Bloating and Constipation: What is a provider to do?
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Bloating: What is it?
- A feeling of increased abdominal pressure which may or may not be accompanied by objective abdominal distention.

ROME IV criteria for functional abdominal bloating/distention
- Recurrent bloating and/or distention occurring, on average, at least 1 day per week with abdominal bloating/distention predominating over other complaints, and there are insufficient criteria for a diagnosis of irritable bowel syndrome (IBS), functional constipation, functional diarrhea, or postprandial distress syndrome.
- Both criteria must be present for the last 3 months with symptom onset at least 6 months before diagnosis.
Bloating

- Sensation of fullness, heaviness, tightness or discomfort
- Subjective symptom-cannot standardize

Bloating

- Reported in up to 20%-30% of the general population
- Reported in 96% of patients with irritable bowel syndrome
- Majority of those affected describe symptoms as moderate or severe
- More than 50% of patients with bloating report a significant impact on quality of life
Bloating

- 50% of persons with bloating don’t report it
- 50% of patients with bloating describe abdominal distention
- Distention more commonly seen with constipation and pelvic floor dysfunction

Bloating Probiotics-definitions

- **Probiotics**: Live microorganisms that offer a health benefit to the host when administered in adequate amounts
- **Prebiotics**: Selectively fermented ingredients that result in specific changes in the composition and/or activity of the GI microbiota, providing benefit to the host health
- **Synbiotics**: Products that contain probiotics and prebiotics
- **Fermentation**: Process in which a microorganism transforms food into other products, usually through the production of lactic acid, ethanol, and other metabolic end products.

What is the mechanism behind bloating?

- Bowel Disturbances
  - Laxal
  - Obstruction
  - Adhesions
  - Thoracic
  - Increased sensitivity
  - Neuromuscular
  - Gas
Differential Diagnosis

- SIBO risk factors
  - Gastric bypass
  - Ileocecal valve resection
  - Dysmotility
  - Small bowel diverticula
  - Strictures due to Crohn’s disease, Radiation or NSAID use
  - Acid suppressive therapy-medications

Differential Diagnoses cont.

- Early stage of ascites formation with liver cirrhosis
- Acute or subacute bowel ischemia-Left heart failure
- Functional dyspepsia-bloating sensation centered in the upper abdomen often postprandial
Bloating-Possible Causes

- Chronic belchers-aerophagia
- Poor fitting dentures
- Gum chewing
- Eating too fast
- Sleep apnea-CPAP
- Carbonated beverages

Bloating-Possible Causes

- Consumption of a large meal or overloading of fermentable foodstuffs
- High FODMAP diet-gas/flatulence & bloating
- Fiber

Bloating: History

- Ask about belching or bloating?
- Timing of symptoms relative to eating
- Dietary evaluation-how much and how frequently do they eat?
- Increased gas production with onions, beans, legumes
- Intolerance to foods that contain Lactose, Gluten, Fructose?
- Improvement with dietary modifications?
- Do they drink large quantities of caffeine or carbonated drinks?
- Do they use artificial sweeteners such as sorbitol, mannitol, glycerol?
- Personal and/or Family History of Cancer
Bloating: History cont.

- Ask about abdominal pain IBS?
- Formation and frequency of stool
- Constipation can induce gas-related symptoms. Diabetic, SIBO or Celiac Disease
- Ask about unintended weight loss?
- Medications? Medication Review: RX and non RX
  - Psyllium containing products increase gas production
  - Metformin
  - Opiates
  - CPAP
  - Home oxygen therapy
  - Nissen Fundoplication surgery

Bloating: Physical examination

- Examination of the abdomen
  - Distention related to small bowel ileus
  - Mechanical obstruction-likely gastric outlet obstruction

- Nongastric causes
  - Arches
  - Organomegaly
  - Increased adiposity
Bloating: Physical Examination

- Bowel sounds
  - Increased pitched sounds suggest mechanical obstruction
  - Decreased or absent—GI ileus or dysmotility
- Detailed DRE
  - Look for fecal impaction
  - Rectal tone
  - Failed relaxation of the puborectalis muscle with simulated defecation

Bloating: Physical Examination

- Heart Sounds
- GYN examination

Bloating: Diagnostic testing

- Alarm symptoms
  - Loss of weight
  - Rectal bleeding
  - Nocturnal symptoms
- Family history of Celiac disease or suggestive of, should be screened
- Family history of ovarian cancer or breast cancer or change in menstruation—pelvic ultrasound
- When indicated—tests to evaluate intolerance to lactose, fructose & sorbitol
Bloating: Diagnostic testing cont.

