

Aspergillus Flavus Multiple Abscess (Pelvic, Iliacus and Iliopsoas) in Post-Renal Transplant Patient: A Rare Case Report

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Abstract

Locally invasive or disseminated aspergillus infection remains an important cause of morbidity and mortality among post-renal transplant patients. Aspergillus diagnosis is remains challenging and delay can result in fatal disease in view of its relative infrequency and the non- specific clinical symptoms and signs. We report a rare case of patient developed multiple aspergillus abscess four years post-renal transplant. We conclude that multiple aspergillus abscess is rare in post-renal transplant patients but it should be considered as a part of clinical assessment of those immunocompromised patients if they being sick.

Keywords

aspergillus; abscess; renal –transplant

Introduction

Infectious complications are the top causes of morbidity and mortality in patients who undergo renal transplantation [1,2]. Post-transplantation-acquired infections are usually from infected grafts, the extraction procedure of the graft, organ preservation, and implantation [3]. Though fungi account for only 5% of all infections in renal transplant recipients, fungal infections have a high mortality rate [1]. Aspergillus infection remains an important cause of morbidity and mortality among organ transplant recipients. Aspergillus is ubiquitous in the environment but rarely causes invasive disease in a healthy host. In immunosuppressed transplant recipients, however, it can be a dangerous opportunistic pathogen that is capable of inducing fulminant clinical disease [1].

Case Report

33 years old male soldier, with past medical history of kidney transplant in May 2011 (from living donor), diabetes mellitus, hypertension and DVT. He presented to ER at King Abdul-Aziz Medical City- Riyadh in early of November 2015 complaining of abdominal pain for about six months, pain was started in the right lower quadrant as a mild pain increased over the time to be more severe with radiation to the lower back. In late course of disease pain prevented him from standing for a long time. Associated symptoms were constipation, intermittent low-grade fever and abdominal distension. When the pain was started patient tried to tolerate and control pain by using oral paracetamol for about two months with some improvement then he took medical advice more than three times in different rural hospitals

without improvement. In the last admission abdominopelvic non-contrast - Computed Tomography Scan (CT scan) was done and revealed pelvic collection. Patient discharged against medical advice and he came to our hospital. In ER, on examination patient was stable, vital signs were normal, abdominal examination revealed moderate distension with generalized tenderness mainly in the right lower quadrant. There was also scar of renal- transplant surgery in right lower quadrant. Patient was receiving immunosuppressive medications (Tacrolimus and Prednisolone) beside oral anti-hypertensive and oral-hypoglycemic tablets. Renal and abdominal ultrasonography (U/S) and abdominopelvic CT scan were done U/S revealed large anechoic area seen from the right flank extending to the right iliac fossa with internal septation and hyperechoic components inseparable from the native kidney, according to report underline collection/pyelonephritis can't not be excluded (Figure1- A and B), further evaluation by CT scan was recommended. Abdominopelvic CT scan showed large multilobulated infiltrative pelvic soft tissue density mass with adjacent lymphadenopathy displaced atrophic right kidney anteriorly, transplanted kidney was in the right iliac fossa displaced by pelvic mass anteriorly. There is also multiloculated cystic lesion additional to soft tissue mass in the right iliacus and iliopsoas muscles likely representing concurrent abscess (Figure 2-A and B). In the third day of admission percutaneous pelvic mass biopsy and fluid aspiration were done under U/S guidance, fluid culture from abscess showed growth of *aspergillus flavus* and *bacteroides fragilis*. Fungus culture from the same fluid after one week showed growth of *Aspergillus flavus*. TB screening was negative from abscess fluid .Surgical pathology report revealed features of fungal infection suggestive *aspergillus* surrounded with fibrosis and active inflammation, another two sample were taken for pathology from pelvic and iliacus and iliopsoas muscles during period of one month after the first sample and all showed the same fungal elements suggestive of *aspergillus*. Drainage catheter was inserted and a moderate amount of fluid drained, the patient received intravenous meropenem for the first four days then stopped and Infectious Diseases team started intravenous amphotericin b lipid complex and metronidazole .During the course of admission patient developed spikes of high-grade fever and it subsided after started of a definitive treatment. He developed DVT in the right calf and thigh and he received heparin injection and warfarin tablets initially and then he continued on oral warfarin. After one month of admission abdominopelvic CT scan was done again which showed decrease in the size of abscess (Figure3-A and B) and patient was feeling well , intravenous antimicrobials was stopped and patient started on oral voriconazole and discharged in a good condition with appointment for follow up in Infectious Diseases clinic.

