Elderly Man With Chronic Constipation

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Overview

• Normal bowel function
• Defining Constipation: Is it really necessary?
• When to test?
• Treatment of Constipation
What is the purpose of the colon?

- Absorption of water and electrolytes
- Absorption of short chain fatty acids
- Salvage carbohydrates and bile salts
- Move colonic contents toward the rectum
- Storage of waste until defecation

Mechanism of defecation and continence

**REST**
- Pubis
- Puborectalis
- Coccyx
- Internal anal sphincter

**CONTINENCE REQUIRES:**
- Contraction of puborectalis
- Maintenance of anorectal angle
- Normal rectal sensation
- Tonic contraction of IAS

**STRAINING**
- Pubis
- Puborectalis
- Coccyx
- External anal sphincter

**DEFECATION REQUIRES:**
- Relaxation of puborectalis
- Straightening of anorectal angle
- Relaxation of EAS
Colonic Innervation

Extrinsic Innervation

Epidemiology

- Prevalence 16% (Range: 0.7-79%)
  - Female to male ratio 1.5:1
- 24-50% prevalence in patients > 65 years old
- Accounts for ~2.5 million MD visits/year
- 7% of US population takes laxative/stool softener
  - 10-18% of those > 65 years old
  - 74% of nursing home residents use daily laxative

AGA Technical Review on Constipation 2013
Defining Constipation

Functional Constipation:
Rome III Criteria

- 2 or more of the following occurring > 25% of defecations
  - Straining
  - Lumpy or hard stools
  - Sensation of incomplete evacuation
  - Sensation of anorectal obstruction/blockage
  - Manual maneuvers to facilitate defecation
  - < 3 stools per week
- Loose stools rarely present except with laxatives
- Insufficient to meet IBS criteria
Constipation Subtypes

- Normal Transit Constipation
- Slow Transit Constipation
- Obstructive Defecation
  - Anismus: Elevated resting sphincter pressure
  - Pelvic dyssynergia: abnormal relaxation of the pelvic floor
- Combined STC and Obstructive Defecation

Defining Constipation

Patient Reported Constipation Symptoms

Adapted from Pare, P et al. Am J Gastroenterol 2001; 96:3130-3137.
Most Bothersome Symptom?

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Self Reported</th>
</tr>
</thead>
<tbody>
<tr>
<td>Straining</td>
<td>35.0%</td>
</tr>
<tr>
<td>Hard/Lumpy Stools</td>
<td>30.0%</td>
</tr>
<tr>
<td>&lt;3 BM/week</td>
<td>15.0%</td>
</tr>
<tr>
<td>Stool Cannot be Passed</td>
<td>10.0%</td>
</tr>
<tr>
<td>Incomplete Evacuation</td>
<td>5.0%</td>
</tr>
</tbody>
</table>

Adapted from Pare, P et al. Am J Gastroenterol 2001; 96:3130-3137.

Causes of Constipation

**Primary**
- IBS-C
- Outlet obstruction
  - Pelvic Dyssynergia
- Normal Transit
  - Visceral hypersensitivity
- Slow Transit
  - Colonic inertia
  - Uncoordinated motor activity

**Secondary**
- Mechanical obstruction
  - Malignancy, stricture, large rectocele, extrinsic compression
- Medications
- Metabolic disorders
  - Diabetes, hypothyroidism, hypercalcemia, hypokalemia, hypomagnesemia, uremia
- Infiltrative disorders
  - Scleroderma, Amyloidosis
- Neurologic
  - Parkinson’s, DDD, MS
Risk Factors for Chronic Constipation

- Female gender
- Physical inactivity
- Depression
- Poor PO intake
- Comorbidities and medications

When and What to Test?
Alarm Features

- Change in Bowel Habits > 50 years
- Blood in stools
- Unexplained anemia
- Unintentional weight loss (> 10 lbs)
- Family history of colon cancer

Step 1 in the Absence of Alarm Features

- History and Careful DRE
- CBC, Metabolic Panel, TSH
- Colonoscopy if indicated for screening (or if alarm features present)
- Therapeutic Trial of Fiber + Laxatives