- CT Scan-bloating & distention
- Measure of abdominal distention—baseline; no or little distention
- Repeated when severely distended
- Abdominal MRI may also be used for repeat imaging because it does not involve radiation

Bloating: Management

- Management should be directed at the underlying mechanism or cause
- Simple reassurance
- Dietary Management
- Microbiome management
- OTC and Natural remedies
- Relieve constipation if present
- Low Sodium diet

Bloating: Dietary Management

- Avoid food intolerances (if detected)
- Reduce fermentation of food residues
- High intake of gas producing foods
- Excess fermentation may increase bloating and distention in individuals who are gas retainers because of a limited ability to expel flatus
- Small bowel malabsorption that delivers unusually large quantities of fermentable components to the colon
Low FODMAP Diet

www.monashfodmap.com

LOW FODMAP APP

Color system - green low dose
Orange - moderate dose
Red - high dose

Recipes

Low FODMAP Diet - What can I eat?

- Green beans, bell peppers, carrots, celery, eggplant, asparagus, tomatoes, lettuce, kale, okra, spinach, sprouts, squash, turmeric
- Bananas, blueberries, cantaloupe, oranges, strawberries, grapes, kiwi, raspberries
- Lactose-free milk, yogurt & hard cheese
- Meats, fish, chicken, eggs, tofu
- Gluten-free bread & pasta, oats, rice, quinoa
- Almonds, hazelnuts, walnuts, peanuts, pine nuts, pecans, macadamia & pumpkin
- Jelly, marmalade, butter, mustard, mayonnaise, olives, cocoa powder, vinegar, soy sauce, cooking oils

Gluten-free raspberry muffins

Ingredients:
- 1 1/2 cups gluten-free flour (sift twice)
- 1/4 cup granulated sugar
- 1/2 tsp baking powder
- 1/2 tsp baking soda
- 1/4 tsp sea salt
- 1/4 tsp vanilla extract
- 1/2 tsp lemon extract
- 1/2 cup unsweetened applesauce
- 1/2 cup vegetable oil
- 2 large eggs
- 1 cup milk

Instructions:
1. Preheat oven to 375°F. Line 12 muffin cups with paper liners.
2. In a large bowl, mix dry ingredients together.
3. Add wet ingredients and mix well.
4. Fill muffin cups 2/3 full.
5. Bake for 20-25 minutes or until a toothpick inserted in the center comes out clean.
Bloating: Management; OTC and Natural Remedies

- Activated charcoal
- Simethicone
- Kiwi fruit extract
- Avoid carbonated drinks
- Fiber-psyllium/ispaghula husk

Bloating: Management

- Antidepressants-SSRI's data inconclusive
- Biofeedback
- Relieve constipation if present

Chronic Constipation in Adults

- Average varies 16% of adults worldwide
- Prevalence 33.5% ages 60-110 years
- Small proportion seek medical care
- Hundreds of millions of dollars are spent annually on laxative use
ROME IV diagnostic criteria-constipation

- Functional Constipation
  - Must include two or more of the following:
    - Straining during more than 25% of defecations
    - Lumpy or hard stools (Bristol stool type 1-2) more than 25% of defecations
    - Sensation of incomplete evacuation more than 25% of defecations
    - Sensation of anorectal obstruction/blockage more than 25% of defecations
    - Manual maneuvers to facilitate more than 25% of defecations (e.g., digital evacuation, support of pelvic floor)
  - Loose stools are rarely present without the use of laxatives
  - Insufficient criteria for irritable bowel syndrome
  - Criteria fulfilled for the last 3 months with symptom onset at least 6 months prior to diagnosis

Constipation-Causes

- Causes-Multifactorial
  - Socioeconomic factors
  - Low fiber consumption
  - Lack of mobility
  - Disturbance of hormone balance
  - Depression
  - Physical & sexual abuse
  - Irritable Bowel Syndrome
  - Failure to respond to urge

- Women: pre-menopausal
- Pregnancy
- Rectosigmoid
- Women are more likely to use laxatives when visiting provider for constipation
- Elderly more common
  - Linked to lack of normal BM of aging
  - Lack of proper diet
  - Lack of adequate fluid intake, physical activity
  - Use of medications
  - Loose fitting dentures or tooth loss
Constipation: Causes

