

## CASE IMAGE

# A case of *Candida parapsilosis* bioprosthetic valve endocarditis

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**Abstract**

Fungal bioprosthetic valve endocarditis is regarded as a rare, fatal disease. Severe aortic valve stenosis due to vegetation in bioprosthetic valves was also rare. Because biofilm formation is a factor related to persistent infection, the best outcomes for endocarditis are achieved in patients treated surgically with concomitant antifungal medicine.

**KEYWORDS**

bioprosthetic valve endocarditis, *Candida parapsilosis*

## 1 | INTRODUCTION

Fungal endocarditis is commonly regarded as a rare but fatal disease. The incidence of infective endocarditis in chronic renal failure and diabetes is thought to be markedly higher than that in the general population.

## 2 | CASE PRESENTATION

A 69-year-old man was admitted to our hospital with a diagnosis of infective endocarditis of a prosthetic aortic valve. His past medical history was significant for chronic renal failure and diabetes. Six months previously, he had undergone aortic valve replacement with a porcine valve for the treatment of aortic valve stenosis.

*Candida parapsilosis* was isolated from the initial blood cultures, and his  $\beta$ -glucan levels were elevated. Transthoracic echocardiography of the prosthetic aortic valve showed valve thickening and severe aortic valve stenosis (transvalvular peak gradient: 60 mmHg) (Figure 1).

Intraoperatively, we found that vegetation had nearly occluded the opening of the prosthetic valve (Figure 2).

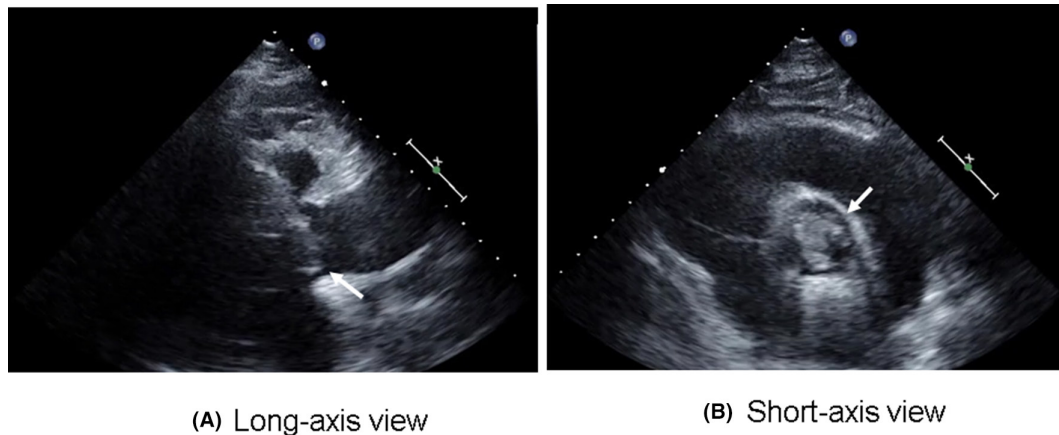
The patient underwent aortic valve replacement with a Trifecta™ Valve (St. Jude Medical, Minnesota, USA). *C. parapsilosis* was cultured from the vegetation. After 8 weeks of intravenous therapy with liposomal amphotericin B, the *C. parapsilosis* disappeared from his blood. However, after another 2 months, he suffered from a high fever. *C. parapsilosis* was isolated from initial blood cultures and his  $\beta$ -glucan levels were elevated again. Transthoracic echocardiography showed vegetation attached to the new valve. Although intravenous therapy with liposomal amphotericin B was continued, *C. parapsilosis* remained. He became disoriented due to a cerebral embolism caused by vegetation and ultimately died from septic shock and disseminated intravascular coagulation at 6 months after the operation.

