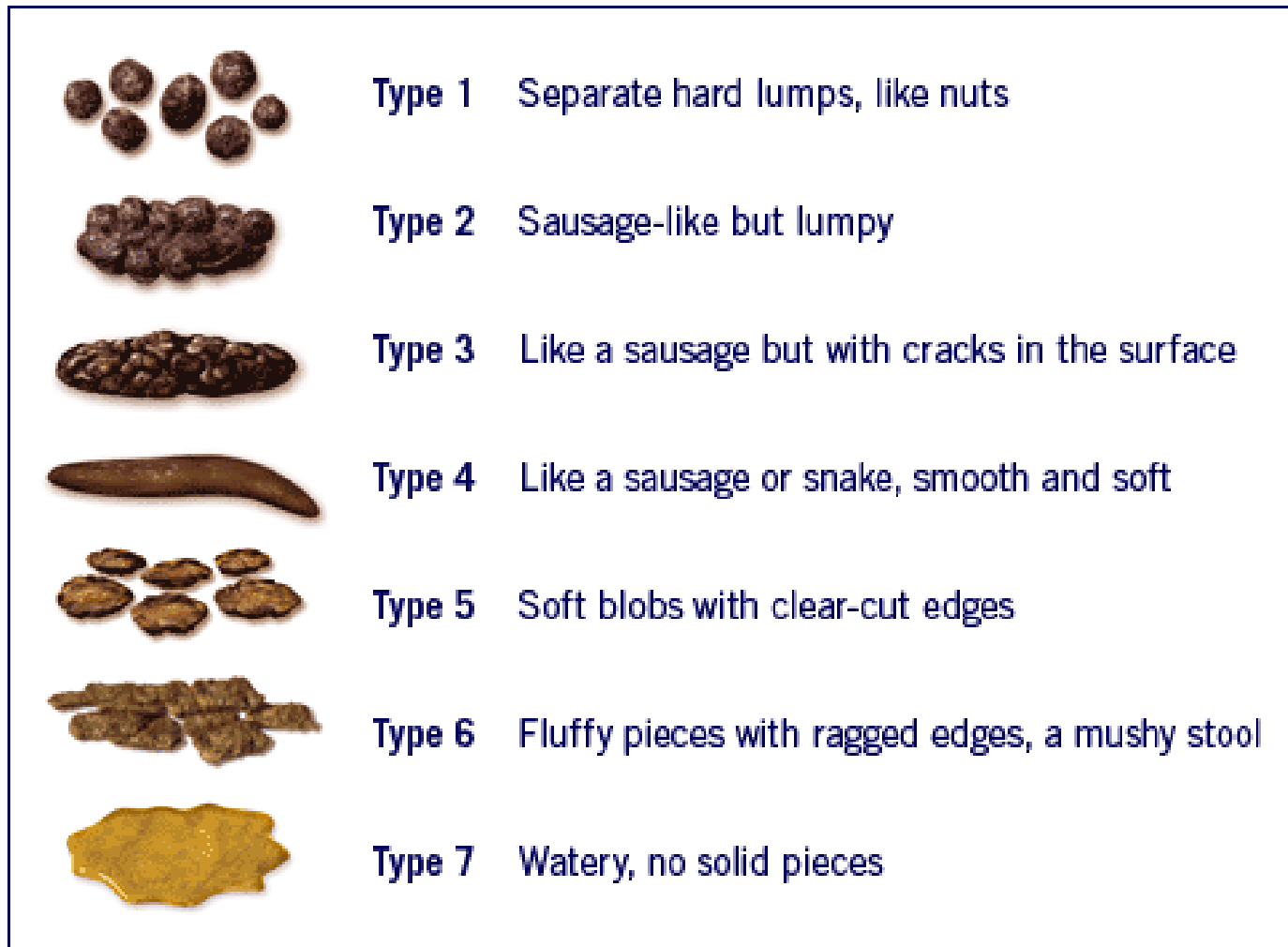
Case Study: Physical Exam

- HEENT: buccal mucosa moist; no thyromegaly/nodules
- Lungs: clear to A&P; C-V: RRR w/o m or gallop
- Abd: No distention; normal bs; no HSM to percussion; ? Fullness LLQ
- Perianal inspection: few ext tags, no fissure, tenderness
- DRE: normal sphincter tone; no palpable masses in rectal vault; heme neg stool; Bear down maneuver weak; Squeeze maneuver weak

