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RESEARCH ARTICLE

CASE PRESENTATION: EARLY DIAGNOSIS OF TRICHOSPORON ASAHII CAUSING URINARY TRACT INFECTION IN IMMUNOCOMPETENT PATIENT

[1,*]Haluk Kılıç, [2]Ebru Tarıkçı Kılıç and [3]Mehtap Turfan Alkan

[1]Bayrampaşa, Goverment Hospital Department of Microbiology, İstanbul, Turkey
[2]Ümraniye, Training and Research Hospital Department of Anaesthesiology and Reanimation, İstanbul, Turkey
[3]Süleymaniye, Training and Research Hospital Department of Microbiology, İstanbul, Turkey

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ABSTRACT

Trichosporon asahii, has been reported increasingly in immunocompetent hosts. There are only sporadic reports of infections caused by T. asahii reported. We report a case of successful management of T. asahii infection with orally administered fluconazole in a 71 year old patient.

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INTRODUCTION

Trichosporon species (T. spp.) are distinguished microscopically by having yeast cells that germinate to produce hyaline hyphae which disarticulate at the septa, the hyphal compartments acting as arthroconidia and very rarely like blastoconidia (Ustaçelebi, 1999). T. spp. belong to the genus of basidiomycetous yeast and are widely distributed in nature. They are found in soil and water and are known to colonize skin, gastrointestinal and genitourinary tract of humans (Kröner *et al*., 2013; Gülşen Hazırolan, 2012). Clinical isolates are generally related to superficial infections. However, this fungus has been recognized as an opportunistic agent of invasive infections, mostly in cancer patients and those exposed to invasive medical procedures. Disseminated trichosporonosis has been increasingly reported worldwide and represents a challenge for both diagnosis (Colombo *et al*., 2011). Major risk factors for Trichosporon ashaii is neutropenic patients, hematologic malignancies, chemotheraphy and organ transplantations. The species causing invasive infections are Trichosporon asahii ve Trichosporon mucoides. Diagnosis and therapy is complex.

Corresponding author: Haluk Kılıç,
Bayrampaşa, Goverment Hospital Department of Microbiology, İstanbul, Turkey.

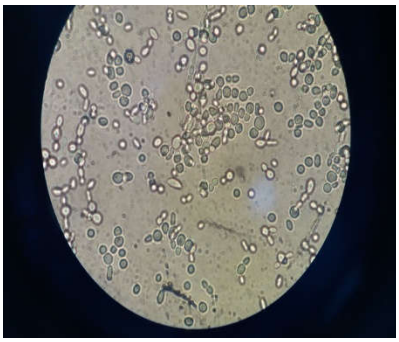
The mortality rate of disseminated Trichosporonosis is high especially among immundeficient patients (Gülşen Hazırolan, 2012). Because of limited data on the *in vitro* and *in vivo* activities of antifungal drugs, treating patients with trichosporonosis remains a challenge. Despite these limitations, antifungal regimens containing triazoles appears to be the best therapeutic approach (4). Among the antifungal agents triazoles are preferred initially (3).

Case presentation

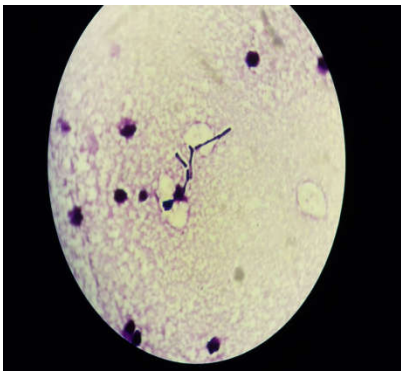
A 71 year old patient was admitted to our hospital because of urinary tract infection. He had no comorbid pathologies. He was diagnosed as a treated case of prostatectomy. Asper his medical records he had gone under cystoskopy. The surgery was performed under cover of antibiotics such as ampicillin and gentamicin starting a day prior to the surgery and continued for 7 days. The patient was also catheterized for seven days and aid free flow of urine. The patient then recovered and discharged. One month later he presented with complaints of pain while micturition and a subfebrile fever. His blood parameters were as follows: WBC: 10.29, Hb: 13.5, CRP:7. The patient's urine sample was examined and cultured. The sample was inoculated on blood agar and Mac Conkey's agar plate sand incubated over night at 37 C. Tiny, cream-white dry wrinkled colonies were seen on blood agar. The graim stain of the colony revealed the presence of septate hyaline hyphae with artrospore sand few budding yeast cells

(Figure 1, 2, 3, 4). The identification by VITEK 2 and maldi-tof is the Trichosporon ashaii. This urine sample was sent to repeat fungal culture and it was found to be positive for the fungus. On the basis of these reports antifungal therapy with flucanozole was iniated and the condition improved dramitically.

