

## Case Report

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## Unveiling neonatal intestinal obstruction due to total colonic atresia: A case report

Fawad Mueen Arbi,\* Muhammad Zulfiqar Anjum, Zeeshan Iqbal, Seerat Fatima

Department of Pediatric Surgery, Bahawal Victoria Hospital, Quaid-e-Azam Medical College, Bahawalpur

**Correspondence\***: Dr. Fawad Mueen Arbi, House Surgeon, Department of Pediatric Surgery, Bahawal Victoria Hospital, Bahawalpur. **E-mail**: fawad.arbi@gmail.com

## KEYWORDS

Colonic atresia,  
Neonatal intestinal obstruction,  
Surgical management,  
Congenital anomaly,  
Newborn,  
Ileostomy

## ABSTRACT

**Background:** Total colonic atresia is an uncommon congenital anomaly associated with neonatal intestinal obstruction, often necessitating prompt diagnosis and surgical intervention to prevent life-threatening complications. Understanding the etiology and optimal management strategies is crucial for ensuring favorable outcomes.

**Case Presentation:** We present a case of a full-term male neonate with total colonic atresia, who presented with failure to pass meconium, abdominal distension, and vomiting. Diagnostic imaging confirmed intestinal obstruction, leading to surgical exploration revealing an atretic colon extending from the Ileocolic Junction to the Rectosigmoid Junction. An ileostomy was performed, followed by meticulous postoperative care, resulting in a successful resolution of symptoms and discharge from the hospital.

**Conclusion:** Timely recognition and staged surgical management are paramount in addressing total colonic atresia, emphasizing the importance of early intervention for optimal patient outcomes. Long-term follow-up and comprehensive care are essential to ensure the overall well-being of affected newborns.

## INTRODUCTION

Total colonic atresia is a rare congenital anomaly characterized by the absence of a normal connection between the colon and the rest of the gastrointestinal tract [1]. The range of the expected incidence is 1 in 10,000 to 1 in 66,000 [2]. It often presents with neonatal intestinal obstruction and may lead to life-threatening complications if not promptly diagnosed and treated [3]. We report a case of total colonic atresia in a newborn presenting with the failure to pass meconium.

## CASE REPORT

A full-term male neonate, born via uncomplicated vaginal delivery, was admitted to our neonatal intensive care unit on the second day of life. The parents reported that the infant had not passed meconium since birth and had exhibited signs of abdominal distension and vomiting. The baby's initial clinical examination revealed abdominal distension, tenderness, and absent bowel sounds. There were no other congenital anomalies noted, and prenatal ultrasounds had not indicated any abnormalities.

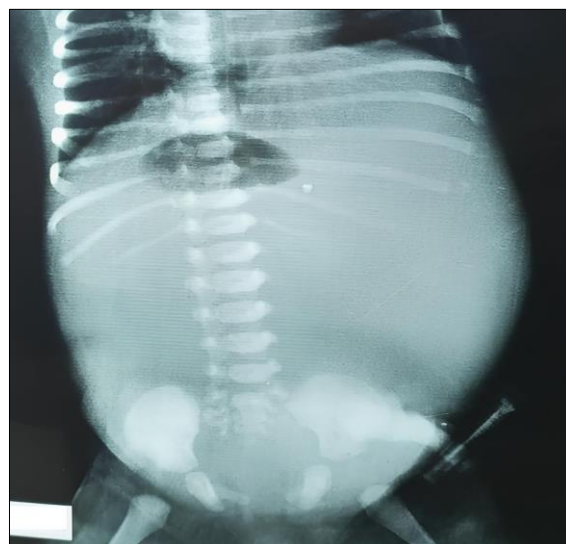


Figure 1: X-ray abdomen showing a single gas bubble

The initial diagnostic workup included abdominal X-rays, which revealed a single air-fluid level (Fig. 1). A contrast enema study further confirmed the presence of a distal obstruction in the colon, suggesting the possibility of atresia of some part of the gut. Per rectal

examination revealed the absence of meconium in the rectal vault, which corroborated this diagnosis.

