Case Report / *Olgu Sunumu*

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Peritonitis due to Candida Guilliermondii in a Patient on Continuous Ambulatory Peritoneal Dialysis

Sürekli Ambulatuar Periton Diyalizi Hastasında Candida Guilliermondii Peritoniti

Emel Tatlı, Meltem Gürsu, Zeki Aydın, Sami Uzun, Serhat Karadağ, Egemen Cebeci, Filiz Pehlivanoğlu*, Öztürk Savaş, Rümeyza Kazancıoğlu**

Haseki Training and Research Hospital, Clinic of Nephrology, İstanbul, Turkey

**Haseki Training and Research Hospital Clinic of, Infectious Diseases and Clinical Microbiology, İstanbul, Turkey*

***Bezmialem Foundation University Faculty of Medicine, Department of Nephrology, İstanbul, Turkey*

Abstract

Peritonitis still maintains its importance today as the most significant complication affecting mortality and morbidity in peritoneal dialysis (PD) patients. Although peritonitis is bacterial in 80% of cases, increasing rate of fungal peritonitis has been reported by many studies in recent years. While Candida species (mainly C. parapsilosis, C. albicans and C. tropicalis) are responsible for 70% of cases, other species (Trichosporon, Penicillium, Aspergillus and Acremonium) are very rarely seen. C. guilliermondii has been reported as the cause of peritonitis in PD patients in a few cases. Herein, we present a PD patient with peritonitis due to C. guilliermondii. We aimed to emphasize that non-albicans Candida species should be remembered in PD patients with peritonitis. *(The Medical Bulletin of Haseki 2015; 53: 248-50)*

Key Words: Peritonitis, candida guilliermondii, ambulatory peritoneal dialysis

Özet

Peritonit, periton diyalizi (PD) hastalarında morbidite ve mortaliteyi etkileyen en önemli komplikasyon olarak önemini korumaktadır. Her ne kadar peritonit, olguların %80'inde bakteriyel olsa da son yıllarda giderek artan oranlarda mantar peritoniti bildirilmektedir. Olguların %70'inden kandida türleri (özellikle C. parapsilosis, C. albicans ve C. tropicalis) sorumlu iken diğer türler (Trichosporon, Penicillium, Aspergillus ve Acremonium) nadir görülür. C. guilliermondii, PD hastalarında peritonit etkeni olarak seyrek olguda bildirilmiştir. Burada, C. guilliermondii nedeniyle peritoniti olan bir PD hastasını sunduk. Peritoniti olan PD hastalarında non-albicans kandida türlerinin akılda tutulması gerektiğini vurgulamak istedik. *(Haseki Tıp Bülteni 2015; 53: 248-50)*

Anahtar Sözcükler: Peritonit, candida guilliermondii, ambulatuar periton diyalizi

Address for Correspondence/Yazışma Adresi: Egemen Cebeci
Haseki Training and Research Hospital, Clinic of Nephrology, İstanbul, Turkey
Phone: +90 212 529 44 00 E-mail: egemencebeci@hotmail.com

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Introduction

Continuous ambulatory peritoneal dialysis (CAPD) is a treatment method practiced in patients with end-stage renal failure and which becomes more commonly used day by day due to its advantages against hemodialysis (1,2). Moreover, peritonitis still maintains its importance today as the most significant complication affecting mortality and morbidity in CAPD patients (3-6). Peritonitis incidence is 1.5 episode/patient-year on average as it may vary in various centers (1,7). Although peritonitis is caused by a bacterial infection in 80% of cases, increasing rate of fungus peritonitis has been reported by many studies in recent years (8). Candida species are most common fungi causing peritonitis (mainly C. parapsilosis, C. albicans and C. tropicalis) which are responsible for 70% of cases and, others (Trichosporon, Penicillium, Aspergillus and Acremonium) are very rarely seen (3,8-10). Pichia guilliermondii is a species of yeast of the genus Pichia whose asexual or anamorphic form is known as C. guilliermondii. C. guilliermondii has been isolated from numerous human infections, mostly of cutaneous origin, in immune suppressed patients. C. guilliermondii has also been isolated from normal skin and in sea water, feces of animals, fig wasps, buttermilk, leather, fish, and beer. Herein, we present a patient with peritonitis in order to attract attention to fungus peritonitis in CAPD patients.

