We report the case of a 41-year-old man who presented with lymphoma 2 years ago and was treated by chemotherapy. Biological findings revealed important eosinophilia, although explorations did not show any lymphoma recidivism or evidence of active infection. One month later, the patient presented with fever and clinical signs of heart failure as the onset of a central catheter infection occurred with methicillin-resistant Staphylococcus aureus bacteremia. Chest radiography revealed an enlarged cardiac shadow with a congestive vascular pattern (Figure, A). The ECG showed sinus tachycardia with incomplete left bundle-branch block (Figure, B). The echocardiogram revealed severe mitral and aortic regurgitation with apical filling of the left ventricle by a mobile structure (Figure, C). An initial diagnosis of severe mitral and aortic endocarditis was made, and valvular surgery replacement was recommended.

A cardiac MRI performed before the planned valvular surgery revealed normal wall thickening in pre- and post-gadolinium diethylenetriamine pentaacetic acid (Gd-DTPA) infusion dynamic sequences (Figure, D; Data Supplement Movie), with a large thrombus (*) filling the apex. A delayed-enhancement sequence 10 minutes after infusion of 0.2 mmol Gd-DTPA per kilogram of body weight emphasized a hypersignal in the subendocardium (Figure, E, arrows). Gd-DTPA infusion allowed both the characterization of thrombus by evidence of no early or late enhancement and of myocardial fibrosis by delayed enhancement. Myocardial scarring or necrosis increases gadolinium concentration, which explains the delayed hyperenhancement. The exclusive involvement of endomyocardium with respect to the myocardial wall, demonstrated by endomyocardial delayed enhancement and normal myocardial thickening, confirmed this hypothesis. The diagnosis of endomyocardial fibrosis associated with this bivalvular endocarditis was made on the basis of this typical MRI finding. Despite valvular replacement and aggressive intensive care, the patient died of septic shock due to recurrence of endocarditis 9 days later.

Eosinophilia syndrome includes a large heterogeneity of systemic manifestations associated with a persistent hypereosinophilia for more than 6 months. This syndrome is considered idiopathic in the absence of neoplasm, allergic or infective disease, or specific organ involvement. In both idiopathic and secondary hypereosinophilic syndromes, cardiac manifestation induces a high morbidity rate with a dire prognosis. Cardiac involvement is characterized by a restrictive pattern that is sometimes associated with severe atrioventricular valvular dysfunction. Restrictive cardiomyopathy is considered to be due to toxic damage produced by activated eosinophils, which provoke endomyocardium fibrosis with obliteration of the right and left ventricles. The cause of valvular regurgitation is less well established but appears to be consistent with the same physiopathology. Cardiac MRI may represent an important tool for early diagnosis and management of this rare but severe disease.

Disclosures

None.

References

Figure. A, Chest radiograph. Note the enlarged cardiac shadow with congestive vascular pattern. B, ECG on admission. Note the sinus tachycardia and the incomplete left bundle-branch block with low QRS voltage in the frontal leads. C, Left, Echocardiogram apical 4-chamber view. Note the apical filling of the left ventricle. Left ventricle ejection fraction was moderately decreased at 54%. Right, Echocardiogram apical 4-chamber view centered on the mitral valve, with color Doppler. Note the severe mitral regurgitation, with regurgitation output of 156 mL/s by PISA (proximal isovelocity surface area) evaluation. D, Steady state free precession MRI transverse view through both ventricles 2 minutes after 0.2-mmol/kg Gd-DTPA infusion. Note the apical filling of the left ventricle by thrombus (★) exhibiting lower signal than adjacent myocardium. E, Delayed enhanced sequence in the same axis 10 minutes after Gd-DTPA infusion. Subendocardium exhibited high signal (arrows) close to the ventricular thrombus (★).