Eosinophilic heart disease in a paediatric patient

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A 12-year-old child with no previous medical history was referred with a 4-day history of cough, shortness of breath, and peripheral blood eosinophilia. Transthoracic echocardiography showed a soft tissue infiltrating the left ventricular free wall, the lateral mitral annulus, and the mitral valve leaflets. A soft tissue strand connecting the lateral left atrial wall and mitral leaflets across the mitral valve orifice was also identified, causing reduced opening and functional mitral stenosis. The diagnosis of Loeffler endocarditis was made, and after 10 weeks of treatment with oral prednisolone, there was complete resolution of symptoms and of the infiltrative tissue with normalization of mitral valve function. The present case highlights some atypical features of eosinophilic heart disease-like occurrence in paediatric age, the complete preservation of the right ventricle and left ventricular apex, and the presentation with mitral stenosis compared with mitral regurgitation typically observed in the late phase of the disease.

Keywords

Inflammation • Mitral valve • Echocardiography • Endocardium

Discussion

Eosinophilic infiltration of the heart was originally described in 1936 by Loeffler in the post-mortem examination of two patients dying after two decades of afebrile leucocytosis and eosinophilia, progressive right-sided heart failure with hepato-splenomegaly, and ascites. Cardiac autopsy showed a layering of fibrosis that obliterated the ventricles but spared the valves. Eosinophilic heart disease is now a recognized manifestation of the hypereosinophilic syndrome, in which up to 50% of patients have evidence of cardiac involvement. Typical cardiac findings include endocardial fibrosis with extensive mural thrombus occupying the apices of both ventricles. Advanced forms include progressive myocardial damage, conduction system disease, and refractory heart failure. The present case highlights some atypical features of eosinophilic heart disease. First, eosinophilic heart disease is extremely rare...
Figure 1  Four-chamber view focusing on the left ventricle showing the eosinophilic infiltrate of the endocardium of the left ventricular lateral wall (A). The arrow shows the inflammatory tissue strand connecting the lateral atrial wall and the anterior mitral leaflet. AML indicates anterior mitral leaflet. Magnified image showing in detail the same findings of A (B). Asterisks indicate normal left ventricular myocardium. The arrows show the inflammatory tissue strand connecting the lateral atrial wall and the anterior mitral leaflet.

Figure 2  Short-axis view of the left ventricle at the level of the mitral valve (A) showing the eosinophilic infiltrate of the left lateral ventricular wall and the anterior and posterior mitral valve leaflets (scallops A1 and P1). Long-axis view of the left ventricle (B) showing the infiltration of the posterior mitral leaflet and the inflammatory tissue strand restricting anterior mitral valve leaflets. AML indicates anterior mitral leaflet; PML, posterior mitral leaflet.

in children. Second, the child described by us presented with infiltration limited to the lateral left atrial and ventricular walls, with preservation of the right ventricle and the apex of the left ventricle. Also, the patient had direct infiltration of the mitral valve, which caused functional valve stenosis rather than regurgitation as it is more commonly seen, probably due to inflammatory tissue
strand detected in the acute phase, as opposed to the mitral regur-
gitation seen after fibrotic scarring in the late phase. Two-
dimensional echocardiography is the primary method for the diag-
nosis of eosinophilic heart disease and should be performed in all
patients with peripheral blood eosinophilia.

Supplementary data

Supplementary data are available at European Journal of Echocar-
diography online.

Conflict of interest: none declared.

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