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Case report

Co-existence of cecal volvulus with situs inversus totalis: A case report

Meric Emre Bostanci, Mustafa Atabey, Birkan Bozkurt*, Ilker Ozel, Kursat Karadayi

Cumhuriyet University School of Medicine, Department of General Surgery, Sivas, Turkey

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ABSTRACT

Detorsion, cecopexy, cecostomy and tube cecostomy are the treatment options for acute cecal volvulus if there is no intestinal ischemia. Resection required if intestinal viability, necrosis, gangrene or perforation exists. After resection, primary anastomosis or ileostomy can be performed. First colonoscopic decompression testing may be appropriate in terms of saving time for elective surgery. The co-existance of situs inversus totalis with cecal volvulus may cause uncertainty of the definite diagnosis and delay of surgical procedure. This is a case report about cecal volvulus together with situs inversus totalis.

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1. Introduction

Situs inversus totalis is a rare genetically based anomaly which has been estimated to occur in the range of 1:10000 to 1:50000.[1] Normally the embryonic rotation of the midgut is counter clockwise but in situs inversus totalis this rotation is in the opposite direction. As a result we see a mirror image of all visceral organs in both thorax and abdomen. This anomaly doesn't affect life expectancy, health condition and isn't accepted as a premalignant condition.[2] These patients can live normal without any complications. However, there might be some technical difficulties in surgical procedures for the patients with situs inversus totalis. Especially in laparoscopic operations, it is difficult to accommodate to the mirror view of visceral organs so it affects the surgeon's capability of maneuver. The cecal volvulus is occurred by turning cecum, distal ileum and proximal colon around the axial axis related with the cecum's abnormal fixation.[3,4] The co-existance of situs inversus totalis and cecal volvulus may cause uncertainty of definite diagnosis and delay of surgical operation. This is a case report about cecal volvulus together with situs inversus totalis.

2. Case report

A 42 years old woman was admitted to our emergency department with abdominal pain, constipation and lack of flatulence. We learned that she had never experienced these symptoms and had no chronic disease before. She had abdominal pain during palpation but there were neither rebound nor defense. The laboratory values were normal except for leukocytosis about 15000. There was dextrocardia and the fundus gas was on the right side on the addominal X-ray (Fig. 1). Computerized abdominal tomography (CT) showed mirror image transposition abdominal visceral organs. At the same time, there was cecal volvulus and the segment was dispositioned. (Fig. 2). At the laparotomy the edematous and partially twisted ceacum with long mesentry (Fig. 3). It was untwisted and right hemicolectomy was performed.

3. Discussion

The situs inversus, a rare genetically based anomaly, [5] can be seen not only as a partial anomaly in abdomen or thorax (situs inversus partialis) but also both in abdomen and thorax together (situs inversus totalis).[6] Normally the embryonic rotation of the midgut is to the counter clockwise but in situs inversus totalis this rotation is in the opposite direction. Because of this false rotation we see a mirror image of visceral organs. In patients, situs inversus totalis is generally diagnosed during a routine check-up or any research for an other disease. Abdominal and chest X-rays, CT and barium X-ray are all useful for diagnosis of this anomaly.[7] On the other hand a cecal volvulus, the rotation a flexible not fixed cecum, distal ileum and proximal colon around the axial axis, is an medical emergency. Cecal volvulus has been reported as an annual incidence of 2.8–7.1 million and it constitutes 1–1.5% of all bowel obstruction and 25–40% of all colonic volvulus.[8] The treatment options of acute cecal volvulus without intestinal ischemia are detortion, cecopexy, cecostomy and tube cecostomy. However

* Corresponding author. Cumhuriyet Üniversitesi, Tıp Fakültesi Hastanesi Genel Cerrahi, Anabilim Dalı Sekreterliği Sivas, Turkey. Tel.: +90 5333413049.
E-mail address: birkan.bozkurt@gmail.com (B. Bozkurt).