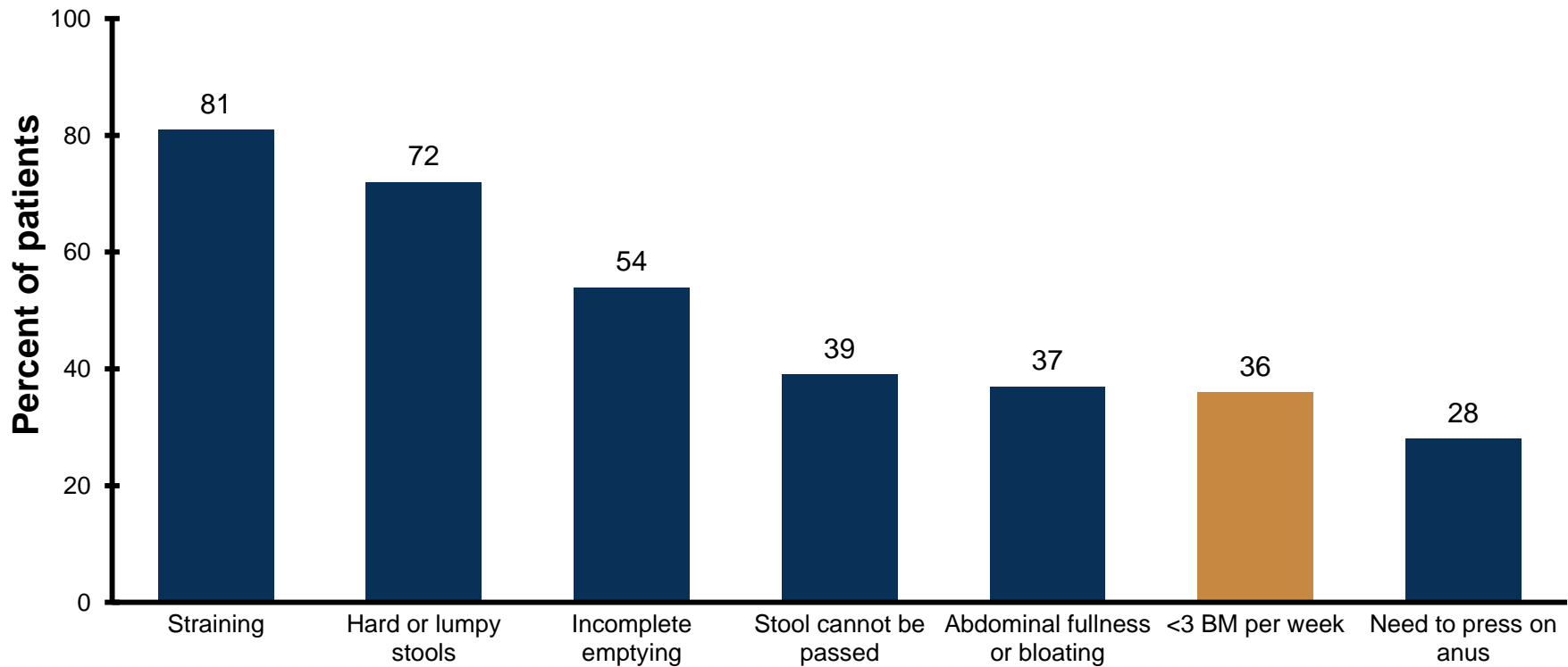
Chronic Constipation: History

- How often do you have BMs?
- What is the consistency of your stool?
- How often do you feel the urge to defecate?
 - Do you always attempt to have a BM after this feeling?
- What other symptoms do you experience?
 - Straining?
 - Feelings of incomplete evacuation?
 - Need for manual maneuvers?

