

Case Report

Anal membrane: varied presentations

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ABSTRACT

An anal membrane is categorized as a low anorectal malformation and is noted under rare malformations in the International classification. It is very rare and may present variedly in different age groups and only a handful of cases have been ever described. It is one of the few anorectal malformations in which the anal canal is at a normal position, thus concealing itself from an attendant who is not suspicious. We present two cases of anal membrane. A newborn girl presenting at birth was treated by primary excision of the membranes. The second case was a 2 year boy with chronic constipation with an obstructive web of a persistent ruptured anal membrane. Both were short procedures with almost no morbidity. Both the cases would have been diagnosed earlier if the primary attendant had done a rectal examination. There was good post-operative outcome in terms of continence and constipation in both the cases. Neither of them needed any anal dilatations. Anal membrane is a rare low anorectal malformation which needs keen suspicion for diagnosis. It is easy to miss it if the attendant omits a rectal examination. Therefore, it is imperative to do a rectal examination of all neonates with non-passage of meconium and as well as children with chronic constipation.

Keywords: Anal membrane, Low anorectal malformation, Paediatric constipation

INTRODUCTION

A persistent anal membrane is a rare remnant of the foetal proctodaeum which has been rarely reported in literature.^{1,2} It is a low anorectal malformation. Due to its rarity and associated normally located anal opening it is often detected late in neonate. Sometimes, such membranes persist through childhood and these children present with constipation. Here, we present two cases of anal membrane at two age groups, one in a neonate and the other in a toddler with constipation.

CASE REPORT

Case 1

A 2 day old girl baby was referred from a rural hospital for failure to pass meconium. The abdomen was

distended. There were three openings, a normally situated urethral, vaginal opening in the introitus and a normally situated anal opening with no meconium in the perineum. The buttocks were well formed. There was a pink mass prolapsing from the anal opening (Figure 1). The anal opening could not be probed.

On spreading the anal dimple, a bulge with a dark green hue of meconium was seen just proximal to the anal verge at the dentate line (Figure 2). Erect abdominal X-ray was normal. A prone cross-table lateral X-ray confirmed a low anorectal malformation. Ultrasonography showed a dilated, loaded rectum with no renal anomaly.

A cruciate incision was made over the membrane and the corners excised. The membrane was at the level of the dentate line. Postoperative period was uneventful.



Figure 1: Pink mass prolapsing from anal opening.



Figure 3: Prolapsed small pink mass from anal canal mimicking an external haemorrhoid.



Figure 2: Bulge just internal to the anal verge showing meconium.



Figure 4: Membranous structure at dentate line which could be hooked.

Case 2

A two year old boy was brought by the grandparents with complaints of constipation and persistent straining during defecation since 1 month of age. The child was malnourished and visibly irritable. He had a distended abdomen with palpable faecalomas. A soft non-tender, non-inflamed pink mass was seen protruding from within the anus (Figure 3).

On rectal examination, faecal loading with faecalomas was palpable and a thick fleshy obstructive membrane was palpable at the dentate line. The membranous structure could be hooked and delivered outside the anal verge (Figure 4).

Blood parameters revealed nutritional anaemia. X-ray showed faecal loading in a dilated rectum and sigmoid colon. No cardiac, renal or spinal anomalies were found on investigations. The child was administered olive oil retention enemas followed by rectal washouts. Dietary modifications with additional therapeutic fibre intake were initiated. After optimization, the child was posted for surgery. The web originated at the dentate line and was obstructing the anal canal from 3 o'clock to 12 o'clock (Figure 5). The web was hooked outside the anal verge and excised.



Figure 5: Web at dentate line which circumscribed right half of the anus from 3 o'clock to 12 o'clock.

Constipation resolved soon after surgery. High fibre diet with plenty of liquids was ensured. On follow up, the child had improved nutritional status with no constipation.

DISCUSSION

Persistent anal membrane or foetal proctodaeum is a rarely reported anorectal malformation. In 1961, this anomaly was classified by Partridge and Gough as a normal anus which was obstructed at the level of anal valves by a membrane which bulges when the infant

strains.¹ It has also been placed under rare malformations in the wingspread classification and the international classification in Melbourne.² Pena classified it as imperforate anus without fistula and recently, the international classification in Krickenbeck interpreted it as a rare regional variant or an anorectal malformation without fistula.³

The International classification describes persistent anal membrane as an intact proctodaeal membrane without other genital fold abnormalities. The fused anal tubercles form the final anal membrane incorporating the inner cloacal membrane and the outer ectodermal depression of the proctodaeum which forms the anus.⁴ The part of the anal canal above this membrane is derived from the hindgut (endoderm) and the part below from the proctodaeum (ectoderm). Therefore, the anal membrane corresponds to the dentate line.¹

The Melbourne classification describes anal stenosis as a partially perforated anal membrane.⁵ These cases with spontaneous partial rupture of the anal membrane present as chronic constipation and malnutrition. These children may develop megacolon and may mimic ultrashort Hirschsprung's disease. Hard stools leading to straining and inability to defecate becomes a vicious cycle leading to aggravated symptoms.⁶

There are a few differentials of this rare conditions, a funnel anus mimics a ruptured anal membrane causing refractory constipation. This entity was described by Nixon as a variant of anorectal junction stenosis wherein a skin lined deep funnel joins the rectal mucosa without any transition epithelium. This funnel is muscle derived.⁷ In the presence of a normal anal canal, failure to pass meconium in a neonate should alert the clinician to a differential of Hirschsprung's disease, intestinal atresia or stenosis, meconium plug, meconium ileus, rectal atresia and medical conditions like hypothyroidism and dyselectrolytaemia.⁸

Anal membrane shows an obstructing membrane very close to the anal verge at the dentate line whereas in rectal atresia, a high anorectal malformation, the obstruction is encountered proximal to the dentate line almost 2.5-3 cm away from the verge.⁹ In type 2 rectal atresia, which is rare, a meconium bulging membrane may be visualised on anoscopy.⁹ This membrane is lower in station and can be visualised externally. There is always an urge to perforate the membrane at presentation which may leave behind parts of the membrane which may present later on life. Forceful anal probing may perforate the bowel resulting in peritonitis and septicaemia.¹⁰ In older children this partially occluding membrane may be totally missed by the non-apprehending attendant or may be treated as haemorrhoids.

CONCLUSION

To conclude this study, an anal membrane or a persistent proctodaeal remnant is a low anorectal malformation at the dentate line. An important differential is rectal atresia which is higher in station. Unlike other anorectal malformations, this anomaly had a well-formed sphincter muscle complex with good outcome in terms of faecal continence. A partially ruptured, persistent anal membrane should be a differential in older children who present with constipation and is easily diagnosed by digital rectal examination. This impresses on the necessity of a routine rectal examination in neonates with delayed passage of meconium as well as children with chronic constipation.

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