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Case Report
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Mitral Valve Prolapse and Long-Term Left Ventricular Function: A Case Study

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Abstract

A 34-year-old female with a history of mitral valve prolapse (MVP) was followed over a 10-year period to assess the long-term effects of MVP on left ventricular (LV) function. Despite initial asymptomatic presentation, progressive left ventricular dilation and mild systolic dysfunction were detected through serial echocardiography. This case highlights the need for long-term cardiac monitoring in MVP patients, even in the absence of symptoms, due to potential silent progression to LV dysfunction.

Keywords: Mitral Valve Prolapse (MVP), Mitral Regurgitation, Left Ventricular, Dysfunction, Echocardiography, Cardiac Monitoring.

Introduction

Mitral Valve Prolapse (MVP) is a common valvular abnormality, characterized by the displacement of mitral valve leaflets into the left atrium during systole. While often considered benign, MVP can lead to significant mitral regurgitation and left ventricular dysfunction over time. This case study explores the long-term progression of MVP and its effects on LV function over a decade of follow-up.

Case Presentation

A 34-year-old female, previously healthy, was diagnosed with MVP during a routine check-up 10 years ago. Initially, she was asymptomatic. Clinical examination revealed a mid-systolic click, with no murmur. Baseline investigations included an ECG which was normal.

Initial transthoracic echocardiogram (TTE): Mild MVP with no significant mitral regurgitation (MR). LV dimensions and ejection fraction (EF) were within normal limits (LVEDD: 4.8 cm, EF: 60%).

At 5-year follow-up: Patient began experiencing mild fatigue on exertion. Repeat TTE showed MVP with moderate MR, mild left atrial enlargement, and early LV dilation (LVEDD: 5.5 cm, EF: 55%).

At 10-year follow-up: Worsening fatigue and reduced exercise tolerance. TTE showed severe MR with significant LV dilation (LVEDD: 6.3 cm), mildly reduced EF (50%), and signs of volume overload. No pulmonary hypertension detected.

Laboratory tests at 10 years: Normal CBC, normal renal and liver function tests, BNP mildly elevated at 210 pg/mL.

Discussion

This case illustrates the gradual progression of MVP from a benign asymptomatic condition to significant MR and LV dysfunction over a decade. The development of LV dilation and reduced EF underlines the need for regular monitoring, even in asymptomatic patients. Echocardiography remains the cornerstone for evaluation and follow-up. Early intervention may be required when evidence of LV impairment or severe MR develops.

Several studies have emphasized the importance of surveillance

in MVP patients. MVP-related MR can be silent but progressive, particularly in individuals with anatomical risk factors such as myxomatous degeneration.

Conclusion

Mitral Valve Prolapse, though often benign, can progress to significant mitral regurgitation and left ventricular dysfunction. Long-term follow-up with serial echocardiography is critical for timely identification of deterioration and planning of medical or surgical intervention.

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