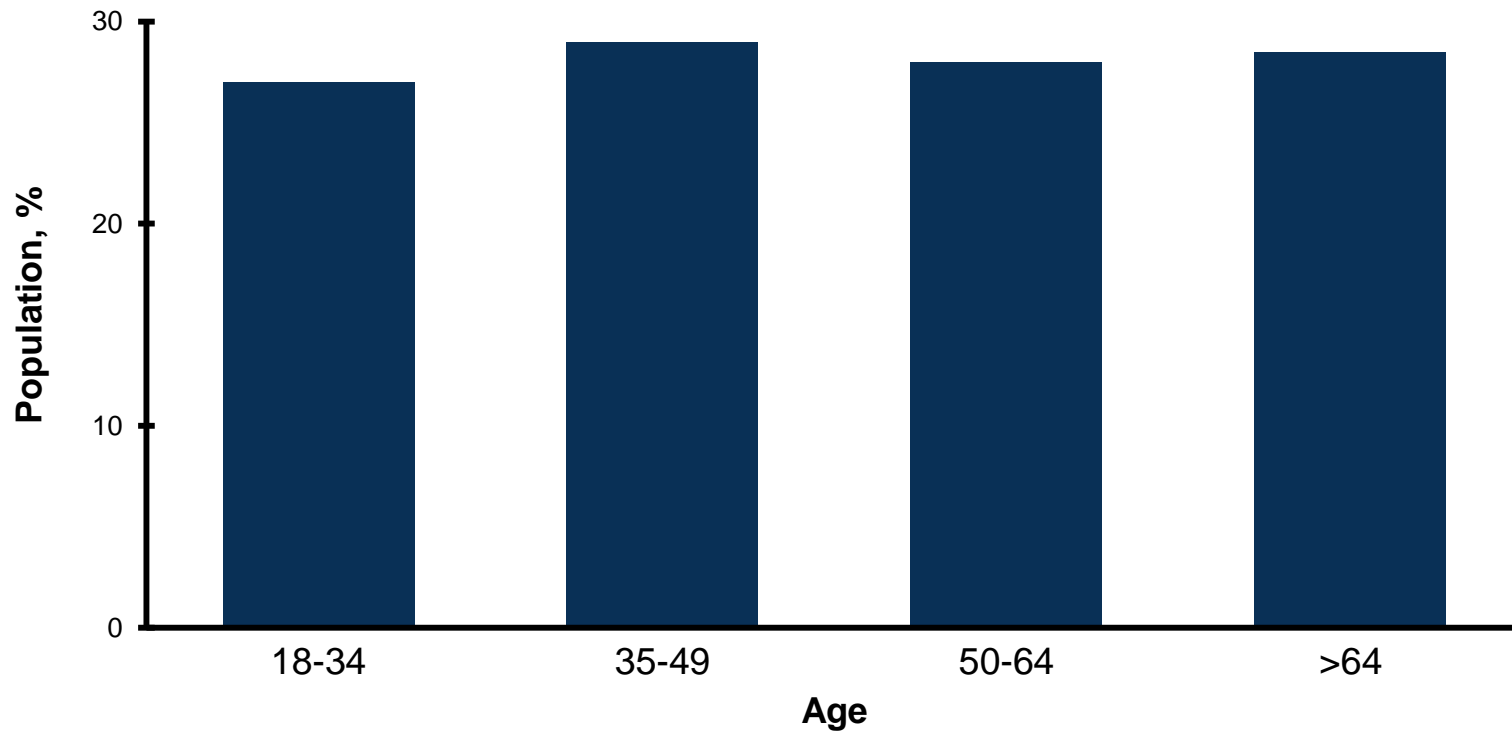
Stool Diary: Bristol Stool Scale



Infrequency NOT Most Frequent Symptom



Chronic Constipation Affects All Age Groups



Rome IV Criteria for Functional Constipation

- Must include 2 or more of the following for at least 6 months and not meet IBS criteria
 - Straining
 - Lumpy or hard stools
 - Sensation of incomplete evacuation
 - Sensation of anorectal obstruction/blockage
 - Manual maneuvers to facilitate defecation
 - <3 BMs/week, no loose stools; insufficient criteria for IBS

Chronic Constipation: Primary Constipation

Classify patients by assessments of anorectal testing and colonic transit into 3 groups:

1. Normal transit constipation
2. Pelvic floor defecation disorders
 - Dyssynergia
 - Rectocele
3. Slow transit constipation

Chronic Constipation: History

- Previous testing?
 - Colonoscopy?
 - Abdominal/pelvic imaging? e.g. CT, MR, U/S, defecography?
 - Transit studies? Smart pill, Sitz markers

Chronic Constipation: Secondary Disorders

- Medications:
 - Opiates
 - Ca⁺⁺ channel blockers
- Neuropathy:
 - Hirschsprung disease
 - Amyloidosis
- Metabolic disorders:
 - Diabetes
 - Hypothyroidism
- Myopathy:
 - Scleroderma (PSS)
- Idiopathic and other disorders:
 - Parkinson's disease
 - Paraneoplastic syndromes
 - Colonic obstruction/neoplasm
 - Pseudoobstruction

Medications Associated With Constipation

- **Prescription drugs**
 - Opiates
 - Anticholinergic agents
 - Tricyclic antidepressants
 - Calcium channel blockers
 - Anti-Parkinsonian drugs
 - Antipsychotics
 - Diuretics
- **Nonprescription drugs**
 - Antacids, especially calcium-containing
 - Calcium supplements
 - Iron supplements
 - Antidiarrheal agents
 - NSAIDs
 - Antihistamines

Rome IV Criteria for Functional Constipation

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Alarm Features That Suggest a Secondary Cause of Constipation

- Hematochezia
- Family history of colon cancer
- Family history of IBD
- Anemia
- Positive fecal occult blood test
- “Unexplained” weight loss ≥ 10 pounds
- Severe, persistent constipation that is unresponsive to treatment
- New-onset constipation in an elderly patient

Types of Advanced Diagnostic Tests

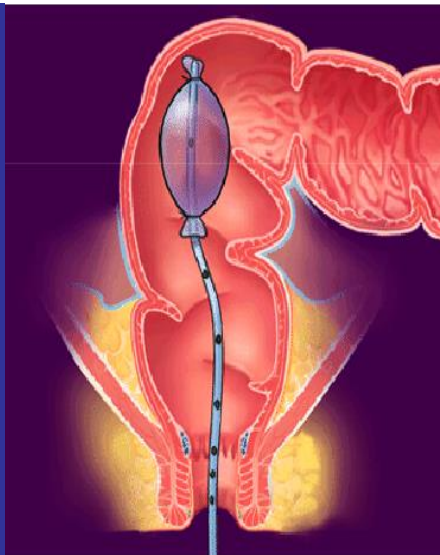
Test	Use
Anorectal manometry	<ul style="list-style-type: none">• Assesses the internal and external anal sphincters, pelvic floor, and associated nerves• Test of choice for outlet obstruction
Balloon expulsion	<ul style="list-style-type: none">• Detects defecatory disorders• Simple, office-based screening test
Defecography	<ul style="list-style-type: none">• Detects structural abnormalities of the rectum• Operator dependent, variable reliability, not widely available
Colonic transit study	<ul style="list-style-type: none">• Measures rate at which fecal mass moves through colon

