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Perforated Appendicitis in a Five Months Old Baby

Salah Eldin Elghote, MD [1], Mohamed Amin El-Gohary, FRCS *[2]

1. Zulekha hospital, UAE

2. Burjeel hospital, Abu Dhabi, UAE.

Corresponding Author: Mohamed Amin ElGohary, FRCS, Professor, Department of Pedaitric Surgery, Burjeel Hospital, Abu Dhabi, United Arab Emiates.

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Abstract

Background: *Acute appendicitis is one of the most common surgical diagnoses in the pediatric population. However, neonates and infants with appendicitis have a variable course, and appendicitis is less often considered in the initial differential diagnoses.*

Case Presentation*: We describe a 5-month-old female who presented with irritability and poor feeding and was found to have acute perforated appendicitis with peritonitis. The mother introduced Banana powder to his formula milk at the age of 3 months which caused constipation and may contribute to the development of acute appendicitis.*

Conclusion: *Acute appendicitis is a rare condition in neonates and infants, with a high mortality rate. The rarity of neonatal appendicitis together with the lack of specific signs and low index of suspicion has led to delays in diagnosis and high mortality. The associated constipation due to early introduction to banana powder feed might have a role in developing appendicitis in our case.*

Keywords: *Appendicular perforation, Neonate, Peritonitis*

Introduction

Appendicitis remains the most common cause of acute abdomen in children. However, the condition is very rare in neonates and infants with a high complication rate. The rarity of the condition remains one of the reasons for late diagnosis. Appendicular perforation in this age group is a life-threatening condition responsible for high morbidity and mortality. Therefore, a high index of suspicion is necessary to make a preoperative diagnosis as the presentation is not classical. Treatment is surgical, and prognosis depends on the gestational age, timing of diagnosis, presence of complications, and other comorbidities

Case Report

Preterm male baby born at 30-weeks of gestation by cesarian section to a second gravid mother with a birth weight of 1.5 kg and uncomplicated perinatal history. Presented at the age of 5 months with of one-day duration of excessive crying, irritability and poor feeling, and a fever of 37.8 C. There was redness at the lower right quadrant with tenderness guarding C reactive protein was 70mg/L and white

cell count 17,000 per microliter. Abdominal ultrasound showed evidence of acute appendicitis, confirmed by computed tomography with IV contrast. The mother gave a history of introducing banana powder at three months of age as extra calorie support, which was associated with constipation.

Mini-laparotomy exploration was performed through a lower transverse incision. Surgical findings showed dilated small bowel coated with purulent exudates, gangrenous appendicitis with a perforation near the tip, and turbid fluid in the peritoneal cavity. There were small bowel adhesions matted together with fibrinous adhesions and generalized peritonitis. Adhesions are released, followed by appendectomy. Peritoneal lavage was performed using a saline wash with diluted betadine. A soft drain was inserted, and the wound closed in layers. Ultrasound repeated after 48 hours showed no fluid collection, followed by removal of the drain. Histopathology was reported as acute supportive appendicitis with perforation and focal adhesion. The baby had an uneventful recovery and was sent home after six days.

Figure 1: Abdominal X-ray showing soft tissues mass at right iliac fossa

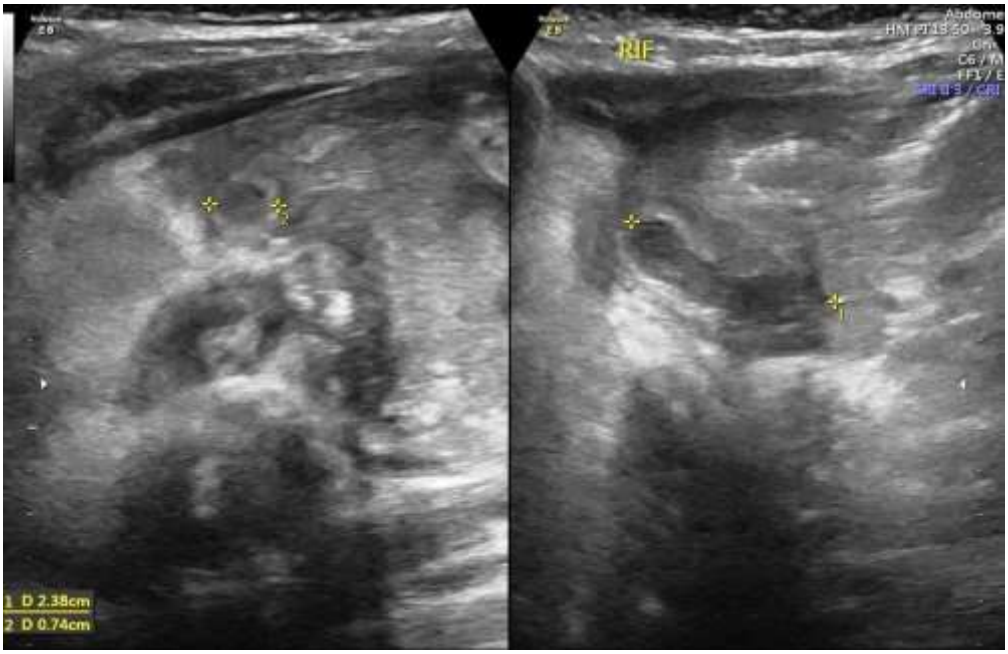

Figure 2: US showing tubular structure suggestive of appendicitis

Figure 03

1. Ill-defined mildly & heterogeneously enhancing soft tissue in right iliac fossa, extending to right lumbar & umbilical regions, with few internal irregular relatively hypoenhancing areas within (? early necrosis), compressing & displacing adjacent small bowel loops & cecum - may represent inflammatory phlegmon.
2. Tortuous blind-ending fluid-filled bowel loop with enhancing walls along posterosuperior aspect of lesion leading and towards collapsed caecum ? inflamed appendix ?? meckel's diverticulitis (less likely).

Discussion

Neonatal and infantile appendicitis is a very rare condition, with no more than 100 cases described over the last century with high mortality and perforation rates[1]. The low incidence can be attributed to several factors; the fetal funnel-shaped appendix with a wide opening into the cecum, a liquid diet, recumbent posture, and rare infections[2]. Its pathophysiology is different from appendicitis in older children. Martin and Perrin[3] suggested that obstruction caused by Hirschsprung disease could play a role in the pathogenesis. Bax et al.[4] proposed that It is a limited form of necrotizing enterocolitis (NEC). This is supported by the fact that more than 50% of infants with appendicitis are preterm. But none of the three theories is scientifically proven. The introduction of dried milk banana powder at the age of 3 months and associated constipation might have played a role in developing appendicitis in our case. Since signs and symptoms are nonspecific, a preoperative diagnosis is challenging, and most neonates have been diagnosed intraoperatively[3-6].

Generally, the babies affected may show irritability, distressed breathing, bilious vomiting, a right lower quadrant palpable mass, abdominal distension, and erythematous rash over the abdominal wall, with anorexia, fever, and leukocytosis[3, 5-9].

The incidence of perforation is high and is a significant factor in this age group's associated high morbidity and mortality. Our baby presented with symptoms and signs of sepsis, and the diagnosis was established preoperatively by US and CT scan.

Conclusion

Acute appendicitis is a rare condition in neonates and infants, with a high mortality rate. The rarity of neonatal appendicitis, together with the lack of specific signs and low index of suspicion, has led to delays in diagnosis and high mortality. In addition, the associated constipation due to early introduction to banana powder feed might have a role in developing appendicitis in our case.

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