Case Report

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Neonatal Intestinal Obstruction Due to Intussusception: A Case Report and Review of Literature

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ABSTRACT

Intussusception is a very rare cause of neonatal intestinal obstruction, particularly in preterm neonates. This rarity may lead to a significant delay in diagnosis. We present a case report of ileo-ileal intussusception occurring in a preterm neonate. Intussusception should be suspected in any neonate suffering from intestinal obstruction. Performing an abdominal ultrasound may confirm the diagnosis.

INTRODUCTION

Neonatal intestinal obstruction is regarded as a major cause of neonatal surgical emergencies. (1) Among causes of neonatal intestinal obstruction, intussusception is a rare cause, particularly in the preterm. (2)

Intussusception in the neonatal period is difficult to diagnose, depending on clinical examination and x-rays. In most reported cases, the diagnosis is made intraoperatively. (2,3)

We report a preterm infant having ileoileal intussusception, which was discovered during laparotomy for neonatal intestinal obstruction.

CASE REPORT

A 2 kg, preterm male neonate delivered vaginally for a primigravida mother with no history of hypertension, diabetes mellitus, anemia, or urinary tract infection during pregnancy. The neonate was managed as a case of respiratory distress syndrome. First meconium passage was on the first day after delivery. At day 6 of life, the neonate developed bile-stained vomiting and abdominal distention; the next day, the neonate was referred to the Pediatric Surgery department in Basrah Children's Hospital and admitted to the Neonatal Intensive Care Unit (NICU). Physical examination revealed a moderate abdominal distention with

visible peristalsis and exaggerated bowel sound on auscultation. Rectal stimulation by thermometer revealed normal-colored stool, HR 120 BPM, RR 50 CBM, Temp 37 c. Hematological tests were performed: (WBC = 17500 /μL, Hematocrit = 37%, PLT = 137.000 /μL), blood glucose = 1.2 mmol /L, blood urea = 9.7 mmol /L, total serum bilirubin = 171 mmol /L. Abdominal radiograph demonstrated small bowel dilatation with multiple air-fluid levels (Fig. 1).

After preoperative preparation with a nasogastric tube, intravenous fluid, vitamin K, and intravenous antibiotics (ceftriaxone and metronidazole), explorative laparotomy was done. The cause of the bowel obstruction was ileoileal intussusception (Fig. 2). The bowel was dusky, with gangrenous changes at the site of the intussusception (Fig. 3,4). Resection of the affected bowel, with end to end anastomosis, was performed. The lead point of the intussusception was Meckel's diverticulum. At the 5th postoperative day, enteral feeding started, and the neonate was discharged well at the 9th postoperative day.

DISCUSSION

Surgical causes of neonatal intestinal obstruction include small bowel atresia, meconium ileus, malrotation, anorectal malformation, congenital megacolon, and other rare causes, like intestinal duplication and small left colon syndrome. [(1)]

The commonest cause of intestinal obstruction in children aged between 6 months and 18 months is intussusception, while in neonates, intussusception comprised only 3% of all cases of intestinal obstruction.

Neonatal intussusception is commonly misdiagnosed as necrotizing enterocolitis (NEC), especially in preterm neonates. [(5, 6)]

Intussusception in neonates is usually diagnosed late, and in most cases, it is discovered intraoperatively. Late diagnosis and treatment of intussusception increase the risk of bowel ischemia. [(7)] In our case, the time between the onset of bilious vomiting and the operation was 48 hours, and this delay may result in gangrenous changes in the bowel wall.

Only a few cases of the reported neonatal intussusceptions are diagnosed before laparotomy. [(2,5,8)]

In most cases of intussusception in preterm infants, no anatomical lead points are found during surgery. [(7)] But in the present case, the patient was preterm, and the pathological lead point was a Meckel's diverticulum.

The imaging findings in preterm infants with intussusception are bowel loop dilatation, with or without air-fluid levels. [(2,7)] in our case, the findings generally go with mechanical small bowel obstruction.

Most cases of intussusception involving the small bowel in preterm infants are without a colonic component, so contrast enema is rarely helpful in the diagnosis. [(2,3,4,9)]

Ultrasound examination can be used to diagnose neonatal intussusception. [2,4,5,7,8] Raza et al. [10] reported that the diagnosis of colocolic intussusception in preterm infants was made by abdominal ultrasound. Aydin[11] stated that his case report of ileoileal intussusception in a preterm neonate is the earliest case diagnosed preoperatively by ultrasound examination, and the only case reduced manually; meanwhile, Shad et al. [12] reported that the ultrasonic examination of preterm infants suffering from intestinal obstruction could not detect ileocecal intussusception. However, no ultrasound examination was performed on our patient because the clinical and radiological features were enough to perform urgent surgery without further delay.

