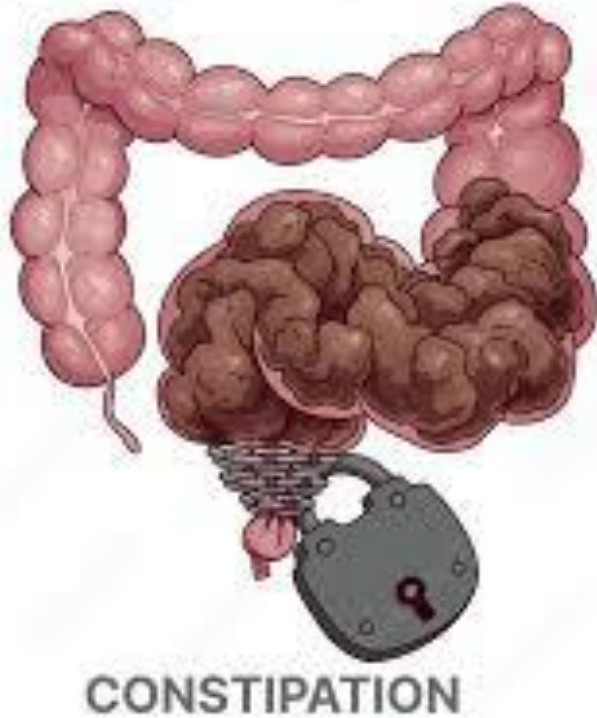


Constipation in infants and children

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INTRODUCTION



- Common problem throughout childhood
- Often accepted as a normal variation that will resolve as children get older.
- Complications:
 - Anal fissure
 - Stool withholding
 - Fecal incontinence (also known as encopresis)

Normal Stooling Pattern



- Stool frequency changes in children with age
- 4 stools / day during the first week of life
- 1 to 2 stools /day by the age of 4 years
- From 5 years of age, daily or every other day without straining or withholding

Definitions



- Rome IV criteria
- Diagnostic criteria must include:
- ≥ 2 criteria for at least 1 month in infants up to 4 years
- $2 \leq$ defecations/ week
- History of excessive stool retention
- History of painful or hard bowel movements
- History of large diameter stools
- large fecal mass in the rectum
- At least one episode of fecal incontinence / week after the acquisition of toileting skills
- History of large-diameter stools that may obstruct the toilet in toilet trained children

Clinical Evaluation and Diagnosis

- History
- Physical Examination
- Laboratory Investigations
- Radiologic Investigations



History



- Time of the first bowel movement after birth.
- Age of onset; frequency, consistency, and size of stools
- Pain during defecation or exhibits retentive posturing
- Whether blood is present on the toilet paper
- Hard-caliber stools
- Incontinence frequency

1		Separate hard lumps, like nuts (hard to pass)
2		Sausage-shaped but lumpy
3		Like a sausage or snake, smooth and soft
4		Fluffy pieces with ragged edges, a mushy stool
5		Watery, no solid pieces. Entirely liquid.



Physicians should ask about

- Abdominal pain or distension
- Loss of appetite
- Fever
- Nausea , vomiting, weight loss or poor weight gain
- Problems with neuromuscular development
- Psychosocial or behavioral problems



Physical Examination

- weight and height
- Abdominal examination
- Perianal region
- Anorectal digital examination
- Inspection of lumbosacral area



Laboratory Investigations



- Routine laboratory testing to screen for hypothyroidism, celiac disease, and hypercalcemia is not recommended in children with constipation in the absence of alarm symptoms.
- Evidence is conflicting for allergy testing to diagnose CMP allergy in children with functional constipation and is therefore not recommended

Radiologic Investigations

- Abdominal Radiography
- Colonic Transit Time
- Abdominal Ultrasonography
- Contrast Enema



Abdominal Radiography



- ESPGHAN/NASPGHAN constipation guideline concluded that abdominal radiography should not be recommended as an additional test for constipation in children and therefore has no role in the diagnosis of functional constipation.
- Useful only for determining the presence of a fecal rectal mass when there is uncertainty as to whether the patient is constipated and rectal examination is not possible





Colonic Transit Time

- CTT study is not recommended for diagnosing constipation and may only be useful for discriminating between functional constipation and FNRFI and in situations in which the diagnosis is not clear



Abdominal Ultrasonography



- Assessment of stool retention and size of rectum and colon can be measured using abdominal ultrasonography.
- Rectal diameter larger than 30 mm is considered enlarged
- Might replace digital rectal examination in the evaluation of fearful children with constipation.

