

## Intestinal Duplication As A Rare Cause Of Acute Intestinal Obstruction: Case Report

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**Abstract:** Intestinal duplications are disorders which have varying presentations. These occur with a prevalence of 1:10000 births. There is usually no sex predilection. Most of the patients present during infancy or early childhood but few may escape this period and present in adulthood with obstruction or perforation. [1] They may be unexpectedly encountered during emergency surgery. We hereby present a case of ileal duplication who presented with a history of acute intestinal obstruction in whom despite various clinical methods and radiological investigations the diagnosis was made only at the time of surgery.

**Keywords:** Intestinal duplication, Intestinal obstruction, Stricture ileum

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### I. Introduction

Most small intestinal duplications are located in the ileum [2]. These may be cystic or tubular and are located on the mesenteric border of the small intestine. They often share a common muscular wall and blood supply with the native intestine. Multiple small intestinal duplications may be present. Rarely enteric cystic duplications may be associated with intestinal atresia. Theories of the duplication of small intestine include split notochord and abnormalities in the neuro-enteric canal. Some Gastro Intestinal (GI) duplications of the foregut and hindgut may result from "Partial Twinning" [3]. These duplications may be associated with other paired structures, such as those found in the genital and urinary tract. Other duplications, especially those of the ileum, may occur as a result of persistent embryological diverticulae. Some portions of the intestinal tract have a solid stage during development; therefore duplications of these structures may result from "aberrant luminal recanalization" [4]. Finally, intrauterine environmental factors, such as trauma or hypoxia during a vascular accident, may cause duplication at any level of the GI tract [5, 6].

### II. Case Report

A 47 year old female patient presented to our Emergency Room (ER), with features of acute intestinal obstruction since last 3 days. There was history of recurrent vomiting, abdominal distension and abdominal pain. Her pulse rate was 104 beats per minute and Blood Pressure (BP) was 100/64 mm Hg (millimetre mercury).

Patient was resuscitated and investigated in the Emergency Room (ER). On X-Ray, there were multiple air fluid levels with dilated ileal and jejunal segments of the small intestine. Ultra sonogram (USG) of abdomen only showed dilated gut loops of the small intestine and no other cause pertaining to the illness. Contrast Enhanced Computerized Tomography (CECT) of the abdomen was also not very helpful in pointing out the cause of the intestinal obstruction. The patient was taken up for exploratory laparotomy. On exploration through a midline incision, small bowel loops were grossly dilated. There was obstruction about 3 feet proximal to the ileo Cecal (IC) junction. At that point, intestinal duplication in the form of an extra loop of small intestine was present. This duplicated loop was arising near the mesenteric border of the ileum, about 60 centimetres long and again reinserted just adjacent to the point of origin (Picture 1). This segment was collapsed but a small stricture was present at the level of insertion of the duplicated loop in the main ileal loop, which was causing obstruction. Whole of the duplicated segment along with distal 5 centimetre (cm) of ileum was collapsed. About 15 centimetre of proximal dilated ileum along with the duplicated segment of the small intestine was excised and

sent for histopathological examination. An end to end anastomosis of the small intestine was done. Patient was discharged on 10th postoperative day after having an uneventful hospital stay. Histopathological examination of the resected specimen confirmed the diagnosis and no features of dysplasia were seen. The patient has made a full recovery and is in regular follow up after 6 months of surgery.

### **III. Discussion**

Intestinal duplications are congenital anomalies of the intestine, first described by Fitz, which are usually encountered in the ileum and majority, are found in infants[7].The small intestine is the most frequent site of gastrointestinal (GI) duplications, accounting for 44% of cases.[8] Outcome of surgical management of GI duplications is favourable. The severity and types of malformation which are associated with GI duplications play a major role in determining the morbidity and mortality. When these are detected, treatment is surgical with complete resection of the duplicated segment of intestine. For proximal lesions, an endoscopic approach can be considered whenever a highly skilled endoscopist is available. The differential diagnosis is with mesenteric cysts and intestinal diverticulae. According to the review published by Johnson et al in 1994, carcinoma was found in 3 (23%) of 13 reported cases of ileal duplications in adults.[9] This evidence of epithelial instability might suggest a tendency toward malignant transformation in long standing duplications. This also supports complete resection of the duplicated segment as the most appropriate method of treatment in these cases. Clinical presentation of GI duplication in adults is variable. A palpable mass can be found in approximately 50% of cases; abdominal pain is often present but the most common clinical presentation includes intestinal obstruction and bleeding. [10] Clinical presentation is related to the site and type of duplication. In duodenum, these malformations are usually cystic and localized on the mesenteric border of the first or second part. In jejunum, most frequent aspect includes a tubular duplication with the common lumen, while in the ileum; it resembles a diverticulum (Meckel's), even though this is present on the anti-mesenteric border of the intestine. Complications of intestinal duplication include volvulus, bleeding, perforation and malignancy.[9]

### **IV. Conclusion**

Intestinal duplications are congenital abnormalities which often manifest in early life and are a very rare cause of intestinal obstruction. A minority of cases may remain undiscovered until adulthood when they may become symptomatic. Symptoms are usually non-specific so this entity is not usually thought of in any differential diagnosis of intestinal obstruction. Surgical intervention is the treatment of choice, in which resection of the entire duplicated segment should be undertaken, so as to avoid future development of malignancy.

#### **Conflict Of Interest**

Authors declare no conflict of interests.

#### **Consent**

Written informed consent was obtained from the patient. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

#### **Author's Contributions**

**Rajesh chaudhary:** Contributed substantially to the Conception, design, Acquisition of data, Analysis and interpretation of data, drafting the article, Critical revision of the article and final approval of the version to be published.

**Amit Dogra:** Contributed substantially to the Conception and design, Acquisition of data, Critical revision of the article and final approval of the version to be published

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### References

**Picture 1.** Showing the duplicated ileal segment with a stricture of the small gut at insertion site. The proximal ileal segment is dilated while the distal segment is collapsed.



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