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An unusual cause of diffuse ascites in an infant: colonic duplication associated with bladder duplication

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ABSTRACT
Colonic duplication is usually asymptomatic; however, when it is symptomatic, patients with this anomaly may present with bleeding, constipation, or manifestations of obstruction, perforation, or malignancy. We report the case of a sixteen-month-old boy who presented with diffuse ascites, and had complete colonic duplication and bladder duplication. Duplication of the colon associated with bladder duplication is a rare entity with only a few cases reported in the medical literature. In addition, it is an extremely rare cause of ascites.

Key words: • *colonic duplication* • *bladder duplication* • *ascites*

Colonic duplication is a rare, usually asymptomatic, congenital anomaly of the alimentary tract (1). When it is symptomatic, patients with this anomaly may present with bleeding, constipation, or manifestations of obstruction, perforation, or malignancy (2–5). Ascites has been reported in only one case of colonic duplication (6). We report the case of a sixteen-month-old boy with complete colonic duplication associated with bladder duplication, whose main clinical manifestation was diffuse ascites.

Case report

A sixteen-month-old boy presented to our hospital with a history of abdominal distension and diarrhea for three days. The symptoms were not associated with pain or fever, and there was no history of trauma. The patient had a 10-month history of vomiting after being fed, but did not have failure to thrive. He was previously diagnosed as having uncomplicated gastroesophageal reflux. Physical examination revealed skin palor and ascites with significant abdominal distension. There was no hepatomegaly or splenomegaly, nor was there any sign of chronic liver disease. There were no other remarkable findings on physical examination. Biochemical analysis of the blood was not diagnostic for a specific disease. Ultrasonographic examination of the abdomen revealed diffuse ascites. Paracentesis yielded thick, copious light yellow fluid. Biochemical analysis of the fluid could not be performed because of its viscosity. Cytologic examination revealed histiocytes and mucin-filled mesothelial cells. Investigation for acid-resistant bacteria was negative, and cultures of ascitic fluid were sterile. Unenhanced and contrast-enhanced abdominal computed tomography (CT) demonstrated diffuse ascites, two rectal segments, one of which was filled with mucin, and the bladder divided into two compartments by a complete sagittal septum (Figure).

The patient underwent surgical laparatomy. The tubular duplicated colon, which had a blind end at the tip of the cecum, was totally excised. There was no colonic perforation.

Discussion

Intestinal duplication occurs mostly in the pediatric age group, and can be located anywhere throughout the gastrointestinal tract. Duplication of the colon accounts for 4–18% of all gastrointestinal duplications (7). Morphologically, this congenital malformation can be either spherical or tubular. Complete duplication of the colon is extremely rare.

Eighty percent of patients with colonic duplication may have associated abnormalities, most notably genital and bladder duplications (8). In bladder duplication, the bladder may be divided into two parts by a complete or incomplete sagittal or frontal septum (9). In our case, a complete sagittal septum divided the bladder into two compartments.

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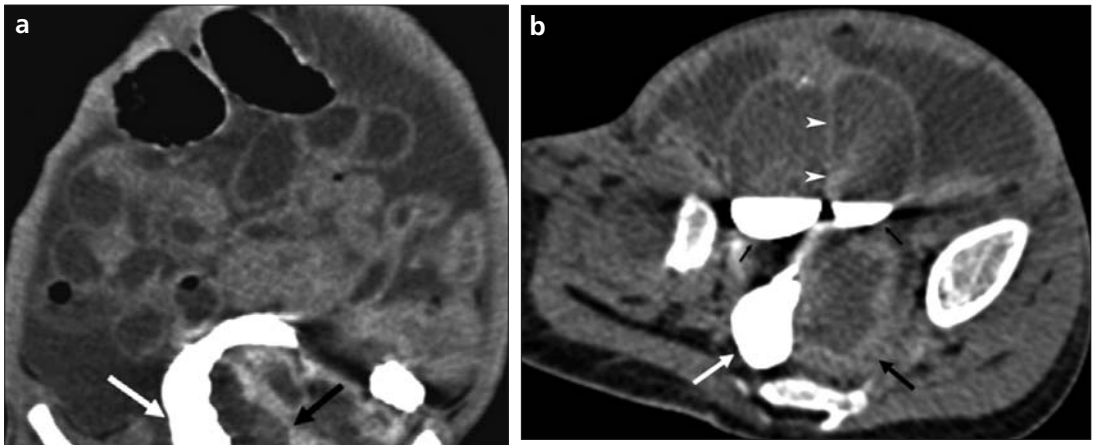

Figure. a, b. Rectal contrast-enhanced coronal reformatted CT image **(a)** demonstrates diffuse ascites and two rectal segments. Filling of the right side of the rectum, proved it to be the patent side *(white arrow)*. A dilated mucin-filled segment on the left side *(black arrow)* is also present. Rectal and intravenous contrast enhanced axial CT image **(b)** shows filling of the right side of the rectum, which proved it to be the patent side *(white arrow)*. The dilated mucin-filled segment on the left side *(long black arrow)* is again seen. The bladder is divided into two compartments by a complete sagittal septum *(arrowheads)*. Contrast material also accumulated at the dependent bladder parts *(short black arrows)*.

Most colonic duplication cases are asymptomatic, and may remain undiagnosed for years. If symptomatic, they manifest by obstruction, bleeding, and constipation (2–4). Perforation and malignancy are also reported (5). Although many duplications are diagnosed incidentally, most patients present with a combination of pain and/or obstructive symptoms (5). These symptoms may be caused by the direct effects of distension of the duplicated segment or by compression of adjacent organs (5).

Our case presented with significant ascites and vomiting. The ascitic fluid was considered to have originated from the extravasation of secretions of the tubular duplicated colon. Vomiting may have resulted from distension of the abdomen with ascites. To our knowledge, this is the second case of ascites in colonic duplication. This case demonstrates an extremely rare cause of ascites.

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