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Retrograde Intussusception Through Distal Stoma Of Loop Ileostomy In Paediatric Case; Rare Case Report

Dr. Kumar Shantanu¹, Dr. (prof) Md Tarique¹, Dr. H.S. Thakur¹

¹Department of General Surgery, Lord Buddha Koshi Medical College and Hospital, Saharsa, Bihar, India

Abstract

Background:

Loop ileostomy is frequently performed for fecal diversion in children with intestinal obstruction, perforation, or inflammatory bowel pathology. Although stomal complications such as prolapse, retraction, stenosis, parastomal hernia, and skin excoriation are well recognized, distal limb intussusception remains exceptionally rare. Owing to its nonspecific clinical presentation, it may mimic more common complications such as parastomal hernia or stomal prolapse, making preoperative diagnosis difficult.

Case Presentation:

A 10-year-old boy weighing 26 kg presented for elective closure of a loop ileostomy that had been created six months earlier for intestinal obstruction the history of diagnosis of intestinal tuberculosis obtained which was established by CBNAAT and histopathology showing granulomatous inflammation consistent with tuberculosis, and the patient had completed a six-month course of antitubercular therapy.

Preoperative contrast-enhanced computed tomography demonstrated findings suggestive of a herniation of omental fat along with contrast filled part of ascending colon proximally and few non contrast filled small bowel loops into distal stoma without evidence of bowel obstruction or strangulation. A loopogram confirmed proximal bowel patency.

During elective exploration for stoma closure, a distal limb intussusception with a lead point near the terminal ileum was identified. while preserving the caecum and intussusception was reduced and resection of approximately 15 cm of ileum was resected till terminal portion colon. Bowel continuity was restored by a side-to-side ileotransverse anastomosis.

The postoperative course was uneventful. The patient tolerated oral feeding well, regained normal bowel function, and remains asymptomatic on follow-up.

Clinical Discussion:

Distal limb intussusception associated with loop ileostomy is exceedingly uncommon, particularly in pediatric patients with intestinal tuberculosis. Radiological imaging may fail to identify the pathology and instead suggest a more common diagnosis such as parastomal hernia. Awareness of this rare entity is essential because delayed diagnosis may result in bowel ischemia or necrosis. Careful intraoperative assessment during planned stoma closure remains crucial.

Conclusion:

Intussusception through loop ileostomy is extremely rare. Herniation with bowel obstruction may delay treatment. Prompt surgical exploration enables accurate diagnosis and definitive treatment with favorable clinical outcomes as bowel ischaemia necrosis may be detrimental and require extensive resection.

Keywords; Distal limb intussusception, Loop ileostomy, Parastomal hernia, Intestinal tuberculosis, Pediatric surgery, Stoma closure, Ileotransverse anastomosis, Case report.

Highlights:

- Distal limb intussusception following loop ileostomy is extremely rare.
- Intestinal tuberculosis may act as an underlying pathological lead point.
- CT scan may misdiagnose the lesion as a parastomal hernia.

- Diagnosis may only become evident during elective stoma closure.
- Surgical resection with ileotransverse anastomosis provides excellent outcomes.

INTRODUCTION

Loop ileostomy is a commonly performed temporary fecal diversion procedure in pediatric surgical practice for conditions including intestinal perforation, distal bowel obstruction, anastomotic protection, and inflammatory bowel disease. Despite its widespread use, several complications have been described, including prolapse, retraction, stenosis, skin excoriation, ischemia, parastomal hernia, and bowel obstruction. Intussusception occurring through an ileostomy, however, remains one of the rarest reported complications.

Most published cases describe intussusception involving the proximal limb of the ileostomy, whereas distal limb intussusception is exceptionally uncommon. Because the clinical appearance closely resembles stomal prolapse or parastomal hernia, preoperative diagnosis is challenging and radiological investigations may be misleading. Consequently, definitive diagnosis is frequently established only during surgical exploration.

