

Story of an Abscess: A Case of *Mycobacterium abscessus* Infection in an Immunocompetent Patient

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ABSTRACT

Mycobacterium abscessus is a very unusual cause of infection in immunocompetent patients. It is a rapidly growing microbe that rarely causes disseminated infection or native valve endocarditis. This organism exhibits intrinsic and acquired resistance to multiple antibiotics and hence becomes a major issue in planning treatment regimens. We report a unique case of a young immunocompetent male patient presenting with stroke and persistent fever. After extensive investigations, he was found to have an abscess caused by *M. abscessus* in the sinus of Valsalva and thrombi in the aorta that was the sequelae following coronary angioplasty. This case report explains the difficulties in the diagnosis and treatment of *M. abscessus*.

Keywords: Aortic root, Endocarditis, Immunocompetent, Infective endocarditis, *Mycobacterium abscessus*, Native valve, Stroke.

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Sir,

Mycobacterium abscessus is a rapidly growing microbe that rarely causes disseminated infection or native valve endocarditis.^{1,2} This organism exhibits intrinsic and acquired resistance to multiple antibiotics and hence becomes a major issue in planning treatment regimens.³ We wish to report a unique case of a young immunocompetent male status post-percutaneous transluminal coronary angioplasty, presenting with stroke and persistent fever with a sinus of Valsalva abscess due to *M. abscessus*.

A 37-year-old male with a history of coronary artery disease status post-percutaneous transluminal coronary angioplasty 6 months back presented with sudden onset of dense hemiplegia on the left side and left upper motor neuron (UMN) facial palsy. Magnetic resonance imaging (MRI) brain showed right middle cerebral artery (MCA) infarct with right M1 occlusion. Since the onset of symptoms was beyond 12 hours, mechanical thrombectomy was deferred and the patient was started on dual antiplatelet therapy with aspirin and ticagrelor. Patient also gave history of low-grade fever on and off for the past 5 months. There was also history of significant weight loss (around 6 kg) in the past few months. Two months prior to the current admission, he was evaluated for the same complaints but it did not yield any positive results. Serology for human immunodeficiency virus (HIV), hepatitis B antigen (HbsAg), and hepatitis C (Hep C), and venereal disease research laboratory (VDRL) test for syphilis were negative; infective parameters were within normal limits, and other investigations like Widal test, malaria antigen, Weil-Felix, scrub typhus IgM, Brucella antibodies, and Mantoux test were negative. In view of persistent fever spikes and significant weight loss, he was readmitted the following month. Bone marrow aspiration and biopsy was done which was suggestive of granulomatous lesion. Patient's erythrocyte sedimentation rate (ESR) was elevated (88 mm at the end of first hour). With the differential diagnosis as tuberculosis or sarcoidosis, the patient was started on empirical antitubercular treatment (ATT) (AKURIT 4) and steroids (prednisolone 30 mg once daily).

In the current admission, transthoracic echocardiogram showed a left ventricular ejection fraction of 45% and no vegetations. Since

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the liver function tests showed elevated liver enzymes, the ATT was withheld. As part of further workup for occult malignancy and to rule out occult infections, positive emission tomography (PET)-CT was done. Sarcoidosis and lymphoma were ruled out with the PET-CT as it did not show any suspicious foci apart from ectasia of aorta. Parallel workup for infective endocarditis and other occult infections were done. Trans-esophageal echo showed sinus of Valsalva abscess cavity and mass in distal aorta—thrombus/vegetation. Computed tomography (CT) aortogram was advised which showed saccular aneurysm of the right coronary cusp, partially thrombosed saccular aneurysm from distal arch of aorta, at the level of subclavian artery origin, and a floating thrombus in the proximal descending aorta. Two sets blood cultures were sent and the organism isolated was macrolide-resistant *M. abscessus*. Bone marrow culture isolated the same organism. The patient was treated with injection amikacin for 3 weeks and injection imipenem 1 g IV twice daily. Patient improved symptomatically

and was continued on 8 weeks of amikacin, with cefoxitin and imipenem for 12 months based on drug susceptibility. During the last follow-up visit, patient was clinically better and was compliant with the antibiotic regimen.

There is a high incidence of infectious complications with reused catheters that include transmission of various viral and bacterial pathogens including *M. abscessus*. *M. abscessus* infections in immunocompetent individuals are very rare and must be suspected in pyrexia of unknown origin with a background of surgical prostheses, such as heart valves, bypass grafts, and intravascular catheters.^{4,5} Due to the drug-resistant profile of this organism, patients require prolonged polymicrobial therapy for the resolution of nontubercular mycobacterial infections. Native valve endocarditis due to *M. abscessus* also requires prompt surgical intervention for better outcomes.

HIGHLIGHTS

M. abscessus infection is not a commonly mentioned differential diagnosis in patients with pyrexia of unknown origin. It is also difficult to diagnose and requires prolonged course of polymicrobial therapy. The practice of reusing catheters for coronary angiogram/angioplasty might be associated with increased incidence of infectious complications including non tubercular mycobacteria (NTM) infections.

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