Sir,
The saprophytic colonization of a cavity by fungal hyphae, without the invasion of the adjacent tissue, is referred to as ‘fungal ball’ [1]. Fungal balls causing intermittent graft obstruction have not been previously reported. We managed a renal graft case that was characterized by intermittent graft obstruction.

The patient was a recipient of a live unrelated renal graft. At 4 months after transplantation, he presented with a history of fever for 7 days and did not pass urine for 1 day. He had diabetes and had been treated for right psoas hematoma 2 months previously. Upon presentation, he was in shock (blood pressure 90/60mmHg) and the graft was tender. His clinical evaluation showed many pus cells in the urine, a dilated pelvicalyceal system (PCS) with nonshadowing echogenic strands in the graft, suggesting fungal ball or clots on ultrasound, (Figure 1) and deranged renal function (serum creatinine: 5.3 mg/dL). He was stabilized with vasoressors and given one session of hemodialysis. From the next day onwards, his urine output increased without surgical intervention and renal function returned to normal.
by the fourth day; however, he developed anuria again on Day 5. Because repeat ultrasound revealed again the same findings, we performed percutaneous nephrostomy, and a white cheesy material was removed through the nephroscope. Histopathology confirmed it as a Candida species and urine culture grew Candida non-albicans. Due to the partial success of the procedure (nephroscopic removal of fungal ball), local irrigation with amphotericin-B was started. This treatment resulted in complete disappearance of the fungal ball, a return of renal function and a disappearance of graft PCS dilatation by Day 14.

Discussion

Candidiasis of the lower urinary tract is common in immunocompromised patients. Diabetes and chronic indwelling catheters are two common risk factors for such opportunistic infections [2]. Fungal balls have been reported to cause unilateral or bilateral obstructions in both the pediatric and adult populations. Renal graft obstructions resulting from Candida albicans and Aspergillus species fungal balls have also been reported. Pathogenic characteristics that restrict fungal infections to the PCS, without parenchymal invasion, have not been reported. It is likely that an urothelium resistance contributes. Fungal balls can be identified as non shadowing echogenic foci on ultrasound [3]. A combined treatment approach that includes medical therapy with topical and systemic antifungal agents and endourological access for extraction, lavage and debulking is recommended.

This patient had several risk factors for urinary tract infection by fungal species, which included diabetes, an immunosuppressed state, bladder catheterization and prolonged antibiotic use (for psoas hematoma removal and drainage). Fungal ball in this patient caused a partial and an intermittent complete obstruction which resulted in the reported presentation. We successfully managed this case of intermittent renal graft obstruction caused by Candida non-albicans fungal ball using a combined approach of local antifungal therapy and endourological debulking. A past history of trauma and suspicion of blood clots as a cause for the obstruction led to a slight treatment delay.

In conclusion, fungal balls can cause intermittent urinary tract obstructions. Avoidance of risk factors and early combined medical and endourological treatments should be recommended for management of fungal nonparenchymal infections of the urinary tract in renal transplant patients.

Fig. 1. Ultrasound picture of renal allograft showing nonshadowing echogenic foci in pelvis—fungal bezoars.

References

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