Case Report

Caecal Volvulus: A Report of Three Paediatrics Cases

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Abstract

Caecal volvulus is favoured by the lack of caecal adhesion and intestinal malrotation. According to the per operation findings, the treatment consists of a de-rotation with or without cecopexy. We present the three cases of caecum volvulus in children and discuss our management. Case 1: 11-year-old girl admitted for caecal volvulus in an acute occlusive syndrome picture. There was caecal volvulus and atresia of the volvulated area. We performed resection and end-to-end anastomosis. Good evolution. Case 2: 6-year-old girl admitted for caecal volvulus in an acute occlusive syndrome picture. We performed caecopexy at the right parietal-colic gutter by three interrupted stitches. Good evolution. Case 3: 6-year-old girl admitted for caecal volvulus in an acute sub-occlusive syndrome picture with hypovolemic choc stage. There were suffering areas and necrosis of the caecum, a part of the ascending colon and iléal loops. We resected the gangrene part of the digest if tract and performed end-to-end ileocolic anastomosis. Good evolution. Caecal volvulus is rare. In our series, a patient had an ultrasound diagnosis. The diagnosis of caecum volvulus was made by computed tomography scan to the second one. The third patient had a perioperative diagnosis which is frequently reported in the literature. Management varies from the simple de-rotation with appendectomy to caecopexy. Caecal volvulus is a therapeutic emergency because the risk of necrosis and perforation is obvious. With proper support, the overall evolution is good.

Keywords: Caecopexy, caecal volvulus, child

Introduction

Caecal volvulus is a rare but not exceptional entity in paediatrics. It is favoured by the lack of caecal adhesion and intestinal malrotation.[1] The prevalence of a mobile caecum is estimated between 10% and 20% of the general population.[2] It is a therapeutic emergency and immediate complications are ischemia and necrosis. According to the perioperative findings, the treatment consists of a de-rotation with or without cecopexy.

Through a description of three cases of caecum volvulus in children, we discuss our management comparing to the literature.

Case Reports

Case 1

An 11-year-old girl followed for growth and mental retardation with a notion of chronic constipation admitted for an occlusive syndrome that has been evolving for 6 days. The general condition was good. The patient was apyretic with a distended but painless abdomen. The plan abdominal radiographs showed multiple mixed hydroaeric levels. The abdominal ultrasound showed distension of the small bowel with a right colon volvulus, a low-abundance intra-peritoneal effusion. There was also an intussusception sausage which spontaneously resolved during the examination. The biological assessment was marked by hyperleukocytosis at 15,540/mm^3, with hypokalemia at 2.9. After resuscitation, surgical exploration found a 3rd sector liquid, the small bowel distension and the right colon upstream of the cecum volvulus. The cecum was free of any peritoneal adhesion. The volvulated area was atretic, which led to the decision to perform resection and end-to-end anastomosis by two non-interrupted stitches with Vicryl 0000. The post-operative follow-up was good.

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Case 2

A 6-year-old girl, with a history of chronic intermittent abdominal pain for the past year admitted for an occlusive syndrome evolving for 3 days. The patient was feverless, dehydrated to 10%, and we noticed a generalized abdominal sensibility.

The plan abdominal radiographs showed mixed hydroaeric levels [Figure 1]. The computed tomography (CT) scan showed significant caecal distension and ileal striction upstream the caecum [Figure 2].

After resuscitation, surgical exploration revealed a caecum free of any peritoneal attachment, volvulated, not parietal intestinal suffering. Caecopexy the right parietal-colic gutter by three interrupted stitches [Figure 3]. Good outcome.

Case 3

Six-year-old girl with intermittent vomiting for 2 years without clinical impact. Admired for diffuse abdominal pain, vomiting since a week associated with the sub-occlusive syndrome. The patient was in poor general condition, febrile at 39°C, dehydrated, with signs of hypovolemic shock. There was a general tenderness of the abdomen. The biological balance revealed functional renal failure with urea at 1.2 g/l and creatininemia 10 mg/l. After resuscitation, surgical exploration found that the caecum was free of any parietal attachment, volvulated. There were suffering areas and necrosis of the caecum, a part of the ascending colon and iléal loops. We resected from the ascending colon to the last ileal loop 8 cm from the Bauhin valve. End-to-end ileocolic anastomosis. The follow-up was simple.

