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Brucella Epididymo-Orchitis Associated with Bilateral Segmental Renal Infarctions

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ABSTRACT

Most common genitourinary involvements of brucellosis include glomerulonephritis, pyelitis, abscess, prostatitis, and epididymo-orchitis. Sometimes the diagnosis of brucella epididymo-orchitis is a challenge because testicular malignancies have similar radiological and clinical findings. Also, various vascular involvements such as cerebral-pulmonary-splenic infarctions, aneurysms, fistula formations, and deep venous thrombosis were reported in the patients with especially cardiovascular brucellosis. But renal infarction due to brucellosis is extremely rare with only one case. In this report, we present the first case of brucella epididymo-orchitis associated with bilateral renal segmental infarction who well responded to brucellosis treatment.

Keywords: Brucellosis, renal infarction, epididymo-orchitis, renal doppler ultrasound. Computed tomography

INTRODUCTION

Brucellosis is a common zoonosis caused by Brucella spp. that can involve almost every system and tissue. Genitourinary (3,7%) and cardiovascular involvement (0,7%) are rare in patients with brucellosis but can lead to mortality and severe morbidity (1).

In this report, we aimed to present the first case with brucella epididymo-orchitis associated with bilateral renal segmental infarction which responded well to brucellosis treatment.

CASE REPORT

A 38 years old male was admitted to the urology clinic with complaints of pain and swelling in the left side of the scrotum for three days. He also reported fatigue for 7 days and bilateral mild flank pain for two days. His medical history was unremarkable. On physical examination, a tender and swollen scrotum was detected. A scrotal doppler ultrasound showed an enlarged left testicle with heterogeneous hypoechoic lesion within the parenchyma With a preliminary diagnosis of a malignant testicular tumor, an urgent left orchiectomy was performed. Ciprofloxacin 500 mg 3x1 was prescribed at this moment. On post-operative follow-up, his flank pain worsened and contrast-enhanced abdominal Computed Tomography (CT) was performed. CT scan revealed wedge-shaped well-circumscribed relative hypodense areas located bilaterally mainly posterior regions of the renal cortex. There was no thrombus within bilateral renal arteries or veins. Also, there were no retroperitoneal or iliac metastatic lymphadenopathies. There was no gross pathology in the other systems or tissues (Figure 1a-c). A doppler ultrasound of kidneys showed bilateral wedge-shaped relatively hypoechoic areas in which no vascularity (either arterial or venous) was seen (Figure 2a-b). At this moment the histopathological examination of the orchiectomy material showed no malignant cells but the features of infection and abscess which suggest a possible Brucella epididymo-orchitis

The Wright agglutination test was found to be positive with a titer of 1/640. When asked he reported fresh cheese consumption very usually as common in our region. He was afebrile (37.0 C^{O}) and his blood culture was negative for brucella and the other agents. With clinical, radiological, and laboratory examination results a diagnosis of brucella epididymo-orchitis and associated bilateral renal segmental infarction was made. Ciprofloxacin was stopped and a combination of oral Rifampicin 1x600 mg and Doksisikline 2x200 mg was started. By the relieve the complaints, the patient was discharged without any other complication. All the renal lesions disappeared on contrast-enhanced CT scan at follow-up 1 month after the first CT scan (Figure 3a-c). There were no also signs of metastasis on CT scan and symptoms of residual disease on physical examination.