Intestinal tuberculosis continues to be an important cause of intestinal obstruction in developing countries. Terminal ileal involvement commonly results in fibrotic strictures requiring temporary fecal diversion. However, an association between intestinal tuberculosis, loop ileostomy, and delayed distal limb intussusception has rarely been documented.

We report a unique case of distal limb intussusception discovered unexpectedly during elective loop ileostomy closure in a 10-year-old child previously treated for intestinal obstruction and intestinal tuberculosis. Preoperative computed tomography suggested didn't defined lesion as intussusception, whereas operative exploration revealed distal limb intussusception requiring segmental ileal resection and side-to-side ileotransverse anastomosis. To the best of our knowledge, very few comparable pediatric cases have been reported in the literature.

REVIEW OF PREVIOUSLY REPORTED LITERATURE

Published reports describing intussusception through an ileostomy are extremely limited. Most involve adult patients with proximal limb prolapse. Distal limb involvement is

distinctly uncommon, and reports in children are particularly scarce.

Across available case reports, the most common presenting features include:

- Stomal swelling
- Irreducible prolapse
- Abdominal pain
- Bleeding from the stoma
- Features of bowel obstruction

Several patients required emergency laparotomy because of bowel ischemia or strangulation.

In contrast, our patient remained clinically stable and presented for elective stoma closure, making this presentation especially unusual.

Another notable feature is the discrepancy between imaging and operative findings. Although CT suggested a possibility of parastomal hernia, surgery demonstrated distal limb intussusception. This reinforces the principle that radiological diagnosis should always be interpreted in conjunction with clinical judgment, particularly in rare surgical conditions.

CARE Timeline

The CARE timeline describes a paediatric patient who initially presented with intestinal obstruction due to terminal ileal tuberculosis and underwent emergency loop ileostomy. After completing six months of antitubercular therapy, elective stoma closure was planned. During surgery on 27 January 2026, unexpected distal limb intussusception was identified, requiring terminal ileal resection and ileotransverse anastomosis. Postoperatively, the patient recovered uneventfully with normal bowel function.

Table 1: Clinical Event Clinical Event

Time	Clinical Event
6 months before current admission	Patient presented with intestinal obstruction secondary to terminal ileal. Lump in RIF
Same admission	Emergency exploratory laparotomy with loop ileostomy performed.
Postoperative period	Histopathology showed granulomatous inflammation consistent with tuberculosis; CBNAAT confirmed intestinal tuberculosis.
Next 6 months	Completed a full six-month course of antitubercular therapy with satisfactory clinical improvement.

Current admission	Admitted electively for planned loop ileostomy closure.
Preoperative evaluation	Contrast-enhanced CT abdomen suggested parastomal hernia. Loopogram demonstrated proximal bowel patency without distal contrast shadow
27 January 2026	Exploratory laparotomy for stoma closure revealed unexpected distal limb intussusception. Approximately 15 cm terminal ileum was resected, followed by proximal side-to-side ileotransverse anastomosis and distal terminal ileal loop closure.
Postoperative follow-up	Uneventful recovery with restoration of normal bowel habits.

CASE PRESENTATION

A 10-year-old boy weighing 26 kg was admitted to the Department of General Surgery, Lord Buddha Koshi Medical College and Hospital, Saharsa, for elective closure of a loop ileostomy.

Six months earlier, he had undergone exploratory laparotomy with loop ileostomy for intestinal obstruction. Histopathological examination of the resected tissue had demonstrated granulomatous inflammation consistent with tuberculosis, and CBNAAT confirmed intestinal tuberculosis. The patient subsequently completed a six-month course of antitubercular therapy with good clinical recovery.

At the present admission, he was clinically stable and was scheduled for planned stoma closure.

Clinical Examination

On admission, the child was afebrile and hemodynamically stable.

General examination

- Conscious and oriented
- Weight: 26 kg
- No pallor or jaundice
- No peripheral edema

Local examination

Inspection of the right lumbar loop ileostomy revealed a protruding bowel segment from the distal limb associated with a parastomal bulge. The stoma appeared healthy, with viable mucosa and no active bleeding. The swelling was clinically suggestive of a stomal prolapse.

