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Endoscopic-Assisted of Transanal Recto-Anal Anastomosis for The Treatment of Rectal Atresia: A Case Report

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1. Abstract

Rectal atresia is a rare subtype of anorectal malformations in which the patients are born with a normal anal canal but have complete atresia located few centimeters proximal to the dentate line. We present one case using endoscopic-assisted the transanal recto-anal anastomosis as a new surgical technique for the management of rectal atresia. A male born with rectal atresia was diagnosed during physical examination and confirmed with X-ray. The anatomic appearance of the external anus, and perineum were normal. An X-ray of the abdomen showed a blind ending dilated intestine, 2.76 cm from rectum. A colostomy was performed. At the age of 6 months, a operation was carried out by using endoscopic assisted transanal recto-anal anastomosis surgical technique. Two weeks later, the colostomy was closed. The rectal anastomosis was treated with rectal dilatation daily in order to avoid stricture. In conclusion, the endoscopic assisted and transanal approach is an alternative to other surgical techniques in the management of rectal atresia.

2. Introduction

Rectal atresia is an extremely rare anorectal anomaly malformation combining a normally developed anus and an atretic rectal segment representing 1-2% of all anorectal anomalies. Rectal atresia is considered separate from imperforate anus or anal atresia because, in rectal atresia, the anus is present and normal, but a variable rectal segment is atretic. Incomplete rectal atresia refers to complete membrane or severe stenosis. An in utero ischemic accident seems to explain the pathogenesis of this rectal malformation [1,2]. We describe a case of rectal atresia in a male newborn presenting with an abdominal distension and failure of passing meconium. This aim of this paper is to present an operation technique of endoscopic assisted and transanal approach in rectal atresia.

3. Case Report

A 2-day-old, full-term, 3.5-kg male baby, born after an uneventful normal spontaneous vaginal delivery, he was transferred to the neonatal intensive care unit (NICU) because of abdominal distension and failure to pass meconium. On rectal examination, the genital organs and external anus were normal (Figure 1). A thermometer was inserted into the anus, but it was ended at 2-3 cm from the anal verge. There was no meconium coated on the thermometer or in the urine. Abdominal X-ray showed dilated intestine with a blind distal end about 2.7 cm from rectum (Figure 2). The neonate was diagnosed as a rectal atresia and a sigmoid divided colostomy was performed. Postoperatively the distal segment of the colostomy was cleaned by using an normal saline from the distal stoma opening once every week in order to avoid fecal accumulation and rectal distention. Follow-up distal colonography was performed at age of 5 months confirmed the continuity of the distal colon without stricture (Figure 3). At 6 months old, pediatric gastroenterologist performed a video endoscope through distal colostomy opening to the blind end of rectum, then it was pushed to the anus

and recto-anal anastomosis was done with resorbable suture material (Figure 4,5). There was no postoperative complication. He had normal defecation without soiling after the operation and the colostomy was closed 2 weeks later. Hegar dilator was used to prevent anastomosis stricture till the size of 16.

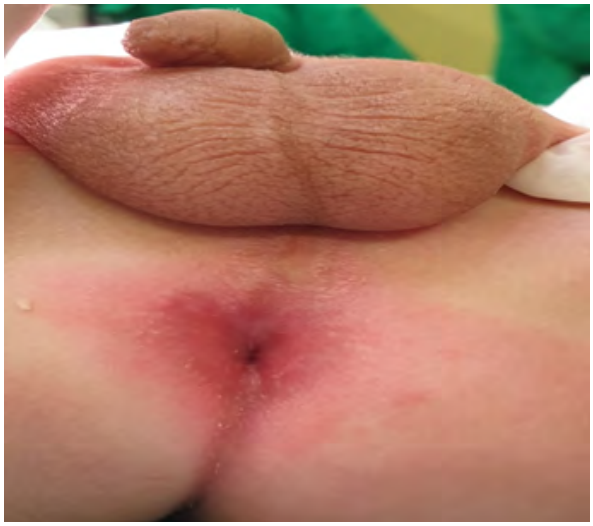

Figure 1. Normal genital organs and external anus.

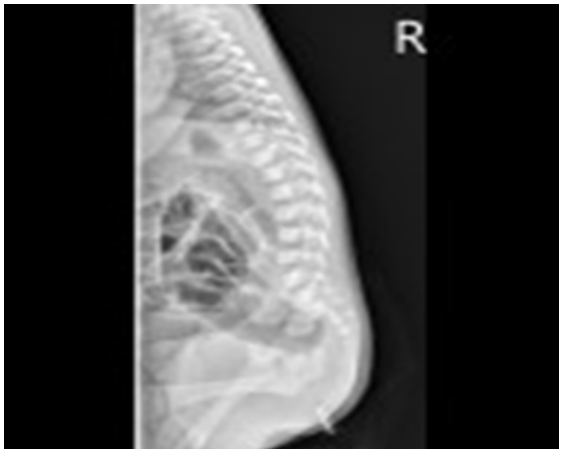

Figure 2: X-ray of abdomen at 24 hours of age. A catheter is placed at the opening of the anus (arrow) showed absent of rectal air.

