

A patient with infective endocarditis of the tricuspid and aortic valve and uncorrected ventricular septal defect: a case report

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Introduction: Infective endocarditis (IE) is rare but potentially fatal disease. Right-sided IE accounts for 5% to 10% of all IE cases, and compared with left-sided IE, it is more often associated with congenital heart disease¹. Among congenital heart disease, ventricular septal defect (VSD) is the most frequent anomaly in right-sided IE². It is rarely diagnosed in adults owing to correction of large VSDs and the spontaneous closure of smaller ones during the patient's early years³.

Case report: 66-year-old man was admitted to Internal Department with symptoms of general weakness, palpitations and shortness of breath which aggravated over the past two weeks. His physical examination showed blood pressure of 140/90 mmHg, irregular heart rate of 203 beats per minute and axillar temperature of 37.0 C. Systolic/diastolic murmur was heard over the left upper sternal border. Laboratory investigation showed mild leukocytosis with white blood count of $10.89 \times 10^9/L$, raised C-reactive protein (CRP) of 47 mg/L and positive rheumatoid factor. The transthoracic echocardiography (TTE) revealed left-to-right shunt perimembranous VSD with enlarged all four heart chambers (**Figure 1**). There were visible vegetation on aortic and tricuspid valves, dilated mitral annulus and severe aortic, mitral and tricuspid regurgitation with signs of pulmonary hypertension (**Figure 2, Figure 3**). Left ventricular systolic function was normal with ejection fraction of 55%. Series of blood cultures were taken but they remain sterile. A computed tomography pulmonary angiogram (CTPA) did not show any signs of pulmonary embolization but there were bilateral pleural effusion. The patient was diagnosed as possible infective endocarditis with modified Duke clinical diagnostic criteria (one major and two minor criteria). He was treated with intravenous empirical antibiotics, diuretics, antiarrhythmics and other supportive treatment. Despite intensive care and treatment his clinical condition was worsened with signs of heart, renal and liver failure. The patient unfortunately died.



FIGURE 1. Transthoracic echocardiography showed a ventricular septal defect.

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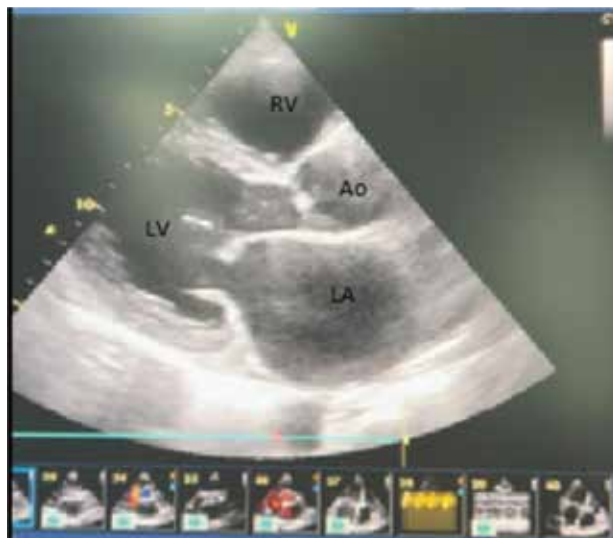


FIGURE 2. Parasternal long axis view showed vegetation on aortic valve with severe aortic and mitral regurgitation.

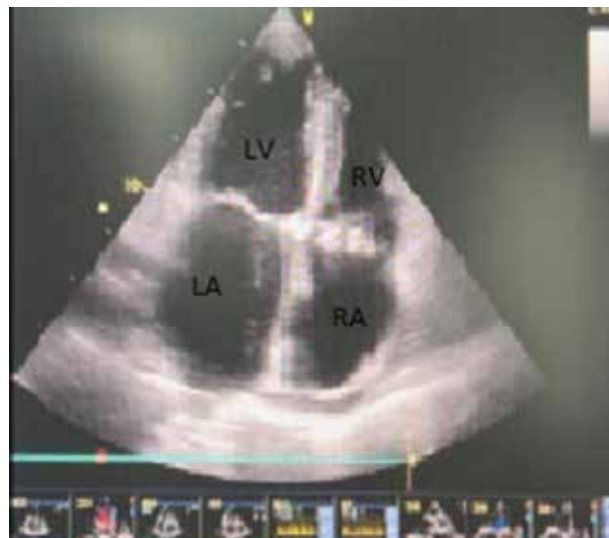


FIGURE 3. The apical four chamber view showed large vegetation attached to the tricuspid valve.

Conclusion: Infective endocarditis still remains diagnostic and therapeutic challenge. Echocardiography is the primary imaging technique used to detect right-sided IE as it provides valuable information because of anterior location of right-sided structures that are close to the TTE transducer. Prompt diagnosis is necessary to prevent its complications including multi organ failure and death.

LITERATURE

1. Shmueli H, Thomas F, Flint N, Setia G, Janjic A, Siegel RJ. Right-Sided Infective Endocarditis 2020: Challenges and Updates in Diagnosis and Treatment. *J Am Heart Assoc.* 2020 Aug 4;9(15):e017293. <https://doi.org/10.1161/JAHA.120.017293>
2. Sattwika PD, Hartopo AB, Anggrahini DW, Mumpuni H, Dinarti LK. Right-sided infective endocarditis in patients with uncorrected ventricular septal defect and patent ductus arteriosus: Two case reports. *Clin Case Rep.* 2018 Sep 29;6(11):2168-2173. <https://doi.org/10.1002/ccr3.1672>
3. Alafify AA, Khuwaitir TA, Al Sharary M, Ullah Sajid N. A Tricuspid. A Tricuspid Valve Endocarditis with a Large Vegetation Encroaching on the Papillary Muscle and Right Ventricular Cavity in Patient with a Ventricular Septal Defect. *Research Journal of Cardiology.* 2011;4(1):38-43. <https://doi.org/10.3923/rjc.2011.38.43>