

# Ventricular septal defect as a consequence of chronic bicuspid aortic valve infective endocarditis

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**KEYWORDS:** bicuspid aortic valve, infective endocarditis, ventricular septal defect, tooth infection.

**CITATION:** *Cardiol Croat.* 2021;16(5-6):185-6. | <https://doi.org/10.15836/ccar2021.185>

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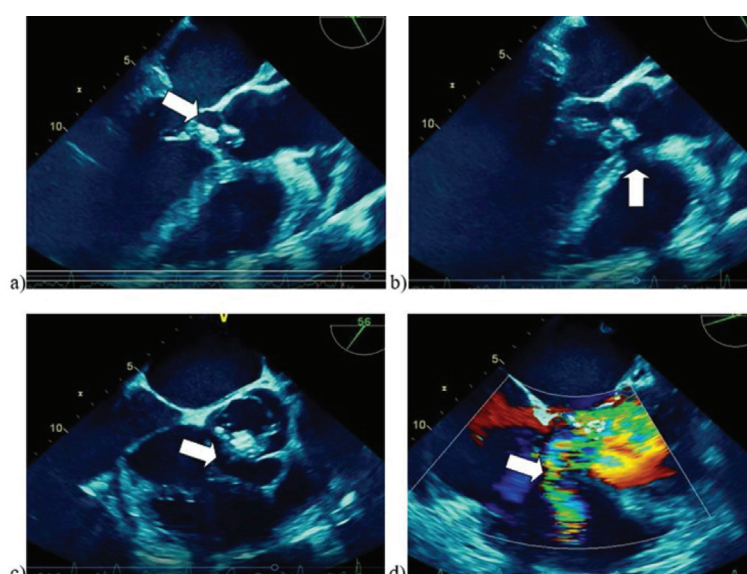
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**Introduction:** Native valve infective endocarditis (IE) is a result of bacteremia with high mortality rate of about 30%. Optimal outcome of valve IE depends on timely diagnosis, etiology, antibiotic treatment, involved valve, patient age, comorbid diseases, extent and location of metastatic complications, and the duration of the infection. Besides invasive procedures and mechanical damage breaking these boundaries, it has also been shown that routine daily activities such as tooth brushing, and chewing could lead to bacterial penetration of the bloodstream. Bicuspid aortic valve (BAV) is the most common form of congenital heart disease with 30-fold higher risk of IE than in the general population. Common complications are congestive heart failure (HF), peri annular abscesses and systemic embolization. Ventricular septal defect (VSD) is often a predisposing factor for the development of IE, but only rarely occurs as a complication of the condition.<sup>1-4</sup> This case report presents the outcome of a patient with BAV that was complicated with a chronic form of BAV IE caused by inadequate tooth hygiene and resulted in the rare IE complication of VSD.

**Case report.** In a 43-year-old obese male patient mid-range stenosis and mild regurgitation of aortic valve (AV), probably BAV, was detected by transthoracic echocardiography (TTE). Tooth caries were detected, and antibiotic prophylaxis was recommended. Eight months later, the patient was hospitalized because of intermittent fever. TTE imaging due to the patient's obesity were poor quality, while patient cooperation for transesophageal echocardiography was limited. He felt better after antibiotic therapy and went home. One month later, he was readmitted because of HF caused by chronic BAV IE showing severe aortic regurgitation, aortic valve abscess and, consequently, a membranous VSD (**Figure 1**). Cardiac surgery with mechanical prosthesis valve replacement and septal defect patching was performed (**Figure 2**).

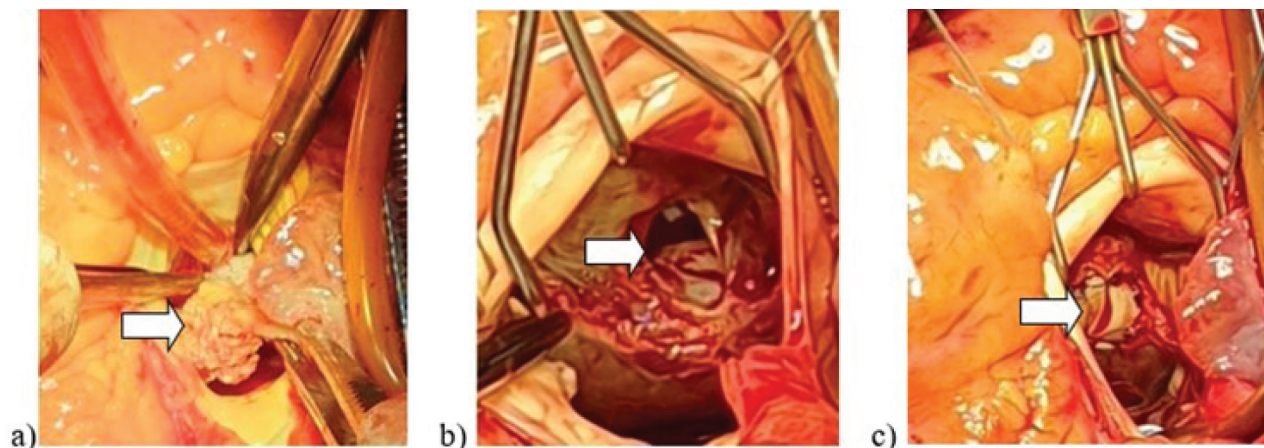


**FIGURE 1.** Infective endocarditis of the bicuspid, aortic valve by transesophageal echocardiography (a); ventricular septal defect (did not exist before) (b); bicuspid, aortic valve abscesses (c); ventricular septal defect by color Doppler (d).

RECEIVED:  
March 28, 2021

ACCEPTED:  
April 2, 2021





**FIGURE 2.** Infective mass on the aortic, bicuspid valve (a); ventricular septal defect due to infective endocarditis (b); patch plastic of ventricular septal defect (c).

**Conclusion:** This case highlights the need for early suspicion of IE, precise cardiac imaging and early investigation for comorbid diseases. Patient cooperation and understanding of the risk are crucial parts of prevention or treatment, or the spread of IE could become complicated with rarer and more complex forms of disease.

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