Discussion

Aspergillus spp. is a respiratory pathogen. The incidence of *aspergillus* infection in renal transplantation is about 2.0–3.9%, *A. fumigatus* is the most often isolated species, accounting for 85% of cases. *A. niger*, *A. flavus* and *A. terreus* have also been found in invasive aspergillosis [4,5]. Pulmonary infection is the most common form of invasive disease, but dissemination to the central nervous system and other sites may occur [6]. The median time interval from transplantation to the clinical presentation of invasive aspergillosis was 2.5–3.5 months [4-7]. The diagnosis of aspergillosis depends on clinical judgment and is difficult to confirm without tissue biopsy and culture confirmation [8]. *Aspergillus* infection in renal transplantation is dangerous, with a mortality rate of 40–86 % [9,10].

Our patient had received the kidney from alive donor from Egypt and surgery was done also in Egypt, so donor medical history was unknown for our team regarding if he had any past medical history

of aspergillus infection, so the source of infection in our patient was unknown. The patient had received doses of steroids, tacrolimus for more than four years which could be a risk factor for fungal infection due to immune system insufficiency. The incidence of aspergillus infection is relatively lower in renal transplant patient in compare to other organs, high dose and prolonged duration of corticosteroids, graft failure requiring hemodialysis, and potent immunosuppressive therapy have been shown to be risk factors for invasive aspergillosis after renal transplantation [11,12]. According to Rubin's report, the presentation of invasive aspergillosis was at 2.5–3.5 months post transplantation and possibly due to the use of immunosuppressive drugs [13]. However, our patient got aspergillosis about four years after renal transplantation. The predominant symptom was abdominal pain but he also developed fever. Common clinical manifestations of aspergillosis in renal transplant recipients are fever and pulmonary infiltrates [20]. Involvement of the reproductive system is rare but it reported by *Kim et al.* for pelvic aspergillosis with tubo-ovarian abscess [20].

A substantial delay in establishing an early diagnosis remains a major impediment to the successful treatment of invasive aspergillosis [14]. Thus, confirmation of the diagnosis of invasive aspergillosis has typically required histopathologic evaluation and fungal culture [14], beside other tests e.g Aspergillus galactomannan. Galactomannan is a polysaccharide cell wall component of *Aspergillus* species that is released into the circulation during fungal growth in the tissues [14].The performance characteristics of the galactomannan test are less well studied in organ transplant recipients. In liver transplant recipients for whom archived sera were tested, the sensitivity of the test was 55.6% and the specificity was 93.9% [15]. In our patient diagnosis took months till abdominopelvic U/S and CT scan revealed collections and Aspergillus infection confirmed by using histopathology and fungal culture which both showed aspergillus many times.