Evaluation of Colonic and Anorectal Function

**Balloon
Expulsion Test**



**Anorectal
Manometry**



**Colonic Transit
Study with Sitzmarks**



Day 1

- 1 Capsule

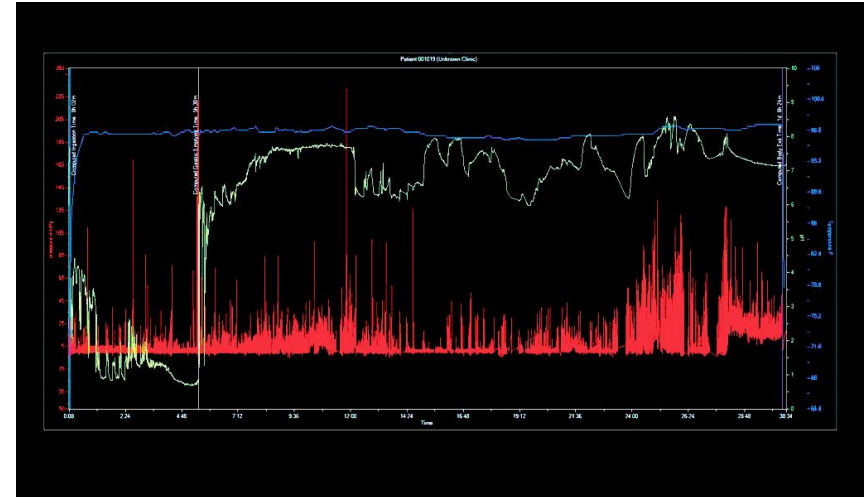
Day 6 (120 hrs)

- Plain Abdomen X-Ray

**Normal Transit=
< 5 markers**

The SmartPill

- Motility GI Software
- Automatically processes data and displays test results:
 - Gastric residence time
 - Whole gut transit
 - Combined small/large bowel transit time
 - FDA approved for evaluation of slow transit constipation



Normal Transit Constipation: Empiric Therapy

Lifestyle

- Increase hydration
- Increase physical activity
- Dietary modification-fiber, fruits/vegetables
- Routines

OTC

- Fiber supplements
- Stimulant laxatives
 - Bisacodyl
 - Senna, cascara
- Stool softeners
 - Docusate sodium
- Osmotic laxatives
 - PEG
 - Milk of Mg

Chronic Constipation: Rx Therapies

- Osmotic
 - PEG
 - Lactulose
 - Sorbitol
- Secretagogues
 - Lubiprostone
 - Linaclotide
 - Plecanatide
- Promotility
- (5-HT₄ agonists)
 - Prucalopride
 - Tegaserod

Case Study: Constipation Diagnosis

- Normal transit?
- Slow transit?
- Pelvic floor disorder?
- Medication induced?
- Diet?

Case Study: Constipation Treatment

- Further testing at this time or empiric therapy?
- What treatment options would you initially consider?
- What would be your next choice?

Patient Follow-Up

- Patient Care
 - Short-term plan
 - Timing including additional labs, procedures, clinic visits
 - Long-term plan
 - Does the patient stay with you? If so, for how long?
 - Do you release back to PCP? If so, at what point?

Chronic Constipation: References

1. European guidelines on functional constipation in adults
2. Chronic Constipation
3. Chronic constipation: review of current literature
4. Current developments in pharmacological therapeutics for chronic constipation
5. Treatment for constipation: new and old pharmacologic strategies



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Chronic Constipation

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Case Study:

- 37-year-old woman with a 3-year history of constipation
- Reports hard stools every 4 days; complains of abdominal bloating
- Describes straining, sense of incomplete evacuation, perineal splinting & occasional digit manipulation
- Has tried OTC laxatives with no relief of symptoms
- In 2018, had unremarkable colonoscopy with no colonic polyps
- No family history of colorectal cancer
- No alarm symptoms: hematochezia/FOBT, anemia, weight loss, FHx of CRC/IBD
- Medications: omeprazole, MVI

Case Study:








- PMH: mild GERD
- PSH: C-section
- OBH: G3P4, 2 SVD history of 3rd degree tear & episiotomy, C-section delivery of twins at 37 weeks
- FH: no known h/o colorectal cancer or colonic polyps
- SH: married with 4 children, non-smoker, social drinker
- Previous evaluation
 - Labs: Normal CBC, CMP, iron studies, CRP, TSH, celiac serologies
 - DRE: medium-sized external hemorrhoids, past history of anal fissure, no masses
 - Sigmoidoscopy 2017 with finding of bleeding internal/external hemorrhoids

Case Study: Physical Exam

- HEENT: AT/NC, PERRLA; no thyromegaly/nodules
- Respiratory: CTAB; no rales, rhonchi or wheezing
- Cardiovascular: RRR, no murmurs w/o m or gallop
- Abdomen: BS in all 4 quadrants, LL abdominal tenderness, no distention; no HSM
- DRE: external hemorrhoids, no anal fissure, high anal sphincter tone, BSFC Type I-hard pellet stool in rectal vault; no palpable masses

