

Right heart echo case selection — possible pitfalls

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Subvalvular pulmonic stenosis

Possible overestimation of subvalvular pulmonic stenosis severity can occur in presence of small membranous VSD when high velocity VSD flow is merging low velocity subvalvular stenotic flow (**Figure 1**). In our 33-year-old patient, however, inside a 5.2 m/s VSD jet a lower velocity 2.4m/s jet

originated from pulmonic stenosis was appreciated and peak Doppler gradient of 23 mmHg measured (**Figure 2**). Cardiac vascular magnetic resonance (MR) confirmed presence of subvalvular pulmonic stenosis with maximal velocity between 2.3 and 2.7 m/s, and on cardiac catheterization gradient of less than 30 mmHg was registered.

Figure 1. Two-dimensional echocardiogram. Basal short-axis view with color flow imaging showing VSD flow merging subvalvular pulmonic stenotic flow.

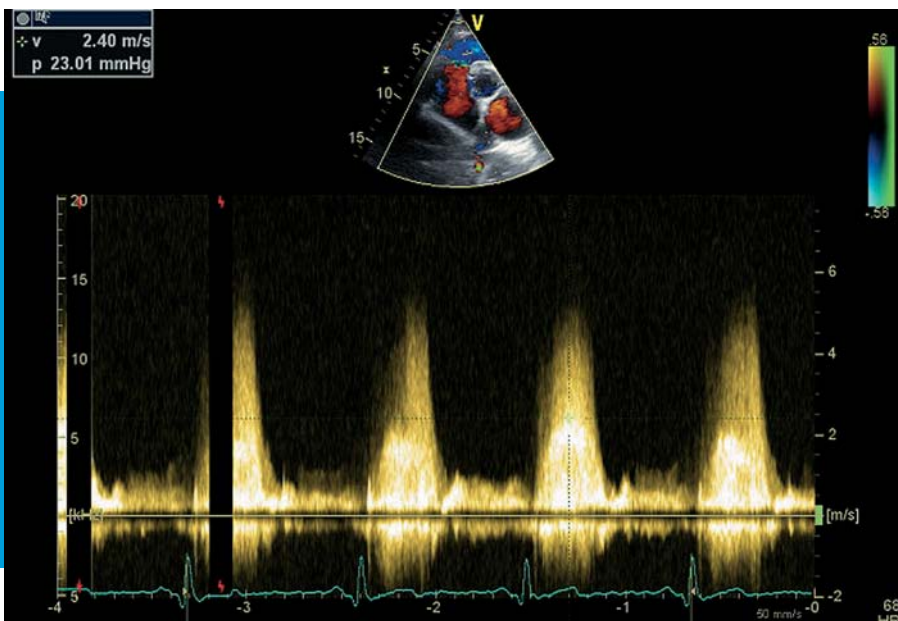
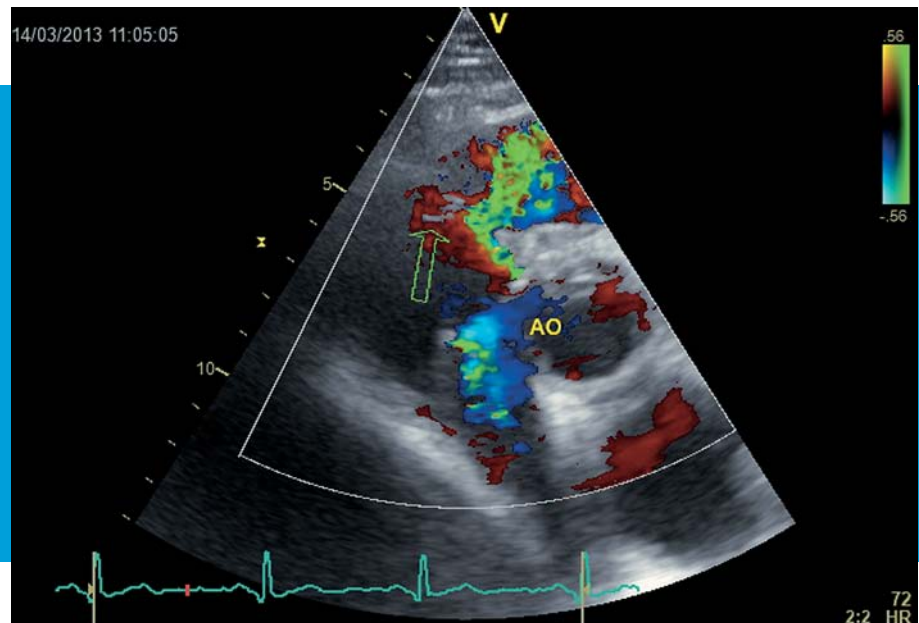


Figure 2. Continuous wave Doppler. Inside high ventricular septal defect jet a lower velocity pulmonic stenosis jet is recognizable.