Discussion

Caecal volvulus is a rare entity. Its prevalence is unknown.[1] It is a twist of the initial part of the right colon and the terminal part of the ileum around the right lower colic vascular pedicle.[3] Age at diagnosis varies from a few months to the end of childhood.[2] In our series, it was 11 years. Sami Tannouri *et al*.[4] also found an average age of 11 years. Contrary to the reported male pre-dominance in literature, we have a series of 3 all-female children.[2-4]

The defect in adhesion of the caecum, the ascending colon is the anatomical situation pre-disposing to the volume of the caecum.[5] The factors promoting the occurrence of caecal volvulus are: Intestinal distension by chronic constipation, post-operative ileus, mental retardation, post-operative flanges, thinning, colonic obstruction dues to Hirschsprung disease.[6] All of our patients had a defect in the adhesion of the caecum but without malrotation. Our first patient has mental retardation with the notion of chronic constipation. Cases of early post-operative caecum volvulus were reported. Takada *et al*.[7] on the 6th day after a Nissen fundoplication, and Saiad *et al*.[5] on the 4th day after an appendectomy.

Symptoms include acute intestinal occlusion due to abdominal distension, abdominal pain, vomiting and cessation of faeces and/or gas.[1]

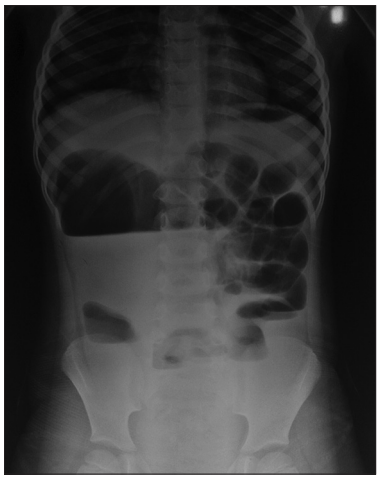


Figure 1: The plan abdominal radiographs showed mixed hydroaeric levels

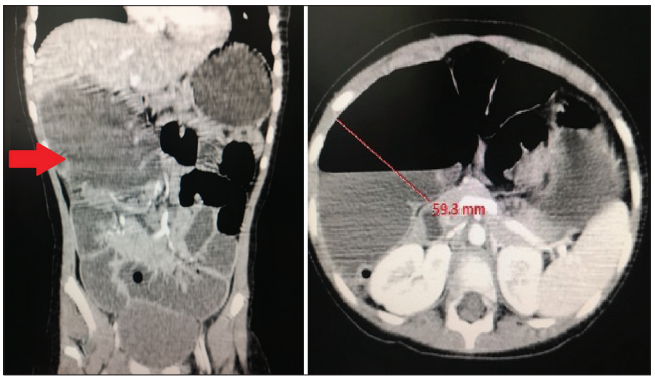


Figure 2: The computed tomography scan showed significant caecal distension (60 mm maximum diameter) and ileal bends (36 mm maximum diameter) upstream of a turn-of-turn image of the ascending colon, with rotation within the caecum toward the midline



Figure 3: Per operative image showing a caecum free of any peritoneal attachment, volvulated around its axis at two turns, not parietal intestinal suffering

The plain radiographs of the abdomen prepared with the contrast product show a bird beak image corresponding to the narrowed area of the twisted colon.[6] A twist of the artery and

the ileocaecal vein can be identified by ultrasound coupled to the colour Doppler.[6] An abdominal CT scan is contributing to the diagnosis of caecum volvulus. In our series, a patient had an ultrasound diagnosis. The diagnosis of caecum volvulus was made by CT scan to the second one. The third patient had a perioperative diagnosis. Yadav *et al.*[8] and Miyao *et al*.[2] report the cases of caecum volvulus diagnosed with abdominal CT. This perioperative discovery is frequent in the literature. More than half of the cases, the operative indication was then made for intestinal occlusion or intestinal intussusception.[5,6,8,9]

There is no clear surgical indication in the child's caecal volvulus. Some authors such as Saiad *et al.*,[5] Shehata *et al.*[1] have opted for simple detortion with appendectomy.[8] There are cases of recurrence.[6] For this reason, caecopexy or caecostomy are suggested to prevent its recurrence.

Based on the findings per operation, we performed one caecopexy and two resections taking the caecum. This attitude corroborates that described in the surgery of the caecal volvulus in children. Other complementary authors performed caecoplasty reducing the size of the caecum.[1,6,8]

Conclusion

Caecal adhesion' defects can remain asymptomatic for a long time, to be revealed late in childhood in an intestinal occlusion table following a volvulus. It is a therapeutic emergency because the risk of necrosis and perforation is obvious. With proper support, the overall evolution is good.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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