

Sigmoid volvulus in an adolescent male patient

Skręt esicy u nastoletniego pacjenta

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Streszczenie

Wstęp: Skręt esicy jest stanem, w którym dochodzi do upośledzenia przepływu krwi w kresce esicy w wyniku jej skrętu. Skręt esicy jest zjawiskiem bardzo rzadkim u dzieci. Przedstawiamy przypadek skrętu esicy u nastoletniego pacjenta.

Opis przypadku: 14-letni pacjent został przyjęty do szpitala z powodu silnego bólu brzucha, nudności, wzdęcia oraz niemożności oddania stolca. W badaniu USG wysunięto podejrzenie skrętu jelita, które potwierdzono w badaniu TK. Przeprowadzono laparoskopowe odprowadzenie skrętu esicy a następnie częściową laparoskopową sigmoidektomię z pierwotnym zespoleniem.

Wnioski: Prawidłowe obrazowanie ułatwia postawienie prawidłowej diagnozy w przypadku rzadkich przyczyn bólów brzucha.

Słowa kluczowe: skręt esicy, dzieci, laparoscopia, tomografia komputerowa

Abstract

Background: Sigmoid volvulus is a condition when blood flow in the sigmoid mesentery is obstructed due to torsion. Sigmoid volvulus is very rare in children. We present a case of a sigmoid volvulus in an adolescent patient.

Case Report: A 14-year-old patient was admitted to the hospital with signs of ileus. During an ultrasound examination, an intestinal torsion was suspected and it was confirmed in a CT scan. An endoscopic detorsion was performed with success. Further patient management consisted of laparoscopic partial sigmoid resection with primary anastomosis. The patient has fully recovered and returned to normal activities.

Conclusions: Proper imaging techniques may be crucial in making the correct diagnosis in rare cases of abdominal pain.

Key words: sigmoid volvulus, children, laparoscopy, computed tomography

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Introduction

Sigmoid volvulus (SV) is a condition where sigmoid colon twists or torsions about its mesentery. This disorder is rare in infants and children [1]. It usually occurs in adults, after the age of 40, more commonly in males [2]. SV leads to intestinal obstruction, which is often acute in children, whereas in adults it may be subacute or progressive. As a result of intestinal obstruction, the most common symptoms include abdominal pain, distention, vomiting and, in chronic cases, constipation. In Europe, Australia and the United States, the incidence of SV is very low.

Nevertheless, SV remains the leading cause of acute colon obstruction in developing countries [3]. The diagnosis is based on clinical and radiological findings and is more difficult to establish in children compared to adults [4], and a correct diagnosis can be easily missed or delayed [4]. We present a case report with exceptional quality CT images and 3D reconstructions.

Case Report

A 14-year-old patient was admitted to the hospital with signs of ileus. The predominant symptoms were: severe, difficult to localize, abdominal pain, nausea, vomiting, lack of stool and flatus. The patient had an episode of subileus the previous year, but the symptoms resolved spontaneously.

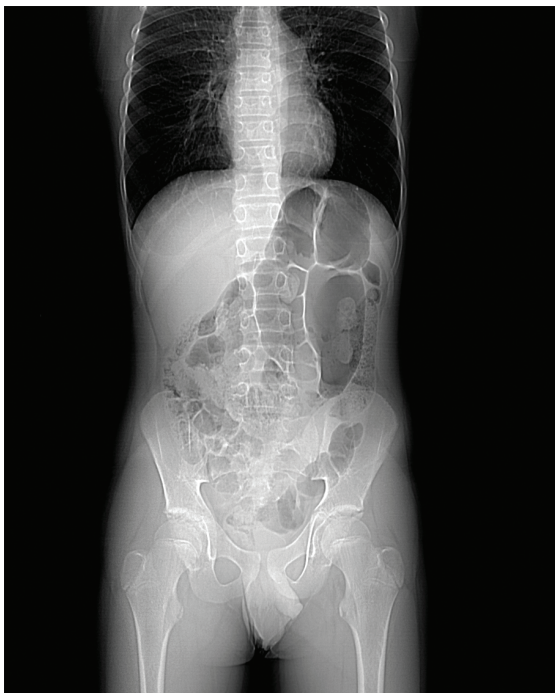


Fig. 1. CT scout view presenting 'coffee bean' sign of a sigmoid volvulus

Ultrasound examination revealed a whirl sign in the left hypogastric region and a CT scan was recommended. An abdominal and pelvic CT scan was performed to clarify the cause of the symptoms. Picture 1 presents the CT scout view of the performed study. Picture 2 shows the whirl sign of sigmoid volvulus. Picture 3 presents a 3D reconstruction of the CT study created in BodyViz® software.

