

## An unusual finding in the right iliac fossa: A giant appendicular lithiasis mimicking as foreign body: A case report

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### Abstract

**Aim:** We report here a youngest child presented with right lower abdominal pain due to appendicitis caused by giant appendicoliths which has been rarely reported. To our knowledge, there is no published large-scale clinical trial on giant appendicoliths in children

**Presentation of case:** A 3-year-old male child with 10 days history of abdominal pain associated with vomiting, nausea, elevated temperature, decrease appetite, and change in bowel habits. During physical examination of the abdomen revealed mild distended abdomen with tenderness and guarding in the right lower abdomen. A plain abdominal x-ray finding was a single giant radiopaque lesion in the right lower abdomen. The most likely differential diagnosis of this radiopaque lesion was a foreign body in the small intestinal lumen. Laprotomy was performed, the operative findings were retrocecal perforated appendix, giant appendicolith, and pus collection. Local adhesiolysis with appendectomy were performed. The child was discharged on the 10th post-operative day after removal of drain and tolerate of oral feeding

**Discussion:** Abdominal pain in right iliac fossa remains a challenge for clinicians, appendicitis is one of the most frequent differential diagnosis of right iliac fossa pain. The main pathological factor of appendicitis is the obstruction of the lumen by fecolith lead to inflammation of the appendix. The giant appendicoliths (more than 2 cm) are extremely uncommon. There are a three cases of giant appendicoliths were reported in literatures.

**Conclusion:** Appendicitis is an important cause of abdominal pain in the youngest children. This is the fourth instance of a giant appendicular lithiasis being reported in a child.

### Keywords

Abdominal pain; Right iliac fossa; Giant appendicular lithiasis.

## Introduction

Abdominal pain in right iliac fossa remains a challenge for clinicians, appendicitis is one of the most frequent and important differential diagnosis of the right iliac fossa pain [1]. The most widely reported pathology is the obstruction of the lumen by fecolith lead to inflammation of the appendix [2]. The appendicular lithiasis, are aggregations of fecal debris and mineral deposits, it usually lodged within the appendix lumen [3]. Their dimension is mostly less than 1 cm, while giant appendicular lithiasis (more than 2 cm) are extremely uncommon [4].

There are a few cases of giant appendicoliths were reported in literatures, all these cases reported in adults. Only three cases in children were reported.

## Case Presentation

A 3-year-old male child presented to us by his father to the emergency department with 10 days history of abdominal pain described as recurrent, intermittent, colicky in nature start as vague abdominal pain then became localized in the right lower abdominal region. Then the child develops recurrent episodes of vomiting undigested food, then the vomiting became greenish in color and more frequent. He had associated nausea, elevated temperature, decrease appetite, and change in bowel habits. No gave a history of similar episode before, foreign body ingestion, trauma, and previous abdominal operation. He had visited many outpatient clinics and medication were administered, but no improvement. During physical examination of the abdomen revealed mild distended abdomen with tenderness and some guarding in the right lower abdomen. The per rectal examination was empty rectum without mass or tenderness. The groin and external genitals examination did not show any abnormality. There were exaggerated bowel sounds on auscultation. The general examination of the child was ill and moderate dehydration, temperature was 39°C, heart rate was 110/min. He was admitted to the emergency department, fluid and antibiotic medication were administered and investigations, including complete blood counts, renal function test, serum electrolytes, blood sugar, and urine analysis. The reports of investigations were normal except, elevated white blood cell count 22.000/mm<sup>3</sup> (mainly neutrophilia).

A plain abdominal x-ray was done; however, there was a single giant radiopaque lesion (3 cm and 1.5 cm size) in the right lower abdomen, there was some abnormal gases distribution in the bowel. The abdominal ultrasound findings were intraabdominal free fluid, dilated bowel loops, and appendix not visualized. The most likely differential diagnosis of this radiopaque lesion was a foreign body in the small intestinal lumen (Figure 1).



