

# Right-sided vegetation unmasks aortic endocarditis

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## KEYWORDS

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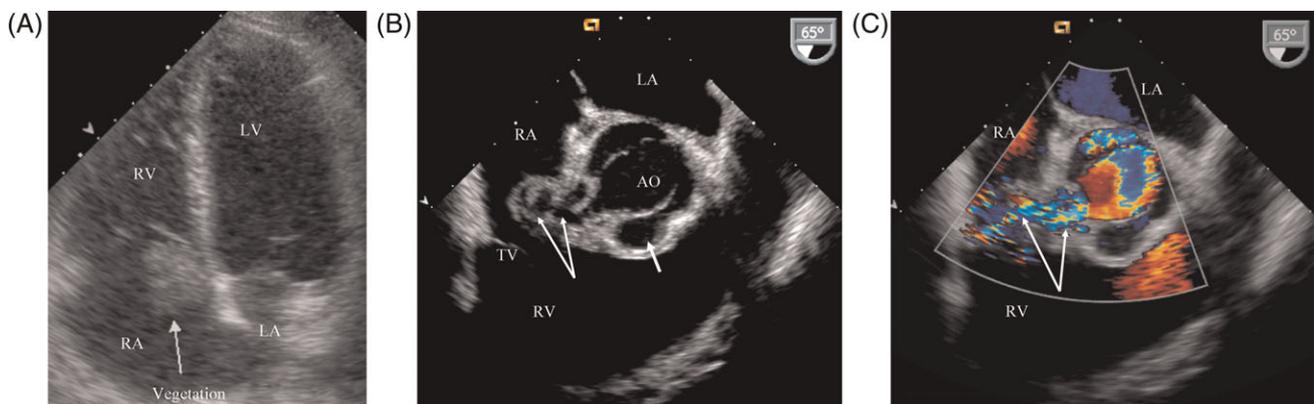
Echocardiography is a key tool in the diagnosis of infective endocarditis. Although transthoracic echocardiography is the first step in the work-up, transoesophageal echocardiography is mandatory for the evaluation of the exact extent of the infectious process. Indeed, perivalvular abscess can fistulate towards different heart chambers, leading sometimes to critical clinical situations.

## Case report

A 45-year-old healthy man was hospitalized with unexplained fever, shivers and fatigue since 2 weeks ago. Four blood cultures were positive for *Staphylococcus aureus*. Physical examination was unremarkable except for a chronic scratch lesion on the right leg and systolic–diastolic heart murmur. Second degree heart block was diagnosed on the ECG. Transthoracic echocardiography in apical four-chamber view revealed a large vegetation (3.4 × 2.1 cm) attached to the base of the septal tricuspid

leaflet (Figure 1A). Subsequent transoesophageal echocardiography (Figure 1B and 1C) showed a bicuspid aortic valve with normal haemodynamics and no vegetations. In addition two aortic wall abscesses (arrows) were visualized. One of them fistulated (thin arrows) towards the right atrium, ending just above the tricuspid valve in the previously described vegetation.

Because of pulmonary septic embolization under antibiotic treatment, the patient underwent emergent homograft aortic valve replacement, aortic wall patch and tricuspid valvuloplasty.



**Figure 1** (A) Transthoracic apical four-chamber view with vegetation in the right atrium attached to the base of the septal tricuspid leaflet. (B and C) Transoesophageal short axis view showing the bicuspid aortic valve with an aortic wall abscess (thick arrow) and the fistula (thin arrows) between the aorta (AO) and the right atrium (RA). RV, right ventricle; LV, left ventricle; LA, left atrium; TV, tricuspid valve.

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Surgical intervention revealed an extensive inflammation of the first 2 cm of the aortic root with one deep ulceration of the wall. The other abscess fistulated from the aortic valve towards the right atrium as visualized by transoesophageal echocardiography. The aortic bicuspid valve seemed to be the initial point of endocarditis lesion, just at the anterior commissure. Membranous interatrial septum was oedematous without aneurysmal formation but the abscess fused towards the right atrial free wall, creating a purulent cavity which was drained. Further evolution was favourable.

## Discussion

The first case in the literature with rupture of the noncoronary sinus of Valsalva proved by both transthoracic and transoesophageal echocardiography was published in 1982. The vegetation was localized in the right atrium and it eroded the Valsalva's sinus without involving neither the aortic nor the tricuspid valve.<sup>1</sup> We reported hereby a quite similar case, however, in the situation of our patient, we believe that the initial point of endocarditis was the bicuspid aortic valve, although the valve itself was structurally not damaged. The bicuspid aortic valve itself and the extensive inflammation of the aortic root sustain this hypothesis. Of particular interest in this case is that the

left-sided endocarditis was unmasked by a right-sided vegetation.

Although perivalvular abscess is not an unusual complication of native aortic valve endocarditis, fatal fistulous communication between the ascending aorta and the right ventricle is exceedingly rare.<sup>2</sup> An unusual combination of ruptured Valsalva's sinus to right atrium with massive pericardial effusion has been also seen.<sup>3</sup> Finally, in children, rupture of a sinus of Valsalva may represent 20% of the cases, in half of those with rupture to the right cavities. In all cases an aortic valve endocarditis was present with *Streptococcus pneumonia* in half of the cases.<sup>4</sup>

## References

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