## 3 | DISCUSSION AND CONCLUSION

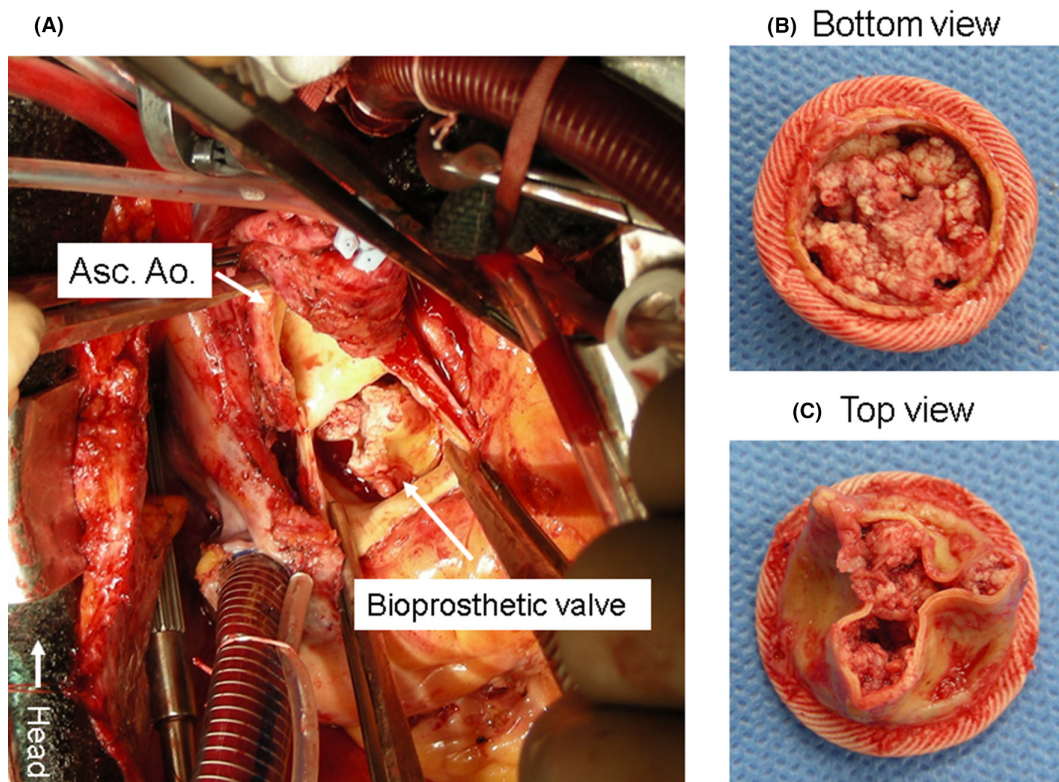
The most common predisposing factors for *C. parapsilosis* endocarditis include prosthetic valves, intravenous drugs, intravenous parenteral nutrition, abdominal

surgery, immunosuppression, treatment with broad-spectrum antibiotics, and a history of valvular disease. The mortality rate of endocarditis caused by *C. parapsilosis* ranges from 41.7% to 61%.<sup>1,2</sup> As the drug of the first choice for fungal endocarditis, liposomal amphotericin B should be selected.<sup>3</sup> In the case of *C. parapsilosis*, it is difficult to control infection with medical treatment

alone. Since biofilm formation is a factor related to persistent infection with *C. parapsilosis*, in the case of endocarditis, the best outcomes are achieved in patients who are surgically treated with concomitant aggressive antifungal medications for 6–8 weeks; however, surgery does not always improve survival in patients with fungal endocarditis.<sup>4</sup>



**FIGURE 1** Transthoracic echocardiograms show vegetations visible in the prosthetic valve leaflets (arrows) from (A) long-axis and (B) short-axis views.



**FIGURE 2** The operative findings show large vegetations at the cusps of the infected prosthetic valve (A). Photographs show the infected prosthetic valve from the (B) bottom and (C) top views. The prosthetic valve was almost occupied by the vegetations. Asc. Ao, ascending aorta.

## AUTHOR CONTRIBUTIONS

**Kenji Sakakibara:** Writing – original draft. **Hiroyuki Nakajima:** Supervision.

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## CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

## DATA AVAILABILITY STATEMENT

All data regarding this case has been reported in the manuscript. Please contact the corresponding author if you are interested in any further information.

## CONSENT

The patient's family have given written informed consent for the publication of this case report.

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