International Journal of Contemporary Pediatrics
Mandal K et al. Int J Contemp Pediatr. 2018 Sep;5(5):1888-1891
http://www.ijpediatrics.com
pISSN 2349-3283 | eISSN 2349-3291

DOI: http://dx.doi.org/10.18203/2349-3291.ijcp20183525

Original Research Article

Rectal stimulation to relieve constipation in infants: is it safe?

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Received: 04 June 2018
Accepted: 29 June 2018

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ABSTRACT

Background: Physiological constipation is the most common cause of stool retention in neonates and infants. Functional constipation is the commonest type of constipation in children of Indian subcontinent with 3% worldwide prevalence. It is quite bothering to the parents when child has not passed stool for the last 3-4 days. Rectal stimulation by betel nut leaf stalk is a widely practiced home remedy in rural India over centuries to treat this physiological constipation in infants.
Methods: An OPD based prospective observational study was conducted in a tertiary care hospital of Eastern India. The cases chosen were 100 infants who underwent rectal stimulation for relieving constipation and another 100 infants who haven't were the controls. Both cases and controls were followed up clinically as well by digital rectal examination and radiologically where indicated for next 6 months for any adverse outcome arising from rectal stimulation.
Results: Outcome on follow up was almost similar in cases and controls. Immediate evacuation of stool following rectal stimulation was seen in 90% cases. Majority of the subjects had an uneventful follow up. Functional constipation diagnosed by ROME III criteria was 30% in cases and 35% in controls. Habit formation and minor local ulcers in perianal region were also noted in few cases. Two cases and one control were diagnosed as Hirschsprung disease on follow up. All caregivers of cases experienced psychological relief following the practice.
Conclusions: Rectal stimulation is an absolutely harmless practice with insignificant outcomes.

Keywords: Constipation, Digital rectal examination, Rectal stimulation

INTRODUCTION

Constipation is a common childhood problem. Functional constipation is the commonest type of constipation in children of Indian subcontinent with 3% worldwide prevalence.[1-6] It is commonly seen among toddlers and preschool children. Approximately 17-40% cases of constipation starts in infancy.[7,8] According to ROME III criteria, functional constipation is defined as presence of two or more of the following in absence of any organic pathology and the duration should be at least one month in <4 years of age, and at least once per week for at least 2 months in ≥4 years of age;

- Two or less defecations per week,
- At least one episode of fecal incontinence per week,
- History of retentive posture or stool withholding maneuver,
- History of painful or hard bowel movement,
- Presence of large fecal mass in the rectum,
- History of large-diameter stools that may obstruct the toilet.

In children <4 years of age, history of excessive stool retention is considered relevant rather than history of

retentive posture or stool withholding maneuver as it is difficult to assess at this age.

Rectal stimulation is done in rural India over centuries to treat this physiological constipation in infants. This is an indigenous procedure done often with betel nut leaf stalk. Though it is not medically recommended, but it is being widely practiced through ages. So, we have conducted a retrospective study to see whether practice is hazardous or harmless.

METHODS

This was a retrospective study done in Pediatric Medicine OPD of Calcutta Medical College, a tertiary care hospital in West Bengal. The study subjects were infants up to 6 months. Hundred cases were selected where mothers gave history of rectal stimulation to infants by betel nut leaf stalk. Hundred controls were selected where there is no history of rectal stimulation or administration of purgatives.

Inclusion criteria for cases was full term healthy children without any complications or congenital anomalies with any of the following features:

- Constipation,
- Infrequent stool passage,
- Colicky behavior
- Cry during defeacation,
- Digital rectal examination showing impacted stool.

Both cases and controls were followed up for next 1 year. In follow up, all subjects were screened for the following:

- Any squeal of rectal stimulations,
- Persistence of functional constipation as per ROME III criteria and,
- Impacted stool found by digital rectal examination.

Any suspected case of Hirschsprung's disease or intestinal obstruction was further assessed radiologically by straight X-ray abdomen in erect posture, ultrasonography of abdomen and barium enema, whichever is applicable. All findings were recorded in predesigned structured proforma. Necessary ethical clearance was obtained from Ethical committee of Calcutta Medical College.

RESULTS

The mean age for the cases was 2.21±1.3 months and 2 months is the median. More than 50% cases had an uneventful follow up. Functional constipation diagnosed by ROME III criteria on follow up was almost equal in two groups. Immediate evacuation of stool following rectal stimulation was seen in 90% cases. Thirteen cases became largely dependent on regular rectal stimulation before passing stool. Minor local ulcers were detected in only 4 cases which responded to local application of zinc containing emollients.

Table 1: Follow up results of rectal stimulation.

Follow up findings	Cases	Controls
Uneventful	51	64
Hirschsprung disease	2	1
Local ulcer	4	-
Habit formation	13	-
Functional constipation	30	35

Table 2: Relief of constipation following rectal stimulation.

