Cardiovascular magnetic resonance of a hiatus hernia causing positional cardiac compression

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A 69-year-old lady with intermittent breathlessness and chest pain underwent cardiovascular magnetic resonance (CMR) in the supine position. A large hiatus hernia was seen compressing the left ventricle, atrium, and mitral annulus (Panels A–E, see Supplementary data online, Video S1 and S2). The CMR, including adenosine stress perfusion, was otherwise normal. The patient was immediately repositioned into the prone position and rescanned. In this position, the cardiac compression from the hiatus hernia was reduced (Panel F, see Supplementary data online, Video S3), thus demonstrating its positional nature.

Cardiac compression by a hiatus hernia can cause syncope, chest pain, and breathlessness. These symptoms have been documented to improve following laparoscopic hiatus hernia repair. Dyspnoea in patients with large hiatus hernias is often attributed to a mechanical effect causing reduced lung capacity. However, a previously published study of patients with large hiatus hernias and exertional dyspnoea demonstrated the mechanism of improved exercise capacity after laparoscopic repair to be resolution of left atrial compression, as measured by cardiac computed tomography and transthoracic echocardiography.

Positional cardiac compression may in fact be an under-diagnosed phenomenon. Echocardiography in the left lateral decubitus position may not detect compression that occurs only when supine, unless an index of suspicion calls to reposition the patient, which is feasible with echocardiography. CMR may be more likely to detect this rare phenomenon given its supine nature.

Conflict of interest: none declared.

Panel. CMR of hiatus hernia (*) causing external compression of left heart. (A) white blood transverse slice, (B) three-chamber cine, (C) two-chamber cine, (D) supine position left atrium and LV short-axis cine, (E) supine basal LV short-axis cine, (F) prone position basal LV short-axis cine. LV, left ventricle.

Supplementary data are available at European Heart Journal – Cardiovascular Imaging online.

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