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Case Report

Colonic atresia in a newborn: a rare case report

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ABSTRACT

Colonic atresia is a rare cause of intestinal obstruction, and the transverse colon is the rarest site of colonic atresia. Our case was an index case of colonic atresia to be first operated on and effectively managed by the collaboration of paediatricians and surgeons in the Bundelkhand region of Uttar Pradesh. A 5-day-old male baby presented with complaints of abdominal distension, bilious vomiting, and failure to pass meconium and was diagnosed as a case of colonic atresia. The present case and the pertinent literature were discussed with an emphasis on surgical management along with medical post-op care. Colonic atresia must be considered an important cause of distal intestinal obstruction in neonates, and other causes of congenital small left colon should be ruled out.

Keywords: Colonic atresia, Hirshsprung disease, Intestinal obstruction, Surgery

INTRODUCTION

Colonic atresia is a cause of gastrointestinal obstruction in the newborn. It is defined as congenital loss of continuity in a colonic segment. It is a rare malformation, with an incidence of 1 out of 20000 live births and it accounts for 1.8 to 15% of all intestinal atresia.[1-3] Colonic atresia was first reported by Binniger in 1673 and Gaub in 1922 reported the first surviving child who underwent proximal diversion colostomy. Initial management for colonic atresia was reported by Potts in 1945.[4-6] Because of its rarity and its presentation as an isolated anomaly, colonic atresia has the most favourable prognosis among all bowel atresia.[7]

CASE REPORT

A 5-day-old male full-term baby of 2.7 kg presented to the department of paediatrics with chief complaints of abdominal distension, intolerance to breastfeeding with failure to pass meconium, and a recurrent episode of bilious vomiting with gradual deterioration in general condition and progression of respiratory distress. The baby was admitted to the neonatal intensive care unit and put on mechanical ventilation. There was no significant family or maternal history, and there was no drug history or infection exposure during pregnancy. There was no other apparent associated anomaly in our case. A plain erect x-ray of the abdomen showed multiple air-fluid levels suggestive of distal bowel obstruction. A provisional diagnosis of colonic atresia could be made, and a contrast enema depicted a small right colonic obstruction. After stabilisation of the child's general condition and effective medical management, the child was taken up for surgery on the 7th day of postnatal life. An exploratory laparotomy was performed. A right colonic atresia III, according to Grossfeld classification, was identified. Figure 1 showing the atretic blind pouch of the colon. In our case, we did a primary end-to-back anastomosis, unlike the conventional approach of a colostomy. Figure 2 showing resected part of the atretic part of colon. The baby was electively intubated for 2 days after surgery. The postoperative course was uneventful, and post-op care was carried out under all

aseptic precautions in the NICU. Gradually, after 2 days, the baby was successfully weaned off the ventilatory support, and the postoperative course was uneventful and satisfactory. Contrast follow-through confirmed smooth passage of contrast, and the child was discharged on post-op day 8 of surgery. After 1 year of follow-up, there were no complications, and daily evacuations were reported.

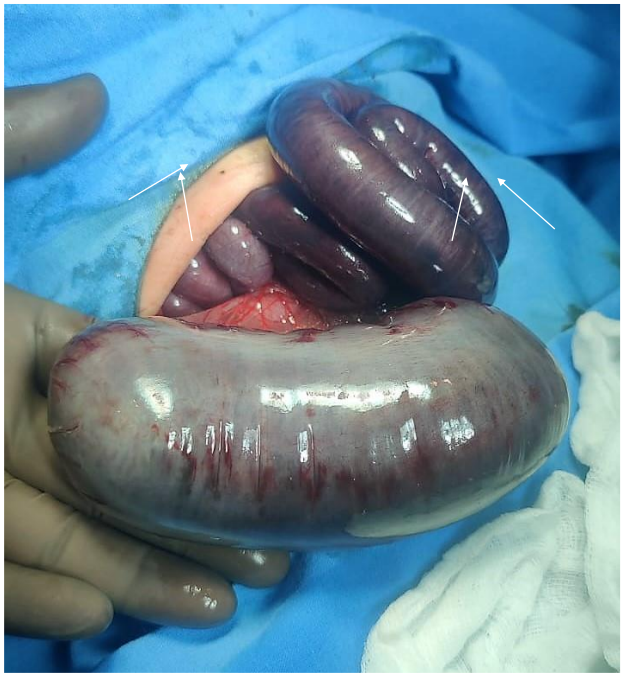

Figure 1: The atretic blind pouch of the colon.