Case

A 42-year-old male patient who had the diagnosis of chronic renal failure for four years and has been undergoing CAPD for two years presented to our outpatient clinic with abdominal pain, diarrhea and cloudy effluent. He had a previous history of hypertension. He had experienced two peritonitis episodes caused by gram-negative bacteria within the past one year. Physical examination revealed diffuse abdominal tenderness and rebound positivity. In addition, the peritoneal dialysis (PD) catheter exit site was found to be edematous and hyperemic. Essential laboratory findings were as follows: hemoglobin: 9.4 g/dL, hematocrit: 34%, WBC: 17.900/mm^3, erythrocyte sedimentation rate: 100/hr, urea: 126 mg/dL, creatinine: 7.1 mg/dL, total protein: 6.8 g/dL, albumin: 2.6 g/dL, aPTT: 85 seconds and PT: 37.5 seconds. Other biochemical findings were within normal limits. The microscopic examination of PD effluent disclosed 150/mm^3 WBCs (78% PMNL, 6% lymphocyte, 14% monocytes and 2% eosinophils) and 0/mm^3 red blood cells. No organisms were observed on gram staining of the peritoneal effluent. Cultures taken for the bacteria were negative whereas mold colonies were observed at the second day of incubation in Sabouraud's dextrose agar. The factor was determined as C. guilliermondii by classical methods and System Integral Yeasts Plus (Liofilchem, Rosetta, Italy) method. Fluconazole was started intravenously at the dose of 100 mg/kg/day (two doses). Tenckhoff catheter was removed after one day of treatment and the patient was enrolled in hemodialysis program. Antifungal treatment was continued for 21 days. Complaints diminished rapidly and the patient was discharged.

Discussion

Fungal peritonitis has been reported in CAPD patients with increasing frequency. The rate of fungus peritonitis in CAPD peritonitis has been reported to be 2-15%, and the factor has been reported to be Candida in 70% of cases (1,4,8). Symptoms and findings of fungal peritonitis are not different from bacterial peritonitis. Fungi enter the peritoneal cavity intraluminally (1,8). Fungi cause drainage problems by forming adhesions through fibrin production or by forming plugs at catheter pores. The case presented here is a case of peritonitis caused by C. guilliermondii which has been reported rarely as a causative agent in patients on PD. In an extensive compilation made in 1986, C. guilliermondii was found in 7 cases of 88 fungus peritonitis in PD patients (11). C. guilliermondii was determined as the factor in only one case of 15 fungus peritonitis case series by Manzano-Gayosso et al. (12). Kazancıoğlu et al. (13) have reported 8 cases of peritonitis due to non-albicans candida from Turkey.

The catheter causing foreign reaction, immunosuppressive medication use and using systemic or intraperitoneal antibiotics for previous bacterial peritonitis attacks were suggested to be predisposing factors in CAPD patients (8). Our patient also had a history of intraperitoneal antibiotics use due to two previous peritonitis attacks within the past one year.

The diagnosis of fungal peritonitis is made by observation in gram-stained preparations or production in cultures. Usually, the treatment is difficult and requires early removal of the catheter. The International Peritoneal Dialysis Association guideline 2005 update and the American Infection Diseases Association guideline 2009 update recommend removal of the catheter as soon as the fungus is found in culture or microbiologically (14,15). The most commonly used antifungal medicines for the antifungal treatment are amphotericin B, imidazole derivatives and flucytosin (8,10). These medicines can be administered intravenously or intraperitoneally. There are studies reporting that fungi adhere to silicone catheter matrix and provide protection from effects of antifungal medicines, thus, treatment would fail unless the catheter is removed. The catheter of the patient was removed considering these recommendations. Furthermore, despite lack of sufficient data for PD patients, there are

publications stating that fluconazole is more effective for C. guilliermondii fungemia in immunocompromised patients, which may be considered as similar patient group, with less mortality compared to amphotericin B (15-17).

In this paper, we aimed to emphasize that infections due to non-albicans candida species should also be considered for PD patients.

Informed Consent: Consent form was filled out by all participants, **Concept:** Meltem Gürsu, Savaş Öztürk, **Design:** Emel Tatlı, Meltem Gürsu, Egemen Cebeci, Savaş Öztürk, **Data Collection or Processing:** Emel Tatlı, Egemen Cebeci, Filiz Pehlivanoğlu, **Analysis or Interpretation:** Egemen Cebeci, **Literature Search:** Zeki Aydın, Sami Uzun, Serhat Karadağ, Egemen Cebeci, **Writing:** Emel Tatlı, Meltem Gürsu, Egemen Cebeci, Rumeyza Kazancıoğlu, **Peer-review:** External and Internal peer-reviewed, **Conflict of Interest:** No conflict of interest was declared by the authors, **Financial Disclosure:** The authors declared that this study has received no financial support.

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