- Psychological: depression, anxiety, eating disorders
- Enteric Neuropathies: Hirschsprung disease
- Neurological Disorders: Multiple Sclerosis, Parkinson's Disease, stroke, spinal cord injury, paraplegia
- Myopathic Disorders: Scleroderma, Amyloidosis
- Anorectal Disorders: anal strictures, anal fissures, hemorrhoids, diverticulosis
- Connective tissues disorders: Lupus
- Endocrine & Metabolic: Diabetes, hypercalcemia, hypothyroidism

Constipation-Causative Medications

- Calcium channel blockers
- Antidepressants TCA's, MAO inhib.
- Opiates (morphine)
- Anticholinergics
- Anticonvulsants
- Antipsychotics
- Antispasmodics
- Analgesics: opiates, tramadol, NSAIDS
- Antiparkinsonian drugs
- Diuretics
- Antacids
- Antidiarrheals
- Chemotherapy agents
- Miscellaneous: oral contraceptives, barium sulfate, iron supplements
- Endocrine medicines
- Sympathomimetics

Constipation: Causes

- Organic-cancer or cancer related causes
- Intestinal radiation, sigmoid or cecal volvulus
- Uncertain causes: Idiopathic Chronic Constipation
- Socioeconomic status: low income
- Hyposensitivity
Constipation-obtaining History

What do you mean by constipation?
Ask frequency & consistency of stools?
Stool size, duration of symptoms?
Excessive obstruction, history of ignoring urge to defecate?
Feeling of incomplete defecation? Hand palpation during defecation? Manual disimpaction?
Ask about bloating? Pain?
Laxative use? Past/present? Frequency, dosage?
Current conditions? Medical history? Recent surgeries?
Psychiatric illness, lifestyle, dietary fiber? Fluid intake?
Use of suppositories, enemas? Identify organic causes

Describe bowel habits using Bristol Stool Scale
Alarm Symptoms:
Change in bowel habit after age 50
Acute onset in older individual
Hematochezia
Unintended weight loss
Anemia
Family history of colorectal cancer

Bristol Stool Chart

| Type 1 | Separate hard lumps, like nuts (need to strain) |
| Type 2 | Soft stool shaped but lumpy |
| Type 3 | Like a sausage but with cracks or split on the surface |
| Type 4 | Soft stool with cracks and soft surface |
| Type 5 | Soft stool with clear-cut edge |
| Type 6 | Flabby pieces with ragged edges, a mushy stool |
| Type 7 | Liquid or semi-solid stool, usually floating |

Bristol Stool Chart
Constipation—Physical examination

- Abdomen
  - Generally nontender; possibly distention and/or discomfort with palpation
- Rectal examination
  - Palpate with index finger
  - Digital evaluation anal tone during rest and squeezing
  - DRE does not exclude defecatory disorders
  - Look for anal pain—fissures, thrombosed hemorrhoids
  - Rectoceles

Constipation—Diagnostic tests

- Laboratory analysis
  - CBC
  - Electrolytes
  - Glucose
  - Calcium
  - Thyroid function tests

- Colonoscopy if alarm symptoms or >50 years old and has not had previous screenings for CRC.
- CT colonography
- Flexible sigmoidoscopy
- Barium Enema

- Discontinue medications that can cause constipation before further testing if possible
- DRE pelvic floor motion during simulated evacuation before referral for anorectal manometry
Secondary Constipation

Known drug side effects
Proven mechanical obstruction
Metabolic disorder
Abnormal blood tests

Constipation-Normal Transit (NTC)

- "Functional" constipation—most common form
- Stool frequency is often within the normal range
- Patients are typically treated empirically and respond well.
- If empiric therapy fails, further evaluation necessary.

Normal transit (NTC)

- Normal physical examination
- Symptoms typically respond to dietary fiber or osmotic laxative
- Tenesmus, hard stools
- IBS-C Pain & Bloating

Known drug side effects
Proven mechanical obstruction
Metabolic disorder
Abnormal blood tests
Constipation-Slow Transit (STC)

- Infrequent bowel movements; typically less than once a week
- Patients may not feel the urge to defecate
- Believed to result from a neuromuscular disorder of the colon
- Aggressive laxative regimen may be necessary
- Dietary fiber and laxatives may not be effective in STC
- Anorectal manometry and rectal balloon expulsion test should be performed in patients who don’t respond to laxatives

Slow Transit (STC)

- Infrequent bowel movements (typically less than once per week)
- Normal Pelvic floor function

Defecation Disorder (pelvic floor dysfunction, dyssynergia)

