REFRACTORY CONSTIPATION
An Unresolved Problem for Many Patients

One of the most common reasons for an office visit. In majority, it is intermittent and requires no or minimal intervention.

For others, it can be challenging to treat and have a negative impact on quality of life, social and psychological ability. In these cases, specific causes of constipation, such as systemic or structural diseases, must be excluded, although it most commonly results from disorders of function of the colon or rectum.

Understanding of the pathophysiology of constipation is fundamental to effective management.
In an analysis of physician visits for constipation in the United States, 31% of patients who required medical attention were seen by general and family practitioners, followed by internists (20%), pediatricians (15%), surgeons (9%), and obstetricians-gynecologists (9%). Only 4% of patients were seen by gastroenterologists, suggesting that few such patients were deemed to need advice from a specialist.
constipation

Chronic functional constipation influences 2%-30% of individuals in Western countries. Although some of these patients can be managed with conservative treatments such as a high fiber diet, laxatives, suppositories, or oral polyethylene glycol, others are not sensitive to these options. Medical treatment is ineffective in about 39% of adult patients with chronic functional constipation.
RISK FACTORS

- Advanced age
- Female gender (F/M: 2-3/1)
- Low level of education
- Low level of physical activity
- Low socioeconomic status
- Nonwhite ethnicity
- Use of certain medications
Refractory constipation

when a patient, fulfilling the standard diagnostic criteria for functional constipation and lacking any alarm feature for organic conditions, fails to improve upon intake of a high-fiber diet and laxatives, usually PEG.
Refractory constipation

When facing a constipated patient complaining of resistance to the above therapeutic approaches, there are several issues which deserve careful consideration before labeling the patient as refractory to standard treatment and going on with further diagnostic evaluations and/or therapeutic interventions.
Reliability of information and patient compliance

“refractory” to medical treatment; because of misunderstandings with the prescribing physician (i.e., poor or altogether complete lack of communication, lack of acceptance of chronicity of the condition, unwillingness to use drugs long-term, scarce understanding of dose regimens, etc.) or as a result of misconceptions on the actual nature and relevance of constipation.
Patient expectations

the patients discontinued drug intake after a very few days of therapy owing to the lack of effect onset.

it is common to find that these patients had not had explained to them that the basic treatment of constipation (i.e., high-fiber diet, PEG or other osmotic agents) may require several days or weeks prior to achieving the effect onset or full effectiveness.
a strong patient-physician relationship owing to the peculiarity of the issue,
is a previous history (often only disclosed after several interviews) of physical or sexual abuse, found mainly in patients with symptoms of obstructed defecation (OD).
Poor basal evaluation

Patients should be accurately re-evaluated for secondary forms of constipation, with particular regard for those associated with the use of drugs. This issue is of particular relevance since some forms of drug-induced constipation (e.g., that secondary to the opioid analgesics) can be managed by specific therapeutic approaches, whereas other (e.g., that secondary to the antidepressants) can influence colonic motility to such a degree of severity that they may require discontinuation of the offending drug or a switch to different drugs.
Medications

- Antacid
- Anticholinergic agents (e.g., antiparkinsonian, antipsychotics, antispasmodics, tricyclic antidepressants)
- Anticonvulsants (e.g., carbamazepine, phenobarbital, phenytoin)
- Antineoplastic agents (e.g., vinca derivatives)
- Calcium channel blockers (e.g., verapamil)
- Diuretics (e.g., furosemide)
- 5-Hydroxytryptamine$_3$ antagonists (e.g., alosetron)
- Iron supplements
- NSAID (e.g., ibuprofen)
- Opioid agonists (e.g., fentanyl, loperamide, morphine)
Poor basal evaluation

At last, further diagnostic evaluations in an attempt to highlight specific pathophysiological mechanisms which might drive focused therapeutic interventions.

- Diagnostic evaluations: the evaluation of intestinal transit time, anorectal manometry (complemented by the rectal balloon expulsion test) and defecography. Upper gastrointestinal (which might limit or preclude surgical procedures) and colonic manometry (possibly with pharmacological testing in patients regarded as eligible for surgery).
PSYCHOLOGICAL DISORDERS

DEPRESSION
EATING DISORDERS
DENIED BOWEL MOVEMENTS
EVACUATORY DISORDER

Neuromuscular dysfunction of the defecation unit can lead to disordered or difficult defecation. Among structural and functional causes, the most common entity is dyssynergic defecation. This condition affects about 40% of chronic constipation. This is usually an acquired behavioral disorder. Clearly, in many patients, there is an overlap, because colonic transit is delayed in two thirds of patients.
Defecatory disorders

Pelvic floor dysfunction, anismus, descending perineum syndrome, rectal prolapse and SOLITARY RECTAL ULCER SYNDROME, rectocele, Frequent straining; incomplete evacuation; need for manual maneuvers to facilitate defecation
Abnormal balloon expulsion test and/or rectal manometry
dyssynergic defecation

