



# Intestinal prolapse through omphalomesenteric fistula, a rare cause of neonatal occlusion: A case report



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## ABSTRACT

Acute intestinal obstruction secondary to omphalomesenteric fistula is a very rare condition. Omphalomesenteric fistula is a consequence of a defect in involution of the vitelline duct between the fifth and ninth week of intrauterine development. We are reporting on a case of neonatal intestinal obstruction due to a prolapse of small bowel through an omphalomesenteric fistula. A newborn baby aged 15 days was admitted in emergency with acute intestinal obstruction lasting for two days. The physical examination found prolapse of small bowel through a persistent omphalomesenteric duct. He received surgical treatment with favorable evolution. The scarcity of the reason during the neonatal period should draw the attention of pediatric surgeons because of its potential complications.

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Congenital intestinal anomalies remain the main causes of intestinal obstruction during the neonatal period. Persistence of the omphalomesenteric duct remains the most common gastrointestinal tract disorder [1–3]. Defects in the omphalomesenteric duct may result from a partial persistence of the vitelline duct (Meckel's diverticulum, umbilical sinus, vitelline cyst, or fibrous cord connecting the umbilicus to the intestine) or complete persistence of the vitelline duct performing an omphalomesenteric or umbilical enteric fistula [3,4]. Usually the clinical symptoms of omphalomesenteric fistula is represented by umbilical oozing, but in cases where fistula is wide a prolapsed bowel can be observed causing small bowel obstruction [2,3].

The purpose of this article is to report on a case of neonatal occlusion secondary to prolapse of the small intestine over an omphalomesenteric fistula in our precarious working conditions.

## 1. Observation

A 15 day male infant who had born at term was admitted in emergency room with acute small bowel evisceration through the umbilicus, abdominal distension, vomiting, absence of passage of gas and feces, and abdominal distension of 48 h duration. Physical

examination revealed dehydration, normal colored mucosa, a temperature at 37,7 °C, a pulse of 123 beats/min, and weighing 3100 g. We also found an omphalomesenteric fistula with a T-shaped prolapse of the small intestine ischemia, swollen and bleeding at the slightest touch (Fig. 1). Laboratory tests found a blood type A Rh positive, 13.1 g/dL hemoglobin, white blood cells count of 8500/μL, 38.5% hematocrit, platelets count of 434,000/μL. The electrolytes and renal function were normal. Abdominal plain X-rays showed air-fluid levels of small intestine type. Echocardiography was normal. After resuscitation, an exploratory laparotomy, showed a persistent omphalomesenteric duct with prolapse of the small bowel and gangrene. Small bowel resection followed by a termino terminal anastomosis was done (Fig. 2). The post operative course was uneventful. The child returned home 10 days after the intervention. With six month of follow up any problem was noted.

## 2. Discussion

The persistent omphalomesenteric duct is an outcome of a regression defect of the vitelline duct. This duct normally regresses between the sixth and ninth week of intrauterine development [2,3]. However it remains permeable in about 2% of children [4,5]. Neonatal intestinal obstruction is a common pathology but intestinal obstruction due to a prolapse of the small bowel on an omphalomesenteric fistula is a rare clinical presentation [6].

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Fig. 1. Omphalomesenteric fistula with a T-shaped prolapse of the small bowel.

Epidemiologically there is an equal frequency between the sexes, although symptomatic forms are more common in males [2].

The clinical presentation of the omphalomesenteric fistula is variable and depends on the age [2]. In 85% of children aged less than one month and 77% of children aged between 1 and 24 months, omphalomesenteric fistula is symptomatic. It may be commonplace in the form of umbilical oozing, an umbilical hernia, or then a type of abdominal pain, rectal bleeding, and acute intestinal obstruction [2,4]. Acute intestinal obstruction occurs in this case in a volvulus, an internal hernia or intussusception prolapsing through the omphalomesenteric duct [2,6].

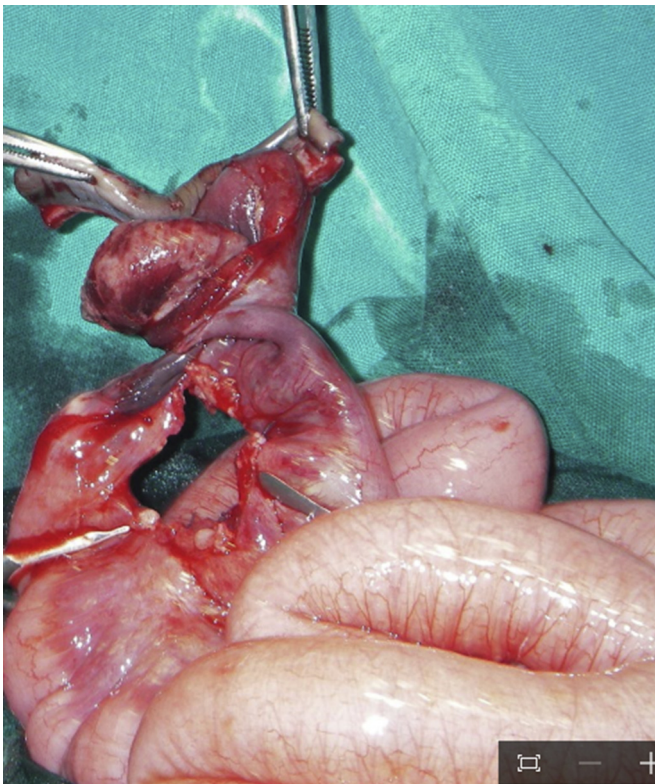


Fig. 2. Intestinal resection before termino terminal ileo/ileal anastomosis.

The laboratory tests were enabled to assess the impact of acute intestinal obstruction including electrolytes balance, hemoglobin, renal function and hemostasis tests.

The importance of imagery in this context of neonatal intestinal obstruction is the research of etiologic diagnosis and associated malformations [7]. In our patient on account of the precarious working conditions imaging consisted of a plain abdominal X-ray and echocardiogram.

The surgical management of this disease is bowel resection with removal of the fistula after reducing the prolapse followed by termino terminal anastomosis [5,7–9]. Such procedure has been adopted in our case. When hemodynamic conditions are put into question or in the advent of peritoneal sepsis an initial digestive bypass is needed to avoid the risk of post operative peritonitis.

For simple fistula, the purpose of surgery is to release the bud by the umbilical route, bowel resection on both sides of the location of the fistula with termino terminal anastomosis [4,5,7]. For some authors, excision of the omphalomesenteric fistula remains justified [4].

The prognosis is usually good if there is early treatment and in the absence of associated malformations, as was the case in our patient [5,7].

### 3. Conclusion

The acute intestinal obstruction secondary to a small bowel prolapse through omphalomesenteric fistula is a rare condition. Without proper care it exposes to complications that can be life threatening. The treatment is essentially the management of occlusion associated with intestinal resection removing the fistula.

### Conflicts of interest

The authors declare no conflict of interest.

### Author contributions

All authors contributed to the conduct of this work. All authors also claim to have read and approved the final manuscript.

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