Chronic constrictive pericarditis

In a 69-year-old patient with minimal effort dyspnea, aneurysmatic dilatation of prominently trabeculated RV apex was observed on TTE which at the first glance raised suspicion on arrhythmogenic right ventricular dysplasia/cardiomyopathy (**Figure 3**). However, apical contractility was preserved and subcostal view revealed increased pericardial thickness (up to 1.2 cm) in the region of free RV wall indicating pericardial constriction to be responsible for aneurysmatic RV remodeling. Furthermore, all echo and Doppler parameters of pericardial constriction were present and pathologically thickened pericardium (up to 2 cm) was seen on MR and 0.5 cm bright calcifications on CT scan.

Mechanical tricuspid valve thrombosis

Three-dimensional transthoracic echocardiography (3D TTE) allows visualization of all three leaflets of tricuspid valve (TV) and accurate assessment of TV orifice area in TV stenosis. A 32-year-old patient with mechanical tricuspid valve replacement performed 10 years ago was admitted with progressive dyspnea and right heart failure. TTE re-

vealed artificial valve thrombosis and severe stenosis — dense immobile leaflets, TTF-E 213 m/s, mean pressure gradient 15 mmHg, pressure half time 230 ms. 3D TTE from right atrial aspect revealed immobile leaflets, large floating thrombus. In attempt to find effective orifice area we first measured false orifice area created by mobile thrombus which in fact appeared in systole. In addition we found a true diastolic orifice and area of 0.4 cm². 3D TTE examination completed echocardiographic study and there was no need for transesophageal echocardiography. The patient underwent tricuspid valve replacement and bioprosthetic valve was implanted with a good result.

KEYWORDS: echocardiography, pulmonic stenosis, constrictive pericarditis, tricuspid valve thrombosis.

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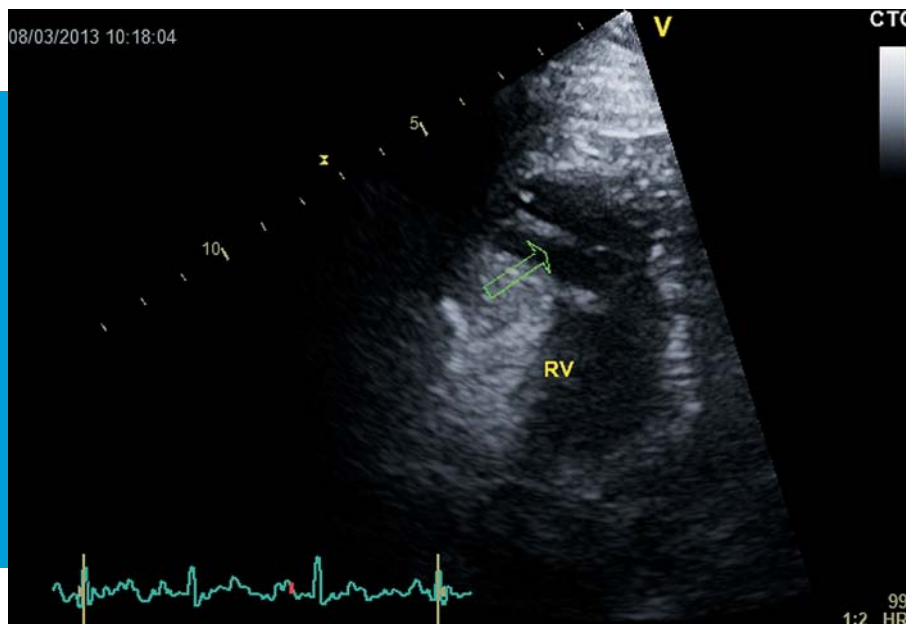


Figure 3. Two-dimensional echocardiogram. Apical four chamber view. Aneurysmatic right ventricular apical deformation due to indentation of thickened pericardium into the middle third of the ventricle.

Literature

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