



CHILDHOOD CONSTIPATION: MORE THAN WHAT MEETS THE EYES

Paediatric Surgery

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ABSTRACT

Constipation is a common pediatric problem encountered in surgical practice. This condition accounts for 3% to 5% of pediatric primary care visits. Prevalence of childhood constipation has been estimated at 1% to 30% in the general population worldwide. Bowel movement frequency and consistency is a function of diet composition and gastrointestinal motility. Children with chronic constipation experience painful defecation. This causes the children to exhibit withholding behaviour leading to fecal impaction. The management of constipation is essentially multifactorial and, along with medical treatment, should address the social and psychological issues that may be associated with it. **Aims:** The aim of this study is to evaluate the causes of constipation presenting in the surgical practice and to determine the treatment modality tailored to each etiology. Settings and Design: This was a descriptive prospective study of children aged 12 years and below who came with complaints of constipation to a tertiary care centre during the 8-year period between 2014 and 2022. **Methods and Material:** Patients meeting the inclusion criteria were included and data was collected which included the age, sex, clinical presentation and modality of treatment. Patients who were treated conservatively were followed up for a period of 6 months while those who underwent surgery were followed up for a period of 1 year. **Results:** During the study period, a total of 326 patients presented with complaints of constipation, with a male to female ratio of 1.23:1. Of all the patients 256 patients had dietary or habitual cause for their complaints, 28 patients had a surgical cause for their complaints while 4 were diagnosed with hypothyroidism and 38 had other causes for constipation. Patients were given enema with relief of symptoms followed by dietary modifications along with fibre, probiotics and laxatives. Necessary surgical intervention was done in patients with surgical conditions. **Conclusions:** Constipation continues to be a common and often difficult to manage problem encountered in outpatient primary care. A careful history and thorough physical examination is all that is required to diagnose functional constipation and differentiate it from organic causes for which the necessary treatment can be initiated. Management includes maintenance therapy with oral laxative, dietary modification and toilet training.

KEYWORDS

Constipation, laxatives, toilet training, Hirschsprung disease, fibre diet

INTRODUCTION

Constipation is a common pediatric problem encountered in surgical practice. This condition accounts for 3% to 5% of pediatric primary care visits.(1) Prevalence of childhood constipation has been estimated at 1% to 30% in the general population worldwide.(2) Constipation is defined as Functional Constipation if there is no underlying organic cause, what is the case in majority of children. In the ones with an organic cause, the etiology varies from Hirschsprung disease, anorectal malformations, neuromuscular disease, metabolic to endocrine disorders.(3)

Bowel movement frequency and consistency is a function of diet composition and gastrointestinal motility. (1,4)

Bowel movement frequency decreases with age. Stool production occurs more often in the first month of life and may be attributed to immaturity of the gastrointestinal tract. Research supports a decrease in mean bowel movement frequency between 1 and 4 years of age. After 4 years of age, bowel movement frequency remains unchanged. There is a positive correlation between infrequency of bowel movements and hardness of stool. This is due to increasing whole gut transit time with age. (1)

Children with chronic constipation experience painful defecation. This causes the children to exhibit withholding behaviour leading to fecal impaction. (5)

The management of constipation is essentially multifactorial and, along with medical treatment, should address the social and psychological issues that may be associated with it.

MATERIAL AND METHODS

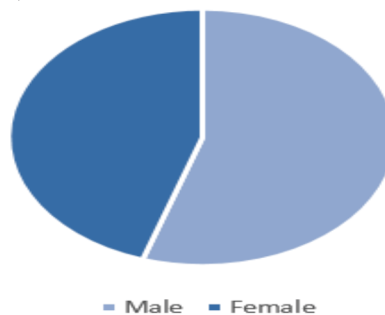
This was a descriptive prospective study of children aged 12 years and below who came with complaints of constipation to a tertiary care centre during the 8 year period between 2014 and 2022.

Patients were enrolled in the study after an informed written consent sought from the parents or guardian. Data on each patient were entered into a pro forma prepared for the study. The study variables collected included age, sex, clinical presentation and modality of treatment. Patients who were treated conservatively were followed up for a period

of 6 months while those who underwent surgery were followed up for a period of 1 year.

