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DEFINITIVE MANAGEMENT OF COLONIC ATRESIA FOLLOWING NEONATAL ILEOSTOMY: A CASE REPORT

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ABSTRACT
Colonic atresia is a rare congenital anomaly of the gastrointestinal tract, often presenting in the neonatal period with intestinal obstruction. Delayed definitive management following diversion may result in diagnostic and therapeutic challenges due to distal microcolon, mucus impaction, and mesenteric defects. We report a case of colonic atresia in a child who underwent ileostomy in the neonatal period and later presented for definitive management. Preoperative imaging, operative findings, and histopathological evaluation are discussed, highlighting the importance of staged surgical management and exclusion of associated enteric neuropathies.

KEYWORDS: Colonic atresia; Ileostomy; Microcolon; Definitive surgery; Pediatric intestinal obstruction

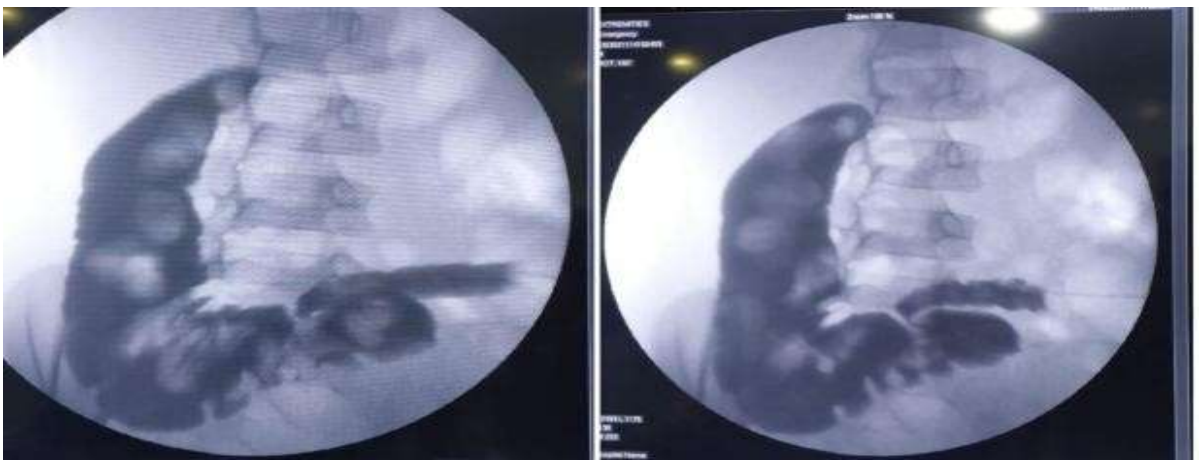
INTRODUCTION
Colonic atresia accounts for less than 10% of all intestinal atresias and is frequently associated with delayed diagnosis and complex surgical management. The condition may present as isolated colonic discontinuity or with associated mesenteric defects and functional abnormalities of the distal bowel. Initial diversion is often required in neonates, followed by definitive reconstruction at a later stage. This case report describes the clinical course, radiological evaluation, operative findings, and histopathological features of a child with colonic atresia managed definitively after neonatal ileostomy.

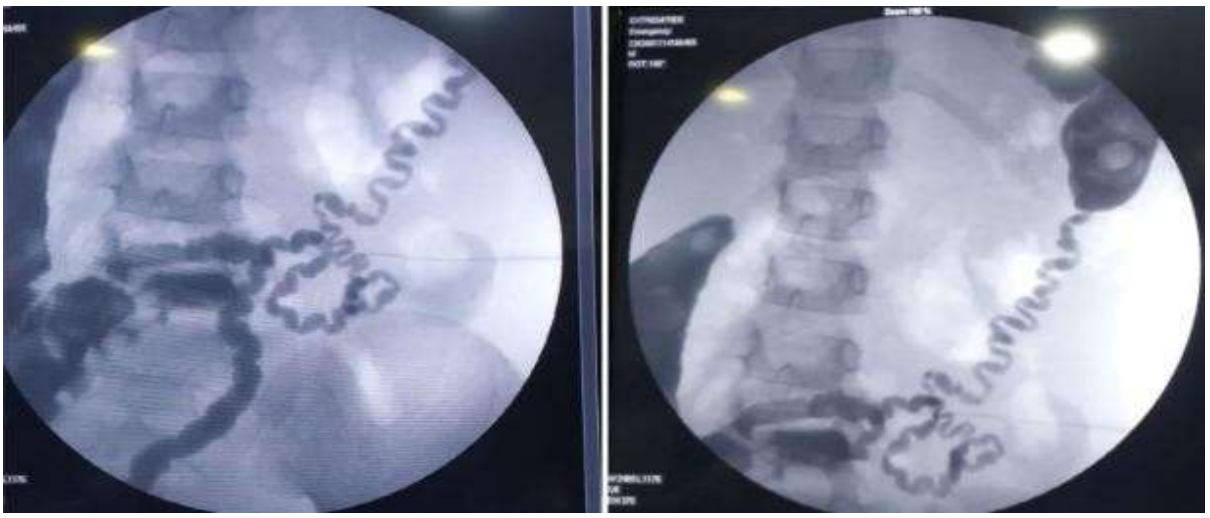
Case Presentation: A child, a known case of colonic atresia status post ileostomy performed on the ninth day of life, presented for definitive surgical management. The patient had complaints of intermittent abdominal pain for the past one year. There was a history of passage of blood-tinged stools through the ileostomy site. No history of fever, vomiting, or abdominal distension was reported. There was no significant past medical history apart from the index surgery. Bladder habits were normal, and bowel movements occurred through the ileostomy. Family history was non-contributory. General and systemic examinations on admission were unremarkable.

