
CLINICAL IMAGE

Fibro-fatty Degeneration in Hypertrophic Cardiomyopathy

Kongkiat Chaikriangkrai* and Mahi Ashwath

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A 44-year-old woman with hypertrophic cardiomyopathy (HCM) (TNNI-3 mutation) presented with palpitations. She did not have history of syncope or family history of sudden cardiac death. Further investigations did not show any evidence of ventricular tachycardia. Cardiovascular magnetic resonance (CMR) imaging was performed for further evaluation and risk stratification. CMR demonstrated asymmetric septal hypertrophy (maximal thickness 2.1 cm) and apical hypertrophy (maximal thickness 2 cm) with the left ventricular ejection fraction of 64%. Steady-state free precession imaging (Fig. 1A) also demonstrated hyperintense midmyocardial lesions in the basal-to-mid anteroseptal wall (solid arrowheads) and mid-to-apical inferior wall (blank arrowheads) myocardium. The lesions were bright on double-inversion recovery sequences (Fig. 1B), and became

hypointense with fat suppression protocol (Fig. 1C) suggesting fatty deposits. Late gadolinium images (Fig. 1D and 1E) revealed extensive lesions with hyper-enhancement consistent with scar in the adjacent regions. To the best of our knowledge, fatty degeneration of the myocardium in HCM has never been described in the literature. Fatty deposition along with scar tissue have been reported following myocardial infarction secondary to epicardial coronary artery disease (typically subendocardium in the territory of diseased coronary artery), dilated cardiomyopathy (typically midmyocardium) and arrhythmogenic right ventricular cardiomyopathy (typically right ventricular subepicardium or left ventricular free wall).¹ In HCM, we hypothesize that fibro-fatty degeneration occurs after myocardial infarction secondary to supply/demand mismatch and/or remodeling of the intramyocardial blood vessels. In contrast to late gadolinium enhancement imaging, which may provide further risk stratification information,^{2,3} it is unclear at this time if fibro-fatty degeneration in HCM represents an additional risk factor for sudden cardiac death.

Heart and Vascular Center, Division of Cardiovascular Medicine, Department of Internal Medicine, University of Iowa Hospitals and Clinics, 200 Hawkins Dr, Iowa City, IA 52242, USA

*Corresponding author, Phone: +1-832-518-6415, Fax: +1-319-353-6343, E-mail: supersoon@gmail.com

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Conflicts of Interest

The authors declare that they have no conflicts of interest.

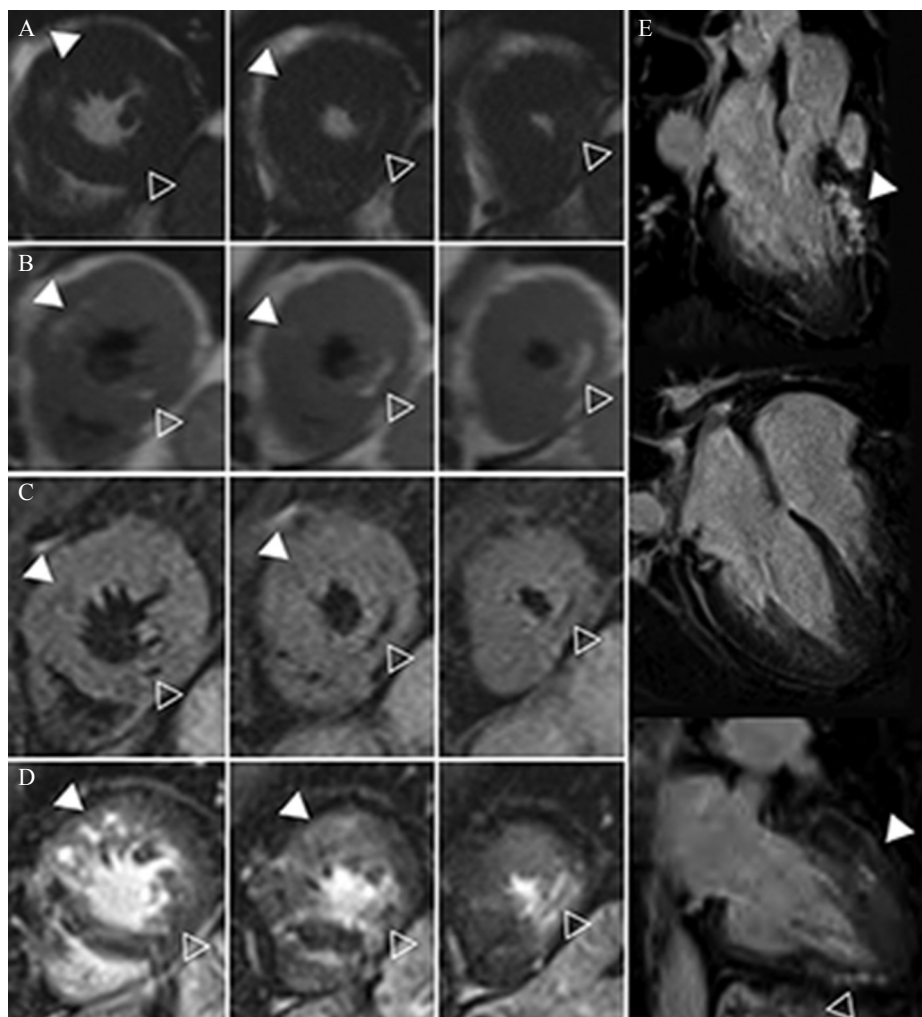


Fig. 1 Cardiovascular magnetic resonance images with steady-state free precession (A), double-inversion recovery sequences (B), fat suppression protocol (C), and late gadolinium images (D and E).

References

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