Mycotic abdominal aortic aneurysm caused by *Streptococcus equi*

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**Case Presentation**

**History**

A 64 year-old male presented with a three-month history of constitutional symptoms including generalized malaise, weight loss, anorexia, fatigue and night sweats. Later in his course, additional symptoms included back and abdominal pain. His medical history was significant for previous myocardial infarction, for which two drug-eluting stents were placed, and a perforated gastric ulcer repaired in 1990. His occupation was animal husbandry, and he worked on a farm that sells livestock with many cattle. He described an injury to the inside of his left leg after he slipped on ice and fell into cattle manure several months prior to the onset of his illness. He denied past or current intravenous drug use.

**Physical Exam**

On presentation, the patient's physical exam demonstrated a tender pulsatile abdominal mass. Peripheral pulses were within normal limits. No cutaneous manifestations of infection were noted.

**Investigations**

Laboratory investigations showed white blood cell count 10.3 x 10⁹/L, hemoglobin 94 g/L, platelets 433 x 10⁹/L, with elevated inflammatory markers (ESR 105 mm/hr, CRP 95.6 mg/L). A computed tomography (CT) scan was performed, which demonstrated a large aneurysm in the infrarenal abdominal aorta measuring 8.2 x 5.8 x 8.5 cm, with retroperitoneal fat stranding surrounding the aneurysm (Figure 1).

**Course in Hospital**

The patient was taken immediately to the operating room for an open repair of the abdominal aortic aneurysm with a synthetic Dacron prosthesis. Intra-operative cultures from both the blood and aneurysm were positive for *Streptococcus equi*, susceptible to penicillin (MIC ≤ 0.06).

The patient was treated with ceftriaxone. Blood cultures 96 hours post-operatively were sterile, and the patient's clinical condition improved rapidly. Following an unremarkable 7 day post-operative course, the patient was discharged home with a 6 week course of ceftriaxone from the day of blood culture sterilization.

**Post-Discharge Course**

At the completion of his course of intravenous antibiotics, the patient reported near complete resolution of symptoms with reassuring laboratory investigations. He was transitioned to amoxicillin 500 mg orally three times daily for six weeks. At review following 12 weeks of cumulative antibiotic therapy, he had returned to his previous functional baseline with no complaints of note, and laboratory investigations had normalized completely. He was switched to amoxicillin 500mg orally twice daily for lifelong prophylaxis. A repeat CT scan of the aorta was performed four months after surgery, which showed no clinically significant abnormalities.

**Discussion**

**Mycotic Aneurysms**

Mycotic aneurysms are dilations caused by pathogens weakening the vascular wall. They are uncommon, accounting for 0.6% of aortic aneurysms, and have a good long-term prognosis with surgical repair. Patients tend to present with pain, fever, elevated inflammatory markers, leukocytosis and bacteremia, and many aneurysms are found ruptured when patients are taken for surgery. Our patient presented with the majority of these symptoms but with insidious onset and months of non-specific symptoms, and incidental diagnosis following non-urgent imaging. *Staphylococcus aureus*, *Salmonella* species and *Streptococcus* species are the most common causative organisms.

**Conclusion**

*Streptococcus equi* is an uncommon zoonotic bacterium that can cause a wide range of infections, including mycotic aneurysms, and should be considered when a patient presents with appropriate risk factors such as working closely with animals. It can be successfully treated in the same way as other bacterial mycotic aneurysms, with surgery to repair the aneurysm and prolonged antibiotic therapy, and lifelong prophylaxis in selected candidates.