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Treatment response assessment in tuberculous pericarditis: multimodal imaging with echocardiography and 18F-FDG PET/CT

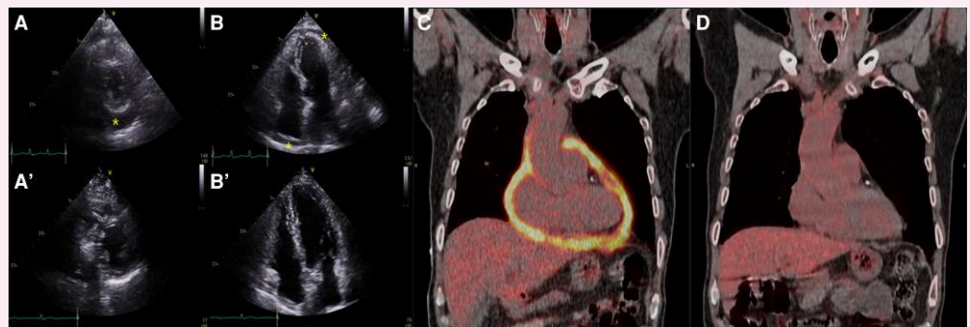
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A 71-year-old male presented with dyspnoea, showing elevated NT-proBNP levels. Echocardiography revealed preserved left ventricular function but indicated thickened and adherent pericardium around both ventricles with a small pericardial effusion and constrictive physiology (Panels A and B, [Supplementary data online, Videos S1 and S2](#)). Cardiac tomography displayed a right upper lobe nodule with pericardial effusion and thickening, complicating the differentiation between lung cancer and an inflammatory nodule. The 18F-FDG PET/CT scan exhibited diffuse pericardial thickening with intense FDG uptake (SUVmax 15.2) (Panel C). Additionally, the FDG uptake in the elongated nodular lesion in the right upper lobe, accompanied by mild fissural retraction, was relatively low in intensity and ill-defined, suggesting a lower likelihood of malignancy. Subsequently, a positive result for *Mycobacterium tuberculosis* was obtained from the tuberculosis PCR test conducted on the sputum, initiating anti-tuberculosis and steroid treatment. After 6 months of treatment, the patient's condition significantly improved, with no exercise-limiting dyspnoea and a marked decrease in NT-proBNP levels from 1141 to 136 pg/mL. Follow-up echocardiography demonstrated reduced pericardial thickness without evidence of pericardial effusion (Panels A' and B', [Supplementary data online, Videos S3 and S4](#)). The subsequent 18F-FDG PET/CT revealed the resolution of the previously observed intense FDG activity along the pericardium (Panel D). While the role of 18F-FDG PET/CT in the initial differential diagnosis of pericardial disease is well documented, there is limited data on its role in evaluating treatment response. Combining 18F-FDG PET/CT with echocardiography could be valuable tools for assessing treatment response in infectious cases such as tuberculous pericarditis.



Multimodality imaging assessment with echocardiography and 18F-FDG PET/CT. Initial echocardiography showed preserved left ventricular function but indicated thickened and adherent pericardium around both ventricles with a small pericardial effusion (panels A and B, where the yellow asterisk indicates the pericardial effusion). The 18F-FDG PET/CT scan revealed diffuse pericardial thickening with intense FDG uptake (SUVmax 15.2) (panel C). Follow-up echocardiography, conducted 6 months after initiating anti-tuberculous medication, demonstrated reduced pericardial thickness with no further evidence of pericardial effusion (panels A' and B'). The subsequent 18F-FDG PET/CT showed resolution of the previously observed intense FDG activity along most of the pericardium (panel D).

While the role of 18F-FDG PET/CT in the initial differential diagnosis of pericardial disease is well documented, there is limited data on its role in evaluating treatment response. Combining 18F-FDG PET/CT with echocardiography could be valuable tools for assessing treatment response in infectious cases such as tuberculous pericarditis.

[Supplementary data](#) are available at *European Heart Journal—Cardiovascular Imaging* online.

Conflict of interest: None declared.

Data availability: The data presented here are available on request from the corresponding author.

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