Tubular Duplication of the Sigmoid Colon with Acute Abdomen: An Adult Case Report

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Abstract Colonic duplication is a rare abnormality, comprising only 6–7 % of all gastrointestinal duplications and usually present during the first decade of life. Tubular duplications of the sigmoid colon are extremely rare and only a few cases have been reported in the literature. In this study, we report the case of a 27-year-old rural man visited our hospital with symptom of repeated episodes of abdominal pain in epigastric region that radiated to right flank and back. An abdominal computed tomography (CT) scan with oral and intravenous contrast revealed an extremely dilated and air-filled loop related to sigmoid colon. An exploratory laparotomy was performed and tubular sigmoid colon duplication was found intraoperatively. The postoperative period was uneventful.

Keywords Sigmoid colon · Duplication · Acute abdomen · Laparotomy

Introduction

Gastrointestinal duplications can occur anywhere in the tract, most commonly within the abdominal cavity [1]. The colon is

the least common site of gastrointestinal duplications and accounts for only 6–7 % of these duplications, often located in the cecum [1, 2].

Approximately 20 % of colonic duplications are tubular and usually present during the first decade of life [1]. Colonic duplication is rarely encountered in adults [2] and tubular sigmoid colonic duplication is even rarer. To our knowledge, only one adult case with tubular sigmoid colonic duplication has been documented in the English literature [3].

In this study, we report a tubular sigmoid colonic duplication in an adult with long-term intermittent abdominal pain successfully treated with a midline abdominal incision.

Case Report

A 27-year-old rural man visited our hospital with symptom of repeated episodes of abdominal pain. He reported an intermittent abdominal pain from childhood that sometimes spontaneously disappears. There was no history of change in bowel habits, rectal bleeding, weight loss, or previous surgeries. During childhood he was hospitalized several times for the same symptom without a clear diagnosis. All laboratory results (including differential cell blood count, blood urea nitrogen, creatinine, amylase, lipase, Na, K, blood sugar, ESR, and urine analysis) and the plain abdominal x-ray and ultrasounds were always negative. However, the symptom persisted, and only symptomatic treatment was given thereafter. In the recent weeks, he reported that the severity of abdominal pain has been increased with more frequent.

The abdominal pain was in epigastric region and radiated to right flank and back. Physical examination revealed a non-tender mass at the right upper quadrant and paramedian. At the hospitalization, the blood samples showed no leukocytosis or increased amylase; urine test and the abdominal x-ray plane were normal. An abdominal computed tomography (CT) scan

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Fig. 1 Computed tomography scan with oral and intravenous contrast

with oral and intravenous contrast (Fig. 1) revealed an extremely dilated and air-filled loop related to sigmoid colon. The patient was being prepared for colonoscopy, but he was suffered from sudden abdominal pain with agitation at midnight that did not respond to narcotic therapy. Due to its presentation as acute abdomen, patient underwent exploratory laparotomy.

Under general anesthesia, a midline incision was made. We found a large bowel-related mass situated along the midline and upper the umbilicus that surrounds inferior vena cava (IVC) and aorta as a spider and had a noticeable adherent to the right ureter. It pressed on celiac plexus and para-aortic ganglia. Grossly, the bowel-related mass measuring 25 cm in length and 3 cm in average diameter was connected to sigmoid colon (Fig. 2). The diagnosis of tubular sigmoid colonic duplication was therefore highly suspected. The duplicated colon was carefully detached from IVC, aorta, and right ureter. After resection of the duplicated colon and the involved sigmoid segment, an end to end anastomosis performed without any complications.

The postoperative period was uneventful. The patient started enteral feeding on postoperative day 5 and was discharged on day 7. Histopathology confirmed the colonic duplication with normal colon mucosa.

Fig. 2 Intraoperative photograph showing the tubular duplication communicating with the sigmoid colon

Discussion

Colonic duplications are characterized as cystic or tubular (approximately 20 %) in appearance, arise from the mesenteric border of the native bowel [1]. Tubular duplications of the sigmoid colon are extremely rare, and only a few cases have been reported in the literature. Two cases were diagnosed and treated during infancy or childhood [4, 5], and only one adult case with tubular sigmoid colonic duplication has been documented in the English literature [3].

Colonic duplications may remain asymptomatic or present with a variety of non specific signs and symptoms. Most patients present with a combination of palpable abdominal mass, vague abdominal pain, chronic constipation, whereas complications such as volvulus, intussusception, perforation, and bleeding may occur [4]. These manifestations may be the direct effects of distension of the duplication or caused by compression of adjacent organs [5]. The presented case had abdominal pain may be due to compression of duplicated colon over the celiac plexus and para-aortic ganglia.

The diagnosis of colonic duplication is often difficult and usually not made preoperatively. In tubular type, the diagnosis of colonic duplication is best established with CT imaging, contrast enema and colonoscopy during the preoperative workup [6]. In the present case, CT scan with oral and intravenous contrast suggested the colonic duplication and the correct diagnosis was only made intraoperatively.

Traditional laparotomy and complete resection of both normal and duplicated colon with end-to-end anastomosis is a usual surgical treatment [7]. An extended excision for at least 2 cm in the normal colon is necessary because pathologic fibrosis and some malignant changes may occur in the conjunction area [8].

In conclusion, the present case describes the difficulties in revealing sigmoid colonic duplications that should be included in the differential diagnosis of abdominal masses in adult patients. Surgical resection is the preferred method of treatment in order to avoid complications.

Conflict of Interest None.

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