Relief of constipation	Cases	Controls
Immediate	90%	10%
Late	10%	90%

Hirschsprung disease was diagnosed in 2 cases and 1 control. All caregivers of cases experienced psychological relief following the practice (Table 1 and 2).

DISCUSSION

Physiological constipation is the commonest cause of stool retention in neonates and infants. However, when warning signs like abdominal distension, bilious vomiting, ileus, failure to thrive are present, organic causes must be considered.[11] As children grow up, normal physiologic changes occur in gastrointestinal tract and decrease the daily number of stools from a mean of 2.2 in infants to 1.4 in 1-3 years old children.[12]

Thus, less frequent defaecation in infants may not be constipation and normal variation in stool frequency and consistency often leads to over-diagnosis of constipation. Two recent studies from the Europe (12,984 healthy children, 1-42 months from UK and 600 healthy infants from Netherlands) have shown that the median stool frequency at 1 month of age was 3 (0-9) per day and it decreased significantly to 2 (0-6) per day at 3 months.[13,1] Also, there was a significant difference in stool frequency between breastfed and formula fed babies at 1 month of age [4 (0-9) versus 1 (0-5) per day, respectively, P<0.01] but there was no difference at 3 months of age [2 (0-6) versus 1 (0-5) per day].[13,14]

Another study from Turkey in 911 children aged 0 to 24 months has shown that the median defecation frequency at 1 month of age was 6 per day and by 4-6 months of age it became 1 per day. More remarkable observation of this study was that the stool frequency in 39.3% infants of 2-6 months of age was once in 2-3 days, but the stool was soft.[15] Hence, before diagnosing constipation, normal variations of stool frequency and consistency in healthy infants and variations as per their feeding pattern (breast fed versus formula fed) should be kept in mind.

A digital rectal examination should be performed to assess rectal tone and presence of rectal distention or impaction.[11] The finding of rectal impaction may confirm the diagnosis of functional constipation. The presence of anal fissures or papillae indicative of chronic anal fissures is also suggestive of functional constipation. If the rectal examination reveals fecal impaction, no confirmatory imaging studies are necessary. If a rectal examination is not possible or is too traumatic for the child, abdominal radiography may be considered. One study found that a plain straight X-ray abdomen showing fecal impaction was highly predictive of the finding of fecal impaction on digital rectal examination.[16] If stool is present in the rectum, a barium enema is not more informative than a plain straight X-ray abdomen. Computerized tomography is not indicated. In the child with infrequent bowel movements and no signs of constipation, colonic transit time can be evaluated with radiopaque markers. Anal manometry is useful when Hirschsprung's disease is suspected. Appropriate relaxation of the anal sphincter reliably excludes HD.[17]

The age of first symptomatic presentation of the child is one of the easiest and most important pieces of information to obtain the diagnosis. Onset of symptoms in infants <1-month-old raises the suspicion of the presence of an organic condition such as Hirschsprung disease (HD). The timing of passage of the first meconium is especially relevant to the risk of having HD; delayed passage of meconium by 48 hours in a term neonate suggests the need for definitive testing to rule out the diagnosis. Although 99% of healthy term neonates pass their first meconium before 48 hours of life, 50% of children with HD also pass meconium within 48 hours of birth. Thus, the failure of passage of meconium within the first 48 hours of life, although suggestive of HD, does not establish the diagnosis.[18,19] In neonates, it is important to confirm the anatomic position and patency of the anus. The absence of an anal wink or a cremasteric reflex, the presence of a pilonidal dimple or hair tuft or hypotonia in lower extremity or decreased reflexes may suggest a spinal cord abnormality such as tethered cord, myelomeningocele or spinal cord tumor. Hypothyroidism is suggested in an infant with bradycardia, failure to gain weight and wide-open fontanelles. Cystic fibrosis should be suspected in an infant with constipation along with rash, failure to thrive, fever or pneumonia. [17]

In the present study, we found that 85% rural population practice rectal stimulation in physiological constipation through generations. The object mostly used is betel nut leaf stalk because it is firm and straight. Use of earbuds and glycerin suppositories are also prevalent. The outcomes on follow up are comparable between two groups. Incidence of functional constipation (30% in cases versus 35% in controls) and HD (2 among cases and 1 among controls) are almost equal. Parents and particularly grandparents start get worried once the child has not passed stool for 1 or two days. Evening colics and frequent crying are mis interpreted as abdominal discomfort arising from stool retention. Hence, the practice of rectal stimulation to evacuate bowel is rather a psychological comfort among parents. So, it can lead to a habit formation both in parents and infant (13% of cases). However, no other adverse reaction was found except trivial local ulcer in 4 cases).

CONCLUSION

Though rectal stimulation to relief physiological constipation in infants is not recommended, yet it is an absolutely harmless practice with insignificant outcomes.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Mandal K, Roy A. Rectal stimulation to relieve constipation in infants: is it safe? Int J Contemp Pediatr 2018;5:1888-91.