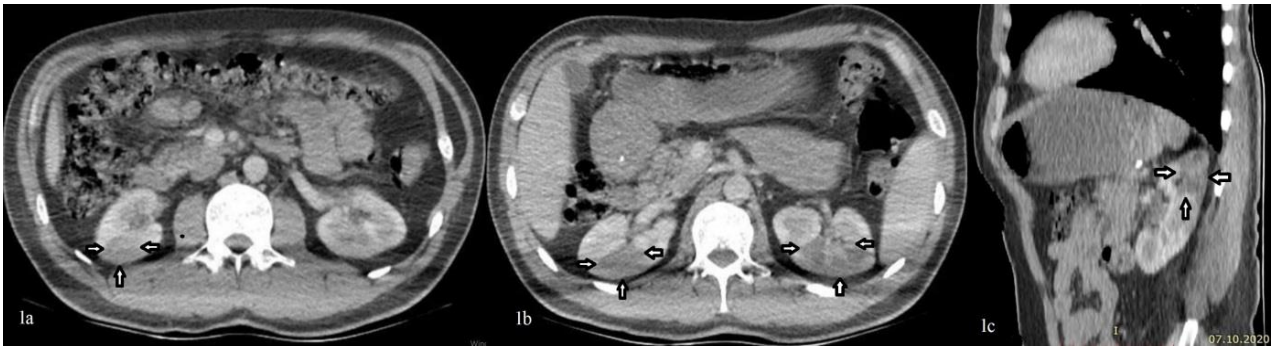

Figure 1a-c. Contrast-enhanced axial (a,b) and sagittal (c) reformatted CT images show bilateral wedge-shaped renal infarctions (Arrows).

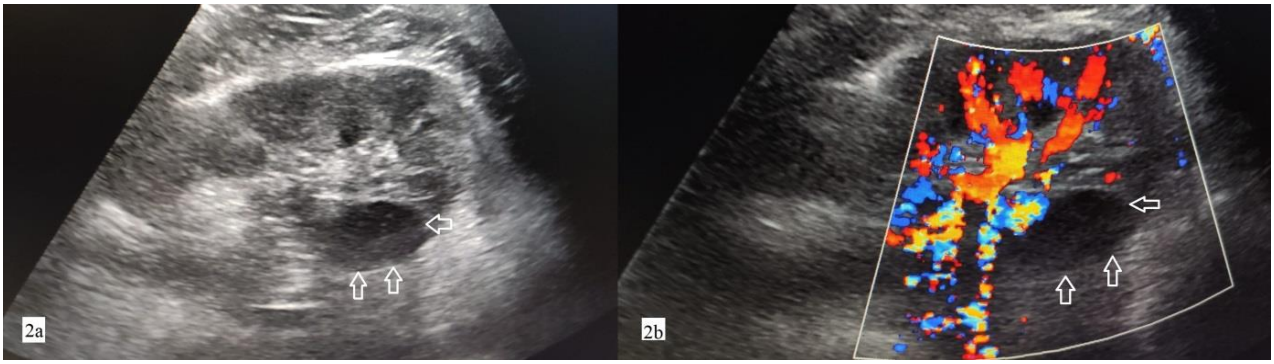

Figure 2a-b. A renal ultrasound shows a relatively hypoechoic focal infarction area in left kidney (a) where no vascularisation was seen (Arrows)(b).

