Unicuspid aortic valve, accurate detection for timely intervention

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Introduction: Unicuspid aortic valve (UAV) is a very rare congenital anatomical variation of the aortic valve. Instead of the aortic valve having three separate leaflets, in the UAV all three leaflets are interconnected. Because of the above, hemodynamics over the valve itself are disturbed, which leads to accelerated degeneration of the valve.[1]

Case report: 32-year-old patient was examined by a cardiologist due to unregulated arterial hypertension and a positive family history of cardiovascular disease (a brother suffered a myocardial infarction at the age of 33 years). Unregulated arterial hypertension of 190/98mmHg was verified by the examination. A systolic murmur was heard over the precordium. The patient had a echocardiography done 2 years earlier in a peripheral hospital where suspected mild aortic stenosis was described without a description of the morphology of the aortic valve. Since then, he has not been referred for regular follow-up with a cardiologist. Now during the examination, transthoracic echocardiography verified moderate aortic stenosis and mild to moderate extremely eccentric aortic regurgitation. Apart from a slightly thicker myocardium of the left ventricle, the rest of the findings were normal. Although the parasternal echo projections were extremely poor, a UAV was suspected (**Figure 1**) and the patient was referred for a transesophageal echocardiography (TEE). Unicommissural unicuspid aortic valve is verified by TEE (**Figure 2**).

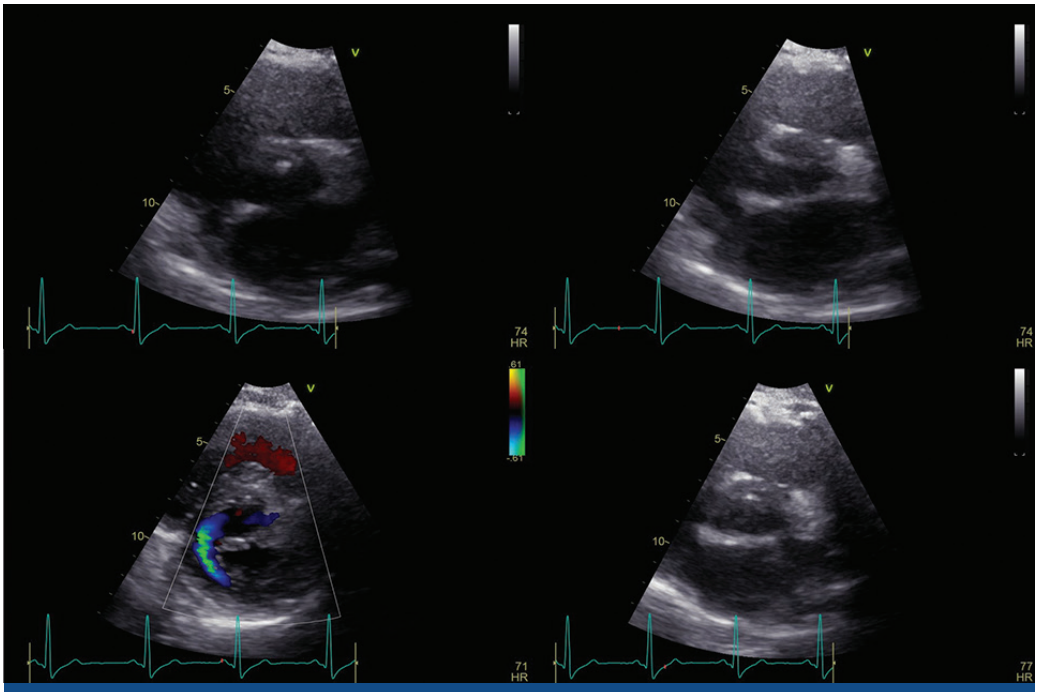

FIGURE 1. Echo projections in the short parasternal axis. Due to the poorer echo windows, the morphology of the valve is not adequately visible. An extremely eccentric aortic regurgitation jet is seen.

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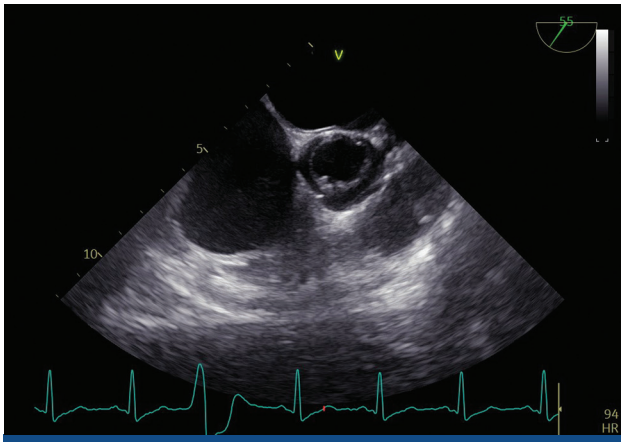

FIGURE 2. Transesophageal ultrasound shows a unicommissural unicuspid aortic valve.

Conclusion: Although UAV is an extremely rare malformation of the aortic valve, it presents a significant risk of accelerated valve degeneration. Timely detection of UAV in order to control risk factors which can contribute to accelerated degeneration such as unregulated arterial hypertension enables the prolongation of operative treatment of the valve.

LITERATURE

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