

CASE REPORT

Unusual Fatty Infiltration of the Basal Left Ventricle

Grant Heatlie PhD MRCP,¹ Bernd C. Cornelius MD,² Andreas Kilkowski MD,² Sanjay Prasad, MD MRCP,¹
Mary N. Sheppard FRCPath,³ and Raad Mohiaddin FRCR FRCP FESC¹

Royal Brompton Hospital, Cardiovascular Magnetic Resonance Unit, London, Great Britain, United Kingdom,¹ Klinikum Ludwigshafen am Rhein gGmbH, ZIR und Medizinische B Klinik, Ludwigshafen, Germany,² and Royal Brompton Hospital, Department of Histopathology, London, Great Britain, United Kingdom³

CASE REPORT

A 46-year-old Caucasian man presented with atypical chest pain and episodic shortness of breath. He had no particular risk factors for coronary artery disease but had a history of heavy alcohol consumption (5 L beer/day).

Transthoracic echocardiography showed a mildly dilated left ventricle and inferior wall hypokinesia. The patient underwent coronary angiography which demonstrated normal coronary arteries.

He was referred to us for further assessment of the echo findings by cardiac magnetic resonance scanning. Images were acquired using a 1.5 Tesla scanner (Siemens Sonata, Erlangen, Germany). Quantitative analysis demonstrated normal left ventricular volumes and global resting left ventricular systolic function at the lower limits of normal (End diastolic volume 169 mL, end systolic volume 104 mL, stroke volume 65 mL). The basal infero-lateral segment of left ventricular myocardium was hy-

pokinetic and had an unusual morphology. Between a subendocardial and a subepicardial layer of the myocardium there was a region with signal characteristics similar to fat. This area was clearly distinguishable from myocardium and appeared with bright signal on spin echo without fat saturation and was completely suppressed with a fat saturation prepulse (Fig. 1). Using a steady state free precession (True FISP) sequence the abnormal area appears bright with dark boundaries due to signal cancellation at the fat/water interface typically seen around fat deposition. The right ventricle was normal.

The presence of a layer of intramyocardial fat has not previously been reported. We are aware of one other case. A 46-year-old man who was known to have a high alcohol intake presented with sudden death. Post mortem studies revealed an intramyocardial layer of fat with no fibrosis (Fig. 2). He also had 3 vessel coronary artery disease.

The etiology of this unusual finding is unclear. As there were no previous studies, we do not know if this may be a congenital abnormality. Left ventricular intramyocardial lipoma has been described although it is rare. In arrhythmogenic right ventricular cardiomyopathy the fat distribution is different and invariably involves the right ventricle making this diagnosis unlikely. The patient who underwent CMR had normal epicardial coronary arteries. We are not aware of ischemic heart disease being a cause of fatty infiltration. Both patients reported a high alcohol intake. It may be that this finding is related to the long term inflammatory and metabolic effects of excess alcohol.

Keywords: Cardiac Magnetic Resonance, Left Ventricular Function.

Correspondence to:

Raad Mohiaddin

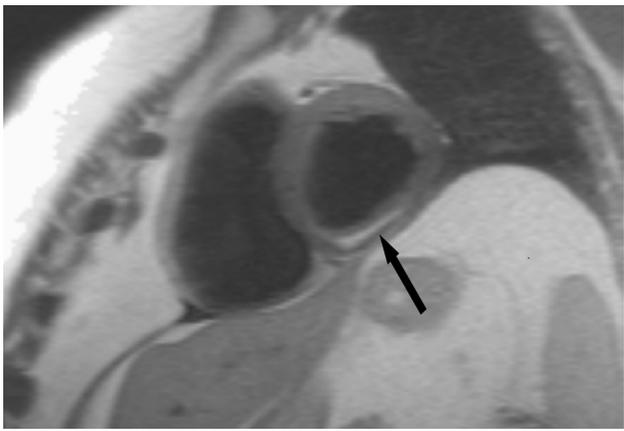
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Cardiovascular Magnetic Resonance Unit

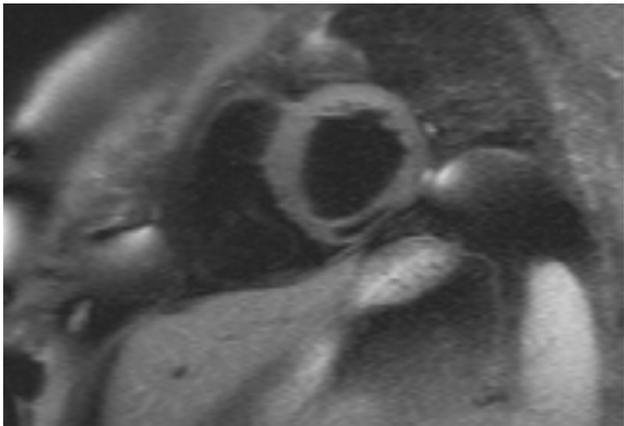
Sydney Street

London, SW3 6NP, Great Britain

email: r.mohiaddin@rbh.nthames.nhs.uk



(a)



(b)



(c)

Figure 1. a) HASTE short axis image showing bright layer (fat) in inferior wall (arrowed); b) Corresponding image to 1b acquired with fat suppression prepulse. The previously bright area is now dark confirming the presence of fat; c) True FISP short axis image showing the bright layer with dark boundary (fat) in inferior wall.

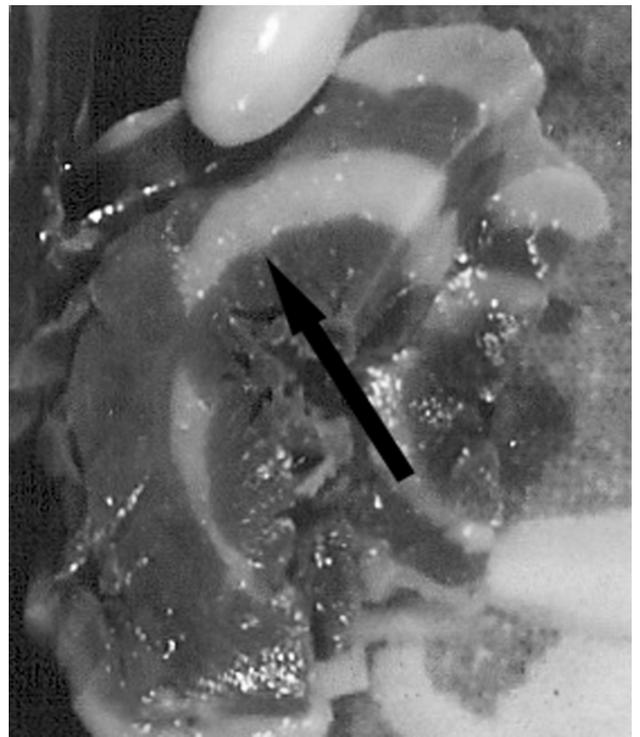


Figure 2. Post mortem specimen demonstrating a discrete intramyocardial layer of fat (arrowed).