Successful treatment of post-transplantation infection depends on early diagnosis, aggressive antifungal treatment, and reducing immunosuppressive treatment [2].Timely initiation of effective antifungal treatment is likely essential for improving outcomes. Therefore, every effort should be made to establish the diagnosis as soon as possible, and empiric therapy should be strongly considered in cases where there is suspicion for invasive aspergillosis (e.g., subacute pulmonary processes, brain lesions)[16]. Our patient received intravenous amphotericin b lipid complex for aspergillus and metronidazole for bacteroides fragilis for period of one month and then he started on oral voriconazole. In old studies the mainstay of therapy for this infection was the use of amphotericin B. The peak dosage goal is 0.75–1.0mg/kg/day, with total dose in the adult ranging from 1,200 mg to 3,000 mg [17,18]. The response rate of Aspergillus infections to amphotericin B was 55% after 14 days of treatment [4,5]. Even when the diagnosis is established and effective antifungal therapy is given, adjunctive surgical debridement is sometimes required [16]. Length of therapy depends upon clinical and radiographic response, the patient's net state of immunosuppression and site and extent of infection. First-line treatment is with voriconazole for most types of invasive aspergillosis as according to IDSA guidelines 2008, but there is no specific recommendation regarding pelvic infection [16-21]. We decided to use lipid formulations of AmB because it is still widely used with good patient outcome as in reported cases [20]. It also considered as drug of choice for patients with invasive aspergillosis can be used as alternative agents in patients who cannot tolerate voriconazole, or whose disease progresses despite its use. However, initial therapy with an AmB preparation has been associated with increased risk of death in solid organ

transplant recipients with invasive aspergillosis [16,19].

Conclusion

Aspergillus multiple abscess (Pelvic, iliacus and iliopsoas) is rare in immunocompromised post renal-transplant patients, but should consider as a part of clinical assessment of sick patients.

Figures



Figure 1(a): Renal and abdominal ultrasonography (U/S), showing large anechoic area seen from the right flank extending to the right iliac fossa with internal septation and hyperechoic components inseparable from the native kidney.



Figure 1(b): Renal and abdominal ultrasonography (U/S), showing large anechoic area seen from the right flank extending to the right iliac fossa with internal septation and hyperechoic components inseparable from the native kidney.



Figure 2(a): Renal and abdominal ultrasonography (U/S), showing large anechoic area seen from the right flank extending to the right iliac fossa with internal septation and hyperechoic components inseparable from the native kidney.



Figure 2(b): Abdominopelvic non contrast - Computed Tomography Scan, showing large multilobulated infiltrative pelvic soft tissue density mass with adjacent lymphadenopathy displaced atrophic right kidney anteriorly, also there is multiloculated cystic lesion additional to soft tissue mass in the right iliacus and iliopsoas muscle.

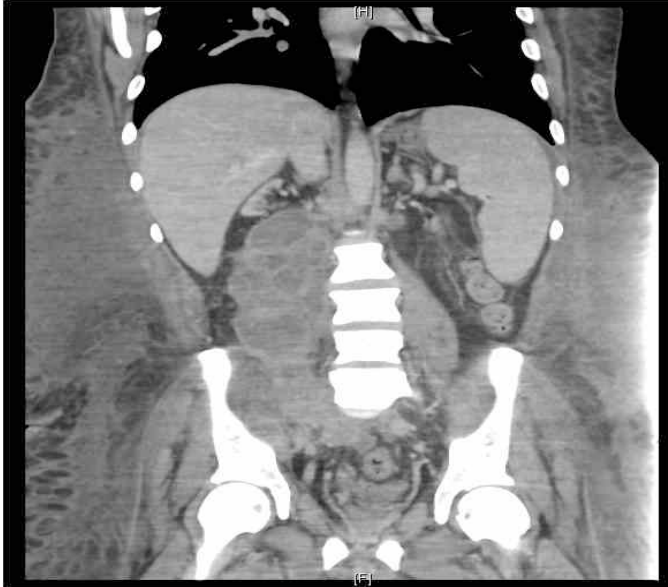


Figure 3(a): Abdominopelvic non contrast - Computed Tomography Scan ,showing decrease in the size of multilobulated pelvic abscess and also of the right iliacus and iliopsoas muscle abscess.



Figure 3(b): Abdominopelvic non contrast - Computed Tomography Scan ,showing decrease in the size of multilobulated pelvic abscess and also of the right iliacus and iliopsoas muscle abscess.

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