Early onset obstructive hypertrophic cardiomyopathy in a physically active male treated with alcohol septal ablation

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Background:

Obstructive hypertrophic cardiomyopathy (oHCM) is a condition typically associated with a gene mutation that causes hypertrophy of the myocardium. It presents with symptoms that worsen as the condition develops, causing severe dyspnoea, chest pain, palpitations, and syncope. Untreated and undiagnosed oHCM is a significant cause of sudden cardiac death in young people, including athletes.

Case presentation:

A 28-year-old, physically active male presented with abnormal ECG findings during a routine physical exam. ECG showed left axis deviation and signs of left ventricular hypertrophy. He noted worsening dyspnoea, chest pain, and palpitations during physical activity. These symptoms lasted two years, and during the second year, dyspnoea started developing at rest. His echocardiogram showed left ventricular outflow tract obstruction as well as an increase in left ventricular outflow tract pressure gradient, indicative of hypertrophic cardiomyopathy. The mitral valve showed significant systolic anterior motion and mild to moderate mitral regurgitation. The interventricular septum measured significant hypertrophy, later confirmed with magnetic resonance imaging (MRI). MRI also showed large zones of non-ischemic fibrosis of the septum and an intact ejection fraction of the left ventricle with morphological changes as part of asymmetric hypertrophic cardiomyopathy. In the family history, the patient's father had oHCM and died of heart failure. The patient was diagnosed with oHCM, with an HCM risk score of 4,66%. To avoid septal myectomy, alcohol septal ablation was done. 95% alcohol was infused into the first septal branch, creating an iatrogenic infarction to reduce left ventricular outflow tract obstruction. The patient had a successful procedure and was let out of the hospital eight days after admission.

Conclusion:

Because of the nature of the disease, oHCM can sometimes go undiagnosed and have lethal repercussions. The key to avoid worsening of the conditions are comprehensive initial patient evaluations, complete with risk stratification, and the right choice of treatment.

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