

Hyperdynamic septal motion due to false tendons in a young cardiac arrest survivor diagnosed with a filaminopathy

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A 25-year-old male presented following an out-of-hospital ventricular fibrillation cardiac arrest. His only past medical history was obesity with gastric banding performed a year previously in Turkey. Return of spontaneous circulation was achieved following bystander cardiopulmonary resuscitation and six shocks from paramedics on scene. His 12-lead electrocardiogram post arrest is shown *Panel A*. Bloods showed a normal full blood count, normal kidney and liver function, and normal lipid panel and inflammatory markers.

Echocardiography revealed multiple distinctive bands across the left ventricle (LV), the most basal of which appeared to be pulling on the mid-septal wall resulting in a hyperdynamic focal septal wall motion abnormality (*Panels B and C*, [Supplementary material online, Video S1](#)). It also showed apical inferoseptal hypokinesis with impaired LV systolic function. Invasive angiography demonstrated normal coronary arteries (*Panel D*).

The patient underwent cardiovascular magnetic resonance imaging showing moderate-to-severe LV impairment (LV ejection fraction

36%). Diffuse, predominately mid-myocardial LV late gadolinium enhancement (*Panel E*) was present with T_1 and T_2 mapping showing no active inflammation or oedema, consistent with a non-ischaemic dilated cardiomyopathy.

Genetic testing confirmed a pathogenic c.3310G>T mutation in the Filamin C (FLNC) gene mutation. This actin-binding protein plays a key role in sarcomeric stability and in the cardiomyocyte response to mechanical stress. It has been implicated in cases of arrhythmogenic, dilated, and hypertrophic cardiomyopathy.

The patient went on to have a subcutaneous implantable cardioverter-defibrillator implanted for secondary prevention and showed good recovery on optimal medical therapy.

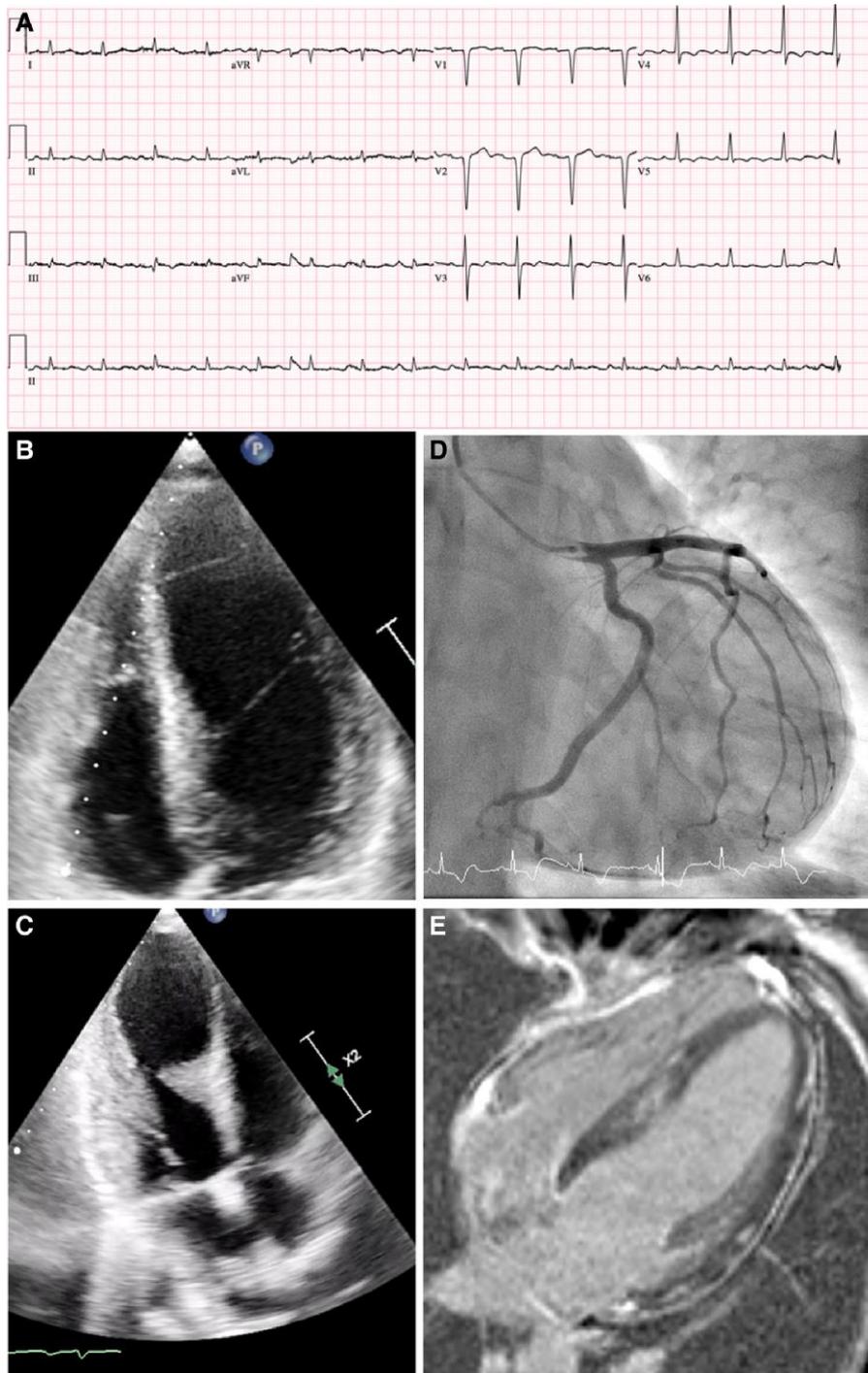
To our knowledge, false tendons resulting in such striking wall motion abnormalities have not previously been described. Given the role of FLNC in stabilizing the myocardium against mechanical stress, it is possible that these wall motion abnormalities may represent a

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(Panel A) A 12-lead electrocardiogram post return of spontaneous circulation. (Panel B) Echocardiogram still from an apical focused view demonstrating multiple bands across the left ventricle. (Panel C) Cine clip demonstrating hyperdynamic focal septal wall motion abnormality due to a left ventricular band. (Panel D) Invasive angiogram demonstrating normal coronary arteries. (Panel E) Cardiac magnetic resonance imaging in horizontal long-axis view demonstrating mid-wall late gadolinium enhancement.

higher-risk phenotype compared to false tendons not associated with wall motion abnormalities, which are considered a normal variant.

Supplementary material

[Supplementary material](#) is available at *European Heart Journal – Case Reports* online.

Consent: The authors confirm that written informed consent for submission and publication of this case report, including images and

associated text, has been obtained from the patient in line with COPE guidance.

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Data availability

No new data were generated or analysed in support of this research.