The patient was taken to the operating room for surgical exploration and intervention. Intraoperatively, an atretic colon was observed, which was extending from ileocolic junction to the rectosigmoid junction. A blind terminal ileum was observed followed by an atretic colon segment (Fig. 2A). A blind rectum was also observed intra-operatively, which was left as such (Fig. 2B). An ileostomy was performed to relieve the obstruction and divert the proximal bowel contents.

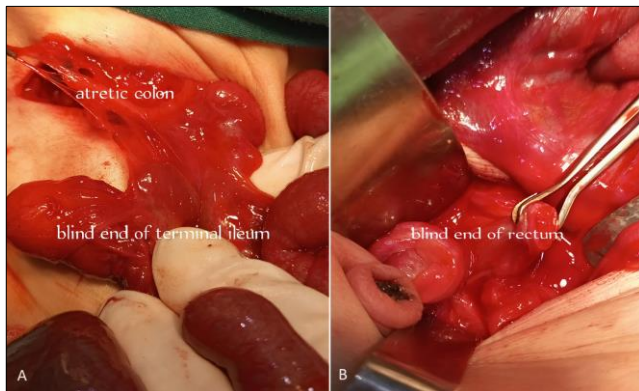


Figure 2: A) showing terminal ileal blind end. B) Showing blind ending rectal stump

Following the end-ileostomy creation, the patient's condition stabilized, and he gradually began passing meconium through the stoma. Subsequent investigations and consultation with a pediatric gastroenterologist were performed to rule out associated syndromes or anomalies.

The patient was managed with meticulous stoma care and close monitoring of electrolyte balance during the postoperative care. The patient recovered uneventfully and was discharged from the hospital on the 6th postoperative day.

## DISCUSSION

Total colonic atresia is a rare congenital anomaly that presents as a neonatal intestinal obstruction. The most common theory linked to the origin of colonic atresia (CA) is the intrauterine mesenteric vascular accidents [1]. CA has also been linked to intraluminal vascular accidents. A study reported that placental emboli might potentially originate and then travel into the mesenteric circulation to impair it, thus leading to such malformations [4]. One of the known causes of CA is varicella infection in the fetus. Varicella infection can damage the intestinal plexus, which can impair vascular development and create ischemia that may produce CA [5].

There is a well-established correlation between colonic atresia and other congenital abnormalities [6]. But in our case, no such abnormalities or congenital

syndromes were identified. The preferred method for diagnosing CA and determining the distal atretic segment's level is preoperative contrast enema [7]. In our study too, contrast enema study was administered prior to surgery to the patient which showed a possible atresia of distal colon.

Early diagnosis and surgical intervention are crucial for the patient's survival. The staged surgical approach with initial ileostomy creation allows for gradual bowel adaptation, and a definitive repair can be performed at a later date when the patient is in better condition. Depending on the newborn's health, either primary anastomosis or primary anastomosis combined with intestinal diversion is seen to be an effective method for managing colonic atresia [8]. But the huge difference in size between the proximal and distal intestines, as well as the length loss resulting from the atresia, might make primary anastomosis technically challenging. Hence, we opted for ileostomy instead of primary anastomosis.

As for the definitive management, our priority lies in the restoration of the distal rectal stump, aiming to achieve a functional anastomosis. To this end, our plan involves utilizing hydro-dilation (hydrotherapy) via the anus as a means to potentially enlarge the rectal stump. By employing this approach, we aim to gradually dilate the rectum, allowing for improved distension and functionality. Once we have achieved sufficient dilation of the rectal stump, we will proceed with ileocolic anastomosis. In order to exclude the possibility of associated Hirschsprung Disease, we plan to perform a rectal biopsy to check for ganglion cells before performing definitive repair.

In conclusion, total colonic atresia is a rare but critical condition that requires prompt diagnosis and surgical intervention. This case highlights the importance of early recognition and staged surgical management to achieve a favorable outcome for the newborn. Further long-term follow-up and comprehensive care are essential to ensure the patient's overall well-being.

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**Author Contributions:** Author(s) declared to fulfil authorship criteria as devised by ICMJE and approved the final version.

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