

## IMAGE FOCUS

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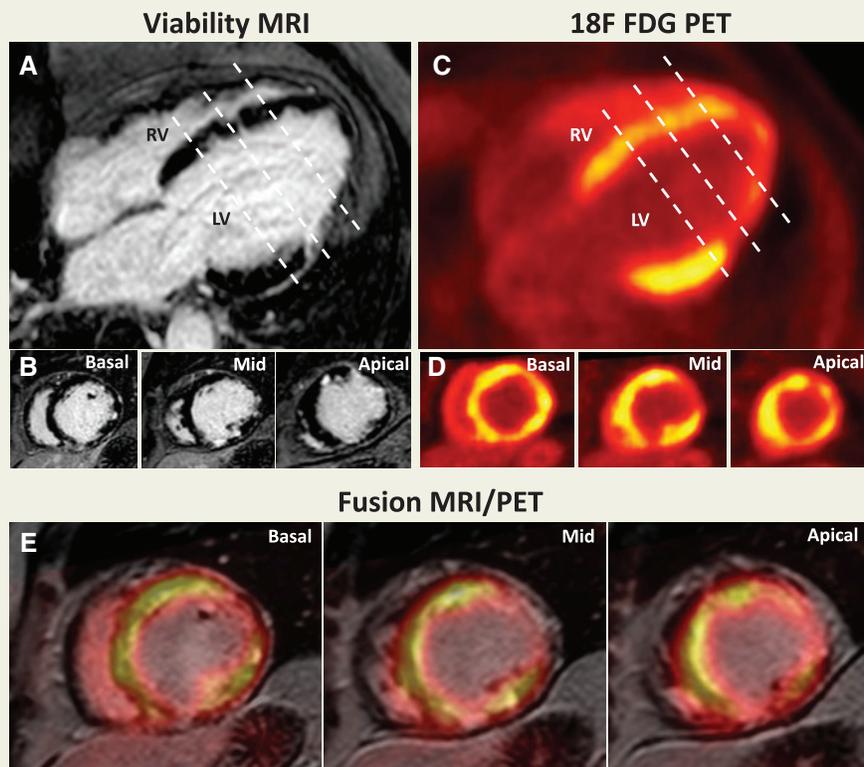
## A rare case of granulomatosis with polyangiitis-induced burnout cardiomyopathy: role of combined viability and metabolic imaging

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A 56-year-old male with history of hypertension, hyperlipidaemia, diabetes mellitus, and granulomatosis with polyangiitis (GPA) on prednisone and cyclophosphamide after failing initial rituximab therapy, was admitted to our department with symptoms of heart failure. EKG showed sinus tachycardia and non-specific T wave abnormalities. Troponin I peaked at 1.63 ng/mL. Transthoracic echocardiogram showed acute reduction in left ventricular ejection fraction (LVEF) from 50% to <35% over 3 months along with regional wall motion abnormalities in a multivessel distribution (see [Supplementary data online, Video S1](#)). He had a normal coronary angiogram 2 months prior to his admission. Cardiac magnetic reso-



nance imaging (MRI) showed diffuse patchy late gadolinium enhancement (LGE) in the basal septum, entire inferior and anterolateral wall and apex with associated regional wall motion abnormalities and severe left ventricular systolic dysfunction (LVEF = 21%; *Panels A and B*; [Supplementary data online, Video S2](#)), consistent with myocardial inflammation or fibrosis. Fusion metabolic imaging with  $^{18}\text{F}$ -fluorodeoxyglucose positron emission tomography ( $^{18}\text{F}$ -FDG PET) showed reduced  $^{18}\text{F}$ -FDG uptake in the areas of LGE, consistent with loss of myocardial viability secondary to GPA (burnout myocardium; *Panels C–E*). The patient was continued on his current immunosuppressive therapy without further escalation given the lack of a foreseeable myocardial recovery benefit. He remained clinically stable at follow up.

Cardiac involvement of GPA includes coronary vasculitis, pericarditis, valvular disease, and cardiomyopathy. Integrated viability and metabolic advanced cardiac imaging (i.e. MRI and  $^{18}\text{F}$ -FDG PET) can help identify the: (i) extent of myocardial involvement and (ii) stage of disease (i.e. active inflammation vs. advanced burnout stage), which might guide further management of this rare subset of patients.

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

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