CONCLUSION

- The high degree of suspicion is required for the diagnosis of intussusception, especially in preterm neonates who appear to have necrotizing enterocolitis.
- Early diagnosis is required for optimal management.

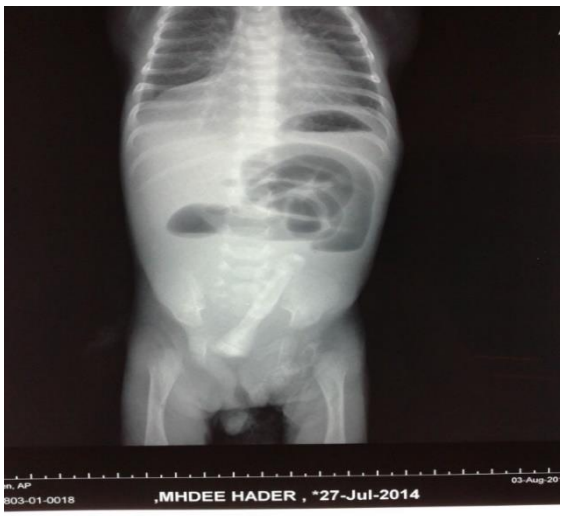

Figure 1. X-ray of the neonate, showing signs of mechanical small bowel obstruction

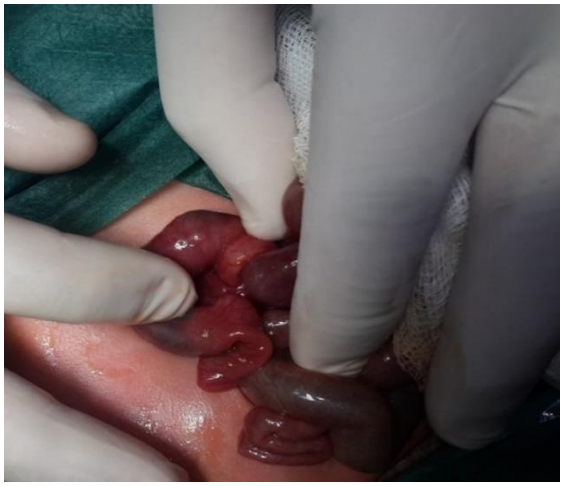

Figure 2. The operative finding of ileoileal intussusception

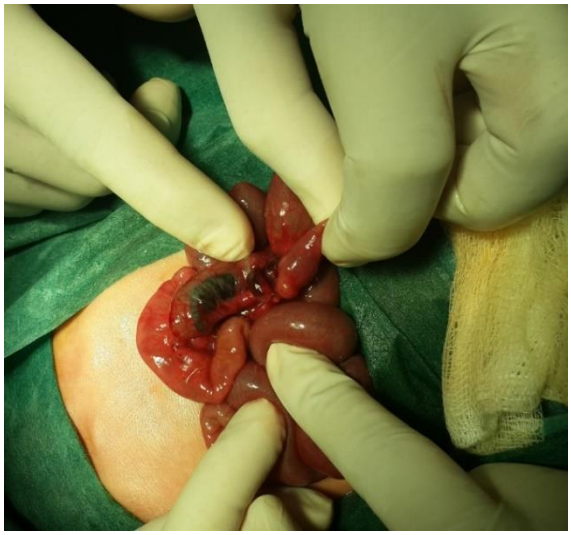

Figure 3. Ischemic changes of the small bowel at the site of the intussusception

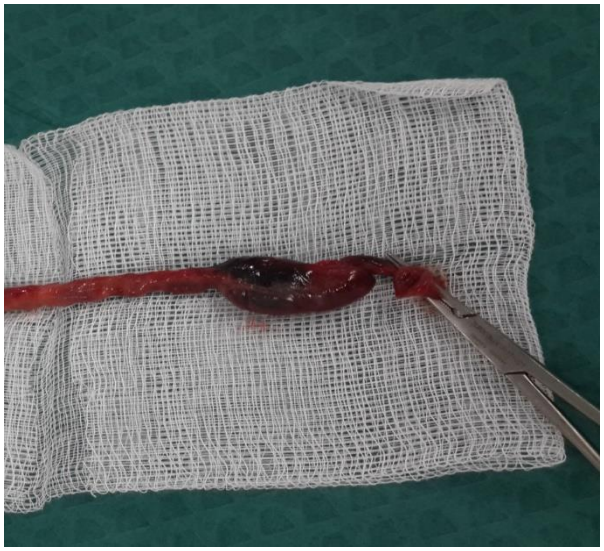

Figure 4. The resected small bowel segment containing the intussusception

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