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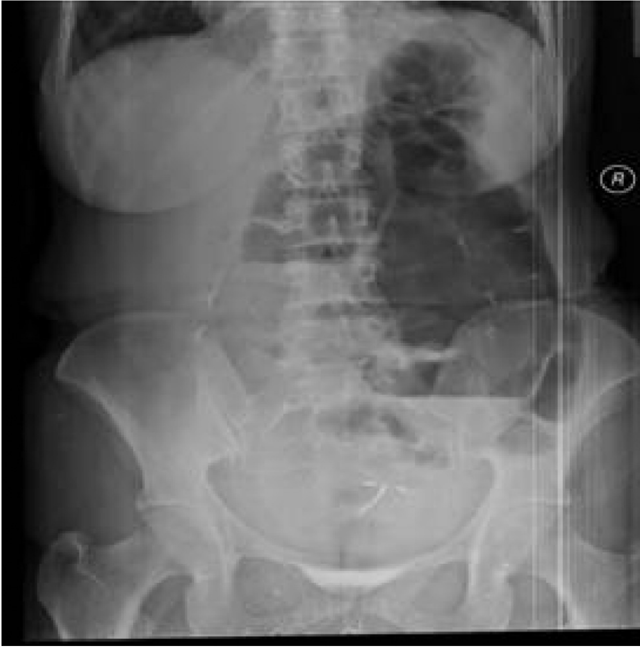

Fig. 1. On abdominal X-ray, the fundus gase was on the right side.

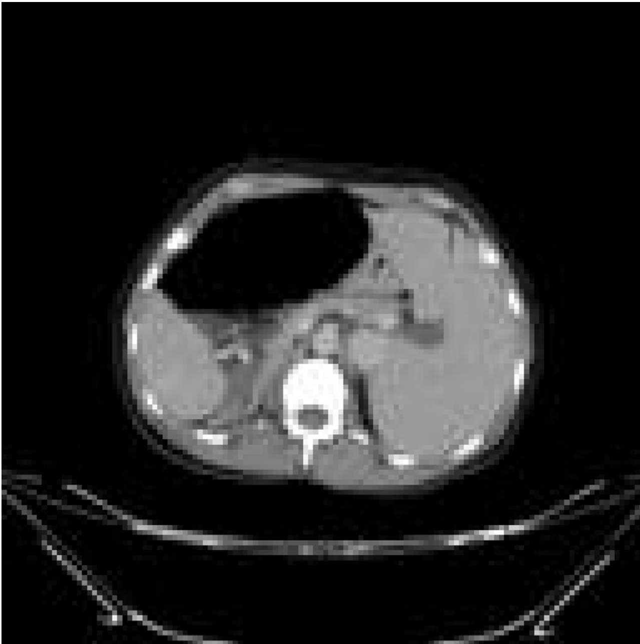

Fig. 2. There was cecal volvulus and this segment has moved to the right on abdominal CT scan.

these controversial options have a high recurrence rate up to %40 and a high mortality rate about %18.[9–11]

Resection must be done if there is an uncertainty about necrosis, gangrene or perforation. After resection a decision must be performed between primary anastomosis or ileostomy according to the patients' status and degree of contamination.[9–11] Right hemicolectomy is a treatment option even for the cecal volvulus without gangrene. As a result right hemicolectomy is the gold standard treatment option as it removes the mobile cecum and it prevents future recurrences.[12] On the other hand, the colonoscopic decompression might be a good choice for patients can be further stabilized and mechanical bowel preparation given before elective surgery procedure. However it has a success rate about %12.5 alone.[13] In our case, because of the uncertainty about intestinal necrosis, low success rate and high recurrence rate, we did not choose cecostomy, cecopexy or tube cecostomy.[9–11]

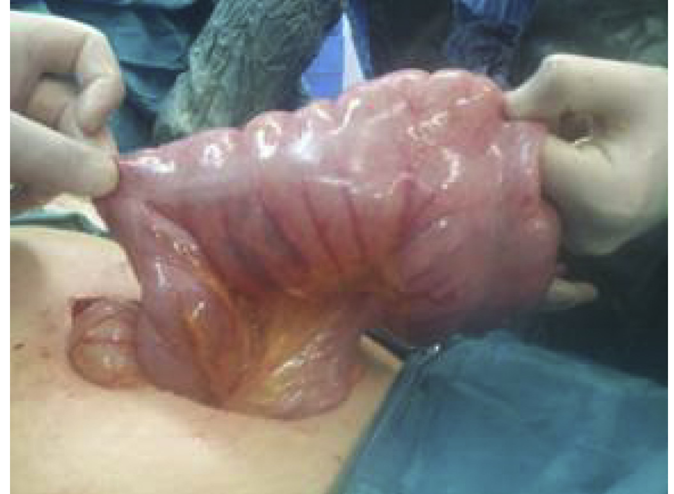

Fig. 3. Distended caecum and small bowel loops in laparatomy.

In conclusion, adult presentation of situs inversus abdominus with cecal volvulus is a difficult diagnosis because of the rare incidence of the disorder. These patients often present with abdominal pain or with ischaemia as exemplified by our case. Diagnosis requires a high index of suspicion.

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