RESULTS

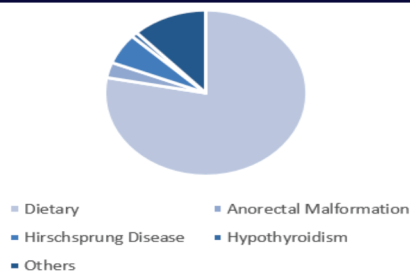
During the study period, a total of 326 patients presented with complaints of constipation, of which 180 (55.21%) were males and 146 (44.78%) females, with a male to female ratio of 1.23:1.



The age of patients at presentation ranged from 1 month to 11 years with 26 patients presenting between 1 month to 1 year of age, 57 patients presenting between 1 year to 2 years of age, 86 patients presenting between 2 years to 3 years of age, 78 patients presenting between 3 to 4 years of age, 50 patients presenting between 5 to 6 years of age and 29 patients presenting between 6 to 11 years of age.

AGE GROUP	NO OF PATIENTS
1MONTH TO 1YEAR	26
1YR TO 2YR	57
2YR TO 3YR	86
3YR TO 4YR	78
5YR TO 6YR	50
6YR AND ABOVE	29

Of all the patients 256 (78.5%) patients had dietary causes for their complaints, 9 (2.7%) patients were diagnosed with Anorectal malformation, 19 (5.8%) were diagnosed with Hirschsprung disease, 4 (1.2%) were diagnosed with hypothyroidism and 38 (11.6%) had other causes for constipation.



Patients were given enema with relief of symptoms followed by dietary modifications along with fibre, probiotics and laxatives. Necessary surgical intervention was done in patients with surgical conditions.

DISCUSSION

Functional constipation has been defined by the ROME III classification as 2 or more of the following features in a child with a developmental age of at least 4 years and occurring at least once per week for at least 2 months before diagnosis (with insufficient criteria for diagnosis of irritable bowel syndrome).

- 2 or fewer defaecations in the toilet per week
- At least 1 episode of faecal incontinence per week
- History of retentive posturing or excessive volitional stool retention
- History of painful or hard bowel movements
- Presence of a large faecal mass in the rectum
- History of large diameter stools that may obstruct the toilet

Functional constipation is common during childhood and most often develops because of painful defecation.

The prevalence of constipation was found to peak in children between 2 to 4 years of age (5) which was consistent with the findings of our study.

Youssef & Di Lorenzo state that in 5-10% children, constipation occurs due to an organic cause.(6) This percentage increases to 21.5% among the children in our study group. Of these, 8.5% children required surgical intervention for the management of the condition. This emphasizes the need of careful history and meticulous examination by the surgeon to deliver tailored management to tackle the underlying disease pathology. (5)

For patients managed conservatively, probiotics were used for all the patients following which every patient showed symptomatic improvement. However, exclusive role of probiotics in the management cannot be accurately delineated as it was used in conjunction with laxatives in all patients.

Amongst the patients diagnosed with Hirschsprung disease, 10 (52.63%) were neonates, 5 (26.31%) patients were between 2 to 5 years of age and 4 (21.05%) patients presented between 6 to 12 years of age. All the patients underwent the standard staged procedure.

In the ARM group, patients with following presentation were included:

- Anal stenosis not assessed at birth
- Recurrence in post-operative patients due to tight skin ring
- Non-compliance to anal dilation post operatively
- Excessive fibrosis post operatively
- Patients with scarring at operative site

The other causes of constipation included hypothyroidism, neurological conditions, rectal prolapse and Down's Syndrome.

Patients with hypothyroidism were treated by a multidisciplinary which included a paediatrician, paediatric endocrinologist and a paediatric surgeon. All patients showed symptomatic improvement after starting thyroxine supplementation.

All patients with rectal prolapse improved following close observation with no patient requiring surgical intervention.

CONCLUSION

Constipation continues to be a common and often difficult to manage problem encountered in outpatient primary care. A careful history and

thorough physical examination is all that is required to diagnose functional constipation and differentiate it from organic causes for which the necessary treatment can be initiated. Management includes maintenance therapy with oral laxative, dietary modification and toilet training. Constipation lasting more than two days should not be neglected. Constipation can be prevented by figuring out the times when it may occur, and making proper changes.

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