**Clostridium cadaveris Bacteremia in an Immunocompetent Host**

*Clostridium cadaveris* bacteremia is extremely rare; the few cases reported in the literature have occurred in immunocompromised patients. We describe a case of *C. cadaveris* bacteremia in an immunocompetent host with necrotic decubitus.

A 42-year-old nursing home patient with paraplegia, secondary to a gun shot injury, was admitted to the hospital on 8 March 1999 for fever and hypotension. He had been in good health except for occasional urinary tract infections. At presentation, he appeared toxic, was febrile (temperature to 39.4°C), and had tachypnea and tachycardia with a new onset of atrial fibrillation. Multiple necrotic decubitus with purulent discharge were noted, including a stage 4 ulcer (6 × 4.5 cm) over the right hip and a stage 3 ulcer (3 × 3 cm) over the left hip. Stage 3 ulcers were also noted over the right popliteal area, both heels, and both ankles. He had an indwelling suprapubic catheter; the insertion site appeared clean. Except for his neurological deficit (paraplegia), further physical examination was unremarkable.

Laboratory studies disclosed the following: leukocytosis (leukocyte count, 22,700/mL) with a left shift; serum sodium level, 147 mEq/L; blood urea nitrogen level, 35 mg/dL; creatinine level, 1.9 mg/dL; and HCO₃⁻ level, 15 mEq/L. Urinalysis showed packed white cloud cells; a chest x-ray was negative. He was treated with ciprofloxacin and gentamicin; this treatment was changed to ticarcillin/clavulanate and gentamicin in the intensive care unit. Surgical debridement of the decubitus was done the following day.

Cultures of initial blood specimens obtained on 8 March 1999 yielded *C. cadaveris*. Blood cultures were incubated in the BACTEC 9240 System (Becton Dickinson, Sparks, MD), and subcultures were grown on blood agar plate (BAP) and Centers for Disease Control and Prevention’s BAP media by use of a gas pack pouch anaerobic system (BBL Becton Dickinson Microbiology Systems, Cockeysville, MD). The identity of the organism was established with the API 20 A anaerobic strip (bioMérieux, Hazelwood, MO). The specimen was subsequently sent to the reference laboratory of SmithKline Beecham (Philadelphia), which reported that it was susceptible to most antibiotics—including ampicillin/sulbactam, chloramphenicol, ticarcillin/clavulanate, cefotetan, cefotaxime, clindamycin, and penicillin.

Cultures of blood specimens obtained on 9 March 1999 yielded *C. cadaveris* and methicillin-resistant *Staphylococcus aureus*. Vancomycin and rifampin were then added to the therapeutic regimen. Culture of a urine specimen obtained during admission yielded methicillin-resistant *S. aureus* and *Citrobacter freundii*, and wound cultures yielded multiple species. A bone scan suggested left calcaneal osteomyelitis. A transthoracic echocardiogram revealed no vegetations. The patient responded well to treatment and was afebrile by the 10th day after admission. His leukocyte count normalized, and subsequent cultures of blood specimens obtained on 10, 16, and 21 March 1999 were negative. Follow-up urinalysis and culture on 21 March 1999 were negative.

Clostridial bacteremias account for 0.5%–2% of all positive blood cultures at most tertiary care centers [1]. Underlying conditions commonly associated with clostridial bacteremias include chronic alcoholism, sepsis following intraabdominal surgery, necrosis of the small or large bowel, genitourinary tract infections, cardiopulmonary diseases, underlying malignancy, diabetes mellitus, and decubitus ulcers [1, 2]. Clostridial bacteremias may be highly lethal and may occur in the setting of systemic immunosuppression or epithelial barrier disruption [3]. The clinical presentation varies from asymptomatic to septic shock and disseminated intravascular coagulation. There may be little correlation between clostridial bacteremia and a patient’s clinical condition; hence, these bacteremias should be interpreted with caution [4].

*C. cadaveris*, formerly known as *Clostridium capitovale*, is a slender, motile gram-positive rod that is nontoxin-producing and nonpathogenic in laboratory animals and humans [5]. Rare cases of *C. cadaveris* infections have been reported in the literature, mainly in immunocompromised hosts. These include a case of spontaneous bacterial peritonitis [6] and a case of pleural empyema caused by *Clostridium difficile* and *C. cadaveris*, in which the latter organism persisted in pleural fluid even after 4 weeks of antimicrobial therapy [7]. There were 2 cases of *C. cadaveris* bacteremia in patients with cancer, which presumably originated in their abdomens [8]. In our case, the source of clostridial bacteremia appears to be the infected necrotic decubitus. The patient’s clinical response to surgical debridement and appropriate antibiotic therapy lends credence to this hypothesis.

This case demonstrates that *C. cadaveris* can be a pathogen in a patient without any underlying malignancy or other cause of immunosuppression (such as chronic steroid therapy, chemotherapy, AIDS, or alcohol abuse) who has severely infected decubitus. We emphasize the importance of anaerobic cultures for septic patients with risk factors such as severely infected decubitus, even in the absence of immunosuppression. Because the incidence of pressure sore infections among institutionalized patients is high, more attention should be given to clostridia and other anaerobes causing invasive systemic infections.
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References