Value of multimodal imaging in recurrent pericarditis – clinical burden of hemodynamic and inflammation imaging

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INTRODUCTION: Recurrent pericarditis can occur in up to 30% of patients after acute episode of pericarditis and is associated with significantly impaired quality of life and morbidity1. High rate of recurrence remains despite treatment as nonsteroidal anti-inflammatory drugs (NSAIDs), colchicine, steroids or other immunosuppressants2. If medical therapy fails, in case of symptomatic constrictive hemodynamics, surgical approach-pericardiectomy is indicated. Therefore, imaging modalities have to distinguish between hemodynamic assessment, where echocardiography is first line imaging modality, and inflammation where other cardiac imaging modalities complement echocardiographic findings2.

CASE REPORT: We present series of two cases, first of recurrent pericarditis in patient with postpericardiotomy syndrome and second recurrent pericarditis which lead to constrictive pericarditis resolved by pericardiectomy. First case is 60-year female who had aortic valve replacement due to severe aortic stenosis three weeks prior development of first symptoms, comprised of severe chest pain, fever with elevated markers of infection, and pleural effusion. Echocardiography revealed normal function of artificial aortic valve, normal ejection fraction of left and right ventricle and pericardial effusion, mainly inferoposterior and in front of right ventricle with septal bounce and hemodynamic signs of elastic constriction. PET CT confirmed inflammation only in pericardium and pleura (Figure 1).

Regression followed due to NSAIDs, colchicine, steroids treatment. She had signs of recurrence within next six month, but less severe inflammation. Second case is 45-year male who was admitted to our institution due to right heart failure and atrial undulation. Echocardiography revealed septal bounce with respiratory dependent septal shift to the right as result of interventricular interdependence due to severe calcification of pericardium mainly in front of right ventricle and pericardial effusion inferoposterolateral and in front of right ventricle with septal bounce and hemodynamic signs of elastic constriction. PET CT confirmed inflammation only in pericardium and pleura (Figure 1).

Figure 1. A) Chest CT showing pericardial and pleural effusion. B) Echocardiography showing pericardial effusion. C) PET CT identifying inflammation of the pericardium.
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Conclusion: Multidisciplinary approach to pericardial disease and multimodality imaging of pericardial pathology is paramount, as diagnosis and treatment often include multiple subspecialties. Echocardiography is still superior imaging modality when hemodynamic is the question but is best complemented with imaging modalities indicating inflammation.

LITERATURE

