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Significant left ventricular outflow tract obstruction secondary to systolic anterior motion in a patient without hypertrophic cardiomyopathy: An echocardiographic study

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Dynamic Left Ventricular Outflow Tract Obstruction (LVOTO) can be hemodynamically significant and affect adversely the heart and the quality of life. Systolic Anterior Motion (SAM) of the anterior mitral valve into the LVOT is the mechanism. However, mechanism of the SAM has been an area of special interest. SAM occurrence in the absence of septal hypertrophy is exceedingly uncommon. Herein, we present a case of a young male patient who sought medical care with a complaint of exertional dyspnea New York Heart Association (NYHA) functional class 2-3, and was found to have SAM and severe LVOTO at rest without HCM, continuous wave Doppler signal showed a peak velocity of 4.96 m/s along the LV outflow tract, with a calculated pressure gradient at rest using the modified Bernoulli equation of 98.44 mmHg. The patient is not known to have any medical conditions, no family history of cardiac condition nor history of sudden death. Trans-Thoracic Echocardiography (TTE) showed concentric remodeling of the left ventricle without hypertrophy. Trans-Esophageal Echocardiography (TEE) was done for further assessment of the anatomy. The anterior and posterior mitral leaflet lengths were measured and were 3.7 cm, 1.3 cm respectively (Normal AML <3 cm, PML <1.5 cm). In our case the LVOTO is significant enough to result in a decreased cardiac output thereby explaining the symptoms and as a consequence the patient developed concentric remodeling. The only finding in this patient explaining SAM is an elongated anterior mitral leaflet.

Biography

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