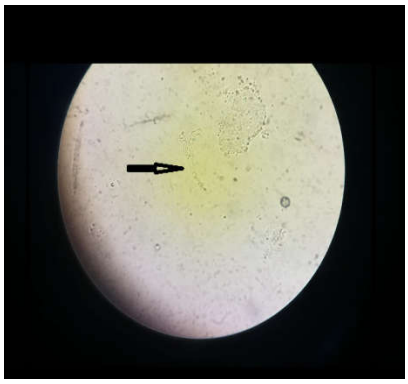
Figüre 1. On blood agar



Figüre 2. Wet microscopy



Figüre 3. Graim stain



Figüre 4. Urine sample microscopy

DISCUSSION

Invasive infection of opportunistic fungal pathogen emerged as a significant problem in the treatment of immunocompromised hosts in the recent years. Since the first report on disseminated trichosporonosis in a leukemic patient in 1970, sporadic cases have been reported. Mathews and Prabhakar in 1995 reported a case of localized invasive trichosporonosis of CNS due to T. beigelii from India (Mathews, 1995). Chakrabarti and co-workers reported a case of generalized lymphadenopathy caused by T. Asahii in a patient with Jobs syndrome (Chakarbarti *et al*., 2002). While the seinstances were in immunocompromized patients, our patient was immunocompetent (physically well-nourished, no neutropenia, HIV negative, normal blood picture, no detectable malignancy, not on chemotherapy or immunosuppression).

Wolf and colleagues, described T. Asahii infection in six nongranulocytopenic patients in ICUs in 2001 (Wolf *et al*., 2001). The etiological role of T. asahii was unequivocally established by direct demonstration in sputum and isolation in culture from this material as well as from CSF. Among immunocompetent hosts, keratitis and onychomycosis are the most common infections. The other infections in immunocompetent patients are sinusitis, pneumonia, thrombophlebitis, peritonitis, fungemia, endophtalmitis, septicarthritis, vulvovaginitis and osteomyelitit.

In 2004, Kontoyiannis *et al*. described the clinical spectrum and outcome of 17 patients with cancer and invasive trichosporonosis documented at the MD Anderson Cancer Center (Kontoyiannis *et al*., 2004). The over all incidence of invasive trichosporonosis was found to be 8 cases per 100,000 admitted patients; 65% of the infected patients had acute leukemia, and 65% had neutropenia. Most patients (59%) had fungemia as the sole manifestation of the fungal infection, and 7 of 10 with Trichosporon fungemia had a central venous catheter-related infection. Of note, 60% of episodes were documented in patients who had been exposed to at least 7 days of antifungal therapy (break through infections). The crude mortality rate at 30 days after admission was 53%. In 2009, Ruan *et al*. described a series of 19 patients with invasive trichosporonosis documented between 2000 and 2008 at the National Taiwan University Hospital (Ruan, 2009). Cancer was the underlying disease in 58% of patients, andonly 4 patients (21%) were neutropenic at the time of the diagnosis. Central venous catheter placement and the use of antibiotics were the most commonly associated conditions, being present in 90% and 95% of all patients, respectively. The mortality rate at 30 days after infection was 42%. Suzuki *et al*. İn 2010 retrospectively evaluated clinical aspects and outcomes for 33 patients with Trichosporon fungemia and hematological malignancies in 5 different Japanese tertiary care centers between 1992 and 2007. The mos of these patients had acute leukemia (82%) and neutropenia (85%), and 90% of them had been exposed to at least 5 days of systemic antifungal therapy (breakthrough infections). Skin lesions were reported in 12 patients and pneumonia in 19 patients. The mortality rate attributable to the fungus was found to be 76%, with 67% of deaths occurring within 10 days of admission (Suzuki *et al*., 2010). Isolation of the same yeast in three urine sample sand the fact that no bacteria were isolated establishes Trichosporon asahii as an etiological agent of urinary tract infection in our patient. Factors that inhance mucosal colonization and subsequent invasion of trichosporon spp.

İnclude broad spectrum of antibiotic treatment and breaks in to mucosal barriers. Our patient exhibited risk factors such as trauma during surgery and the presence of cathater.

Conclusion

Trichosporonosis is usually an isidious disease but it can present as an acute opportunistic infection in susceptible people. The increase in immuncompromized patients has been accomponied by an increase not only in frequency of opportunistic fungal infections but also in the variety of species involved. The diagnosis is likely to be missed because of a general lack of awareness and lack of awareness and lack of features of etiologic agent.

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