Successful catheter reinsertion in a case of *Paecilomyces varioti* peritonitis in a patient on continuous ambulatory peritoneal dialysis

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ABSTRACT

Peritonitis is one of the most common and important complications in patients on continuous ambulatory peritoneal dialysis (CAPD). Fungal peritonitis isreported in 4–8% of peritonitis episodes. Fungal peritonitis due to *Paecilomyces* species is not common. We report a case of CAPD peritonitis due to *P. varioti*. We immediately removed the CAPD catheter and IV amphotericin was administered for 4 weeks along with temporary hemodialytic support followed by successful catheter reinsertion.

Key words: Amphotericin B, continuous ambulatory peritoneal dialysis peritonitis, fungal peritonitis, *Paecilomyces varioti*

Introduction

Peritonitis is one of the most common factors responsible for morbidity and mortality in patients on continuous ambulatory peritoneal dialysis (CAPD). Both bacteria and fungi are known to cause peritonitis. Approximately 4–8% of peritonitis episodes have a fungal etiology,[1] *Candida* species accounting for 75%.[2] The reported incidence of mortality in bacterial peritonitis is approximately 0.6–3% and that in fungal peritonitis is 12–44%.[3] So, it is imperative that fungal peritonitis is diagnosed rapidly and appropriate treatment given so that the survival rates are improved.

Fungal peritonitis due to *Paecilomyces* species is not common. Very few case reports have been published worldwide.[4] *Paecilomyces* species are saprophytic fungi and are uncommon pathogens that can produce serious infections in immunocompromised patients and occasionally in immunocompetent hosts.[5] Reddy *et al*. reported a case of fungal peritonitis caused by *Paecilomyces puntonii* from India.[6] We report a case of fungal peritonitis caused by *Paecilomyces varioti*, which is not reported from India till date to the best of our knowledge.

Case Report

A 51-year-old man was on CAPD had 2 episodes of culture negatibe peritonitis over the period of 2 years. First episode 2 months after the initiation of CAPD was treated with empirical antibiotics (vancomycin and amikacin) by intraperitoneal route; second episode 6 months prior to current admission and was treated with the same antibiotics. He again presented with complaints of diffuse abdominal pain and high grade fever with cloudy PD effluent. He also complained of diarrhea. On evaluation, his PD effluent cell count was 3000 cells/mm^3 with 80% polymorphs, Gram stain and AFB stain were negative, aerobic cultures did not grow any organism. He was again started on intraperitoneal amikacin and vancomycin. His PD effluent cell counts did not improve after 48 h of therapy. Fungal cultures by Sabouraud dextrose agar medium had grown filamentous fungi after 48 hours and microscopically it showed chains of single celled phialoconidia produced in basipetal

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succession from a phialide. phialides are swollen at their bases, gradually tapering towards their apices and formed a brush - like penicillus confirming the diagnosis of *P. varioti* [Figure 1]. Accordingly CAPD catheter was removed, he was initiated on hemodialysis mode Amphotericin B was started at 1 mg/kg/day. He was treated for a period of 4 weeks with a cumulative dose of 1.5 g of Amphotericin. CAPD catheter reinsertion was done successfully, he is currently on PD and is doing well.

Discussion

In recent years, unusual and "nonpathogenic" fungi like *Paecilomyces* have been increasingly reported as etiologic agents of fungal peritonitis. These organisms have been considered to be nonpathogenic and troublesome laboratory contaminants. *Paecilomyces* are common saprophytic fungi found in soil, silage, and water. They are not usually associated with human infection. However, some species such as *P. varioti*, *P. marquandii* and *P. lilacinus* are emerging as causative agents of hyalohyphomycosis in the immunocompromised host.[7] *P. varioti* have been reported to cause pyelonephritis,[8] endophthalmitis,[9,10] hairy-cell leukemia,[11] cerebrospinal shunt infection,[12] and prosthetic valve endocarditis.[13,14]

The most important risk factors for fungal peritonitis are prolonged use of antibiotics and previous bacterial peritonitis episodes. A study by Goldie *et al*. reported that 65% of fungal peritonitis patients had received broad-spectrum antibiotics within the preceding month, 74% within 3 months, and 87% within 6 months.[15] Our patient presented with fungal peritonitis 6 months after empirical antibiotic therapy for suspected bacterial peritonitis. He also had two episodes of suspected bacterial peritonitis.

Filamentous fungi rarely contaminate the catheter via intraluminal route and cause peritoneal infection. *P. varioti* has been isolated from unused dialysate bags.[3] Several case series reported increased dialysate eosinophils.[16,17] In other reported cases as well as in our patient, no eosinophilia was found in the dialysate. The treatment of fungal peritonitis is immediate catheter removal with temporary hemodialysis. The conventional antifungal regimens include fluconazole, Amphotericin B, and flucytosine alone or in combination, based on fungal sensitivities. *P. varioti* is usually very sensitive to Amphotericin B.[7] We used intravenous Amphotericin B for our patient who responded dramatically with cumulative dose of 1.5 g.

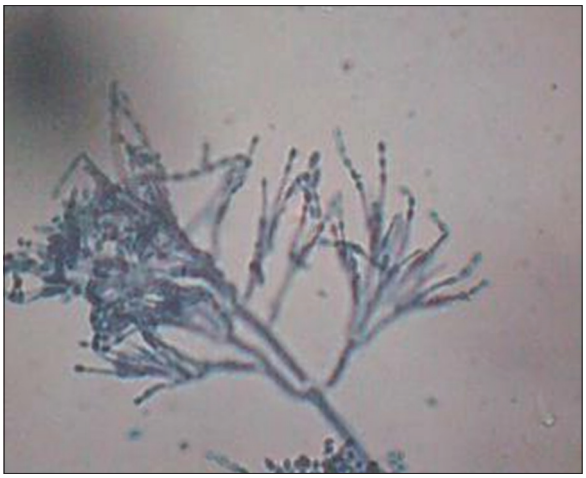

Figure 1: Microscopic morphology of *Paecilomyces varioti* showing chains of single celled phialoconidia produced in basipetal succession from a phialide. phialides are swollen at their bases, gradually tapering towards their apices and may form a brush - like penicillus

Conclusion

Paecilomyces varioti is relatively a rare cause of peritonitis in patients on CAPD. Early diagnosis and prompt removal of the catheter can save patients life. It can be easily treated with common antifungal agents like Amphotericin B which can facilitate catheter reinsertion.

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