Abdominal examination demonstrated a soft abdomen without guarding or rigidity. No evidence of intestinal obstruction or generalized peritonitis was present.

Laboratory Investigations

Routine hematological and biochemical investigations were within acceptable limits for surgery. Previous medical records documented:

- Histopathology: Granulomatous inflammation consistent with tuberculosis
- CBNAAT: Positive for Mycobacterium tuberculosis

RADIOLOGICAL EVALUATION

Contrast-Enhanced Computed Tomography

Preoperative contrast-enhanced CT abdomen demonstrated:

- Loop ileostomy in the right lumbar region.
- Herniation of omental fat.
- Herniation of contrast-filled ascending colon.
- Herniation of a few non-contrast-filled small bowel loops into the parastomal sac.
- Hernial sac measuring approximately 11–12 cm in craniocaudal length and 3.5 cm in maximum width.
- No evidence of bowel obstruction.
- No evidence of bowel strangulation.
- Multiple enhancing, non-necrotic mesenteric and pre-para-aortic lymph nodes.

Loopogram

A contrast loopogram was performed before surgery and demonstrated free passage of contrast into the proximal bowel without evidence of complete distal obstruction, supporting the decision to proceed with elective stoma closure.

Operative Findings

Elective laparotomy was undertaken through the previous stoma site with extension as required.

Intraoperative exploration revealed distal limb intussusception

The intussuscepted segment originated from the distal limb of the loop ileostomy. Careful inspection identified a lead point. The involved bowel remained viable without evidence of perforation or transmural gangrene.

Approximately 15 cm of terminal ileum, including the pathological lead point, was resected. The ascending colon appeared healthy and was preserved.

Surgical Procedure

Following resection of the diseased and relatively ischaemic terminal ileal segment, bowel continuity was restored by performing distal segment closure and proximal end side-to-side ileotransverse anastomosis using standard surgical technique.

After meticulous hemostasis and peritoneal lavage, the abdominal wall was closed in layers.

No intraoperative complications occurred.

Postoperative Course

- The patient had an uneventful postoperative recovery.
- Nasogastric decompression was discontinued after the return of bowel function. Oral feeding was gradually initiated and was well tolerated.
- The patient passed stools normally without abdominal distension or vomiting.
- The surgical wound healed satisfactorily, and the patient was discharged in stable condition.
- At follow-up, the child remained asymptomatic with normal bowel habits, good nutritional recovery, and no evidence of recurrent intestinal obstruction or postoperative complications.



Figure 1: Clinical photograph demonstrating the prolapsed distal limb of the loop ileostomy

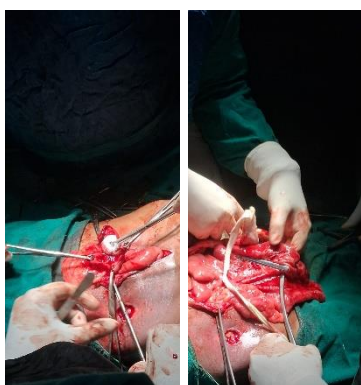


Figure 2: Intraoperative photograph showing distal limb intussusception identified during elective loop ileostomy closure.



Figure 3: Resected terminal ileal specimen containing the pathological lead point responsible for intussusception.

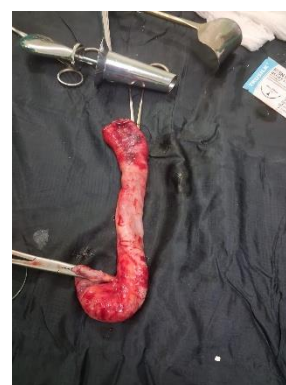


Figure 4: Intraoperative image after reduction and resection of the intussuscepted bowel prior to definitive reconstruction.

DISCUSSION

Intussusception through a stoma is an exceptionally uncommon surgical complication, with only a limited number of cases reported in the literature. While stomal complications such as prolapse, retraction, ischemia, stenosis, skin excoriation, and parastomal hernia are frequently encountered, distal limb intussusception through a loop ileostomy remains exceedingly rare, particularly in the pediatric population.