Bristol Stool Chart

Bristol Stool Chart

Type 1		Separate hard lumps, like nuts (hard to pass)
Type 2		Sausage-shaped but lumpy
Type 3		Like a sausage but with cracks on its surface
Type 4		Like a sausage or snake, smooth and soft
Type 5		Soft blobs with clear-cut edges (passed easily)
Type 6		Fluffy pieces with ragged edges, a mushy stool
Type 7		Watery, no solid pieces. Entirely Liquid

Testing

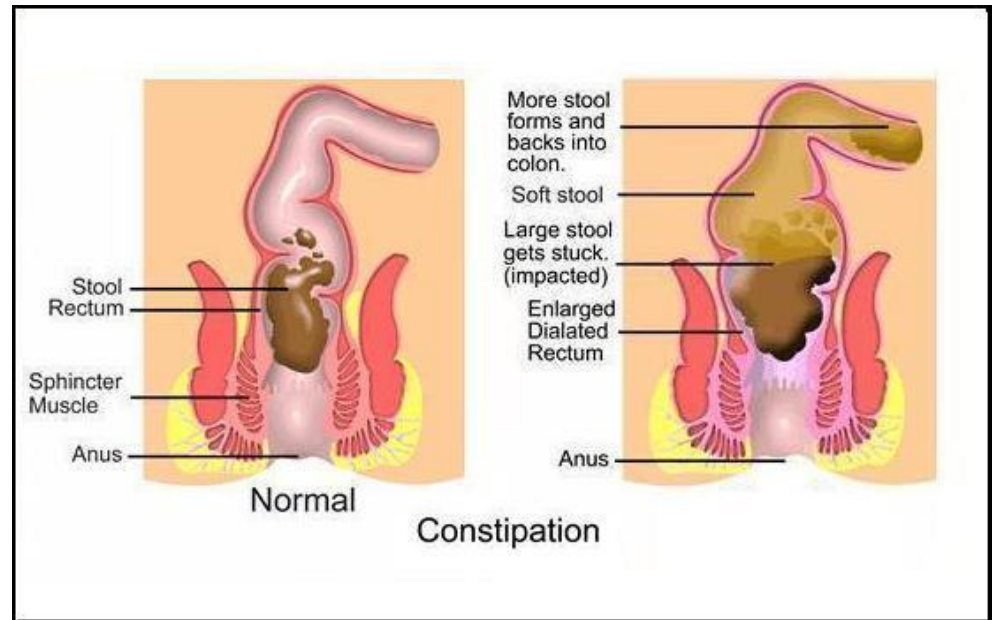
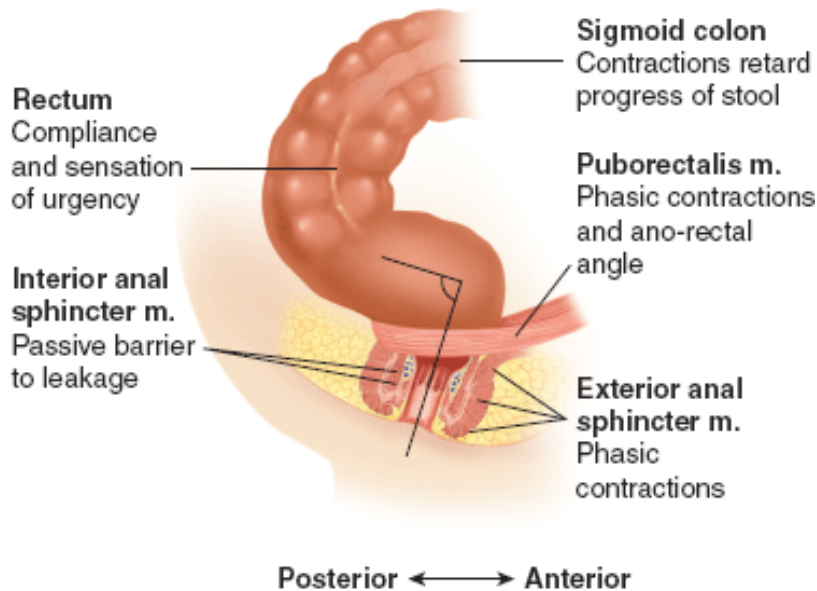
What labs or tests should be ordered?

- Labs: normal CBC, CMP, iron studies, CRP, TSH, celiac serologies
- DRE (check for hard stool, masses, anal fissures, hemorrhoids, sphincter tone, push/squeeze maneuver, puborectalis muscle)

Is any further workup necessary?

- Endoscopic evaluation if with alarm symptoms; can order flexible sigmoidoscopy vs colonoscopy to rule out inflammation and/or malignancy
- Sitz mark study/KUB: to assess for slow transit vs outlet obstruction constipation
- Anorectal manometry: to assess anal tone (low, normal, or high anal tone), sphincter function, balloon expulsion testing (outlet obstruction), and rectal sensation thresholds
- MR defecography to assess for outlet obstruction/anatomical issues (entero/rectoceles, mucosal vs rectal prolapse, rectal intussusception)
- Smart Pill Capsule Study: evaluation of bowel transit time

Anorectal Anatomy



Sitzmark Study (Abdominal KUB)