AGA Medical Position Statement on Constipation 2013
Dietary and Lifestyle Modifications

• Increase physical activity
  – 20-60 minutes, 3-5 days per week improved symptoms and QOL in patients with IBS-C
• Increase fluid intake (only if dehydration a factor)

Fiber and Osmotic Laxative

• Soluble fiber
  – Psyllium (Metamucil, Konsyl)
  – Methylcellulose (Citrucel)
  – Calcium polycarbophil (FiberCon)
  – Wheat dextrin (Benefiber)
• Stool softeners
  – Docusate sodium or calcium
• Osmotic laxatives
  – Polyethylene glycol
  – Lactulose
  – Sorbitol
  – Magnesium sulfate or citrate*
Step 2: Inadequate Response

- Anorectal Manometry and Balloon Expulsion Test

<table>
<thead>
<tr>
<th>ARM and BET</th>
<th>Abnormal</th>
<th>Inconclusive</th>
<th>Normal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pelvic Dyssynergia</td>
<td>Abnormal</td>
<td>Defecography</td>
<td>Normal</td>
</tr>
</tbody>
</table>

Adapted from AGA Medical Position Statement on Constipation 2013

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Anorectal Manometry

<table>
<thead>
<tr>
<th>Normal</th>
<th>Pelvic Dyssynergia</th>
</tr>
</thead>
</table>
Sitz Marker Study

Day #1

Day #5

Wireless Capsule Motility
Step 3A: NTC or STC

- **NTC or STC**
  - Improvement: Continue
  - No Improvement: Modify Regimen, Consider New Therapies

- **Laxatives**
  - No Improvement: Repeat CTT on Meds
  - Delayed: Assess Upper GI Motility
    - Gastric Emptying: Normal
    - Gastric Emptying: Delayed
      - *Consider Colonic Manometry*

Adapted from AGA Medical Position Statement on Constipation 2013

Treatment of STC

- **Osmotic Laxatives**
  - Stimulant laxatives
    - Glycerin suppository (local rectal stimulation)
    - Bisacodyl (stimulate secretion and motility)
    - Senna (Increases secretions and motility)

- **Prosecretory Agents**
  - Lubiprostone (activates ClC2)
  - Linaclotide (stimulates intestinal CFTR)
Surgery: Subtotal Colectomy with IRA

- 100% patients with spontaneous BMs >5 years
- 10% required Lomotil post operatively (Lomotil d/c’ed by all after 1 year)
- 96% had improvement in quality of life at 3 years
- 87% had improvement in QOL at 5 years
- No differences between patients with STC only vs. STC with PFD


Step 3B: Defecatory Disorder

- Defecatory Disorder
- Pelvic Floor Retraining
  - No Improvement
  - Repeat BET
- Abnormal Pelvic Relaxation
- Biofeedback, suppositories
- Structural Abnormality i.e. Rectocele
- Consider Surgery
- Colonic Transit
- Defecography
- Normal

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Biofeedback Therapy

• Aims: teach relaxation of pelvic floor muscles (puborectalis and EAS) in coordination with increasing intraabdominal pressure (Valsava)

• Methods
  1. EMG feedback alone
  2. Anal pressure feedback alone
  3. EMG and anal pressure feedback

* 3-12 sessions

Efficacy of Biofeedback Therapy

• Meta-analysis 38 studies showed improvement of symptoms after biofeedback compared to placebo
  – No difference between biofeedback protocols
  – Improvement in symptoms and QOL
  – Biofeedback better compared to sham therapy and standard medical therapy
  – Results maintained after 1-2 years follow up

Take Home Points

• Common among older patients
• Causes are multifactorial
• Treatment aimed at modifying risk factors and symptom control
  – Start with fiber and osmotic laxatives
  – Use stimulant laxatives sparingly due to concerns about dehydration
• Need for testing is based on presence of alarm symptoms and response to therapy
• Evaluate for obstructive defecatory disorders if symptoms refractory to therapy