The treatment of a patient with dyssynergic defecation consists of:

- Standard treatment for Constipation
- Specific treatment i.e. neuromuscular training or biofeedback therapy
- Other measures include botulinum toxin injection, myectomy or ileostomy
dyssynergic defecation

Behavioral therapy for dyssynergic defecation involves both:
life style modifications, laxatives, establishing a bowel regime and biofeedback therapy
Randomized controlled trials have demonstrated that biofeedback therapy using neuromuscular coordination and training and visual or audio or verbal feedback techniques is effective in improving bowel symptoms and correcting dyssynergic defecation.
biofeedback

The mechanism(s) through which biofeedback changes bowel function are poorly understood. Newer and user friendly methods of biofeedback training including development of home-based biofeedback therapy should be systematically evaluated.
Interestingly, there seems to be no difference among the various available biofeedback techniques in terms of efficacy.
dyssynergic defecation

Adequate pelvic floor retraining by biofeedback therapy improves symptoms in more than 70% of patients with functional defecatory disorders
If symptoms persist in spite of an adequate trial of biofeedback therapy, **anorectal tests and colonic transit should be reevaluated**. After reassessment of these tests, adequate treatments can be applied according to results of the tests. In patients with refractory pelvic floor dysfunction, **suppositories** such as anal application of nitric oxide cream or enemas rather than oral laxatives alone should be considered. If therapeutic effect is unsatisfactory in patients with refractory pelvic floor dysfunction after retrial of biofeedback therapy with suppositories or enemas, **other treatment options are limited**.
sacral nerve stimulation or sacral neuromodulation

involving modulation of the extrinsic neural control of the pelvic floor through the sacral nerve root stimulation or direct stimulation of the organ, such as the anal canal. Early reports showed that anal canal electrical stimulation was associated with improving symptoms of constipation.
sacral nerve stimulation or sacral neuromodulation

It is carried out by percutaneous placement of an electrode in the third sacral foramen and implantation of a stimulating device under the skin in the Buttocks. Although it may be effective in individual patients, the overall efficacy is limited and unpredictable, with positive results reported in 40%-100% of cases.
Electrogalvanic stimulation, although effective in individual OD patients, has not been formally studied in controlled trials.
In selected OD patients, local injections of botulinum toxin have been attempted with a certain success, although the evidence remains very scarce and is based on uncontrolled studies. Owing to such limitations, this approach cannot be proposed as a standard treatment but should be restricted to patients unresponsive to any other available medical therapy before considering a surgical approach or be employed only for research purposes.
CLASSIFICATION

Constipation is in majority functional constipation.

Functional constipation can be divided into broad categories: three normal-transit constipation 59%, slow-transit constipation 13%, and defecatory or rectal evacuation disorders 25% and 3% had a combination of a defecatory disorder and slow-transit constipation.
Normal-transit constipation

Incomplete evacuation
Abdominal pain may be present but not a predominant feature
Normal physiologic test results
**Slow-transit constipation**

Infrequent stools (e.g., ≤1/wk) lack of urge to defecate; poor response to fiber and laxatives; generalized symptoms, including malaise and fatigue; more prevalent in young women

Retention in colon of >20% of radiopaque markers five days after ingestion
During straining

Puborectalis muscle

Anorectal angle

Descent of the pelvic floor
**DIAGNOSTIC TESTS**

**PHYSIOLOGIC MEASUREMENTS**

**Measurement of Colonic Transit Time**
- Radiopaque Markers
- Scintigraphic studies
- Wireless Motility Capsule

**Tests to Assess the Physiology of Defecation**
- Anorectal Manometry
- Defecography
- Balloon Expulsion Test
- Barostat study
- Electromyographic Testing of Striated Muscle Activity
- Rectal Sensitivity and Sensation Testing
Normal or slow transit constipation

Laxatives (eg, PEG, MOM, bisacodyl)

Improvement: Continue regimen

No improvement: Modify regimen - consider newer pharmacological agents

Improvement: Continue regimen

No improvement: Repeat colonic transit test (on medications)
Repeat colonic transit test (on medications)

- Delayed
  - Consider gastric emptying if necessary
    - Slow
      - Consider further assessment for upper GI motility disorder
        - Abnormal
          - Manage appropriately
        - Normal
          - Consider colon manometry ± barostat
            - Normal
              - Consider colonic manometry ± barostat
                - Abnormal
                  - Consider subtotal colectomy + ileorectal anastomosis
            - Abnormal
              - Consider temporary loop ileostomy

- Normal
  - Adjust medications as needed
Barostat study

Currently, colonic manometry is usually performed with a 6-8 solid state or water-perfused sensor probe, although high-resolution fiber-optic colonic manometry with better spatiotemporal resolutions may become available in the near future.