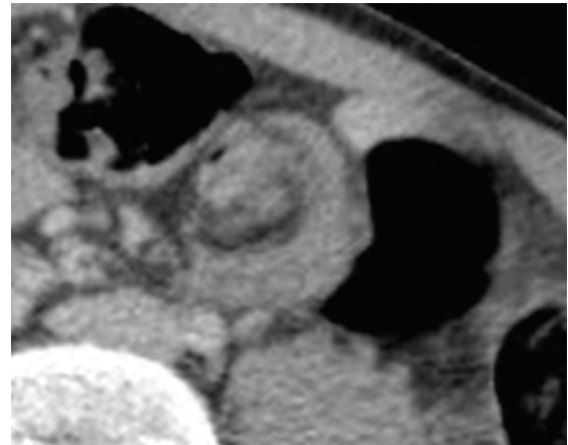


Fig. 2. Whirl sign of a sigmoid volvulus

An endoscopic detorsion was performed with success using PENTAX EC 3890Fi2 colonoscope. Further patient management consisted of laparoscopic partial sigmoid resection with primary anastomosis. The surgery was performed using EinsteinVision® 3D camera system. An optical port was inserted and three trocars (2 x 5 mm and 1 x10 mm).

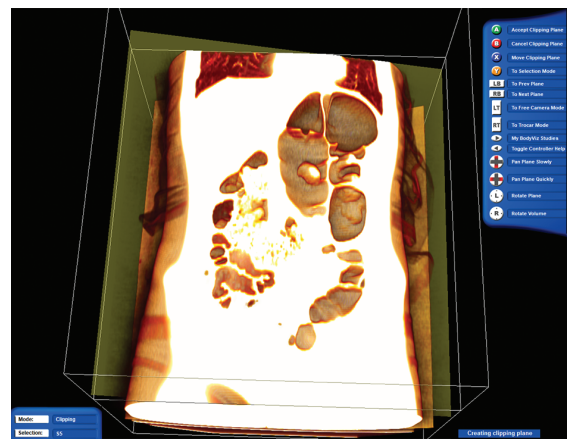


Fig. 3. 3D reconstruction of the CT study created in BodyViz® software

A very elongated sigmoid was found. After identification of the ureter 35 cm of the mesentery was resected using Ligasure™. In the next step Alexis O-ring was inserted through the umbilicus and resected mesentery was removed and an end to end anastomosis was performed. The patient has fully recovered and returned to normal activities.

Discussion

It has been shown that the CT scout view is an integral part of CT imaging [5] and should be thoroughly analysed. Sigmoid volvulus is the most common cause of strangulation of the colon although it is a rare diagnosis in children [6] therefore proper imaging plays a critical role in establishing the proper diagnosis. Moreover, 3D image reconstruction techniques allow for surgical planning that improves safety and shortens the duration of surgery.

The coffee bean sign (kidney bean sign, bent inner tube sign) is a sign, not completely specific [7], of a sigmoid volvulus, seen on a plain abdominal radiograph. The thick 'inner wall' is interpreted as a double wall thickness of opposed loops of bowel. Outer walls are thinner due to single wall thickness [2]. CT scan findings of sigmoid volvulus include the whirl sign, which represents tension on the tightly twisted mesocolon by the afferent and efferent limbs of the dilated colon [8].

Endoscopic treatment, without surgical reduction, is the first-line treatment of sigmoid volvulus when no signs of peritonitis or bowel gangrene are found [8]. Iida et al. [9] found that success rate of endoscopic detorsion is 61.9% and that recurrence rate is 46.2%, therefore minimally invasive correction is advised. Above mentioned authors also proved that the use of laxatives and history of open abdominal surgery are factors predicting successful endoscopic detorsion. Detorsion can also be performed via barium enema and rigid proctoscopy but some reports reveal better results with a flexible approach. Also, if detorsion is successful, a rectal tube should be left [10].

Conclusions

Proper imaging techniques may be crucial in making the correct diagnosis in rare cases of abdominal pain and for optimal surgical treatment. Presented case shows that minimally inva-

sive treatment of sigmoid volvulus is plausible when suitable imaging is performed.

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Komentarz:

This paper shows a case report that is interesting for unusual, and the authors stress the need of differential diagnosis and appropriate diagnostic imaging. [...] Overall is a well written article about an unfrequent surgical disease in children that provides some clues on the diagnosis.

prof. Jose L. Peiro