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Step by step valve destruction in infective endocarditis with no apparent vegetations

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Topic(s):
Echocardiography: Valve Disease

Citation:

Background

Infective endocarditis can present without evident vegetation, diagnosis is challenging and prognosis very poor. We present an illustrative case where natural evolution of the mitral valve destruction with no evident vegetations was followed with frequent consecutive transthoracic (TTE) and transesophageal echocardiography (TOE).

Case presentation

71-year old male with known dilated cardiomyopathy presented with dyspnoea, ankle swelling and severe kidney failure with hyperkalemia. During short hospitalization he was recompensated with haemodialysis, parenteral diuretics and inotropes. TTE showed dilated left ventricle with severe systolic dysfunction and no evidence of valvular disease. Few days after discharge he was readmitted with malaise and febrile state with no obvious site of infection. Blood cultures were positive for Staphylococcus aureus and antibiotic therapy was initiated immediately. Weekly TTEs and TOEs were performed (Figure 1, column A-D):

Week 1: TTE was performed due to congestive heart failure. There was no suspicion on disease and TTE showed no obvious mitral valve pathology.

Week 3: Second TTE showed only light thickening of posterior mitral leaflet with mild mitral regurgitation.

Week 4: Follow-up TOE was performed showing posterior leaflet discontinuity with small eccentric regurgitation jet and no vegetation.

Week 6: Symptoms of congestive heart failure persisted despite antibiotic treatment. A progressive destruction of posterior leaflet with evident perforation of P1 scallop and consequent severe mitral regurgitation. Patient was referred for urgent mitral valve replacement.

Conclusions

Staphylococcus aureus is a destructive pathogen and can cause severe destruction of native valve even without obvious vegetations. This case presents echocardiographic features of natural course of infective endocarditis on mitral valve. Despite antibiotic therapy progressive valve destruction is possible.
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Row 1: Transthoracic echocardiography, apical three chamber view

Row 2: Transesophageal echocardiography, long axis three chamber view

Row 3: Transesophageal echocardiography, long axis three chamber view