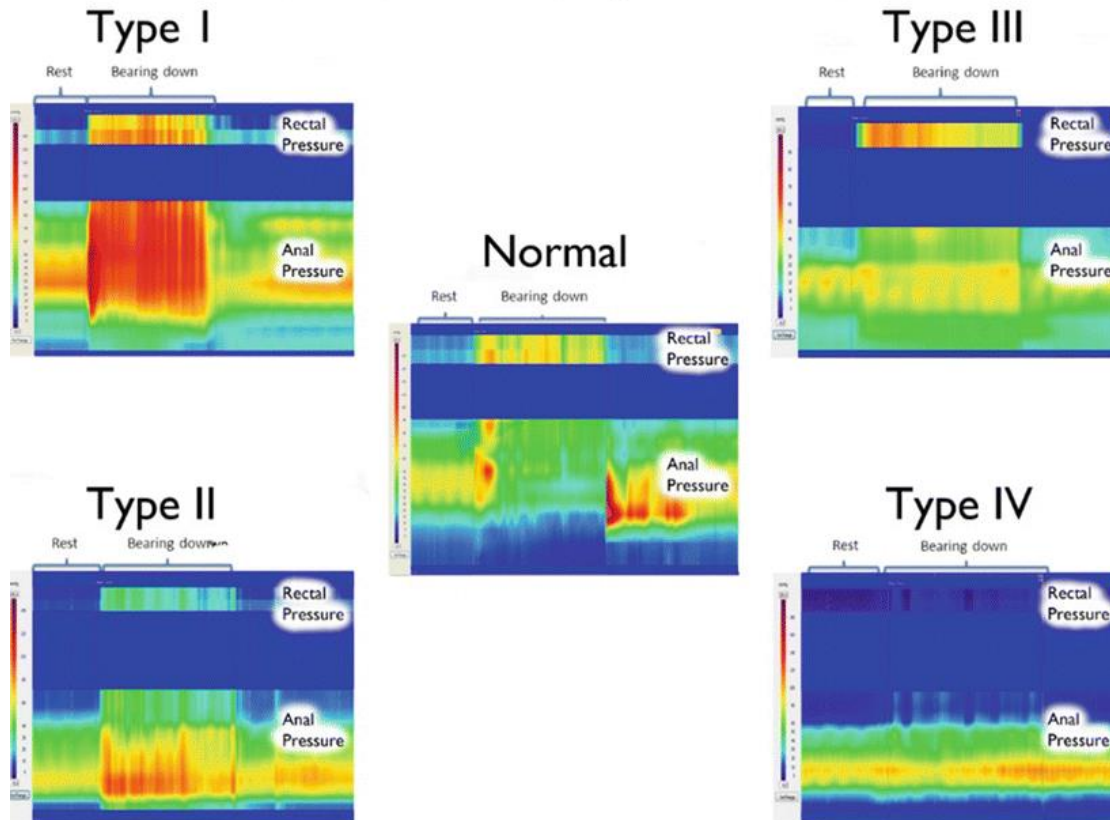
Test is abnormal if there are >5 sitz markers remaining in colon