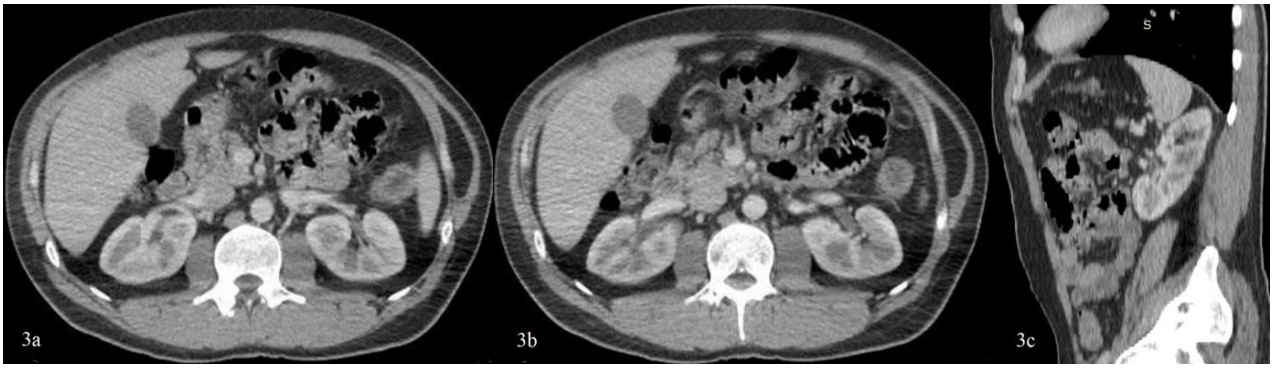

Figure 3a-c. Contrast-enhanced axial (a,b) and sagittal (c) reformatted CT images at the follow-up at 1 month after the antibrucella treatment started, show bilateral normal renal parenchyma. The infarctions disappeared totally.

DISCUSSION

Brucellosis is a common worldwide zoonotic infection that is transmitted to humans by contact with the secretions of infected animals or consumption of their meat and dairy products. It can affect various tissue and systems since gonads are involved in 9% of the male patients.[2] Generally, the imaging findings of brucella and non-brucella epididymo-orchitis are similar but, abscess formation, bilateral involvement, and testicular involvement are more common in the patients with brucella epididymo-orchitis Also brucella epididymo-orchitis can very rarely lead to pseudomass appearance.[3] Because of the similar imaging features of brucella epididymo-orchitis with non-brucella epididymo-orchitis and malignant conditions, sometimes accurate discrimination is not possible with routine radiological examinations.

Various vascular complications are reported in brucella patients especially with cardiac involvement. Cerebral-splenic infarctions, iliac artery thrombosis, pulmonary embolism, deep venous thrombosis, aortitis, aneurysms, aorto-duodenal and aorto-bronchial fistula were described in the patients with brucellosis.[4] Septic embolism, endophlebitis due to direct endothelial damage, induction of the inflammation are the suggested mechanisms for vascular complications in brucella patients.[5-7]

Renal involvement of brucellosis include abscess formation, pyelonephritis, Ig A nephropathy, cyryoglobulinemia and nephritis.[8] Contrary to spleen, various parenchymal involvement types of kidney are well reported but the renal vascular complications are extremely rare. Wang et al reported a 15 years old male with intestinal brucellosis associated with celiac artery and superior mesenteric artery stenosis. On contrast-enhanced CT image of the patient, there were multiple wedge-shaped hypoattenuating areas in spleen parenchyma and a similar appearance on the upper lobe of left kidney. The lesions in both spleen and left kidney were disappeared after 3 months of brucellosis treatment.[9] To our knowledge, our patient is the second case with brucellosis who is complicated with renal infarction. Similarly with the previous case, no cardiological findings were present and also an excellent response to anti-brucellosis treatment was observed. Contrary to him, bilateral renal but no splenic infarction was seen in our patient. Also the renal infarction in the previous study was likely occurred secondary to intestinal brucellosis but in our patient the primary source is probably infected left testicle. But in all these two cases unlike the other reported vascular complications related to brucellosis, no signs or symptoms of cardiac or aortic involvement were detected. Direct transmission of the infection to the kidney by a neighborhood can be suggested in the previous case. In our case, lymph node drainage of the testicle may contribute the spreading of the infection. Also left testicular vein may be a way to reach the infection to the left kidney.

Cardiovascular diseases including atherosclerosis, atrial fibrillation, trauma, congenital or acquired hypercoagulable conditions, substance abuse, infections are the most common causes of renal infarction while no etiological cause is identified in nearly half of them.[10] Detailed cardiac evaluation is very important in the patients with renal infarction and with brucellosis.

Brucellosis must be kept in mind in patients with renal infarction and also the patients with brucella epididymo-orchitis must be evaluated for renal complications especially renal infarctions.

Conflict of Interest

All contributing authors declare that they have no conflicts of interest.

Financial Disclosure

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Informed Consent

Written informed consent was obtained from the patient who participated in this case.

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