

## Case Report

# Congenital mesocolic hernia—a case report

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### Abstract

Internal hernias are defined as protrusions of viscera through congenital or acquired aperture within the peritoneal cavity without an exit from the abdomen. The entity is broadly diversified with a wide variety of forms and severity of symptoms. A 10-day-old, full-term infant with poor feeding, bilious vomiting, and faecal retention for 3 days presented at our hospital. In the abdominal ultrasound, a whirl-pool sign was detected and laparotomy indicated. Intraoperatively, a malrotation of the small bowel with herniation of the jejunum into a mesocolic hernia was detected.

**Keywords:** internal hernia; newborn; malrotation

### Introduction

Internal abdominal hernias are defined as protrusions of viscera through congenital or acquired intraperitoneal orifices with hernia contents remaining within the peritoneal cavity [1]. This type of hernia accounts for up to 5.8% of small bowel obstructions [2] and has a high mortality rate in newborns [3]. Any form of internal hernia is potentially lethal because of the possibility of strangulation and intestinal ischemia. Due to their unspecific symptoms, internal hernias are often not correctly diagnosed preoperatively [4]. Congenital mesocolic hernias are clinically conspicuous by symptoms of an acute abdomen and bilious vomiting, indicating fast further diagnostics [5, 6].

Due to the rarity of this pathology, we report a case of a congenital mesocolic hernia.

### Case report

A mature 10-day-old girl with uncomplicated birth was transferred to our hospital in a markedly reduced general condition. The girl is the firstborn daughter of a 21-year-old mother with an inconspicuous family history. Pregnancy and birth were unremarkable.

At the initial presentation at our hospital the infant was sleepy with leading symptoms of weakness in drinking and a 3-day history of stool retention. The patient was in a dehydrated state with otherwise unremarkable physical status. The birth weight was 2685 g with a decrease to 2250 g at time of presentation. A gastric tube delivered copious bilious secretions. The initial blood gas analysis revealed uncompensated metabolic alkalosis, hypokalaemia and hypochloremia, and a lactate of 2 mmol/l. A blood test revealed a c-reactive protein of 9.5 mg/l, with otherwise normal values for age.

Initially, a sepsis was suspected, and a lumbar puncture revealed unremarkable cerebrospinal fluid findings. Re-evaluation of the laboratory chemistry revealed an increase of lactate to 9 mmol/l within 2 h after arrival at our hospital. Following this examination, a whirl-pool sign of the mesenteric vessels was seen on abdominal ultrasound. A volvulus was suspected due to these findings, indicating an emergency laparotomy. Intraoperatively, intestinal loops presented with normal configuration; however, the stomach was massively dilated and a malrotation of the intestine was found. The ileocecal junction was located in the right upper abdomen, the colon was located in the left mid-abdomen, and the duodenum was not configured properly. The duodenum ran paravertebrally caudally with initial right approach. The mesenteric root was malrotated, without ischemia of the bowel. At the ileal-cecal mesentery, a mesenteric sac was located in which the proximal jejunum was herniated. This sac represented an internal hernia trapping the small intestine. Thus, there was a very high small bowel ileus caused by a congenital mesocolic hernia. The small intestine was removed from the hernia (see [Video 1](#)). The intestine was then rotated counterclockwise, with the positioning of the small bowel in the right hemiabdomen and the ileocecal junction in the midabdomen, the remaining colon in the left hemiabdomen corresponding to an intestinal non-rotation.

Postoperatively, oral nutrition was increased stepwise, and laboratory values normalized. The girl was discharged with a weight of 2830 g at day 16 after operation.

### Discussion

According to Welch, internal hernias are classified as pericentral (13%), through the Winslow foramen (8%), transmesenteric (8%), intersigmoid (6%), supramesic and pelvic (6%), transomental

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(1%–4%), and paraduodenal hernias (53%). Paraduodenal hernias are also called congenital mesocolic hernias [7]. Congenital mesocolic hernias are divided into left and right paraduodenal hernias, based on their location corresponding to the duodenum. In these cases the small intestine herniates either partially or entirely into a peritoneal sac originating from a fossa proximal to the fourth segment of the duodenum [5]. Left-sided paraduodenal hernias (LPDH) are more common than right-sided hernias [8]. LPDH is defined as herniation into the Landzert fossa. Normally, this cavity closes when the inferior mesenteric vein, the ascending left colic artery, and the left mesocolon fuse with the retroperitoneum in the 5th to 10th embryonic week [9]. The right-sided mesocolic hernia is combined with nonrotation of the proximal duodenojejunal part of the intestine. The pathological rotation of the colonic frame results in the formation of pockets and herniation of the small intestine into them [10]. In our case, the patient presented with a right-sided mesocolic hernia.

Preoperative diagnosis is a particular challenge because of the non-specific symptoms. X-rays should be avoided in a neonate [11]. A mesocolic hernia may be accompanied by volvulus and, as in our case, may appear as such sonographically [12]. However, bilious vomiting caused by the high obstruction is an important sign and can lead to a rapid diagnosis.

## Conclusion

Internal hernias are a broadly diversified entity with a wide variety of forms and symptoms. A rare manifestation is the congenital mesocolic hernia, which occurs mainly in infancy and is therefore subject to special diagnostic challenges.

## Supplementary data

Supplementary data are available at *Journal of Surgical Case Reports* online.

## Conflict of interest statement

None declared.

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