Contrast Enema

- Unnecessary in uncomplicated constipation
- Identifying anatomic abnormalities
- Diagnostic workup of HD



Manometry

- Anorectal Manometry
- Colonic Manometry



Anorectal Manometry



- Indicated to demonstrate the presence of the rectoanal inhibitory reflex
- Can help diagnose pelvic floor dyssynergia

Colonic Manometry



- Differentiate between normal colonic motor function and colonic neuromuscular disorders in the evaluation of children with intractable constipation

Magnetic Resonance Imaging



- Only in children presenting with neurologic complaints or physical symptoms, such as gluteal cleft deviation, suggestive of spinal cord abnormalities.

Treatment for Constipation



1. Education
2. Dissipation
3. Maintenance Treatment
 - Dietary Changes
 - Behavioral Interventions
 - Medications

Education



- Explanation to parents and child of the anatomy and physiology of defecation
- No quick solution for this condition
- Recovery is possible with adequate, often protracted, treatment
- Timing of successful treatment is often unpredictable
- Duration of maintenance therapy usually takes 6 to 24 months

Disimpaction



- Oral or rectal agents
- Oral (PEG) is the laxative of first choice(1.0 to 1.5 g/kg/day)
- Docusate sodium, saline, mineral oil, glycerin, or bisacodyl enemas have been shown to be effective.
- Soapsuds, tap water, phosphate, milk and molasses, and magnesium enemas is not recommended because of their potential toxicity

