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Fatal *Prototheca wickerhamii* Bloodstream Infection in a Cardiac Allograft Recipient†

We read with great interest the recent comprehensive review by McMullan et al. concerning the potential pitfalls involved in diagnosis of algaemia due to *Prototheca* species presented as a report of an elderly cardiac transplant recipient who had a fatal case of protothecosis (1). We found the mention of prototheca species being associated with fungal coinfection to be of particular interest, and we share our recent experience with a similar patient for whom the diagnosis was made postmortem.

A 69-year-old woman with multiple comorbidities, including diabetes mellitus, deep venous thrombosis on chronic warfarin therapy, and cardiomyopathy status post-cardiac transplantation performed 9 years earlier, was transferred to our tertiary-care hospital for a higher level of care after about 1 month of inpatient stay in another facility. Her medications at time of transfer included prednisone (5 mg) administered daily, mycophenolate mofetil (500 mg) administered twice daily, and cyclosporine (10 mg) administered twice daily.

She initially presented to the other hospital after sustaining a traumatic femoral fracture necessitating surgical repair. She developed profuse postoperative lower gastrointestinal bleeding that required a right hemicolectomy. Her complicated course of recovery became prolonged, and she developed multiple-organ system failure with viremia due to cytomegalovirus infection. On hospital day 19, she was reported to have central line-associated fungemia due to *Candida glabrata*. Despite aggressive medical care with broad-spectrum antibacterials, antivirals, and caspofungin, she continued to deteriorate and died on hospital day 35 (total inpatient stay, 65 days).

Blood cultures obtained 2 days prior to her demise were reported to be positive after approximately 72 h of incubation. Gram staining yielded yeast-like Gram-positive organisms. A subculture on Sabouraud dextrose agar at 37°C grew white, round colonies. A wet-mount preparation showed round sporangia containing sporangiospores (data not shown). The organism was identified as *Prototheca wickerhamii* by Vitek 2 analysis (bioMérieux, Durham, NC).

Looking back, we had some unanswered questions. Could the initial positive blood culture for *C. glabrata* have been a misidentification of infection by *Prototheca*? Isolation of *Prototheca* species in culture can be difficult in the presence of other organisms, as bacteria and fungi may overgrow the algae (2). Both our patient and the patient whose case was reported by McMullan et al. experienced bloodstream infections thought initially to be due to non-*albicans Candida* species.

Development of protothecosis in immunocompromised patients after lengthy periods of hospitalization raises the possibility of nosocomial and/or environmental acquisition. A source of infection was not identified in our patient; however, a source should be sought in cases in which this unusual infection is identified in even a single occurrence.

Laboratories and clinicians who care for immunocompromised patients should be vigilant in thoroughly investigating "fungemia" and in identifying the organism, especially in cases of persistent infection that fails to respond to appropriate therapy.

REFERENCES

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