

STREPTOCOCCUS SANGUINIS ENDOCARDITIS INVOLVING ALL VALVES IN A PATIENT WITH VENTRICULAR SEPTAL DEFECT

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KEY WORDS: Infective endocarditis · Ventricular septal defect · *Streptococcus sanguinis* · Transoesophageal echocardiography.

A 68-year-old male presented with night sweats, fatigue, and shortness of breath for 5 weeks. His past medical history included uncorrected perimembranous ventricular septal defect (VSD) and previous infective endocarditis (IE) treated conservatively several years ago. Clinical examination revealed pansystolic murmur and Janeway lesions in bilateral heels. Blood inflammatory markers were high [C-reactive protein (CRP) = 72 mg/L, white blood cells = 12000/mm³]. Blood cultures were positive for *Streptococcus sanguinis*. Transthoracic echocardiography was suspicious of IE of the mitral valve. IE was confirmed by transoesophageal echocardiography. Vegetations were seen on the mitral (Fig. 1A, Supplementary movie 1), aortic (Fig. 1B, Supplementary movie 2), tricuspid (Fig. 1C, Supplementary movie 3, 4, and 5), and pulmonary (Fig. 1D, Supplementary movie 6 and 7) valves. There was also a large vegetation associated with the VSD (Fig. 1E, Supplementary movie 8, 9, 11, and 12), which seemed to protrude from it (Fig. 1F). The patient was treated with intravenous amoxicillin and gentamicin with clinical improvement and fall in CRP (8.5 mg/L) after 4 weeks of treatment. Mutual agreement between cardiologists and cardiac surgeons was to complete the antibiotic therapy for another 2 weeks and follow-up with serial echocardiograms.

IE affecting all valves is extremely rare, especially when the pulmonary valve is involved (only 1.5% to 2.0% of hospital admissions for IE).¹⁾ In this case, we thought that the pulmonary valve was actually affected because of the trajectory of the jet from the VSD (Fig. 1G, Supplementary movie 10) that abutted the valve.

Streptococcus sanguinis is a gram-positive coccus which belongs

to the normal human mouth flora, particularly found in dental plaques.²⁾ It is a known cause of subacute IE, especially in patients with congenital heart disease, after oral surgery.³⁾ Notably, our patient mentioned frequent usage of dental floss.

SUPPLEMENTARY MOVIE LEGENDS

Movie 1. Transoesophageal echocardiogram, mid-oesophageal view of the mitral valve, showing the vegetations on the anterior and posterior leaflets.

Movie 2. Transoesophageal echocardiogram, mid-oesophageal long axis view of the aortic valve, showing the vegetation on the non-coronary cusp.

Movie 3. Transoesophageal echocardiogram, mid-oesophageal view of the tricuspid valve, showing the vegetation associated with it.

Movie 4. Transoesophageal echocardiogram, transgastric view of the tricuspid valve, showing the vegetation associated with the valve and the ventricular septal defect.

Movie 5. Zoomed view of Supplementary movie 4.

Movie 6. Transoesophageal echocardiogram, mid-oesophageal view (45–60°) of the pulmonary valve, showing the vegetation associated with it.

Movie 7. Zoomed view of Supplementary movie 6.

Movie 8. Transoesophageal echocardiogram, transgastric view showing the perimembranous ventricular septal defect.

Movie 9. Transoesophageal echocardiogram, transgastric view with colour compare mode, showing the perimembranous ventricular septal defect and the left-to-right shunt through it.

