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Non-Surgery Related Aspergillus Native Valvular Endocarditis:
Report of Two Cases

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Abstract

Two unusual cases of aspergillus valvular endocarditis without any history of cardiovascular surgery found at autopsy are reported. As there is a chance of dissemination, early diagnosis is important. Clinical awareness can lead to early recognition and effective treatment of this potentially lethal condition.

Introduction

Opportunistic infections by fungi have become important causes of increasing morbidity and mortality in the immunocompromised host.1 Mycotic infections of the heart on the other hand are relatively uncommon but may be increasing in frequency.2 These are usually associated with disseminated fungaemia and are usually fatal.3 Candida is the organism most often found in fungal infections of the heart (62 percent of cardiac fungal infections).3 Aspergillus is the second common organism causing fungal carditis.3 Aspergillosis can involve the heart in one of the two ways. True endocarditis generally is a nosocomial complication of heart surgery4 or may not be associated with surgery.5,6 A second form of cardiovascular infection is myocardial aspergillosis.4 This occurs as a part of disseminated infection in association with pulmonary disease.7 Aspergillosis involves the myocardium more frequently than the endocardium and is more invasive than candida resulting in combined endocardial and myocardial infection.3,8 The pericardium and mural endocardium can be involved from the myocardial abscesses.9,10 The endocardial involvement is not present in some series. Herein we report two cases of aspergillus native valvular endocarditis without prior cardiovascular surgery.

Case Reports

Case No. 1: A 17 year old female was admitted with history of vomiting, altered sensorium, fever and left sided hemiparesis for 10 days. It was diagnosed as infective endocarditis with focal neurological deficit but patient deteriorated and died within 48 hours of hospital admission. Investigation revealed sterile blood cultures and leucocytosis. Echocardiography showed vegetation on mitral valve. There was no previous history of cardiac surgery. Patient was not apparently immunocompromised.

At autopsy, mitral valve showed a 2.5 cm diam. polypoidal friable vegetation over the anterior leaflet with destruction of it. The other valve cusp and commissure were anatomically normal excluding any underlying congenital or acquired heart disease. In addition, the anterior papillary muscle showed necrosis and there was rupture of chordae tendinae. Microscopically, the vegetation showed slender septate hyphae with acute angle branching, the morphology of which was consistent with Aspergillus. Multiple microabscesses with numerous fungal hyphae were seen in the myocardium. Gram’s stain failed to reveal any organism. Multiple metastatic abscesses were also seen in brain and kidney. The lungs did not show any evidence of fungal infection.

Case No. 2: Forty two year male of Chinese extraction, was admitted with history of fever for twenty days. Patient was a chronic asthmatic on bronchodilators and indigenous drugs. Twenty years back, patient had a history of minimal change disease presenting as nephrotic syndrome. On examination, he had severe anemia and massive splenomegaly.

Blood culture was sterile on two occasions. Patient died after a hospital stay of four days with a diagnosis of haematological disorder in view of splenomegaly, anaemia and fever. Autopsy revealed a large polypoidal vegetation over the aortic valve partly destroying it and extending into the proximal portion of the ascending aorta with formation of mycotic aneurysm (Fig. 1). Aortic valve was tricuspid.

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On microscopy, the vegetation confirmed to be aspergillus in origin (Fig. 2). The other organs did not show any evidence of dissemination. No bacteria could be identified even by special stain. Secondary haemochromatosis in the form of extensive deposition of hemosiderin pigment in liver, spleen and bone marrow were also seen. There was no morphologic evidence of any other hematological abnormality. The kidneys were unremarkable grossly, on light and electron microscopy. Though antemortem investigations were lacking, this secondary haemochromatosis was possibly due to some form of minor thalassemic disorder or red cell enzyme disorder.

**Discussion**

The present two cases of aspergillus valvular endocarditis involving the mitral and aortic valve respectively without any history of cardiovascular surgery are distinctly unusual. True aspergillus valvular endocarditis is extremely rare and mainly occurs after heart surgery over prosthetic valves. In Young’s autopsy series, the heart was involved in seven cases and there was no true endocarditis. Akinson et al described only one case of aspergillus valvular endocarditis who had also undergone cardiac surgery. Only a few cases have been reported where it is not associated with surgery. Woods et al and Mikulski et al described one case each in a liver transplant recipient and in acute leukaemia respectively. The present two cases did not have any history of cardiovascular surgery. While the first case showed evidence of dissemination into systemic organs, the second case did not disseminate but extended into proximal portion of ascending aorta resulting in mycotic aneurysm formation. While there was no definite clinical setting of immune suppression in either case, potent antibacterial therapy in the first case and possible steroid therapy in the second case can not be totally ruled out.

As dissemination invariably occurs, early diagnosis is needed for proper therapy. The diagnosis in this group is especially difficult because blood cultures are always negative and the only clues are fever and embolic phenomenon. Survival can be improved by early diagnosis and the institution of aggressive antifungal therapy.

**References**


