

## Renal aspergilloma presenting with pelvi-ureteric junction Obstruction (PUJO)

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### Abstract

Primary renal aspergillosis, though a rare entity, is still seen in immune compromised individuals. Renal aspergillosis may lead to formation of focal abscesses, fungal bezoars and may cause ureteric obstruction. Treatment involves stabilization of patient and removal of fungal bezoars along with administration of anti-fungal agents. This report describes the case of localized primary renal aspergillosis with fungal bezoars formation in a 55 years old female, diabetic, hypertensive, who presented with upper urinary tract obstruction and was successfully managed by endoscopic removal of fungal bezoars and intravenous amphotericin followed by oral itraconazole.

**Keywords:** Renal aspergilloma pelvi ureteric junction obstruction.

### Introduction

Aspergillosis is a fungal infection occasionally found in immunosuppressed patients. Aspergillosis is primarily a pulmonary pathology with haematogenous spread to other organs in persons with compromised immune status, such as diabetics, those on corticosteroids and HIV positive individuals or chronic alcoholic patients.<sup>1,2</sup> The recommended management of patients with renal aspergilloma remains unclear

Here, we describe a case of localized renal Aspergillosis in a type 2 diabetic patient presenting with pelvi-ureteric junction obstruction.

### Case Report

A 55 years old diabetic, hypertensive female, came to outpatient department of the Indus Hospital, Karachi, in June 2013, with complaints of intermittent right flank pain associated with low grade fever and burning micturition for one year. Pain was of mild to moderate intensity, radiating to right groin, relieved by parenteral analgesics. She had poor compliance for medication for her Diabetes. General physical examination showed anaemia. With positive right side flank tenderness. Rest of systemic examination was unremarkable. Ultrasound kidneys showed moderate hydronephrosis along with

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echogenic mass measuring 2.8x1.1 cm at the upper pole of right kidney and there was no radio-opacity in plain x-ray. Computed tomography of both kidneys and urinary bladder showed moderate hydronephrosis and hydroureter in the right kidney without any stone or any mass causing obstruction. Initial blood investigation was done which showed Hb 9.0gm/dl, TLC was  $11.8 \times 10^9$ , Creatinine 2.2mg/dl and HBA1C9.2%. urine culture was negative. Patient was kept for double J (DJ stent) stent insertion in right side of system under prophylactic antibiotic cover to relieve patient's symptoms. Post operative course was uneventful and patient was discharged on first post operative day on Insulin and antihypertensive medication.

Patient was readmitted on 16th post operative day with complaints of high grade fever, burning micturition and right flank pain. Ultrasound right kidney showed moderate hydronephrosis with proximal hydroureter along with echogenic lesion seen in right lower pole of kidney. X-ray KUB showed that DJ stent had slipped into proximal ureter so ultrasound guided PCN was placed and urine sent for culture which showed no growth. Ante grade nephrostogram was performed which showed right sided Pelvi-ureteric junction obstruction. DJ stent was removed on next day and DJ stent was sent for culture because there was whitish ball on the proximal end of DJ stent. During hospital stay patient passed fungal balls. There was growth of E.coli and Aspergillus in urine culture and DJ stent. Infectious disease (ID) consultation was taken and HIV status and hepatitis B and C serology was checked after informed consent which was non reactive. Inj Amphotericin 50 mg every 48 hours and Imipenem 250 mg IV was started for 7 days.

After starting the antifungal therapy the patient became a febrile and she was discharged on oral Itraconazole 200 mg PO BD for 3 months then 100 mg PO OD for 2 month and course of antibiotics according to culture. She is being regularly followed as outpatient in Urology, Diabetologist and ID department, and she is doing well.

### Discussion

Primary renal aspergillosis, though a rare entity, is still seen in immuno-compromised individuals. A large case series revealed that Aspergillus infection of the kidney

accounts for 30% (27/90) of total renal fungal infection and majority (63%) results from disseminated infection.<sup>3</sup> Aspergillosis can also involve other genitourinary organs like prostate as reported in literature.<sup>4</sup>

Aspergillosis of the kidney can lead to formation of multiple focal abscesses, Aspergillus cast of the renal pelvis, and ascending panurothelial aspergillosis of the urethra, bladder, pelvis and kidney.<sup>5</sup> There are also case reports of ureteric obstruction due to aspergillosis.<sup>2</sup> Aspergillosis of urinary tract must be diagnosed promptly and treated aggressively. In untreated cases, it can cause urinary obstruction through formation of fungal balls resulting in hydronephrosis, oliguria or anuria, destruction of the renal parenchyma, ultimately sepsis and wide-spread dissemination of the organism, and death of the patient. Treatment includes relief of obstruction by removal of fungal ball along with antifungal therapy. Voriconazole is considered the gold standard for systemic antifungal treatment. It has been proved to be superior to amphotericin-B in terms of response and improved survival with fewer severe side effects.<sup>6</sup>

In our case the patient was treated with IV amphotericin followed by oral itraconazole for 6 months which is from the same group.

Treatment with amphotericin (dosing may be 0.75-1.0mg/kg/day total dose of 2-4g) has been the standard of care. Adding flucytosine or rifampicin may increase the effectiveness of amphotericin. Gumbo et al<sup>12</sup> and Young et al<sup>2</sup> showed poor response rates to amphotericin. Other drugs include itraconazole, caspofungin acetate and voriconazole. Voriconazole may lead to better responses

and improved survival with fewer side effects compared to amphotericin.

### Conclusion

Localized renal aspergillosis may be suspected in diabetic patients having history and signs of urinary tract obstruction, previous urinary tract instrumentation, passage of suspicious masses in urine and persistent pyuria. Examination of the suspicious substances expelled per urethra is essential for diagnosis as it can be fungal bezoars. Treatment comprises of oral itraconazole along with relieve of subsequent obstruction either by self passage or ureteroscopy.

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