Case Report

An unusual cause of liver and renal abscess in an immunocompetent individual

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Abstract

The occurrence of combined liver and renal abscess by *Candida albicans* in an immunocompetent patient is a rare entity. Here, we report a 40-year-old female who presented to the hospital with complaints of fever, right flank pain, vomiting and loose stools. Contrast-enhanced computed tomography (CT) of the abdomen revealed liver and renal abscess with contracted left kidney with multiple urinary calculi and bilateral mild to moderate hydroureteronephrosis. Culture of the aspirate from abscess grew *C. albicans*. Blood cultures and urine cultures were sterile. She was treated with tablet voriconazole and percutaneous drainage of renal and hepatic abscess was done. Fever spikes and pain abdomen subsided after 1 week of therapy. Repeat CT abdomen after 3 weeks showed resolving liver and renal abscess.

Keywords: *Candida albicans,* immunocompetent, liver abscess, renal abscess

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INTRODUCTION

Liver abscesses in developing countries are mostly of amoebic or pyogenic (*Escherichia coli* being the most common) in origin. The microorganisms responsible for renal and perirenal abscess are usually Gram-negative and Gram-positive organisms such as *E. coli, Klebsiella pneumonia, Staphylococcus aureus and Bacteroides fragilis*.[1] Fungal organisms such as *Candida albicans* are uncommon causes of renal and perirenal abscess. Fungal liver abscesses are rare and are usually detected in immunocompromised patients. Here, we report a rare occurrence of both liver and renal abscess caused by *C. albicans* in an immunocompetent patient.

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CASE REPORT

A 40-year-old female presented with a history of intermittent fever episodes for 1 month, right flank pain for 1 month associated with vomiting and loose stools for 3 days. In view of her above symptoms, ultrasound abdomen was done which showed liver abscess in segment six, segment five of liver and renal abscess in the interpolar region of right kidney. Contrast-enhanced computed tomography (CECT) abdomen [Figure 1] done for further evaluation showed similar findings of liver abscess in segment six, segment five largest measuring 3 cm × 2.1 cm and renal abscess measuring 3.8 cm × 3.2 cm in the subscapular region at mid pole

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Figure 1: Contrast-enhanced computed tomography abdomen shows peripherally enhancing lesions with central non-enhancing necrotic component in subscapular region of the right kidney and in adjacent liver parenchyma suggestive of abscesses (circle)

and lower pole of right kidney with contracted left kidney with multiple renal calculi and bilateral mild to moderate hydroureteronephrosis. She was started on empirical broad-spectrum antibiotics but continued to have fever spikes and pain abdomen. Amoebic serology was negative. Blood cultures were sterile. Urine cultures showed no growth. The patient underwent right percutaneous nephrostomy and pigtail to the liver abscess and pus was drained. The pus culture grew *C. albicans* after 4 days [Figure 2]. Repeat aspirate samples also grew *C. albicans*. Routine investigations showed that her blood sugar levels were normal. HIV ELISA was negative. She was diagnosed to have *Candida* liver and renal abscess and was prescribed voriconazole according to the sensitivity of the organism. Fever spikes and pain subsided after a week of voriconazole therapy. Drain output also decreased. The patient was treated with tablet voriconazole 200 mg bd for a total duration of 6 weeks. Review ultrasound abdomen done 6 weeks later showed complete resolution of liver and renal abscess.

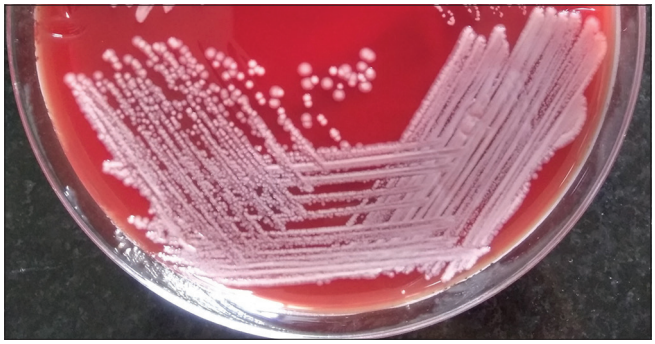

Figure 2: Blood agar plate shows growth of fluffy white creamy colonies of *Candida albicans*

DISCUSSION

Although *Candida* species are a common commensal of the digestive tract, they become pathogenic during immunodeficient states and after prolonged antibiotic treatment.[2] Features associated with the development of disseminated candidiasis include antecedent broad-spectrum and prolonged antibiotic therapy, combination treatment containing aminoglycoside, long hospitalisation, parenteral nutrition, corticosteroid therapy, cancer chemotherapy, renal transplantation and neutropenia.[3] Most hepatic fungal abscesses occur in patients with haematological malignancies and are caused by *C. albicans*.[4] Common pre-disposing factors for renal abscess include diabetes mellitus, urolithiasis, obstructive uropathy, previous instrumentation or surgery, immunosuppression and kidney biopsy.[5] Fungi particularly *Candida* have been reported as a rare cause of perinephric abscess, especially in older patients with diabetes mellitus and urinary tract obstruction.[6] Pyogenic liver and renal abscess would have been the most likely diagnosis with the presentation, but blood cultures were sterile and aspirate cultures grew *C. albicans* twice. Although antibiotic therapy is the mainstay of treatment, percutaneous or surgical drainage of abscess >5 cm or abscess 3–5 cm in diameter if there is no response to the antibiotic treatment is indicated.[7] She had no evidence of immunosuppressive states such as diabetes, indwelling urinary catheter or previous hospital admissions or history of recurrent infections. Our patient was found to have urolithiasis and bilateral hydronephrosis on CECT abdomen indicating a chronic obstructive uropathy which could be the pre-disposing factor for candidiasis. Percutaneous drainage of renal and hepatic abscess along with antifungal therapy resulted in resolution of abscesses and improvement of the patient. Our report emphasises that even in immunocompetent patients, a possibility of fungal abscess should be considered if the patient, particularly with pre-disposing risk factors, is not responding to empirical antibiotic therapy so that prompt treatment can be initiated preventing complications.

Visceral abscess caused by fungi, especially in immunocompetent individual, is a rare occurrence. Here, we report a case of combined hepatic and renal abscess caused by *C. albicans* in an immunocompetent female treated successfully with percutaneous drainage and antifungal therapy. Urolithiasis detected incidentally on CECT abdomen could be one of the pre-disposing factors in our case. Timely diagnosis and management of such cases

are essential to prevent further complications ensuring a better outcome.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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