Motility Testing: Anorectal Manometry

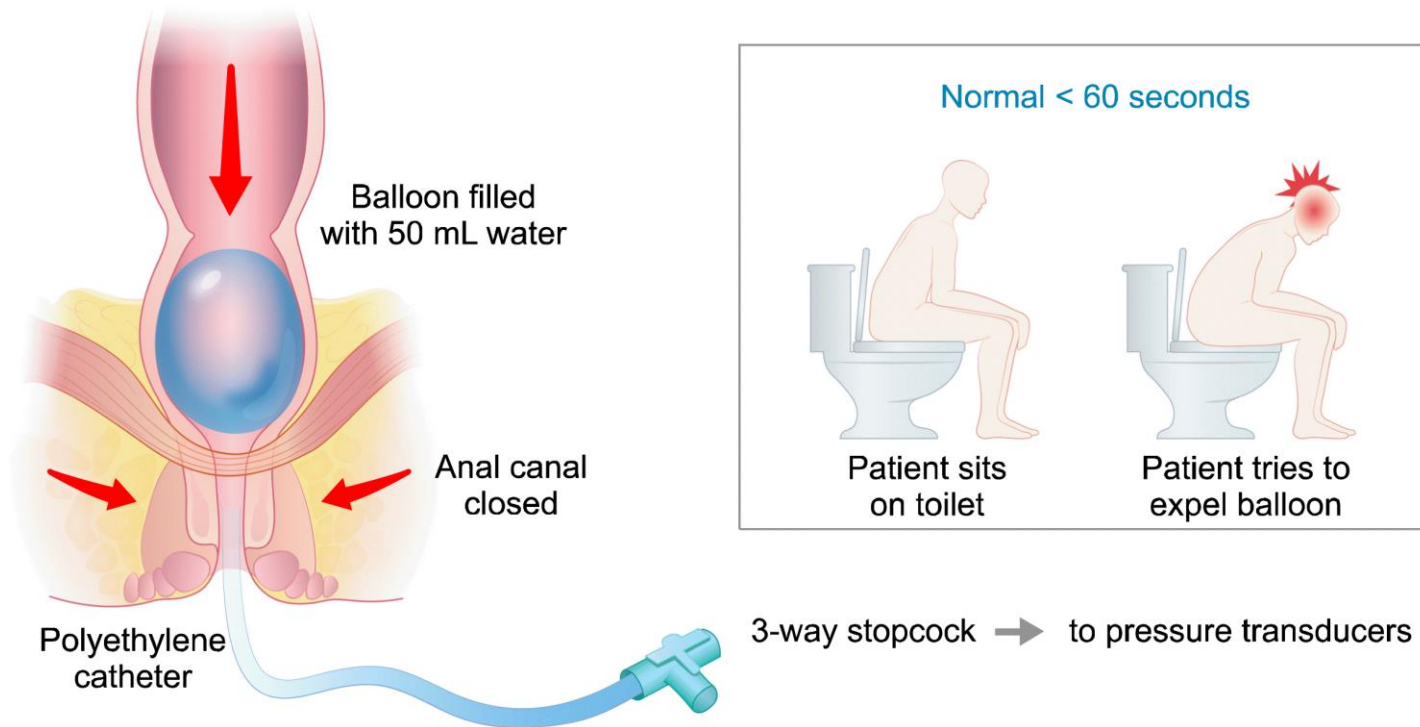


Motility Testing: Anorectal Manometry

High Resolution Manometric Patterns of Attempted Defecation



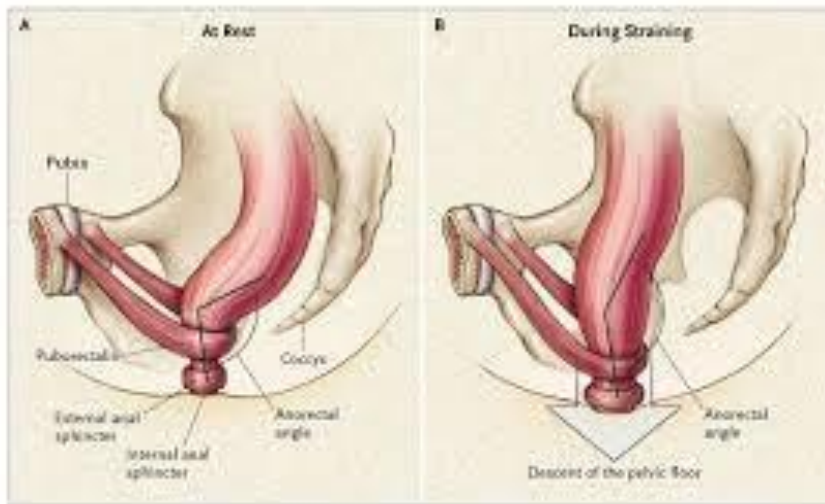
Balloon Expulsion Testing



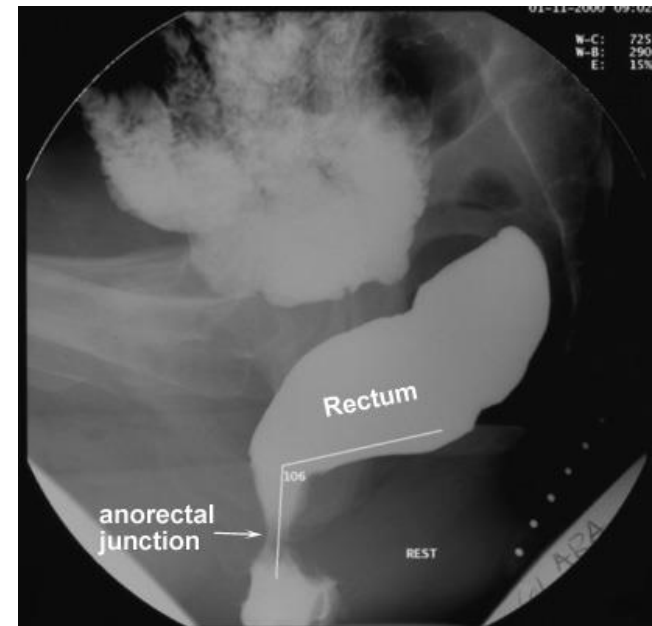
Normal test if can expel balloon in <1 minute

Imaging: MR Defecogram

Puborectalis Muscle



MR Defecography



Imaging/Procedures

- Abdominal XR KUB: moderate stool burden in descending and sigmoid colon
- Sitz mark study/KUB: 10 markers scattered throughout colon
- Colonoscopy: normal ileocolonoscopy with no masses, lesions or polyps
- Anorectal manometry: high resting/squeeze anal pressure, paradoxical contractions, unable to expel balloon, abnormal rectal sensation thresholds
- MR defecography: anterior rectocele, but no enteroceles or rectal intussusception

Rome IV Criteria: Bowel Disorders

- Emphasizes functional bowel disorders constitute a spectrum of GI disorders rather than isolated entities
- Although characterized as distinct disorders based on diagnostic criteria, there is significant overlap and sometimes difficult to distinguish as distinct entities
- There can be transition from one functional bowel disorder to another or one predominant symptom to another as part of natural course of condition, response to therapy or both

Rome IV Criteria: Chronic Idiopathic Constipation

ROME IV DIAGNOSTIC CRITERIA

Diagnostic Criteria a for IBS

Recurrent abdominal pain at least 1 day weekly for the last 3 months, and 2 or more of the following:

- ✓ Related to defecation
- ✓ Associated with reduced bowel movements (fewer than 3/week)
- ✓ Associated with hard or lumpy stools

Diagnostic Criteria a for Functional Constipation

Presence of 2 or more of the following:

- ✓ Straining in at least 25% of bowel movements.
- ✓ Hard stools in at least 25% of bowel movements.
- ✓ Sensation of incomplete evacuation in at least 25% of bowel movements.
- ✓ Sensation of anorectal blockage in at least 25% of bowel movements.
- ✓ Manual maneuvers to facilitate defecation in at least 25% of bowel movements.
- ✓ Fewer than 3 bowel movements per week.