Movie 10. Transoesophageal echocardiogram, mid-oesophageal view with colour compare mode, showing the jet from the

• Received: May 14, 2017 • Revised: June 30, 2017 • Accepted: September 1, 2017

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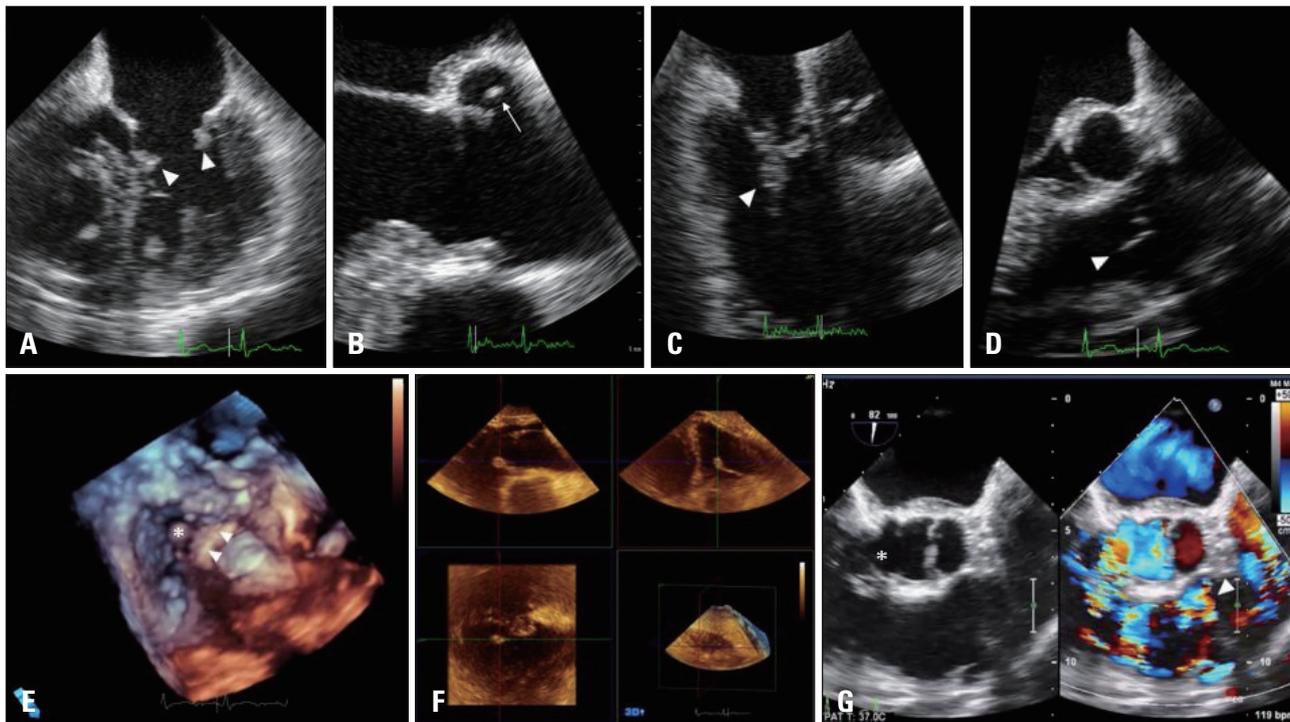


Fig. 1. Infective endocarditis involving all valves and the VSD. Transoesophageal echocardiogram revealed vegetations on both anterior and posterior mitral valve leaflets (arrowheads) (A). Long axis view of the aortic valve detected a small vegetation on the non-coronary cusp (arrow) (B). Mid-oesophageal view (30–60°) of the tricuspid valve revealed a vegetation (arrowhead) (C). Mid-oesophageal view (45–60°) depicted a small vegetation on the pulmonary valve (arrowhead) (D). 3D-echocardiography of the VSD (arrowheads) and the vegetation associated with it (*) (E). 3D-echocardiography multiplane review of the vegetation associated with the VSD (F). Transoesophageal colour-compare mode that illustrates the jet from the VSD (*) that abuts the pulmonary valve (arrowhead) (G). VSD: ventricular septal defect.

perimembranous ventricular septal defect directed towards the pulmonary valve.

Movie 11. 3D-echocardiography multiplane review of the perimembranous ventricular septal defect and the associated vegetation.

Movie 12. 3D-echocardiography of the perimembranous ventricular septal defect and the associated vegetation.

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