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Case report

Aspergillus flavus endocarditis: a case report

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Abstract

Fungal endocarditis is the most severe form of infective endocarditis and has the worst prognosis. Though primary fungal endocarditis is very rare it is relatively common in patients having certain predisposing factors like open heart surgery, use of intracardiac prosthetic devices, prolonged use of intravenous catheter, prolonged and multiple use of broad spectrum antibiotics and administration of immunosuppressive agents. It is commonly associated with large friable vegetations in the heart valves which lead to complications of systemic embolisation. The difficulty in isolating the fungus by routine blood culture methods further complicates the diagnosis. Here we are reporting a case of fungal endocarditis caused by *Aspergillus flavus* presented with neurologic and vascular complications due to embolisation of vegetations who expired despite receiving intensive medical treatment. Aspergillus endocarditis is usually associated with high mortality ranging from 80-96% regardless of the treatment.

Key words: Fungal endocarditis, *Aspergillus flavus*

Introduction

Approximately 1.3% to 6% of all infective endocarditis cases are of fungal origin [1]. Open heart surgery, intracardiac prosthetic devices, prolonged use of intravenous catheter, prolonged and multiple uses of broad spectrum antibiotics and administration of immunosuppressive agents are among the reported causes [1]. Two thirds of fungal endocarditis cases are caused by *Candida spp*. and one third by *Aspergillus spp*.[2]. *Aspergillus* endocarditis is usually associated with high mortality ranging from 80-96% regardless of the treatment [3].

Case Report

A 47 year old immunocompetent man was admitted with chief complaints of sudden onset right sided weakness with facial deviation and discoloration of the left leg, low to moderate grade fever off and on for 1 month and cough with expectoration.

He underwent an open heart surgery 7 months back for aortic valve repair and closure of congenital ventricular septal defect (VSD) with uneventful post operative recovery.

Examination of the patient revealed right sided hemiplegia with ischemia in the lower limbs, fever, presence of clubbing and pallor. There were no cardiac murmurs or extra heart sounds. The rest of the clinical findings were unremarkable.

Laboratory data included haemoglobin 6.2 gm/dl, total leucocyte count 23,100, DLC N81 L08 M01 E10, platelet count 1.46 lacs, creatinine 2.5 mg/dl, urea 69 ng/dl, albumin 2.8 g/dl, total protein 6.1 g/dl, bilirubin 1.1 mg/dl, ALP 198 IU/L, SGOT 1319 IU/L, SGPT 368 IU/L, ESR of 102 mm/h, prothrombin time, INR 1.11, RBS was normal. Multiple blood cultures were negative.

CT scan of the brain done on admission showed left parietal lobe infarct. Trans thoracic echocardiography (TTE) suggested infective endocarditis with multiple mobile vegetations on the inferior vena cava and aortic valve. Arterial doppler report showed long segment occlusive thrombus in bilateral popliteal, posterior tibial and anterior tibial arteries with no flow appreciated in these vessels and also in arteria dorsalis pedis distally on either limbs.

The patient was started on Linezolid, Netilmicin and Piperacillin-tazobactam on admission but was not responding. He remained febrile and TLC increased upto 30,700. Fluconazole was added but the condition further deteriorated.

A bilateral lower limb embolectomy was done on 20th day of admission and the embolus retrieved was sent for microbial evaluation.

A repeat CT scan of the brain done after two days of embolectomy showed a fresh infarct in the left parieto-temporal lobe.

Bacteriological evaluation of the embolus revealed no positive findings. 20% KOH digestion preparation showed abundant septate hyaline hyphae suggesting fungal infection and on fungal culture colonies suggestive of *Aspergillus spp* were isolated.

The colony morphology and microscopic finding of the fungal isolate was suggestive of *Aspergillus flavus.*

Despite vigorous treatment the patient expired due to infective endocarditis with systemic and cerebral embolisation.

Discussion

Invasive *Aspergillus* infection is extremely rare in immunocompetent individuals but open heart surgery is a major factor leading to such infections[4].

Clinical manifestation of fungal endocarditis is non-specific and resembles bacterial endocarditis except negative blood culture reports and large vegetations in the valves and high incidence of their embolisation[2]. Embolic involvement of the lower limb is a relatively uncommon presenting sign but there are previous reports of such presentation[5].

The high mortality rate of fungal endocarditis is primarily due to difficulty in definitive diagnosis of such cases as well as lack of effective antifungal drugs and need for surgical intervention. The outcome of this patient with *Aspergillus flavus* endocarditis was also fatal as described previously in other reports[5].

Conclusion

Management of fungal endocarditis is principally dependent on high index of clinical suspicion and prompt intervention. Early surgical intervention for removal of the vegetations, immediately after beginning the antifungal therapy is the recommended treatment. However even with treatment, the survival rate is very low. Therefore greater emphasis must be given to prophylaxis including maintenance of proper aseptic measures during intracardiac operations and identifying other host as well as environmental factors.

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References

1. Filizacan U, Cetemen S, Enc Yavuz et al. *Candida albicans* endocarditis and a review of fungal endocarditis: Case report. The Heart Surgery Forum 2004; 7 (4).
2. Kaloterakis A, Rizos I, Goumas G, et al. Isolated native tricuspid valve candida endocarditis in a non drug addict patient: Case report and review of literature. Journal of Heart Valve Disease 2003; (12): 652-58.
3. Ghaffari Nejad MH, Farasatkish R, Ojaghi Z, et al. Aspergillus prosthetic valve endocarditis, brain abscess and aortic root replacement by homograft. Iranian Heart Journal 2002; 2:62-5.
4. Mozaffari K, Peighamberi MH, Baghaei R, et al. Fungal endocaritis: Review of our cases over a four year period. Iranian Heart Journal 2010; 11 (1): 34 – 37.

5. Esmaeilzadeh M, Parsaee M, Peighambari MM, et al. Late occurrence of fatal aortitis: a complication of Aspergillus endocarditis following coronary artery bypass graft surgery. European Journal of Echocardiography 2009; 10 (1): 165 – 67.