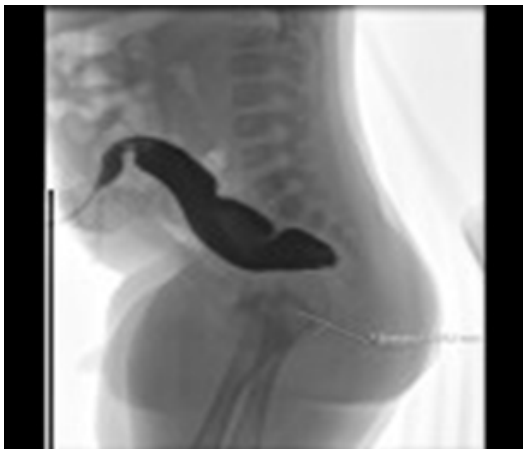

Figure 3. A colonography showed the blind end rectum with a distance of 2.7cm (red line) to the external anus (arrow).

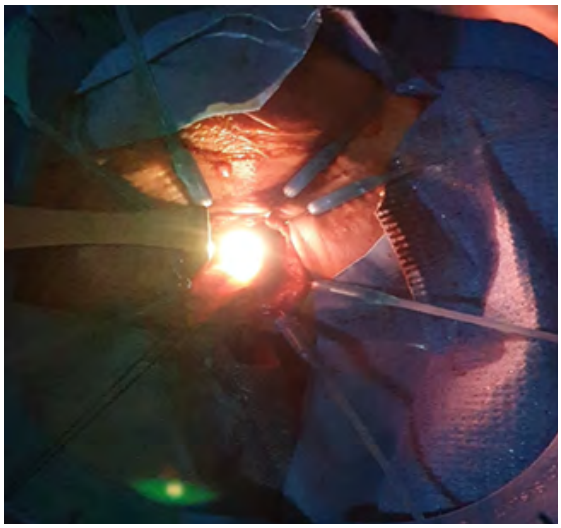

Figure 4: The endoscope was pushed down to the anus and it was seen at 1 cm from the anus.

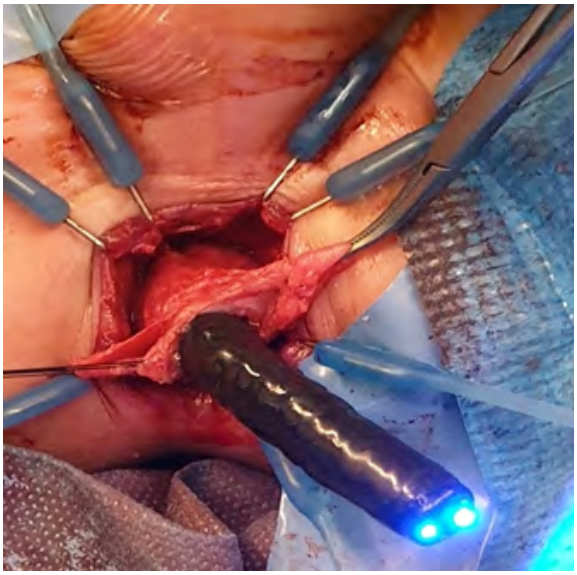

Figure 5: The figure showed the endoscope passed through the opening after the excision of the blind end performed under excellent view.

4. Discussion

Rectal atresia with a normal anus is a rare anomaly mostly described as part of a series of anorectal malformation. Most authors believe it to be an acquired lesion with a vascular genesis. Rectal atresia has been classified five type using the Ladd-Gross classification, Type I: rectal stenosis: (A) intramural, (B) web with a hole; Type II: rectal atresia with a septal defect; Type III: rectal atresia with a fibrous cord between two atretic ends; Type IV: rectal atresia with a gap; Type V: multiple: (A) rectal atresia with stenosis, (B) multiple rectal atresia, and (C) thickened Houstons valves/ multiple rectal stenosis [2]. Rectal atresia presents in the newborn period with a history of failure to pass meconium, progressive abdominal distention, refusal to feed and vomiting suggest the intestinal obstruction in neonates and lead to further investigations

[3]. Physical examination reveals marked abdominal distension with a normal anus and genital organs. The clinical diagnosis is easily confirm with rectal thermometer, finger, or a red rubber catheter inserted and ended at 2-3 cm from the anal verge. Associated anomalies, although rare, may be sacral, cardiac, or renal anomalies [4,5]. When a rectal atresia is clinically suspected, with the aid of abdominal radiograph and barium enema, the diagnosis can be established with dilated bowel loops with an absence of rectal gas of distal pouch and the atretic anal segment. In addition, ultrasonography and magnetic resonance imaging can be used to rule oput pelvic floor, renal and spinal abnormalities [6,7]. The most common procedure performed for rectal atresia is a posterior sagittal anorectoplasty (PSARP) following an initial diverting colostomy. This technique is widely used due to its reported success in establishing fecal continence with reduced complications . However, PSARP involves extensive mobilization can injury the sphincter mechanism and the sensation inherent in it. We present a case to illustrate the endoscopic-assisted transanal pull through recto-anal anastomosis technique for rectal atresia in our center. It shortened the operation time and reduced possibility of the injury to nearby anatomical structures. This technique is safe because better of visualization of the rectal pouch. Using video-endoscope is good tool to view the exact rectal pouch and working space, lowering the risk of injury to nerves or other pelvic organs during the operation. If the distance between the proximal and distal rectal ends is a long gap and it should be concerned that the urethra would be pushed down and injured. After the operation, the low rectal anastomosis should be dilated to prevent stricture. By using endoscopic assisted with the presence of diverting colostomy, this procedure is a good choice for avoiding 3-stage procedures in neonate with rectal atresia.

5. Conclusion

Using the combination of endoscopy and transanal approach is good alternative technique of management of rectal atresia's disease in children. This technique is safe, easy, lower risk of complications.

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