Most previously published reports describe proximal limb intussusception through an ileostomy, usually associated with raised intra-abdominal pressure, excessive bowel mobility, pregnancy, chronic cough, or increased intra-abdominal strain. In contrast, distal limb intussusception has been documented only sporadically, and the underlying pathophysiology remains poorly understood.

The present case is unique for several reasons. First, the patient was a 10-year-old child, whereas most reported cases

involve adults. Second, the patient had intestinal tuberculosis involving the terminal ileum, an uncommon background condition in reported cases of stomal intussusception. Third, the patient had successfully completed a full course of antitubercular therapy and was admitted only for planned loop ileostomy closure, making the intraoperative discovery of distal limb intussusception entirely unexpected. Finally, preoperative CT imaging suggested a parastomal hernia, illustrating the diagnostic challenge posed by this rare condition.

POSSIBLE MECHANISM

The exact mechanism responsible for distal limb intussusception remains uncertain. Several hypotheses have been proposed:

- Persistent abnormal intestinal peristalsis
- Increased mobility of the terminal ileum after diversion
- Local inflammatory changes following intestinal tuberculosis
- Residual fibrosis or scarring acting as a pathological lead point
- Altered pressure dynamics around the loop ileostomy
- Mesenteric laxity predisposing to bowel telescoping

In our patient, the lead point was located near the terminal ileum, suggesting that residual inflammatory or fibrotic changes related to healed intestinal tuberculosis may have contributed to the development of intussusception. Although definitive causation cannot be established from a single case, this association deserves attention and may represent a potential mechanism requiring further investigation.

DIAGNOSTIC CHALLENGES

Preoperative diagnosis of stomal intussusception is difficult because its clinical appearance closely resembles more common complications, particularly stomal prolapse and parastomal hernia.

In the present case, contrast-enhanced CT demonstrated:

- Herniation of omental fat
- Herniation of ascending colon
- Herniation of small bowel loops
- No bowel obstruction
- No bowel strangulation

This case therefore highlights an important limitation of imaging studies. Even modern cross-sectional imaging may fail to identify distal limb intussusception when the anatomy around a loop ileostomy is distorted. Consequently, surgeons should maintain a high index of suspicion whenever clinical findings appear atypical or do not correlate completely with radiological interpretation.

Importance of Surgical Exploration

Because imaging failed to establish the correct diagnosis, surgical exploration became both the definitive diagnostic and therapeutic procedure.

During surgery, distal limb intussusception with a lead point near the terminal ileum was identified. The involved bowel remained viable, allowing timely resection before irreversible ischemic injury occurred.

Approximately 15 cm of diseased terminal ileum was resected while preserving the ascending colon. Restoration of bowel continuity was achieved by side-to-side ileotransverse anastomosis, followed by simultaneous loop ileostomy closure.

The patient's postoperative recovery was uneventful, supporting the effectiveness of early operative intervention.

Why This Case Is Clinically Important

Several aspects distinguish this report from previously published literature:

- Pediatric presentation
- Intestinal tuberculosis as the primary disease
- Elective rather than emergency presentation
- Radiological misdiagnosis as possible parastomal hernia
- Unexpected intraoperative diagnosis
- Successful definitive reconstruction with ileotransverse anastomosis
- Excellent functional outcome

These features emphasize that even apparently straightforward elective stoma closure procedures may reveal unexpected pathology requiring modification of the operative plan.

CLINICAL LESSONS

This case provides several important learning points for practicing surgeons:

- i. CT findings may mimic a parastomal hernia and fail to identify intussusception.
- ii. Previous intestinal tuberculosis may produce residual pathological changes capable of acting as a lead point.
- iii. Elective stoma closure does not exclude the possibility of unexpected intraoperative pathology.
- iv. Early surgical exploration facilitates bowel preservation and favorable postoperative outcomes.
- ii. Intestinal tuberculosis may be associated with residual structural abnormalities acting as a lead point, although causality remains unproven.
- iii. CT may incorrectly suggest a parastomal hernia.
- iv. Surgical exploration remains the gold standard for diagnosis and treatment when findings are inconclusive.
- v. Early recognition and appropriate operative management can achieve excellent long-term results.

