

Infective endocarditis: An uncommon cause of renal infarction mimicking acute appendicitis

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Abstract

A healthy 15-year-old presented with typical overnight symptoms of acute appendicitis. He had a low-grade fever, McBurney's point tenderness and leukocytosis. Laparoscopy and appendectomy were carried out. The patient returned to hospital due to a recurrence of symptoms and a computed tomography scan showed lower segmental infarction of the right kidney. A subsequent echocardiogram revealed a vegetation on the mitral valve.

Keywords

infective endocarditis; renal infarction.

Introduction

Infective endocarditis is a rare disorder with an estimated incidence of 1.7-6.2 cases per 100,000 per year in the United States and western Europe [1]. IE is characterised as a multi-system disease involving the formation of vegetation on cardiac valves. This vegetation can dislodge and become emboli, affecting any organ in the body. Risk factors for IE include rheumatic heart disease, intravenous drug use and poor dental care [1]. The Duke Criteria remains the gold standard for diagnosis of IE with a high specificity and negative predictive value [2].

Case Report

A 15-year-old male, without a significant medical history, presented to the Emergency Department with complaints of vomiting and severe pain in the right iliac fossa which started overnight. He had a low-grade temperature of 37.6. Other vitals were normal. There was no clubbing, jaundice, cyanosis, or abnormal petechiae. He had normal heart and lung sounds. There was marked tenderness and rebound tenderness over McBurney's point. Bowel sounds were sluggish. Total white cell count was $17.5 \times 10^9/L$ with preponderance of neutrophils of $16 \times 10^9/L$. LDH was elevated at 599 U/L. Other laboratory results

including renal, liver, coagulation and routine urinalysis were normal. Plain chest radiography and electrocardiography were normal.

Based on the clinical picture, he was reviewed by the general surgical team who made a diagnosis of acute appendicitis. He underwent a laparoscopic appendicectomy and was discharged home with a course of oral antibiotics. Subsequently, the histopathology of the appendix showed lymphoid hyperplasia.

On follow-up 2 weeks later, he reported a 1-day-history of moderately severe left sided abdominal pain. He was admitted into hospital and treated with IV metronidazole and ertapenem as per local hospital guidelines for intra-abdominal infection. A contrast enhanced computed tomography was carried out. This was reported as dilated right sided large bowel with prominent ileum and lower pole right renal infarctions. He underwent an echocardiogram which showed a large vegetation attached to the anterior mitral valve leaflet with moderate mitral regurgitation (Figure 1). He received 6 weeks of IV benzylpenicillin as treatment for infective endocarditis and made a full recovery. Subsequent follow-up ECHO showed a smaller vegetation compared to previous.

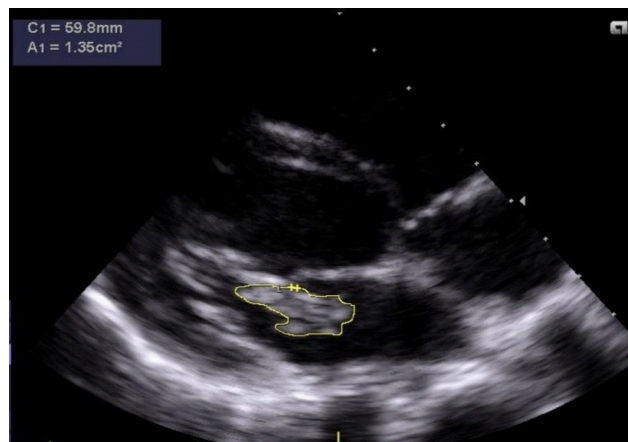


Figure 1

Discussion

One of the biggest challenges of this case was the presentation of renal infarction as a mimic of acute appendicitis. Acute renal infarction is an uncommon condition, presenting with nonspecific symptoms such as abdominal pain, nausea, vomiting and fever. Due to its rarity and non-specific nature, the diagnosis of renal infarction is often delayed or mistook as other intra-abdominal pathology e.g., appendicitis and pyelonephritis. Although the literature is relatively scarce, there are other documented case reports of acute renal infarction mimicking appendicitis [3,4].

Interestingly, in a study by Huang et al. 92% of their patients with renal infarction were noted to have three times higher than the normal upper limit of serum LDH [5]. However, they noted LDH levels should be interpreted cautiously as these can be elevated in other many other conditions such as mesenteric ischaemia, intra-abdominal infection, and acute myocardial infarction [5].

Another challenge of this case was the presentation of infective endocarditis as renal infarction. A study investigating renal tissue from patients with confirmed infective endocarditis found that localised infarction was the commonest renal lesion. In most of these, infarction was a result of septic embolism [6].

Besides renal manifestations, 65% of embolic event in infective endocarditis involve the central nervous system and neurological complications develop in 20 to 40% [1]. Clinicians must be wary of the multiple ways of presentation of infective endocarditis.

Learning points for clinicians:

Infective endocarditis is a multi-system disease that can affect any organ in the body through embolisation. Acute renal infarction presents as non-specific symptoms and can mimic other intra-abdominal pathology such as appendicitis and pyelonephritis.

Declarations

Patient consent: Informed consent was obtained from the patient for publication of this case report.

Conflicts of interest: The authors have no conflicts of interest to declare.

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