

Mild Anterior Displacement of the Anus as a Cause of Constipation: Introducing a New Modality for Diagnosis.

Seyed Javad Nasiri^{1*}Fariba Jahangiri¹Mojtaba Moosavi Khoshdel¹¹ Ali Asghar Children Hospital, Iran University of Medical Sciences, Tehran, Iran

*Address for Corresponder: Dr. Seyed Javad Nasiri, Ali Asghar Children Hospital, Iran University of Medical Sciences, Tehran, Iran

(email: sarveravan@yahoo.com)

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Abstract

Introduction: Mild anterior displacement of the anus may be a cause of constipation. Routinely for detection of the anterior anus, the mean anal position index is used but in this study we introduce another modality for this purpose.

Material and Methods: In this prospective study, patients with intractable constipation with onset below one year of age, normal rectal manometry, normal rectal biopsy and abnormal shape of anal verge, were included. The location of the anus was checked by muscle stimulator and according to the severity of the anteriority mini anorectoplasty or simple Y-V transposition of the anus was performed.

Results: Ten patients were studied. All were female with a mean age of 7 months. In 2 cases anorectoplasty and in the others Y-V anoplasty was done. All patients ultimately were cured.

Conclusion: Using muscle stimulator in external sphincter is reliable for detection of anterior displacement of the anus. Anorectoplasty or Y-V anoplasty for resolving constipation in these patients are effective.

Keywords

- Constipation
- Anorectal
- malformation
- anterior anus

Introduction

Anterior displacement of the anus (ADA) is a common congenital anomaly.¹ Anal Position Index (API) less than 0.46 in males and less than 0.34 in females is considered to be ADA.² ADA usually presents itself as early onset of constipation; as

early as the time of birth or at the time of starting formula.¹

Different studies by Leap et al.¹ and Rerksuppaphola et al.³ have claimed that there is a close relation between ADA and chronic constipation in children and that this diagnosis should be considered when

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treating a pediatric patient with constipation but there are studies that have questioned this relationship.⁴

In this study we introduce a new clinical method and report the effect of correction of this type of anomaly in management of intractable constipation in children.

Materials and Methods

In this prospective study any patients who filled the inclusion criteria was selected. Mean follow up duration was 2 years (6 months to 8 years).

Inclusion criteria:

History of intractable constipation, Onset of constipation before 12 month of age, normal biopsy and/or normal rectal manometry, abnormal shape of anal verge (fish bone shape of the anal verge which is shown in **Figure 1**) and at least 6 months availability for follow up.

After routine evaluations, under general anesthesia, at first, the muscle complex was checked by a muscle stimulator. In a normal patients when the external sphincter is stimulated by a stimulator the anus will be found in the center of the contracted muscle; but in patients with anterior anus after contraction of the external sphincter the anus will be located anteriorly in relation to the center of the ring of the sphincter. The distance of the anus from the center of the muscle (during contraction), was measured, (regardless of the mean anal position index), If the distance were ≥ 10 mm, mini anorectoplasty was done, If the distance was < 10 mm, posterior displacement of the anus by Y – V plasty was performed. For those with

anorectoplasty, after two weeks, weekly dilatation for 6 weeks was done.

Results

Ten patients were included in the study. They all were female. Mean age at presentation was 7 months (1 - 10 months), mean age of operation was 3.2 years (4 -68 months), mini anorectoplasty was done in 2 cases and posterior displacement with Inverted Y - V plasty was performed in the others. During the follow up, in 6 cases laxative treatment was no longer needed. Two cases needed laxative treatment for 3 more months and 2 cases need daily enema and laxative which was tapered after 3 and 6 months respectively. Two patients developed stenosis: one was cured by a simple surgery, and the other one by a few weeks dilatation.

Discussion

Constipation is common in children, it accounts for 3% to 5 % of all visits to the pediatric clinics and as many as 35% of all visits to the pediatric gastroenterologist.¹ More than 95% of constipations are functional and the remainder are due to organic causes. The main point in management of constipation is differentiation of organic from functional constipation. In order to achieve this goal we should primarily rely on history and physical examination. In the medical history, the onset of the constipation may be a clue to the diagnosis; i.e. in hirschsprung's disease constipation almost always is present from birth, but functional constipation usually presents after one or two years of age. In infants with anterior anus the constipation begins in the first few months of life after starting solid food (usually at 6 months

of age).² The anteriorly displaced anus may easily be overlooked. For defining the anterior anus different procedures and modalities have been advised, Chameria K, Shetti and Thambidorai CR et.al, described using pelvic MRI with ultrasound gel as rectal contrast in infants with barrel gun perineum.^{5,6} Núñez-Ramos R, et al use ano-genital index (AGI), to determine the position of the anus², so careful perineal inspection is the important part of examination in constipated children specially in cases who are suspected to have anterior anus. In these cases the diagnosis may be supported by measuring of anal position index (API) or by other modalities. In this study we introduce a new modality for diagnosis of anterior anus, which is done by detection of the location of the anus in relation to the center of contracted external sphincter (induced by muscle stimulator). By this method it is possible to detect the mild anterior anus and manage the intractable constipation which before detection may be considered as functional.

Conclusion

- 1- Mild anterior anus can be a cause of constipation and may easily be missed.
- 2- In any child with a history of constipation which presents after starting formula, and with abnormal shape of anal verge, anterior anus should be considered.
- 3- Using muscle stimulator on external sphincter is a good tool for detection of the anterior anus.

Conflict of Interest

There is no conflict of interest.

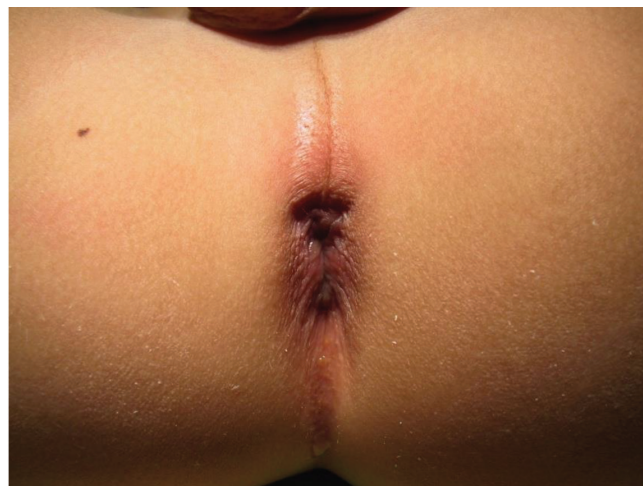
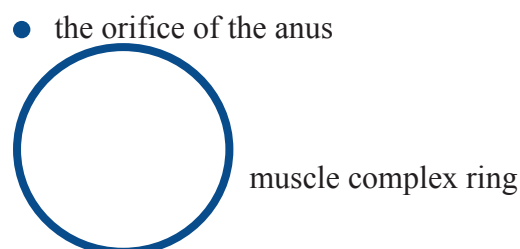


Figure 1: Fish bone shape of the anal verge



Figure 2: anus location: in relation to external muscle ring



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