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Thinking Outside the Bowel: Clostridium difficile Bacteremia Case Series

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Background. *Clostridium septicum* is an anaerobic, motile, spore-forming, tox-in-producing Gram-positive bacillus (GPB) that has been associated with colon and hematologic malignancies. Despite the low incidence of infection, it is a virulent organism leading to rapidly progressive gas gangrene. Only 51 cases of *C. septicum* related aortic aneurysms have been reported. 100% mortality is reported in patients without surgical intervention vs. 79% undergoing surgery. The primary aim of this study was to determine the incidence and clinical outcomes of patients treated at our institution with *C. septicum* aortitis.

Methods. In this IRB-approved retrospective case series, we reviewed our microbiology laboratory’s blood and tissue cultures from January 2005 to 2018 to identify cases of *C. septicum* infection. All patients >18 years of age who had positive cultures were reviewed to provide radiographic or histopathologic correlation.

Results. Among 50 patients with *C. septicum* in blood and tissue cultures, seven patients were identified with aortitis. Underlying malignancy was found in four cases and included colon cancer (three cases) and prostate cancer (one case). The most common location for infection was the infrarenal aorta (four cases). Previous vascular surgery had been performed in three cases. Five of the seven patients underwent surgical repair with pathology revealing GPB in three patients and acute inflammation in the other two patients. *C. septicum* grew in tissue cultures from these patients. Four of the seven patients (all of whom underwent surgery) had positive blood cultures. The two patients that did not undergo surgery died which is consistent with the 100% mortality described in the literature. All patients were treated with β-lactam therapy. The median duration among the five who completed intravenous (IV) therapy was 1 week.

Conclusion. A small percentage of patients with *C. septicum* aortitis survived over 1 year. Earlier recognition and emergent surgery with appropriate antimicrobial therapy are needed to improve the outcome of patients diagnosed with this rare infection.

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