**Figure 1:** Plain abdominal x-ray show giant radiopaque lesion in right lower quadrant.

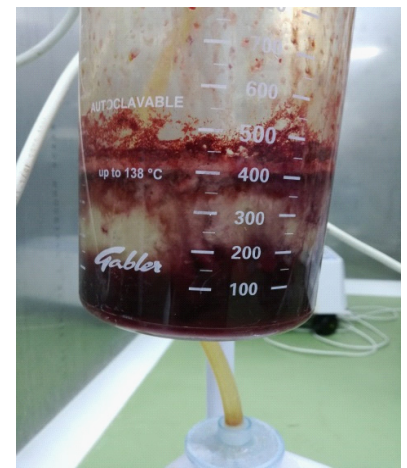
After resuscitation, a laparotomy was performed under general anesthesia, the operative findings were a pericecal inflammation, omental adhesion, giant fecalith in the base of the retrocecal perforated appendix, and pus collection in right lower abdomen and pelvic area (Figure 2,3). Local adhesiolysis with appendicectomy were performed with some technical difficulty because of the perforation site was near the base of the appendix, intraperitoneal pus was drained (Figure 4), local lavage with normal saline, and 18 F soft closed suction drain was left in. The post-operative course was uneventful except superficial surgical site infection was appeared in the 5<sup>th</sup> postoperative day, drainage of pus with local wound care and intravenous antibiotics according to the culture and sensitivity were received. The child was discharged on the 10<sup>th</sup> post-operative day after removal of drain and tolerate of oral feeding.



**Figure 2:** Intraoperative image showing perforated base of the appendix with giant fecalith.



**Figure 3:** Intraoperative image of the appendicular perforation site with large fecalith.



**Figure 4:** Image shows 500 c.c of intraperitoneal pus was drained.

## Discussion

Abdominal pain in right iliac fossa remains a challenge for clinicians, appendicitis is one of the most frequent and important differential diagnosis of right iliac fossa pain, due to the associated morbidity and mortality [1]. While multiple pathological factors of appendicitis have been identified, the most widely reported pathology is the obstruction of the lumen by fecolith lead to inflammation of the appendix [2]. The appendicolith, also known as a "Appendicular lithiasis," are aggregations of fecal debris and mineral deposits, it usually lodged within the appendix lumen, most of appendicular lithiasis are present in children, males, a low fiber diet, and retrocecal appendix [3,5].

The youngest age for the occurrence of a giant appendicolith as reported in literatures was in a 3-year-old female [6], while in our research it was a 3-year-old male. Their dimension is mostly less than 1 cm, while giant appendicoliths (more than 2 cm) are extremely uncommon [4]. The largest appendicoliths reported in literatures were (2.1 cm, 2.2 cm, 2.3 cm, and 3 cm) reported by (Garg et al., Kaluarachchi et al., Kim et al., and Singhal et al.) [5] respectively. In our result the dimension of appendicolith was 3 cm.

The diagnostic approach is largely based on the proper history taking, clinical examination, and supplemental laboratory tests. The imaging studies (abdominal x-ray, ultrasound, and CT scan) are used when indicated [5]. The appendicular lithiasis that founded by plain x-ray film is a reliable indicator of appendicitis [5]. The presence of calcification in the right lower abdominal region can lead to diagnostic confusion, such as appendicular lithiasis, radiological artifact, biliary ileus, foreign bodies, ureteral or vesical stone, genitourinary tract calcifications, tumors, and calcified lymph node [1]. If appendicular lithiasis are detected with abdominal pain, there is a 90% possibility of appendicitis and increase the risk of perforation up to 50%, especially if was present at the appendicular base or its size more than 0.5 cm [8].

Recently, appendicular lithiasis, and its location at the base of the appendix may be associated with an increased risk of appendiceal gangrene, and complicated appendicitis [9,10]. There are a few cases of giant appendicoliths were reported in adult literatures. Only three cases were reported in children by Athawale et al. [11], Adorisio et al. [12], and Gupta, et al [13].

## Conclusion

Giant appendicular lithiasis can cause diagnostic confusion as a foreign body. Appendicitis is an important cause of abdominal pain in the youngest children. Abdominal x-ray was an important investigation in a child with abdominal pain. Giant appendicular lithiasis was an important cause of appendicitis with serious complications. This is the fourth instance of a giant appendicular lithiasis being reported in a child.

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## Ethical approval

The ethical approval for the study was granted by the ethical approval committee at the University of Anbar.

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