Maintenance Treatment

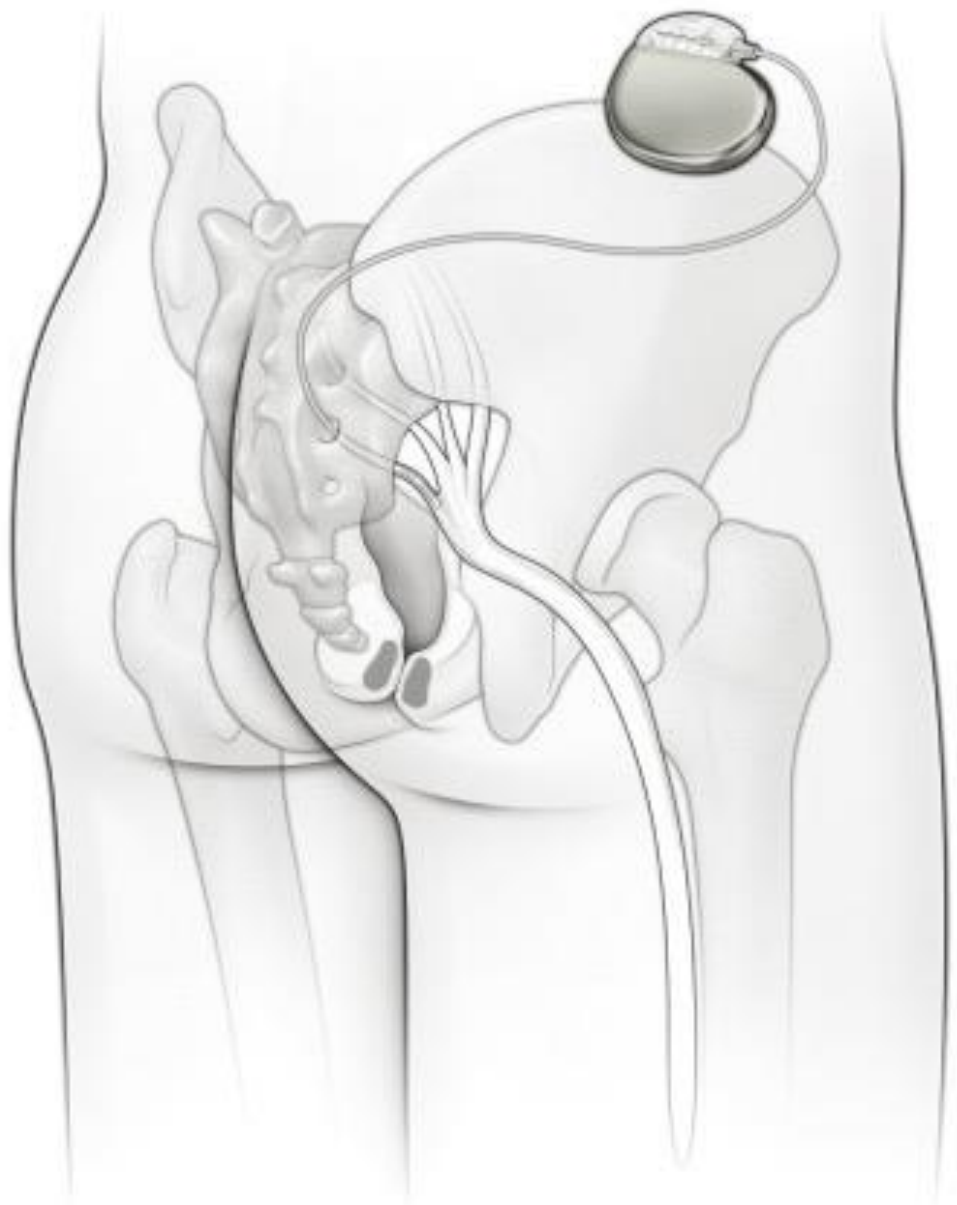


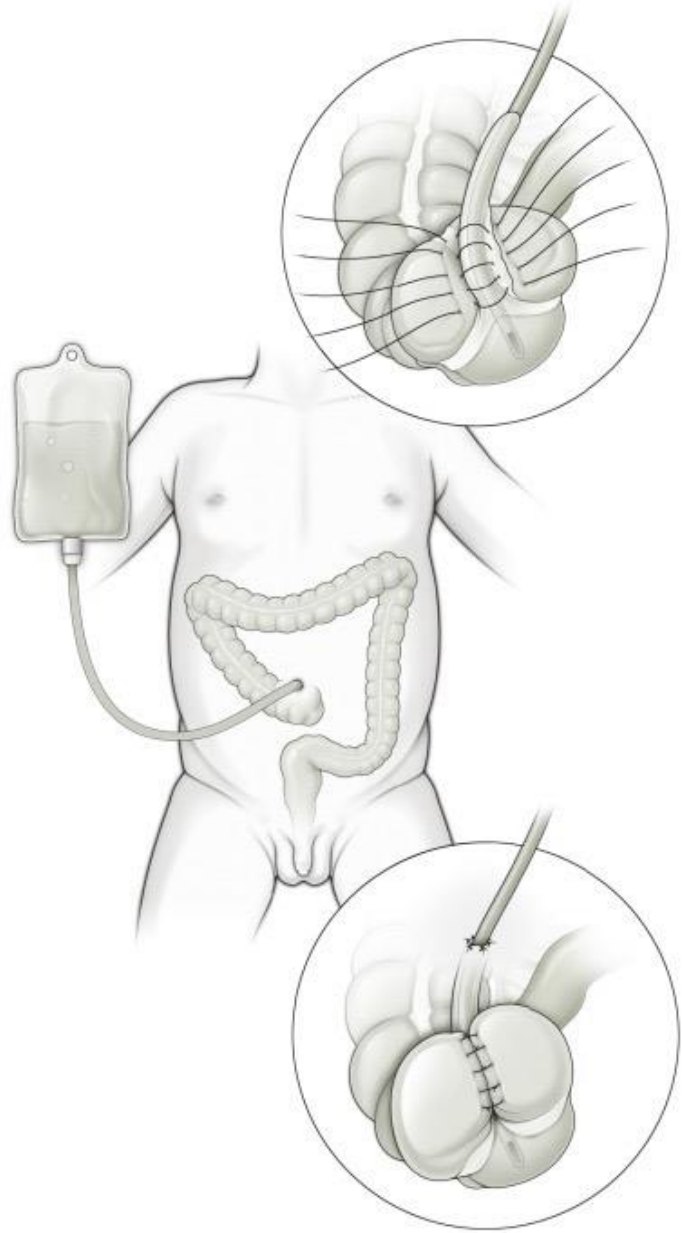
- **Fiber and Fluid**
- **Prebiotics**
- **Probiotics**
- **Low FODMAP Diet** (fermentable oligo-, di-, and monosaccharides and polyols) restricts the intake of poorly absorbable carbohydrates
- **Behavioral Interventions**
- **Medications**
- **Oral Laxatives**
- **Retrograde Enemas and Irrigation**
-



• Neuromodulation

Sacral nerve modulation (SNM) is a promising new treatment option for patients with intractable functional constipation. SNM involves percutaneous placement of an electrode in the third sacral foramen and implantation of a stimulating device under the skin in the buttocks





Surgery

- Antegrade Enemas
- Rectosigmoid Resection
- Botox

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*Thank You
For Your
Attention*