Colonic manometry and sensation/tone/compliance assessment with a barostat are useful tools for evaluating the underlying pathophysiology and causes of chronic constipation in patients with refractory symptoms, especially prior to performing a colectomy.
Indications for Colonic Manometry

Adults

- Chronic slow transit constipation that is not responsive to medical therapy in the absence of an evacuation disorder

- Chronic colonic pseudo-obstruction and megacolon or megarectum, with viscus diameter exceeding 10 and 15 cm respectively
Colonic manometry assembly (A) and abdominal X-ray (B) showing typical location of sensors after placement.
MRI deficography

Rectal evacuation may be imaged using MRI, but is technically more difficult both for the patient and to obtain good images actually during evacuation. With modern fluoroscopic units the radiation dose is low. MR becomes important when a more global view of the pelvis is required, i.e. to image vaginal prolapse and cystocele as well.
TREATMENT

GENERAL MEASURES

Reassurance
Lifestyle Changes
Psychological Support
Fluid Intake
Dietary Changes and Fiber Supplementation
OTHER FORMS OF THERAPY

- Defecation Training
- Anorectal Biofeedback
- Complementary and Alternative Medical Therapies; Abd massage & Aquupuncture
- Sacral Nerve Stimulation

Surgery:
Colectomy
The stapled transanal rectal resection (treating refractory OD patients)
CONCLUSION

-To date, the refractoriness of constipation to medical treatments is still a significant issue.

-Current literature on this topic suggests that a number of pharmacological or non-pharmacological therapeutic options can be offered to patients with true constipation refractory to first-line conventional treatments.

- However, for the majority of such options, the available supportive evidence is scanty and the clinical outcomes are often not satisfactory.
After discontinuing medications that can cause constipation and performing blood and other tests as guided by clinical features, a therapeutic trial (ie, fiber supplementation and/or osmotic or stimulant laxatives) is recommended before anorectal testing (strong recommendation, moderate-quality evidence).

NTC and STC can be safely managed with long-term use of laxatives (strong recommendation, moderate-quality evidence).
Anorectal tests should be performed in patients who do not respond to these measures (strong recommendation, high-quality evidence).
Pelvic floor retraining by biofeedback therapy rather than laxatives is recommended for defecatory disorders (strong recommendation, high-quality evidence).
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Anorectal tests and colonic transit should be reevaluated when symptoms persist despite an adequate trial of biofeedback therapy (strong recommendation, low-quality evidence).
A subtotal colectomy rather than continuing therapy with chronic laxatives should be considered for patients with symptomatic STC without a defecatory disorder (weak recommendation, moderate-quality evidence).
Colonic intraluminal testing (manometry, barostat) should be considered to document colonic motor dysfunction before colectomy (weak recommendation, moderate-quality evidence). Suppositories or enemas rather than oral laxatives alone should be considered in patients with refractory pelvic floor dysfunction (weak recommendation, low-quality evidence).
THAT IS ALL I WROTE!!

THANKS FOR LISTENING
Clinical Clues to an Evacuation Disorder

Rectal Examination (with patient in left lateral position)

*Inspection*  Anus “pulled” forward during attempts to simulate strain during defecation
  - Anal verge descends <1 cm or >4 cm (or beyond ischial tuberosities) during attempts to simulate straining at defecation
  - Perineum balloons down during straining; rectal mucosa partially prolapses through anal canal

*Palpation*  High anal sphincter tone at rest precludes easy entry of examining finger (in absence of a painful perianal condition such as an anal fissure)
  - Anal sphincter pressure during voluntary squeeze only minimally higher than anal tone at rest
  - Perineum and examining finger descend <1 cm or >4 cm during simulated straining at defecation
  - Puborectalis muscle tender to palpation through rectal wall posteriorly, or palpation reproduces pain
  - Palpable mucosal prolapse during straining
  - “Defect” in anterior wall of the rectum, suggestive of rectocele
Anismus

- the inability to relax the pelvic floor voluntarily during evacuation, leading to slow and incomplete rectal emptying with poor opening of the anal canal on evacuation proctography.
Rectocoele

- anterior bulging of the rectal wall during evacuation is common in women. The depth of the rectocoele may be measured from a vertical from the anterior anal canal to the most anterior part of the rectocoele. Rectocoeles >2cm in depth are considered significant, and >4cm large. However, the size of a rectocoele does affect the ability to evacuate. Rectocoeles may well be symptomatic only when there is trapping within the rectocoele. At the end of evacuation when the rectum has emptied, the rectocoele remains filled. Digitation, pressing on the posterior wall of the vagina is usually needed to empty the rectocoele.
Pelvic floor descent

- this is a very simple assessment of the position of the pelvic floor at rest and at the start of evacuation. The position at rest is more important. Normally the anorectal junction is just at, or a little above, the level of ischial spines. Due to the restricted field of view during proctography, the pubococcygeal line is not seen and the level of the ischial spines used instead. Descent at rest or inability to elevate the pelvic floor voluntarily implies weakness, and has been found to be a significant finding in the investigation of incontinence that probably reflects striated muscle atrophy.