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TRICHOSPORON BEIGELII PERITONITIS ASSOCIATED WITH CONTINUOUS AMBULATORY PERITONEAL DIALYSIS

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SUMMARY

This paper reports a case of peritonitis caused by *Trichosporon beigelii* in a woman submitted to continuous ambulatory peritoneal dialysis.

Diagnosis was established by direct examination and culture of dialysis effluent.

KEYWORDS: Peritonitis; *Trichosporon beigelii*; Continuous ambulatory peritoneal dialysis.

INTRODUCTION

Advances in treatment and therapy have prolonged the lives of patients having chronic diseases. However, disruption on the cutaneous barrier and depression of immune defenses in patients with chronic renal failure submitted to a treatment by continuous ambulatory peritoneal dialysis (CAPD) makes a variety of organisms to assume importance as pathogens [11]. *Candida albicans* accounts for the majority of isolates in fungal perionitis associated with CAPD, but unnusual fungal species have become increasingly recognized as important cause of peritonitis in these patients [12]. This study reports a case peritonitis caused by *Trichosporon beigelii* during continuous ambulatory peritoneal dialysis.

CASE REPORT

A 49-year-old white house wife, born and living in São Gabriel, RS, has long been hypertensive and developed chronic renal failure which was diagnosed six years ago. She was on CAPD treatment since 1989 and during this period two episodes of peritonitis were diagnosed: on 7 June 1991 by *Staphylococcus aureus* and on 24 February 1992 by *Acinetobacter calcoaceticus*. On 12 November 1992 she was hospitalized at the Nephrology Department of the Santa Maria University Hospital presenting abdominal pain which had begun a week before. A day before the hospitalization the patient presented fever and a cloudy dialysate. Clinical examination showed abdominal pain and fever. The ultrasonographic study revealed the presence of a liquid collection in the abdominal cavity. The dialysis effluent was turbid, with a cell count of 2.667/μl (94% polymorphs; 3% eosinophils and 3% lymphocytes).

The microscopic examination from the centrifuged sediment of the effluent collected on 12 and 13 November 1992 revealed fragments of hyaline, septate hyphae measuring 2 to 4 μm in diameter, arthroconidia and blastoconidia, some with budding, measuring up to 8 μm in diameter. Centrifuged deposits were cultured on Sabouraud dextrose agar and brain heart infusion broth, incubated at 25°C. Colonies on Sabouraud dextrose agar appeared on 3th day and were soft, cream-colored,

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yeastlike, that develops radial furrows and irregular folds. On brain heart infusion broth the fungus developed like a pellicle over the surface. Identification was based on fermentation and assimilation patterns, urease and potassium nitrate reactions. The Tenckoff catheter was removed on 14 November 1992 and Fluconazole treatment (100 mg/72 hours during three weeks) was started. The patient's symptoms disappeared and she left the hospital on 3 December 1992 on hemodialysis treatment.

DISCUSSION

Fungi of the genus *Trichosporon* have a widespread natural distribution. *T. beigelii*, the causative agent of white piedra, a superficial hair infection found in tropical and subtropical regions, is a normal inhabitant of soil and occasionally part of the human flora [4]. However, *T. beigelii* and *T. capitatum* may be the cause of lethal deep or disseminated infections in the compromised host [5, 13]. Since the first case of deep infection caused by *T. beigelii* [14] in 1970 some cases of invase or disseminated infection have been reported, specially in leukemic patients [4,5]. Although the pathogenic potential of *T. beigelii* being very limited, the increasing importance of opportunistic fungal infection in immuno-compromised hosts must be emphasized [5].

First reference on *Trichosporon* peritonitis in a patient undergoing CAPD was made by KHANNA et al. [6] in 1980. HAUPT et al. [4] in 1983 isolated *T. beigelli* and *T. capitatum* from surveillance cultures in stool, skin and urine from 13 (3.7%) highly immunocompromised hosts of a total of 353, three of whom had systemic infections with *Trichosporon* species. One of these patients, a 15-year-old boy that had received a bone marrow transplant, presented a desquamated cutaneous lesion and later positive culture from peritoneal dialysis effluent, suggesting a cutaneous origin of the peritonitis caused by *T. beigelii*. PRITCHARD & MUIR [8] in a 10 years cultural survey of *T. beigelii*, isolated the fungus on three occasions from the peritoneal fluid of a patient on CAPD of a total 208 isolates from all clinical specimens. HOY et al. [5] 1986 related the positive fungal culture from dialysate of 62-year-old male patient with adenocarcinoma of prostate and at autopsy *T. beigelii* was isolated from lung, esophagus and kidney. CARR et al. [1] in 1987 reported a further case in a 62-year-old woman on CAPD by end stage renal failure. CHENG et al. [2] in 1989 in 27 cases of fungal peritonitis on CAPD patients isolated *Trichosporon* spp in one and *Candida*, *Trichosporon* and an unidentified acid-fast bacillus in other. PARSONNET [7] in 1989 related one episode of *T. beigelli* peritonitis in a 39-year-old haitian woman on CAPD by renal failure due to analgesic abuse. YUEN et al. [15] in 1990 reported a new case in a 55-year-old man in with *T. beigelii* was isolated in culture and revealed in gram stain from peritoneal effluent as numerous budding yeasts cells. UJHELYI et al. [10] in 1990 diagnosed *T. beigelii* peritonitis in a 41-year-old man in CAPD after rejection of renal transplant: a potassium hydroxide mount of peritoneal effluent was positive for yeasts and cultures of the catheter grew the fungus. Disconnection of dialysis line leaving open to the air may be the route of entry of the fungus to peritoneal cavity.

The access of fungi to the peritoneal cavity is through touch contamination or direct extension of a catheter-exit-site infection into the subcutaneous tunnel and into peritoneum [9]. Direct examination of peritoneal effluent is of further importance when disclosed a fungus, because these organisms were more fastidious to grow on culture than bacteria [6]. In a serie of 36 patients, in 50% the direct examination revealed fungal elements on at least one occasion [3].

Unfortunately these results were usually discounted untill the worsening of symptoms and/or the culture results confirm the diagnosis. In the management of fungal peritonitis catheter removal followed by a systemic antifungal therapy is essential for effective resolution of the infection [9, 12]. In the present report, peritonitis possibly initiated by inoculation of the fungus through the catheter but the readiness on diagnosis permited the correct management of peritonitis episode.

RESUMO

Peritonite por *Trichosporon beigelii* associada com diálise peritoneal ambulatorial continuada

É relatado um caso de peritonite por *Trichosporon beigelii* em mulher submetida a tratamento por diálise peritoneal ambulatorial continuada. O diagnóstico foi feito pelo exame direto e isolamento do fungo em cultivo do dialisado.

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