Neisseria sicca Endocarditis Presenting as Multiple Embolic Brain Infarcts

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A 58 year old male presented with a 14 day history of progressive forgetfulness and aggressiveness. He had a history of human immunodeficiency virus infection, ischemic cardiomyopathy, and a myxomatous mitral valve (status post Saint Jude’s mitral valve replacement 8 years before presentation). At presentation, he had a temperature of 37.8°C, a heart rate of 120 beats/minute, and a blood pressure of 105/66 mmHg. Physical exam revealed a Glasgow coma scale of 14, a muffled valvular click, and a 3/6 systolic murmur heard best at the apex. White blood cell count was 15 000 cells/μL (85% neutrophils). The international normalized ratio (INR) was 5.54. Of note, the patient was on warfarin due to presence of the St. Jude’s mechanical valve. A noncontrast computed tomography of the brain revealed a left frontal hemorrhage, right temporal and right cerebellar hemorrhage, scattered subarachnoid hemorrhages, and an intraventricular hemorrhage with rightward midline shift (Figure 1). Anticoagulation was discontinued, and fresh frozen plasma was administered to reverse the prolonged INR. Blood cultures grew a Gram-negative diplococcus, which was identified as Neisseria sicca. Transesophageal echocardiography performed on day 3 of admission revealed mild mitral regurgitation and 2 small vegetations. The cardiothoracic surgical team evaluated the patient and opted not to perform surgery due to preserved mitral valve functionality and concern for further intracranial hemorrhage in the setting of heparin administration during surgery. He was initially treated with rifampin, cefazidime, as well as a single dose of gentamycin. Blood cultures cleared within 3 days. Antibiotic coverage was narrowed to ceftriaxone after final sensitivities (ceftriaxone minimum inhibitory concentration 0.25) were determined. Mental status improved by day 9 of admission. He received ceftriaxone for a total of 10 weeks in an effort to obtain repeat brain imaging to confirm stability of suspected mycotic brain aneurysms before antibiotic stop date. However, the patient, ultimately, did not return for follow-up imaging.

Neisseria sicca is a Gram-negative diplococcus (Figure 2) found commonly in the upper respiratory tract [1]. It is typically...
a commensal organism. To our knowledge, there are only 22 reports of *N. sicca* endocarditis in the existent literature. Immunosuppression and the presence of an artificial valve were 2 risk factors that predisposed our patient to infection with the organism [1–3]. Other risk factors include poor dentition and intravenous drug abuse [1–3]. *Neisseria sicca* grows easily on blood cultures. The organism is usually susceptible to β-lactam, but obtaining sensitivities is highly recommended [1–3]. In the literature, >90% of cases present with embolic events [3]. Current endocarditis guidelines recommend surgery in cases of prior embolism and large remaining vegetation [4]. In this case, the patient had already experienced embolic events, but the remaining vegetations were small. The patient also had significant risk of bleed if heparin were administered during surgery, making surgery a suboptimal option. There are no guidelines or clear consensus for antibiotic duration in the setting of infected aneurysms [5]. However, at least 6 weeks of antibiotics are typically recommended [5].

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**References**