

## *Trichosporon asahii* as a cause of urinary tract infection: A rare human pathogen

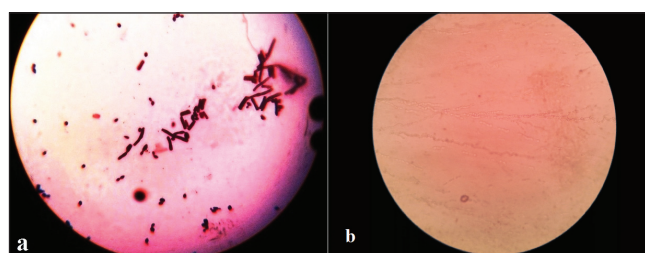
Editor,

*Trichosporon* species are basidiomycetes fungi that inhabit the soil and may also be present in air, water, organic substrate, and in other external environments.<sup>[1,2]</sup> They colonize the skin, gastrointestinal tract, and respiratory tract of humans, and also been detected in feces, sputum, blood, and central venous catheters.<sup>[3,4]</sup> They cause white piedra and onychomycosis in immunocompetent hosts.<sup>[5]</sup> They are reported as a cause of disseminated invasive yeast infection in the immunocompromised host.<sup>[3]</sup> Invasive urinary tract infection caused by *Trichosporon asahii* is rare.

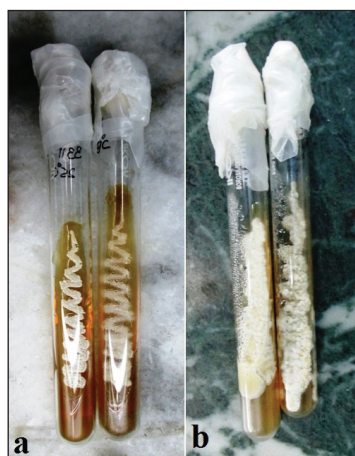
A 55-year-old male was admitted in our hospital following a road traffic accident. His Glasgow Coma Score was poor at the time of admission with computerized tomographic scan of brain showing extensive subarachnoid hemorrhage with marked cerebral edema. Patient was put on ventilator and treatment was started. Patient had a history of diabetes mellitus. His investigations showed hemoglobin 13.1 g%. His total leukocyte count was 17,600/mL with 85% neutrophils and 13% lymphocytes. Random blood sugar was 267 mg/dL.

His blood and urine samples came in our laboratory for culture and sensitivity. Blood was sterile on culture. Urine was cultured on cystine lactose electrolyte deficient (CLED) agar plate. On Gram-staining, urine showed few pus cells and budding yeast cells. Tiny creamy white wrinkled colony was seen on CLED agar plate after overnight incubation at 37°C. Gram stain of colony showed intertwined hyphae and rectangular arthroconidia [Figure 1a]. Germ tube test was performed which was negative. Two more consecutive urine samples of the patient were obtained and analyzed. Colony from CLED agar was subcultured on Sabouraud's dextrose agar (SDA) and incubated at 25°C and 37°C. After 24 h of incubation, both tubes of SDA showed white to the creamy smooth colony. It became yellow waxy wrinkled and raised with central cerebriform folds after 7 days of incubation [Figure 2]. In CHROM agar, light green colony was seen after overnight incubation. In Cornmeal Tween 80 agar, this yeast-like fungus showed hyphae that fragmented in arthroconidia and blastoconidia [Figure 1b]. The yeast-like fungus was identified as *Trichosporon* species on the basis of its colony morphology, Gram-staining, positive urease test, failure to ferment carbohydrates, and formation of pellicle in Sabouraud's dextrose broth. It was further identified as *T. asahii* by VITEK® 2 system (bioMérieux Inc., 100 Rodolphe Street, Durham, NC, USA).

On the basis of our preliminary report, antifungal therapy with fluconazole was started. However, unfortunately as the patient had severe brain injury he did not survive.



**Figure 1:** (a) Gram stain of colony showed intertwined hyphae and rectangular arthroconidia, (b) Cornmeal Tween 80 agar showing hyphae that fragment in arthroconidia and blastoconidia



**Figure 2:** (a) After 24 h of incubation, both tubes of Sabouraud's dextrose agar showed white to creamy smooth colony, (b) it became yellow waxy wrinkled and raised with central cerebriform folds after 7 days of incubation

Isolation of same yeast in three consecutive samples in significant count established *T. asahii* as an etiological agent of urinary tract infection.

In this case, the patient was diabetic that is, immunocompromised. Hence, he was prone to opportunistic infection. Furthermore, the patient was on the urinary catheter; it is possible that the fungus colonized the urinary catheter from the skin flora during catheterization and subsequently progressed toward invasive Trichosporonosis.

We concluded that early detection and identification of *Trichosporon* is necessary to provide specific and appropriate treatment. For this, a high level of suspicion is necessary because of the silent diagnostic feature of the etiological agent.

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