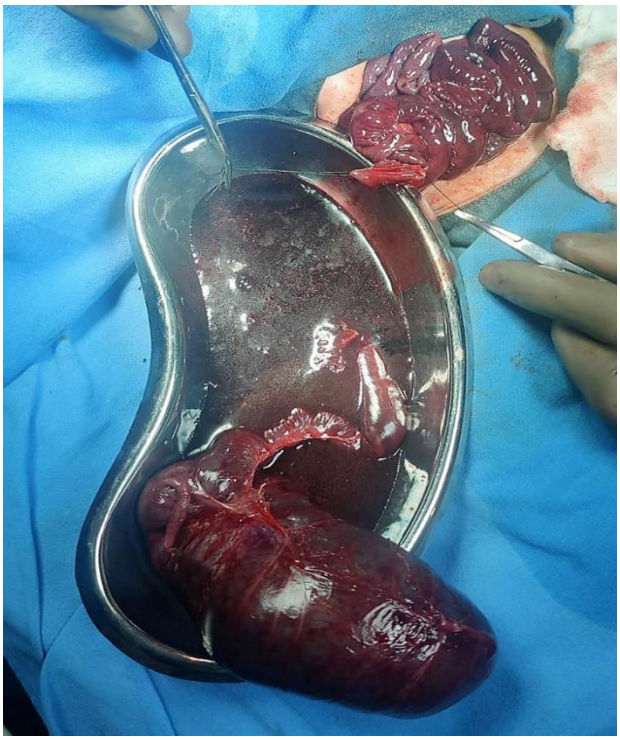

Figure 2: A specimen of a resected part of the atretic part of the colon.

DISCUSSION

The most accepted theory of colonic atresia was an intra-uterine vascular insult due to an embolus in the mesenteric circulation, foetal herniation, kinks and intussusceptions of the gut, and maternal cocaine intake. Other theories, like failure of recanalization, intestinal perforation, drugs, and environmental factors, have been proposed. However, our case was the first reported case of colonic atresia in the Bundelkhand region of Uttar Pradesh to be operated on and effectively managed by the collaboration of pediatricians and surgeons. As explained by Louw and Bernard in 1955, the etiological basis of colonic atresia was believed to be a vascular insult to the mesenteric vessels. However, in our case, there was an isolated colonic atresia without any associated anomaly, and our case presented with colonic atresia at the level of hepatic flexure in contrast to the highest incident at the level of splenic flexure. Both Louw and Grossfeld classifications are still being used to subdivide the anatomy and define the treatment and prognosis of the patient. However, a report by Benawara et al of the three cases occurring among the first-degree relatives of a family supported the genetic basis.[6,8] Colonic atresia had been associated with numerous anomalies. In 2005, Cox et al described small intestinal atresia associated with colonic atresia.[6] A similar study done by Baglay et al found a significant association between an anterior abdominal wall defect and colonic atresia. Etensel et al emphasised aetiology, demography, treatment, and overall prognosis, along with associated anomalies with colonic atresia. In this regard, three main types of colonic atresia were identified, while a fourth type relates to multiple atresia. The characteristic clinical features of colonic atresia include abdominal distension, which can be marked and progressive at 24-48 hours of life, and the inability to eliminate meconium present at distal bowel obstruction.[7,9] Even though colonic atresia can be diagnosed prenatally using ultrasonography, diagnosis is usually suspected at birth. However, in this case report, there was no prenatal diagnosis. Prenatal diagnosis is of great importance since ultrasound examination can show a relatively characteristic image.[8] That may allow faster management with fewer complications associated with a delayed diagnosis. Changes in surgical management have been reported in the literature since previous recommendations included performing primary anastomosis depending on the location of the atresia and its proximity to the splenic flexure. The current recommendation is to perform primary anastomosis regardless of the location of the atresia.[6] Once colonic atresia has been diagnosed, it should be urgently and surgically corrected to prevent perforation.[10,11]

It should be mentioned that rectal and anal atresia are not included in colonic atresia. Mortality is 10% if adequately managed in the absence of other associated pathologies. However, a late diagnosis beyond the first 72 hours of life can potentially be associated with >60% mortality.[6,7] The differential diagnosis of colonic atresia

includes acquired colonic stenosis that may be secondary to necrotizing enterocolitis or infectious diseases; meconium plug syndrome; Hirschsprung's disease; cystic fibrosis; and small left colon syndrome.[6]

CONCLUSION

Although colonic atresia is a rare disease, it must be considered an important cause of distal obstruction in neonates. Early treatment is imperative, as mortality from this disease increases considerably 72 hours after birth. Once the early treatment of this disease had been done, a good prognosis and low mortality were reported.

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