

Title: Clostridial Mycotic Aneurysm Leading to Emphysematous Aortitis: A Case Report

Authors: Thomas Ng, DO, MS; Christopher Pham MS3

Introduction:

Emphysematous aortitis (EA) is a rare consequence of mycotic aneurysm. Most cases have been linked to infection with *Staphylococcus* species. This case reports *clostridial* bacteremia leading to arterial myonecrosis and subsequent aortitis.

Case:

The patient was a 66-year-old male with a medical history of end stage renal disease with an arterio-venous fistula and diabetes who presented with tachypnea and diarrhea for one week. He also presented with tachycardia and hypertension and had a leukocytosis of 23,000/ μ L with elevated inflammatory markers. Computed tomography showed air within the walls of the thoracic aorta and in the periaortic soft tissue with extension from the aortic arch to the mid descending thoracic aorta consistent with aortitis. Blood cultures revealed *Clostridium subterminale*, however, gastrointestinal work up did not reveal esophageal or colonic malignancy, or mucosal trauma. He then underwent ascending aorta and distal arch reconstruction. Unfortunately, his post-operative course was complicated by hypotension and asystole. Post-mortem aortic tissue cultures were positive for *Clostridium innocuum*.

Discussion:

EA is a rare but often fatal sequelae of mycotic aneurysms and has been hypothesized to occur through arterial injury (trauma), bacteremic seeding, contiguous infection, or septic emboli. Risk factors include arterial injury, infection, immunosuppression, and atherosclerosis. Mycotic aneurysms comprise only 0.5% to 1.3% of all aneurysms, and *Clostridium* species only comprise 0.7% of those cases. With *C. innocuum* aortitis, periaortic gas was found to be present in 92.6% of cases. Curiously, the patient was found to have bacteremia with a separate *Clostridium* species from the one found in the aortic wall. Some reported cases of *Clostridial* bacteremia was associated with mucosal damage. The patient's negative endoscopy findings may suggest a different source of infection, possibly from seeding of atherosclerotic plaques from the patient's arterio-venous fistula.

Conclusion:

Emphysematous aortitis is a rare complication of anaerobic infection.