Candida tropicalis causing prosthetic valve endocarditis

PA Nagaraja, *T Mathew, DP Shetty

Abstract

The incidence of endocarditis produced by the so-called “opportunists” as a complication of prosthetic valve surgery is progressively increasing in frequency and gradually transforming the clinical picture habitually associated with this disease. Candida endocarditis is an unusual but severe complication caused by Candida albicans or other fungal species. This case and a review of the literature indicate that Candida endocarditis treated with amphotericin B and prosthetic valve replacement may recur months after treatment, and that late recurrent Candida endocarditis, which is difficult to diagnose and treat, may be best prevented by lifelong antifungal suppressive therapy.

Key words: Candida, endocarditis, prosthetic valve

Case Report

Prosthetic valve endocarditis (PVE) is a frequently encountered complication of heart valve replacement surgery, accounting for 9.5-15% of all endocarditis cases.1 Fungi cause a small but significant proportion of PVE and contribute to 4-6% of all etiology.2 We report a case of Candida endocarditis that was treated with Amphotericin B and prosthetic valve replacement.

Case Report

A 33-year-old female patient was admitted in April 2002 for complaints of easy fatigability, pre-syncope, swelling of both legs and occasional atypical chest pain. This patient was a known case of rheumatic heart disease (RHD), with severe mitral stenosis (MS), moderate aortic stenosis (AS) with moderate aortic regurgitation (AR), and moderate tricuspid stenosis (TS) with moderate pulmonary artery hypertension (PAH). The patient had undergone open mitral valvotomy (OMV), open aortic valvotomy (OAV) and open tricuspid valvotomy (OTV) in 1993. Preoperative echocardiogram showed severe mitral stenosis without MR, moderate AS with grade III AR and organic tricuspid disease. Adequate left ventricular (LV) function was noted. The patient underwent a mitral valve replacement using St Jude bi-leaflet prosthesis and aortic valve replacement (AVR) with a St. Jude valve (19 mm). Postoperatively, normal valve functions were noted and the patient was discharged on anticoagulants and other cardiac drugs.

The patient was readmitted a month later with complaints of persistent vomiting, giddiness and syncope. Echo showed vegetations on the prosthetic mitral valve. Blood cultures done on multiple occasions grew Candida species. A diagnosis of fungal prosthetic valve endocarditis was made. Based on the sensitivity, the patient was treated with Amphotericin B and Fluconazole. The patient was discharged on oral Fluconazole (200 mg/day). However, the patient failed to make any improvement and finally succumbed at her residence. The Candida isolate, grown from the blood cultures, on speciation using ID 32C (Mini-API, bioMérieux, France) was identified as Candida tropicalis. The urine isolate was not available to confirm the identity. A final diagnosis of fungal infection of the prosthetic mitral valve caused by C. tropicalis was made.

Discussion

Candida species can cause clinical manifestations in various organs of the cardiovascular system, i.e., the pericardium, myocardium, and endocardium, with endocarditis being the best-known clinical entity. Endocarditis is seen primarily in intravenous drug users and in individuals with damaged native valves, especially in congenital heart disease or rheumatic valvular diseases, and in prosthetic heart valves.3

Medical cure of fungal prosthetic valve endocarditis (PVE)
is rarely reported. Report of medical treatment of a patient with *C. tropicalis* PVE has been published. A huge tricuspid valvular vegetation was identified by two-dimensional transthoracic echocardiography. After a total of 2 g of amphotericin B, the patient continued with fluconazole daily with a follow-up of fifteen months. This report represents the first case of long-term survival of *C. tropicalis* PVE successfully managed without surgery.4

Candida infective endocarditis has a bad prognosis, specially in those patients not operated early; it develops in patients with predisposing factors, which in a published series were a previous infective endocarditis (four patients) and/or a prosthetic valve implantation -less than one year before; it has important morbidity with multiple embolic events, perivalvular involvement, valvular regurgitation and heart failure.5

The mortality due to Candida PVE is high, especially when PVE was complicated by congestive heart failure and persistent fungemia. For uncomplicated PVE, the mortality rate for patients receiving antifungal therapy alone (40%) was no worse than for those receiving combined medical and surgical therapy (33%).6

Thakur et. al have reported treatment of Candida prosthetic valve endocarditis with a combination of Fluconazole and Amphotericin B.7 A review of prosthetic valve endocarditis has shown that the overall mortality among the patients was 56% (88% among those with early onset - less than 2 months after the operation; and 40% among those with late onset – more than 2 months after the operation).8 A higher mortality is also documented in those cases that develop endocarditis early after the surgery.

References