Journal of Pediatric Surgery Case Reports 33 (2018) 30–34

Contents lists available at ScienceDirect

Journal of Pediatric Surgery Case Reports

journal homepage: www.elsevier.com/locate/epsc

Primary segmental intestinal volvulus associated with acute appendicitis

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ARTICLE INFO

Keywords:
Segmental intestinal volvulus
Malrotation
Fecolith
Acute appendicitis
Case report

ABSTRACT

Introduction: Segmental intestinal volvulus without underlying causes is called Primary Segmental Volvulus. Herein, we report a rare case of segmental ileal volvulus associated with acute appendicitis.

Case Presentation: A 3-year-old boy presented with complaints of diarrhoea associated with vomiting, central abdominal pain, and decreased activity for 2 days. He was referred to paediatric surgery as a case of acute appendicitis. Ultrasound of the abdomen showed acute appendicitis with ileoileal target sign. Laparotomy was done, which showed segmental ileal volvulus without malrotation associated with inflamed appendix and fecolith at the tip. Appendectomy plus intestinal resection and anastomosis were also done.

Discussion: Primary Segmental Intestinal Volvulus is a very rare condition, and only a few cases have been reported in the literature. It has a prevalence of 22.9%–26.3% in children.

In our case, ultrasound findings are suggestive of acute appendicitis and suspicion of intussusception. Intraoperatively, segmental intestinal volvulus was observed along with inflamed appendix and a fecolith at its tip.

Conclusion: Primary Segmental Intestinal Volvulus should be considered as a differential diagnosis of any child patient who came with small bowel obstruction symptom.

1. Background

Volvulus is the twisting of a loop of intestines around its mesentery. It is commonly observed in neonates and children due to malrotation. Other causes of volvulus described in the literature include congenital bands, post-operative adhesions, duplication cyst, meconium plug, Meckel's diverticulum, internal herniation, and ventriculoperitoneal shunt [1–4]. Intestinal volvulus without any underlying causes is called primary segmental intestinal volvulus (PSIV), which is a rare condition with only a few cases being reported in the literature. Herein, we report a case diagnosed as acute appendicitis with suspicions of ileoileal intussusception clinically and radiologically. Intraoperative findings showed PSIV of the ileum was associated with inflamed appendix and fecolith at its tip.

2. Case report

2.1. Patient information

A 3-year-old boy not known to have any chronic medical illness came with a history of diarrhoea (thrice a day), vomiting (twice a day), central abdominal pain, decreased activity and feeding refusal for 2 days duration.

2.2. Clinical findings

Vitally, the patient was tachycardic with a pulse rate of 188 beats per minute and tachypnoeic with a respiratory rate of 38 breaths per minute. Body temperature was measured to be 36.2°, and his blood pressure was 123/88 mmHg.

The patient looked sick, with a dry mucous membrane and a capillary refill less than 2 s. The examination of the central nervous system revealed negative meningeal signs. His chest examination revealed equal bilateral air entry with left middle zone crepitation. Examination of the abdomen revealed soft, lax abdomen with no tenderness. The patient later developed right iliac fossa tenderness associated with severe abdominal distention.

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https://doi.org/10.1016/j.epsc.2018.03.010
Received 5 March 2018; Received in revised form 11 March 2018; Accepted 17 March 2018
Available online 21 March 2018

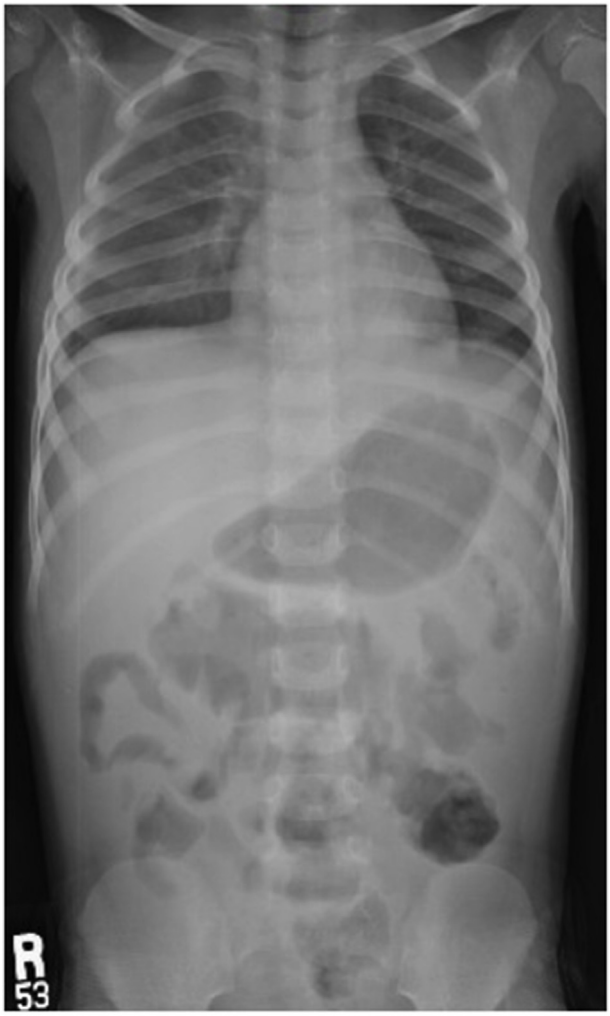


Fig. 1. Chest and Abdomen x ray shows: showed right-sided mild pleural effusion and mildly distended small bowel loops.

