

Right ventricular calcification: an unusual variant of right ventricular remodelling in pulmonary hypertension

A 50-year-old man with chronic obstructive pulmonary disease and rheumatoid arthritis requiring chronic steroid therapy presented for evaluation of progressive dyspnoea. An echocardiogram revealed right ventricular (RV) systolic dysfunction and moderately elevated RV systolic pressure (47 mm Hg) (figure 1). A right heart cardiac catheterisation was performed and revealed moderate pulmonary arterial hypertension (PH). A chest CT with contrast was negative for pulmonary emboli. However, diffuse RV myocardial and focal right pulmonary arterial calcification was noted with sparing of the left heart and pericardium in the non-contrast scan (figure 2). Laboratory evaluation failed to demonstrate hypereosinophilia or hypercalcaemia. The patient was treated for PH with sildenafil and experienced improved dyspnoea.

Previous reports of RV myocardial calcification with sparing of the left ventricle have been associated with endomyocardial fibrosis, associated RV apical mass, hypereosinophilia and thromboembolic PH from the apical mass.^{1 2} However, calcification in endomyocardial fibrosis typically localises to the endocardium. In contrast, our patient had diffuse RV myocardial calcification, no evidence of an apical mass and no hypereosinophilia. Furthermore, there was no evidence of hypercalcaemia to explain this finding. The combination of PH and RV myocardial calcification without evidence of other cardiac dystrophic calcification suggests this may represent a variant of RV remodelling in response to PH. It is hypothesised that chronic steroid therapy may have contributed to RV and pulmonary arterial dystrophic calcification.

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Contributors BEF identified the relevant imaging findings, compiled the images and wrote the manuscript; JDS and VAH helped to identify and compile the relevant CT images; DK helped edit and provide feedback on the manuscript content.

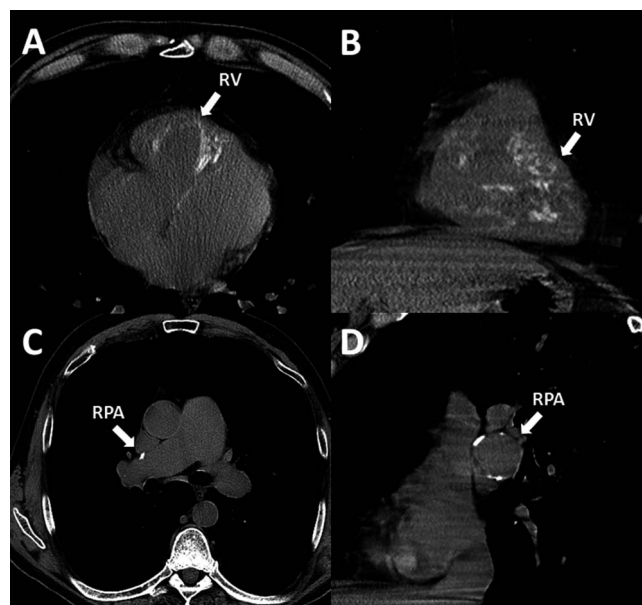


Figure 2 Non-contrast high resolution chest CT in the axial (A) and coronal (B) orientations demonstrating diffuse right ventricular (RV) myocardial calcification in association with focal ring-like calcification of the right pulmonary artery (RPA) (C, D).

Competing interests None.

Patient consent Obtained.

Ethics approval National Jewish Health IRB.

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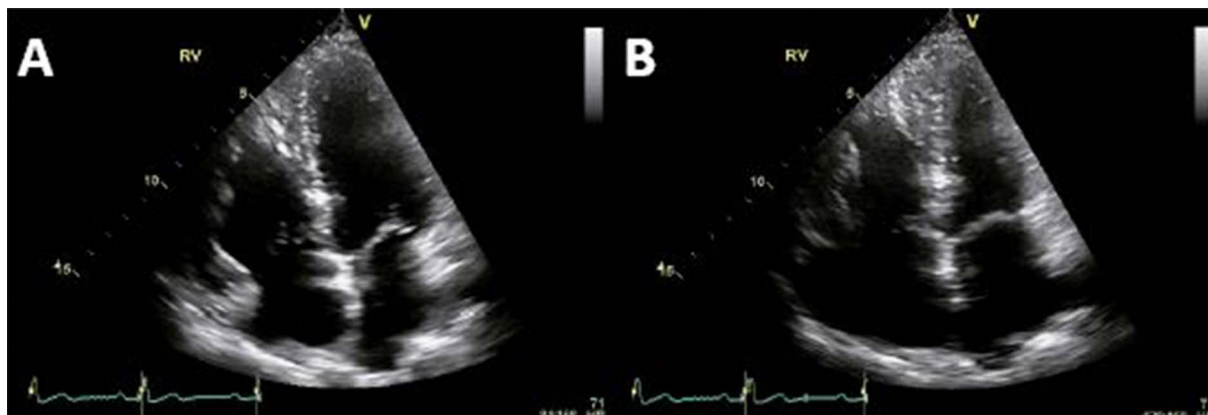


Figure 1 Two dimensional echocardiographic images in the apical four chamber view in (A) systole and (B) diastole demonstrating right ventricular (RV) enlargement, hypertrophy and systolic dysfunction.