Investigations : A distal loopogram and contrast enema were performed on 09/06/2023.

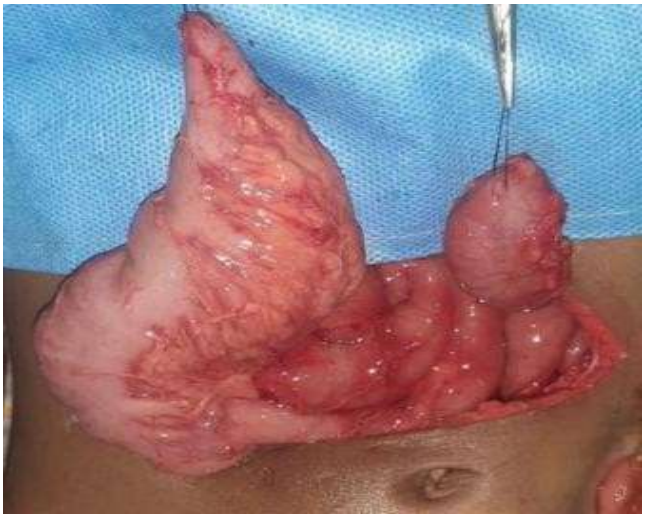
Distal Loopogram: Contrast was observed entering the distal ileum and subsequently the ascending colon, which was grossly dilated up to the hepatic flexure, terminating as a blind-ending loop at the right side of the transverse colon. Multiple filling defects suggestive of mucus collection were noted, with dilatation of the distal blind loop.

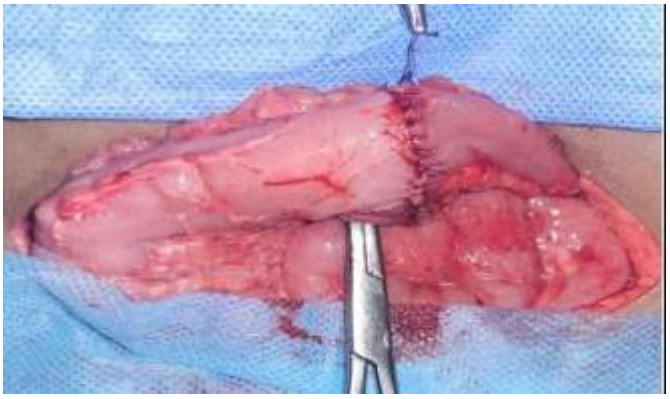
Contrast Enema: A long-segment microcolon was visualized up to the splenic flexure, beyond which a dilated blind-ending loop was noted. No communication was identified between the proximal and distal colonic segments.





Surgical Management
The patient underwent **exploratory laparotomy with rectal biopsy, colonic resection, and primary anastomosis** on 10/06/2023.





Intra-operative Findings
Intra-operatively, a blind-ending proximal colon was identified at the level of the hepatic flexure. The ascending colon was grossly dilated with mucus plugs and secretions. A
blind-ending distal colon was noted at the level of the splenic flexure. The distal colon was of long course with thin calibre and normal mesentery. The descending colon was grossly dilated with mucus accumulation. A defective mesentery was also observed.

Histopathological Examination
Histopathological analysis (HPE No: HS 1091/23) revealed:

- **Rectal biopsy**: Muscle fibres with presence of few ganglion cells.
- **Biopsies from blind ends of proximal and distal colonic segments**: Colonic mucosa with inflammatory changes, hypertrophic muscle fibres, and prominent neural bundles.

These findings ruled out aganglionosis and supported a diagnosis of colonic atresia with secondary changes.

DISCUSSION

Colonic atresia is a rare congenital condition, commonly attributed to intrauterine vascular insults leading to bowel discontinuity and mesenteric defects. Staged surgical management is often advocated, particularly in neonates presenting with gross bowel dilatation or diagnostic uncertainty. Long-standing diversion can lead to distal microcolon and mucus accumulation, as observed in the present case.

Preoperative contrast studies play a crucial role in delineating bowel anatomy and planning definitive surgery. Rectal biopsy remains essential to exclude associated

Hirschsprung's disease, which has been reported in association with colonic atresia. The presence of ganglion cells in this patient allowed safe restoration of bowel continuity.

CONCLUSION

This case highlights the importance of thorough preoperative evaluation and histopathological confirmation prior to definitive surgery in patients with colonic atresia managed initially with diversion. Early recognition of distal bowel status and exclusion of enteric neuropathy are critical for successful surgical outcomes.

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