

# Tubular Ileal Duplication In An 8 Month Old Infant

Shazia Perveen,<sup>1\*</sup> Abdullah,<sup>1</sup> Jamshed Akhtar<sup>1</sup>

## ABSTRACT

*Enteric duplication is a rare congenital anomaly that can occur anywhere along the GI tract, most frequently in ileum. Cystic variety is more common than tubular duplication. Here we report a case of an 8 month old infant who presented to emergency department as acute abdomen and investigations showed pneumoperitoneum. On exploratory laparotomy he was diagnosed as case of tubular ileal duplication with distal communication to the gut where perforation was found.*

*Key words* Ileum, Enteric duplication, Perforation.

## INTRODUCTION:

Enteric duplication anomalies are rare and generally present in pediatric population within the first two years of life.<sup>1</sup> Duplication can be found anywhere from mouth to anus but is most common in the small intestine. Ileal duplication is the most common (30%) variety followed by those occurring in duodenum, stomach, jejunum, colon and rectum.<sup>2</sup> There are two forms of duplications, namely spherical or cystic duplications, and tubular duplications. Cystic duplications (75%) are more common than tubular duplications (25%).<sup>3</sup> There are many reports on enteric duplication cysts in children, however tubular enteric duplication with distal communication to the bowel and perforation is rare. We report a patient with similar presentation.

## CASE REPORT:

An 8 month old boy, weighing 6.8kg, presented to Emergency Department with the complaint of fever and loose motions for 15 days, and abdominal distension for the last two days. Past history was unremarkable. On examination patient looked pale and lethargic with heart rate of 120 beats per minute. Abdomen was distended, tense and tender. Laboratory parameters showed hemoglobin of 8.7g/dl, and leucocyte count of 1,800/mm<sup>3</sup>. Abdominal x-ray showed free air under right dome of diaphragm. Child

was optimized with fluid rehydration and packed red cells transfusion.

On exploration pus flakes and small bowel contents found in abdominal cavity. A small perforation was found at antimesenteric border of ileum, approximately 40 cm proximal to ileocecal junction with surrounding bowel inflammation (Fig-I). Resection and anastomosis was planned. At resection duplication of gut in proximal segment of ileum was found. On further exploration tubular duplication, 15cm long, sharing common vascular supply and common wall with the gut found (Fig-II). On examining the already resected segment, it was found that the distal end of duplicated segment was ending at site of perforation where the two lumens were communicating with each other. Following complete resection of duplicated gut an end to end anastomosis was performed and thorough lavage of peritoneal cavity done.

Postoperatively recovery was smooth and drain removed on 2<sup>nd</sup> postoperative day and bowel also moved, however, on 4<sup>th</sup> postoperative day patient developed tachypnea, altered sensorium, jaundice with total bilirubin of 13mg/dl and started oozing serosanguinous discharge from drain site. Medical consult was taken. Patient developed acute liver dysfunction. Despite aggressive ICU care and ventilator support, on 7<sup>th</sup> postoperative day patient expired. No definitive cause could be identified. Histopathology of the resected duplication revealed presence of ectopic gastric mucosa.

## DISCUSSION:

Gastrointestinal duplications are rare congenital anomalies of the alimentary canal that usually present in childhood having an incidence of 1 in 100,000 cases per year.<sup>4</sup> Enteric duplication must fulfill

<sup>1</sup> Department of Paediatric Surgery National Institute of Child Health, Jinnah Sindh Medical University Karachi

## Correspondence:

Dr. Shazia Perveen<sup>1\*</sup>

Department of Paediatric Surgery  
National Institute of Child Health  
Jinnah Sindh Medical University  
Karachi  
E-mail: dr.shaz89@gmail.com



Fig I: Perforation of ileum.

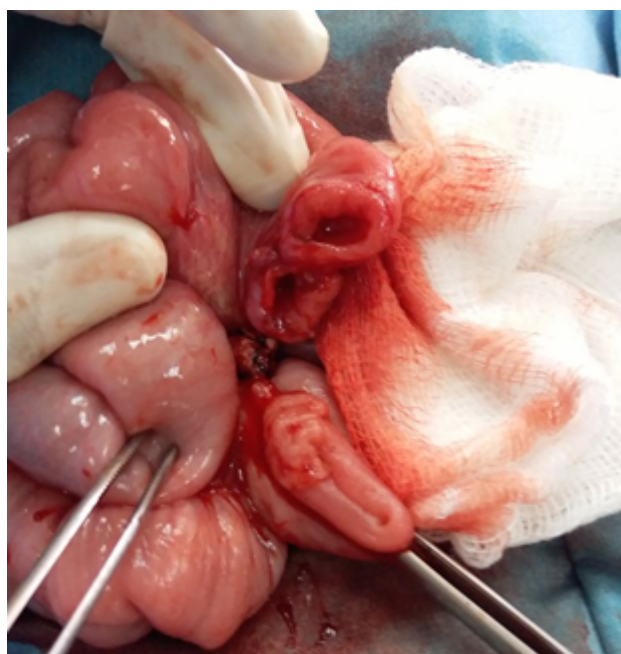


Fig II: Duplication cyst noted at resection of gut.

three Rowling's criteria to qualify as duplication cyst; the wall of the duplication in continuity with one of the duplicated organ, surrounded by a smooth muscular layer, and presence of digestive mucosa, more often typical or heterotopic as gastric mucosa, colonic mucosa, bronchial or pancreatic structure.<sup>5,6</sup> Acid secreting heterotopic gastric mucosa often causes peptic ulcer disease, which leads to perforation and peritonitis as seen in our case. The length of tubular duplications varies from few centimeters up to as long as the whole length of the small intestine. Tubular duplication often

communicates with the main intestine proximally or distally or at both ends in our case it was distal end.

The cause of liver dysfunction in our case could not be identified. Literature search showed that relevant factors causing acute postoperative liver dysfunction included use of halothane and enflurane for anesthesia and paracetamol hepatotoxicity. However none of these anesthetic agents were used in our case. Isoflurane, an isomer of enflurane, was used for maintenance of anesthesia that is also thought to be hepatotoxic in human beings.<sup>7</sup> Paracetamol, in our case, was used as antipyretic and analgesic at a dose of 15mg/kg/dose corresponding to total dosage of 400mg per day whereas maximum dose that can be administered in infants is 700mg in 24 hours. In the reported case four single applications a day are documented without further information on the time interval but were within therapeutic range. Blood products transfusion was also used postoperatively, that can be a cause, though unproven.

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Abdullah: Patient management.

Jamshed Akhtar: Final drafting of manuscript.

Conflict of Interest:

The authors declare that they have no conflict of interest.

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