- Caused by functional and anatomical abnormalities that cause constipation
- Patients unable to coordinate abdominal, rectoanal and pelvic floor muscles
- May also demonstrate rectal hyposensitivity
Defecation Disorder (pelvic floor dysfunction, dyssynergia)

- Patients typically present with significant straining
- Spend large amounts of time on the toilet daily
- Manual rectal evacuation using a finger
- Position changes, frequent enema use
- May even have difficulty evacuating liquid stools
- Pelvic floor tone may be constantly increased, can lead to hemorrhoids and anal fissures

Defecation Disorder (pelvic floor dysfunction, dyssynergia)

- To confirm diagnosis two of the following tests should be positive:
  - Anorectal manometry - incomplete relaxation of the anal sphincter
  - Balloon Expulsion test - impaired evacuation
  - Defecography - impaired evacuation
  - Inappropriate contraction of the pelvic floor muscles

Defecation Disorder (pelvic floor dysfunction) (dyssynergia)

- Prolonged/Excessive straining
- Difficulty defecating even soft stool
- Vaginal/perineal pressure used to defecate
- Manual maneuvers to aid defecation
Constipation: Management

- **Fiber**
  - Soluble
  - Insoluble
- **Osmotic Laxatives** - Obtain water in the intestinal lumen
  - Polyethylene glycol
  - Lactulose
  - Magnesium hydroxide
  - Magnesium citrate
  - Magnesium sulfate
  - Sodium phosphate

- **Stimulant Laxatives** - Induce fluid & electrolyte secretion by the colon or induce peristalsis thereby producing a BM.
  - Senna
  - Bisacodyl
  - Castor oil
  - Cascara
  - Rhus toxicaria
  - Aloe

- **Probiotics** - Insufficient evidence to recommend

- **Prosecretory Agents**
  - Linaclotide - Guanylate Cyclase-C Receptor Agonist
  - Plecanatide
  - Lubiprostone Chloride Channel Activator
- **Anorectal Manometry**
  - Measures pressure activity of anorectum
  - Provides information for defecatory disorders (dysynergia)

- **Balloon Expulsion Testing**
  - Used with anorectal manometry
  - Used to determine dysynergic defecation

- **Barium enema**
  - Colon x-ray to identify anatomic abnormality

- **Defecography**
  - Visualizes the anorectum and pelvic floor

- **Magnetic Resonance Defecography (MRD)**
  - Noninvasive medical technique
  - Visualizes pelvic floor anatomy & dynamic motion for anorectal disorders

- **Colonic Transit Study**
  - Pt swallows a capsule that contains radiopaque marker or a wireless recording device
  - Progress of the capsule is monitored through colon over several days
  - Visible on x-ray

- **Biofeedback**
  - Used for pelvic floor dysfunction (dysynergia)
  - Administered by skilled/experienced therapist
**Summary-Bloating**

- Bloating: A feeling of increased abdominal pressure which may or may not be accompanied by objective abdominal distention (ACG, 2017)
- Recurrent bloating and/or distention occurring, on average, at least 1 day per week with abdominal bloating/distention predominating over other complaints, and there are insufficient criteria for a diagnosis of irritable bowel syndrome (IBS), functional constipation, functional diarrhea, or postprandial distress syndrome.
- Both criteria must be present for the last 3 months with symptom onset at least 6 months before diagnosis.

**What causes bloating?**

- **Bowel Disturbances**
  - Liquid
  - Obstruction
- **Adiposity**
- **Thoracic**
- **Increased sensitivity**
- **Neuromuscular**
- **Gas**

**Chronic belchers—aerophagia**

- Poor fitting dentures
- Gum chewing
- Eating too fast
- Sleep apnea—CPAP
- Carbonated beverages

**Good history/physical exam**

- Management should be directed at the underlying mechanism or cause.
- Simple reassurance
- Dietary Management
  - Microbiome management
  - OTC and Natural remedies
  - Biofeedback
- Relieve constipation if present.

**Summary-Constipation**

- **Causes—Multifactorial**
  - Socioeconomic factors
  - Low fiber consumption
  - Lack of mobility
  - Disturbance of hormone balance
  - Depression
  - Physical & sexual abuse
  - Irritable Bowel Syndrome
  - Failure to respond to urge
  - Secondary causes
Summary Constipation

- History/Physical exam
- Diagnostic tests
- NTC
- SSC
- Pelvic Floor Dyssynergia
- Treatment: Treat secondary causes
- Fiber, laxatives, medications, & biofeedback depending on cause