

Acute Appendicitis Masquerading as Urinary Retention in a 7-year-old Boy

Poster
No. 172

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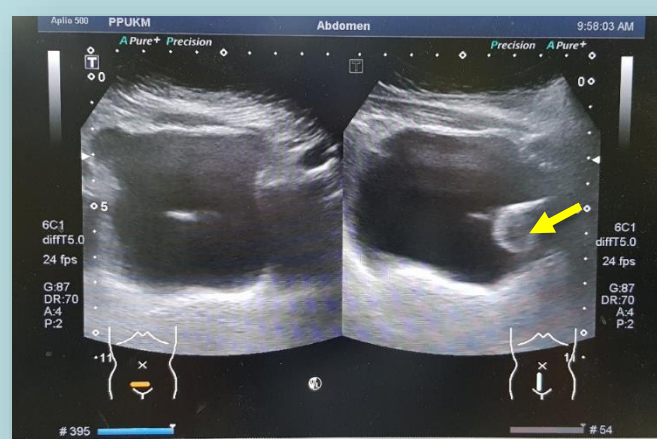


Introduction

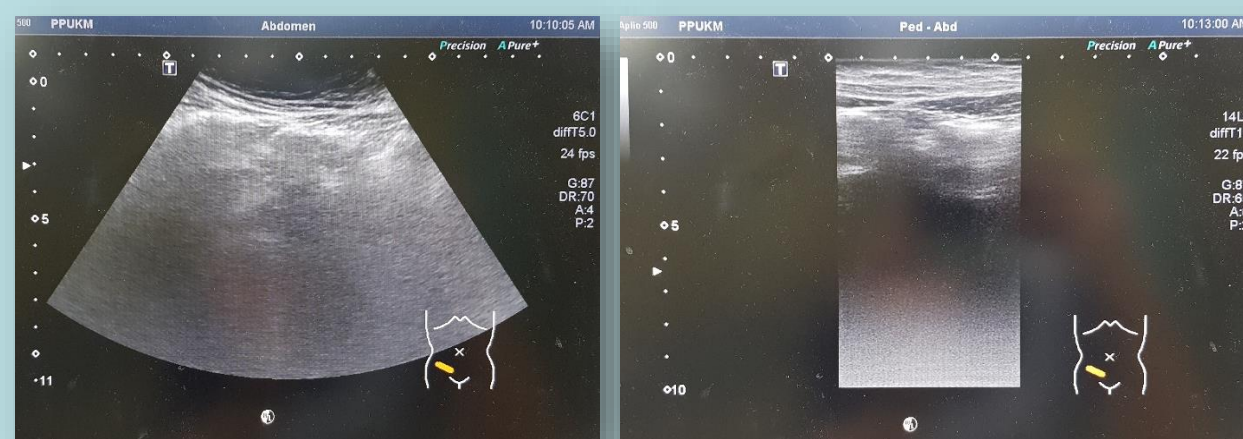
Acute urinary retention (AUR) is rare in pediatrics population [1]. One of the uncommon causes is acute appendicitis. The prevalence of acute appendicitis is low in age less than 5 years old [2]. The disease ordinarily manifests itself in typical presentations including vomiting, abdominal pain, fever, diarrhea and lethargy. Among the pathology identified in the disease are luminal obstruction by faecalith, appendicoliths or lymphoid hyperplasia [3]. Diagnosing acute appendicitis in children are challenging. Unlike adult patients, children are less verbal and as a result, different approaches are required in obtaining history and physical examination to obtain the right diagnosis and execute accurate treatment plan.

Case Report

We presented a case of a healthy seven-year-old boy presented to emergency department (ED) with sudden onset of fever associated with inability to pass urine, abdominal pain and vomiting. He had visited a general practitioner clinic two days prior and was prescribed with acetaminophen and antibiotic. Upon presentation, he was restless and sweating profusely due to his abdominal pain. His vital signs were blood pressure of 141/98mmHg, heart rate 89/min, oxygen saturation 99%, temperature of 36.8°C and pain score of 10/10. On examination his abdomen was distended and guarded with pain on palpation. Bedside ultrasound revealed distended urinary bladder. Bladder catheterization was performed and drained 700mls of clear urine. He was reassessed and findings showed no guarding but mild tenderness at right iliac fossa. Rovsing's, psoas and obturator signs were negative. Initial investigation showed leucocytosis of $19.4 \times 10^9/L$ and elevated C-reactive protein of 2.21 mg/dL. Renal profile and urinalysis (UA) were unremarkable. Serum lactate was 1.1 mmol/L. Abdominal X-ray revealed faecal loaded. His Alvarado score was 6. Ultrasound abdomen was suboptimal as presence of air-filled bowel loops at right iliac fossa. Appendix was not visualized. The provisional diagnosis was acute urinary retention secondary to acute appendicitis. Pediatric surgical team was consulted for diagnostic laparoscopy. Intraoperative findings confirmed presence of an inflamed appendix with appendices epiploic adhered to lateral abdominal wall. Base of the appendix was healthy without any perforation and pus collection. No collection seen over pelvis and sub-hepatic fossa. Laparoscopic appendectomy was performed. Patient recovered post-operatively and was discharged home on day two of hospitalization.



The abdominal ultrasound showing patient's urinary bladder four hours later after draining 700cc of clear urine. The yellow arrow indicates urinary bladder catheter in-situ.



The abdominal ultrasound showing right iliac fossa view obscuring by bowel gas. Appendix was not appreciated due to the gas-filled bowels.

Discussion/Conclusion

AUR is twice more common in male compared to female. Most common etiology for AUR in male are balanoposthitis and acute constipation or faecal impaction [4]. Despite the rarity, AUR can be atypical manifestation of acute appendicitis in children. Symptoms that were found common and best rule in acute appendicitis were absent or decreased bowel sounds, a positive psoas sign, a positive obturator sign, a positive Rovsing's sign and rebound tenderness [5]. However in this case, patient was brought to hospital with atypical sole complaint of AUR associated with abdominal pain. Work-up was carried out in such manners to exclude the most common causes of AUR in children which are mechanical obstruction and infection. Abdominal X-ray was ordered immediately after the symptomatic relieve of AUR aimed to prevent missed diagnosis. Elevated white blood cell count (WBCC) and C-reactive protein (CRP) supported clinical decision process in diagnosing acute appendicitis especially in children with atypical presentations [6]. However, clinicians must consider that the specificity and positive predictive value of these tests are low as any other inflammatory processes also cause an elevation in WBCC and CRP [7]. Abdominal ultrasound is a safe diagnostic tool especially in children as it is noninvasive and can be performed at bedside. However, normal finding does not exclude acute appendicitis. CT abdomen and MRI exhibit higher sensitivity in detecting appendicitis and have a role as a diagnostic tool in inconclusive cases [8]. Nevertheless, the high ionizing radiation of CT scan, use of contrast and expensive cost limit its role as a diagnostic tool. Abdominal ultrasound remained as the first line imaging in acute appendicitis among children [5]. The proposed pathophysiology for AUR in this case is irritation to the bladder sphincter. The reason for the pain in acute appendicitis on the other hand is caused by the inflamed appendix or inflammatory exudate either to the pelvis of the kidney, the ureter, or the bladder. The appendix may not necessarily be perforated [9]. Acute appendicitis in children is a clinical diagnosis. This case highlights the significance of differential diagnosis and age-specific work-up with such presentation in special population. Thorough and comprehensive evaluation, continuous reassessment of symptoms and high index of suspicion is the only way in unmasking the right diagnosis.

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Declaration of conflict for all authors

None declared

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