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Computed tomography findings in a patient with fungal aortitis: acute aortic syndrome secondary to fusariosis

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Abstract

Fusarium is a mould widely distributed in soil and water which causes various diseases in plants and occasionally in animals. The Fusarium species cause a broad spectrum of infections in humans, of which, the degree of severity is largely determined by the immune-status of the host, occurring in the most severe and invasive forms in immunocompromised individuals. Skin infections, sinusitis and pneumonia are the most common human manifestations of the disease. In patients with severe immunodeficiency, the disease can become invasive and disseminated causing fungemia. We report a case of an immunocompromised patient presenting with acute chest pain secondary to complicated Fusarium aortitis.

Keywords: Infectious aortitis • Imaging • Immunocompromised host

We present a case of acute aortic syndrome secondary to complicated aortitis in an immunocompromised patient. Computed tomography (CT) imaging showed multiple saccular aortic aneurysms as areas of localization of the infective process.

A 75-year old Caucasian female was admitted with acute onset of midsternal chest pain, palpitations and increasing air hunger. She was normotensive, with a heart rate of 100–130 and a low-grade fever. She had a history of aplastic anaemia, complicated by severe thrombocytopenia [platelets (PLT) count: 29.000], for which she had been on immunosuppressive therapy. She also had a recent history of Fusarium skin infection. On physical examination she looked emaciated (body mass index: 18), but was not in acute distress. She had a muffled heart sounds with a 3/6 diastolic murmur, and no jugular-vein distension. Echocardiogram showed periaortic haematoma involving the aortic root and a large pericardial effusion with thickened pericardium, suggestive of an exsudate. CT demonstrated 'outpouching' of contrast at the aortic root, the ascending aorta and the distal descending thoracic aorta (Figs 1 and 2). Blood cultures grew *Fusarium solani*. The new radiological findings of multiple saccular aneurysms in association with active infection were suggestive of infectious aortitis. Given the compromised conditions and the multiple sites of aortic involvement, the patient was not considered as a surgical candidate.

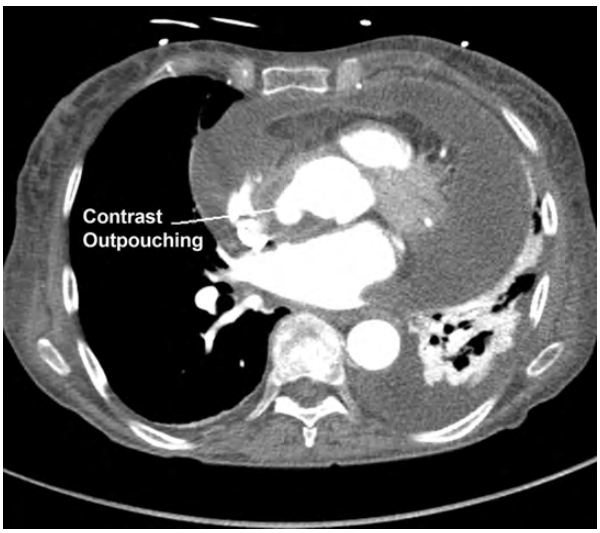

Figure 1: CT scan image showing a pseudoaneurysm of the aortic root with large pericardial effusion and thickened pericardium.

Invasive fusariosis represents the second most common cause of mould infection after aspergillosis among immunocompromised patients [1]. Skin, lungs and paranasal sinuses are the most common sites of infection [1, 2]. More than 100 species of Fusarium have been identified, but only a few of these can cause infections in humans. *F. solani* is the most virulent, causing approximately half of all cases. Airborne transmission or direct inoculation through the skin of Fusarium-contaminated water or soil represents the common modality of infection. Unlike infections in normal hosts,

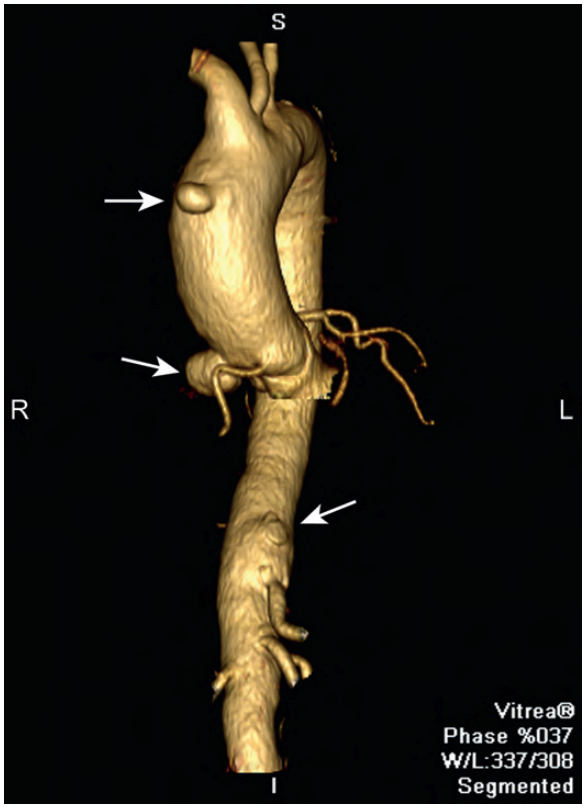

Figure 2: CT scan 3-D reconstruction showing multiple saccular aneurysms at sites of localization of the infective process.

fusariosis in immunocompromised individuals is most likely to become invasive and disseminated [2]. Typically, the infection spreads from the skin, the lungs or the paranasal sinuses, causing direct tissue destruction and angioinvasion, which allows systemic infection and dissemination through the blood stream [2, 3]. Unlike Aspergillosis, Fusariosis is frequently associated with positive blood cultures. Treatment is based on amphotericin-B therapy or other anti-fungal agents based on specific sensitivity [2]. Prognosis is dismal, with a 20% survival rate at 90 days from diagnosis [1]. Vasculitis is a known, but extremely rare, complication of fusariosis [4]. However, no cases of Fusarium aortitis are reported in the literature. Surgical treatment could be considered as a 'last resort'-measure for patients with localized aortitis and signs or symptoms of impending aortic perforation. Prognosis remains poor.

Conflict of interest: none declared.

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