STRENGTHS OF THIS CASE

- CARE-compliant reporting
- Pediatric patient
- Histologically and microbiologically confirmed intestinal tuberculosis
- Comprehensive radiological evaluation
- Loopogram available
- Multiple intraoperative photographs
- Clear operative documentation
- Excellent postoperative follow-up

LIMITATIONS

The principal limitation is that this report describes a single patient, preventing conclusions regarding causality between intestinal tuberculosis and distal limb intussusception. In addition, the original histopathology report was unavailable for review, although the discharge summary documented granulomatous inflammation consistent with tuberculosis and the diagnosis was supported by CBNAAT.

CONCLUSION

Distal limb intussusception after loop ileostomy is an exceptionally rare complication that may closely mimic a parastomal hernia or stomal prolapse on clinical examination and radiological imaging. This case demonstrates that preoperative CT findings may be misleading and that definitive diagnosis may only be established during surgical exploration. Surgeons should maintain a high index of suspicion when evaluating atypical parastomal swellings or stomal prolapse, particularly in patients undergoing elective ileostomy closure. Prompt operative management allows timely bowel preservation, definitive reconstruction, and excellent postoperative outcomes.

LEARNING POINTS

- i. Distal limb intussusception is an extremely rare complication of loop ileostomy.

DECLARATIONS

- **Ethics Approval:** Ethical approval was exempted by the institutional ethics committee as this manuscript reports a single anonymized case. All procedures were performed in accordance with the ethical standards of the institution and the principles of the Declaration of Helsinki.
- **Consent:** Written informed consent for publication of this case report and accompanying clinical images was obtained from the patient's parents/legal guardian. A copy of the written consent is available for review by the Editor-in-Chief upon request.
- **Funding:** The authors received no financial support for the preparation of this manuscript.
- **Conflict of Interest:** The authors declare that they have no competing interests.

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Author Contributions (CRediT)

Dr. Kumar Shantanu

- Conceptualization
- Literature review
- Data collection
- Manuscript writing
- Figure preparation

Dr. (prof) Md Tarique

- Surgical management
- Critical revision of manuscript

Dr. H. S. Thakur

- Surgical management
- Supervision

All authors approved the final manuscript.

Guarantor: Dr. Kumar Shantanu

Data Availability: All data generated or analyzed during this study are included in this published article. Additional information can be made available by the corresponding author upon reasonable request.

Cover Letter

To

The Editor-in-Chief

International Journal of Surgery Case Reports

Subject: Submission of a Case Report

Dear Editor,

We are pleased to submit our manuscript entitled:

Retrograde intussusception through distal stoma of loop ileostomy in paediatric case ; rare case report

This manuscript describes a rare pediatric surgical complication identified unexpectedly during elective loop ileostomy closure. The patient had previously undergone loop ileostomy for intestinal obstruction secondary to intestinal tuberculosis confirmed by histopathology and CBNAAT. Preoperative CT suggested a possibility of parastomal hernia; however, surgery revealed distal limb intussusception requiring segmental ileal resection and side-to-side ileotransverse anastomosis.

To our knowledge, reports describing distal limb intussusception associated with loop ileostomy in children are extremely limited, particularly in the setting of intestinal tuberculosis. We believe this case provides important educational value by highlighting the limitations of radiological diagnosis and emphasizing the role of meticulous intraoperative assessment.

This manuscript is original, has not been published previously, and is not under consideration elsewhere. Written informed consent has been obtained from the patient's legal guardian.

Thank you for your consideration.

Sincerely,

Dr. Kumar Shantanu

Department of General Surgery

Lord Buddha Koshi Medical College & Hospital

Saharsa, Bihar, India