Diagnostic Criteria for Functional Defecation Disorders

1. The patient must **satisfy diagnostic criteria for functional constipation and/or irritable bowel syndrome with constipation**. During repeated attempts to defecate, there must be features of impaired evacuation, as demonstrated by 2 of the following 3 tests:
 - a. Abnormal balloon expulsion test
 - b. Abnormal anorectal evacuation pattern with manometry or anal surface EMG

Diagnostic Criteria a for Functional Abdominal Bloating/Distension

Must include both of the following:

1. Recurrent bloating and/or distention occurring, on average, at least 1 day per week; abdominal bloating and/or distention predominates over other symptoms.
2. There are **insufficient criteria for a diagnosis of irritable bowel syndrome, functional constipation**.

Criteria should be present for at least 3 months with symptom onset at least 6 months prior to diagnosis

Differential Diagnoses

- **Chronic idiopathic constipation (functional constipation):** infrequent but persistent difficulty in passing stool along with incomplete evacuation. There is no physiologic abnormality and this is not IBS
- **Opiate-induced constipation (OIC):** constipation onset related taking opiate medication
- **Irritable bowel syndrome-constipation predominant :** abdominal pain with change in bowel pattern. Can have abdominal pain with or without slow colonic transit or dyssynergia. Many have visceral hypersensitivity.
- **Slow transit constipation:** prolonged delay in stool transit throughout colon, lack of urge to defecate, abnormal transit study.
- **Overflow constipation (overflow diarrhea):** severe constipation where there is a blockage, and stool leaks around blockage.
- **Outlet obstruction constipation:** normal colonic transit but with sense of stool in rectal vault but difficulty with passage of stool per anus
- **Dyssynergic defecation/anismus:** ineffective defecation due to failure to relax or inappropriate contraction of the puborectalis and external anal sphincter muscles; can have straining, incomplete evacuation and use of manual maneuvers, no coordination of abdominal/pelvic floor muscles
- **Pelvic floor disorder/dysfunction:** trauma related to vaginal tear/episiotomy, pelvis surgery, enterocele, rectocele, pelvic organ prolapse, rectal prolapse, rectal intussusception
- **Secondary cause of constipation:** Endocrine or metabolic disorders, neurologic disorders, myogenic disorders, and medications

Management Options

Nonpharmacological Management

- Tried adding dietary and supplemental fiber to daily regimen with no change in bowel function
- Increased fluid intake
- Exercise/mobility: brisk walking/running 3 miles at least 3 days per week
- Uses “squatty potty” which has helped somewhat
- Anal biofeedback, pelvic floor physical therapy, rectal sensation retraining



Management Options

- **Pharmacological Strategies**
 - Surfactants: stool softeners (docusate sodium)
 - Supplemental fiber; bulk forming laxatives (psyllium, methylcellulose, polycarbophil, wheat dextrin)
 - Saline laxatives (Mg citrate, Mg sulfate, Milk of magnesium)
 - Osmotic laxatives (polyethylene glycol, PEG)
 - Stimulant laxatives (cathartics, senna or bisacodyl)
 - Synthetic disaccharides (lactulose) sugar alcohol (sorbitol)
 - Suppositories (glycerin or bisacodyl), enemas (saline, tap water soapsuds enemas), mineral oil
 - Herbal medication (cascara sagrada)
- **Colon Secretagogues**
 - Lubiprostone 8 mcg, 16 mcg, or 24 mcg po daily or BID (CIC2 agonist FDA approved for OIC)
 - Linaclotide 72 mcg, 145 mcg, or 290 mcg po daily (GCC receptor agonist)
 - Plecanatide 3 mg po daily (GCC receptor agonist)
 - Prucalopride 1 mg or 2 mg po daily (5HT₄ receptor agonist CIC)
 - Tegaserod 3 mg or 6 mg po daily (5HT₄ receptor agonist, approved for IBS-C/CC)
- **Bile Acid Agents**
 - Elobixibat
 - Chenodeoxycholate

Patient Follow-Up

- Patient Care
 - Short-term plan
 - RTC 2-4 weeks post initial consultation
 - No additional labs/procedures if doing well clinically
 - For hematochezia, new onset at older age, severe case, consider endoscopic evaluation
 - If still symptomatic despite initial therapy, consider Sitz marker and anorectal manometry
 - Long-term plan
 - Can remain under care for 1-3 months
 - Continue follow-up until “desired” bowel function goal is reached
 - Do you release back to PCP?
 - Yes, once patient is well managed on a daily bowel regimen or
 - Has achieved desired outcome, would release back to PCP

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