3. Diagnostic assessment

CBC and WBC: Trend from 1st day to 3rd day (20.5 × 10^6/μl (High), 14.0 × 10^6/μl (High), 8.89 × 10^6/μl). Neutuphiles: Trend from 1st day to 3rd day (13.1 × 10^3/μl (High), 8.83 × 10^3/μl, 5.57 × 10^3/μl).

Lymphocytes: Trend from 1st day to 3rd day (5.98 × 10^3/μl, 4.11 × 10^3/μl, 1.9^3 × 10^3/μl (low))

LFT: ALT:114 U/L (High), - AST: 442 U/L (High). – ALP: 138 U/L. - GGT: 14 (low). – Direct Bilirubin: 1.5 μmol/L. – Total Bilirubin: 4 μmol/L/

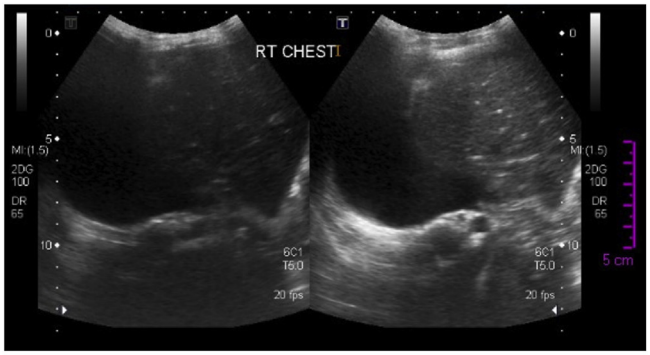
RFT: Trend from 1st day to 3rd day: Bun: (8.4 mmol/L, 7.2 mmol/L, 5.6 mmol/L).

Creatinine: (33 μmol/L, 26 μmol/L, 30)- NA: 132 mmol/L (low), 132 mmol/L (low), 134 mmol/L (low)).

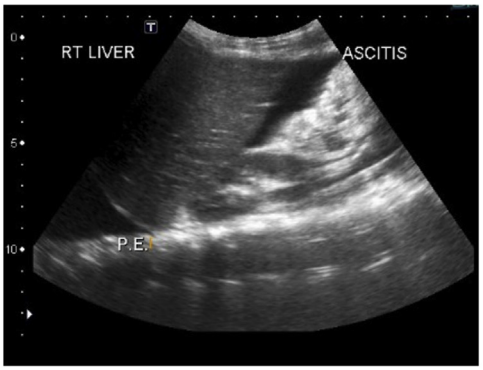
K: (4.4 mmol/L, 4.7 mmol/L, 3.6 mmol/L).

The patient was admitted in General Paediatrics ward as a case of gastroenteritis with hyponatremia.

During night rounds, the patient was observed to be tachycardic, tachypnoeic, and hypoactive, with right iliac fossa tenderness on abdominal examination. Pediatrics Surgery Consultation was done, and the patient's chest and abdominal X-rays were performed (Fig. 1). Chest X-ray showed right-sided mild pleural effusion, whereas the abdominal X-ray showed mildly distended small bowel loops. In addition, the patients had collapsed colon with loading faecal matter, especially at the left side and rectosigmoid colon; his stomach was also distended with no evidence of pneumoperitoneum.



A



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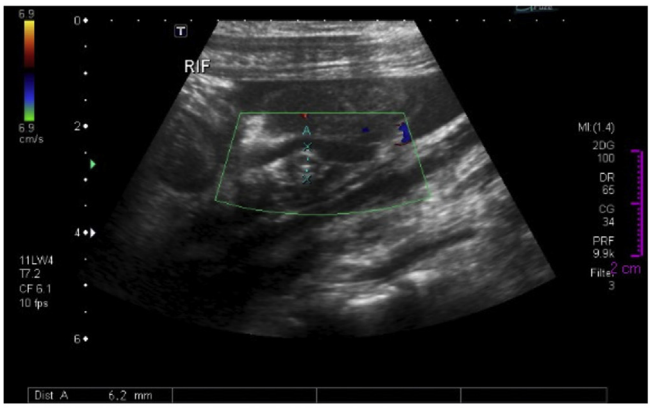

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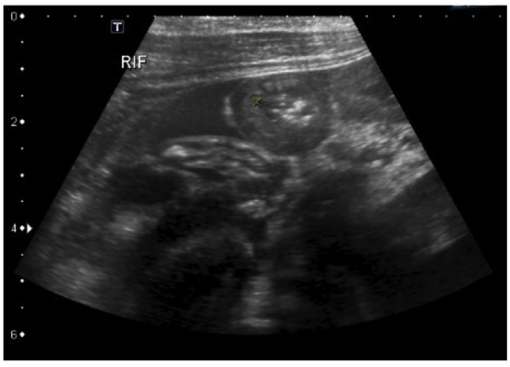

D

Fig. 2. (A) Ultrasound of the abdomen showed bilateral pleural effusion more at right. (B) Ultrasound of the abdomen shows mild to moderate abdominopelvic ascites. (C) Blind-ended tubular structure in the right lower quadrant measuring 6 mm in transverse diameter, with luminal echogenic content at the tip, which suggests inflamed appendix. (D) Ileoileal Target sign.