

An Unusual Case of Acute Myocardial Infarction

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A 42-year-old female with irrelevant medical history, medicated with oral contraceptives. Admitted by precordial pain of anginal characteristics, with electrocardiography in sinus rhythm with transient inferolateral ST-segment elevation and elevation of troponin I (28ng/mL). Despite recent emotional stress, transthoracic echocardiography showed no abnormalities, excluding Takotsubo's cardiomyopathy.

Electrocardiography with no dynamic abnormalities. Coronary angiography with no epicardial coronary lesions. For a better characterization of the condition, cardiac magnetic resonance was performed, showing small area akinesia at the transition between the lower and lateral distal segments,

with hypersignal in the T2-weighted sequences and transmural enhancement in the late enhancement sequences — findings suggestive of a small area of infarction in the circumflex/right coronary artery, potentially from embolic causes (Figures 1A to 1C).

No detection of atrial fibrillation at monitoring. Transesophageal echocardiography evidenced Patent Foramen Ovale (PFO) with discrete basal left-right shunt. After injection of agitated saline serum associated with cough/Valsalva maneuver, significant passage of blisters to the left atrium was seen through the oval fossa (Figures 1D to 1F). Acute myocardial infarction (AMI) was assumed to derive from paradoxical embolism, with suspension of oral contraception. PFO closure was performed. The thrombophilia study revealed homozygosity of the Methylenetetrahydrofolate Reductase Gene (MTHFR).

In the absence of atherosclerotic disease, AMI in a young patient with no cardiovascular risk factors should alert to the possibility of embolic etiology. Paradoxical embolism manifested as AMI is rare and requires a high level of clinical suspicion. Treatment is still a matter of debate, but PFO closure should be considered to avoid recurrence of events.

Keywords

Embolism, Paradoxical; Foramen Ovale, Patent; Myocardial Infarction.

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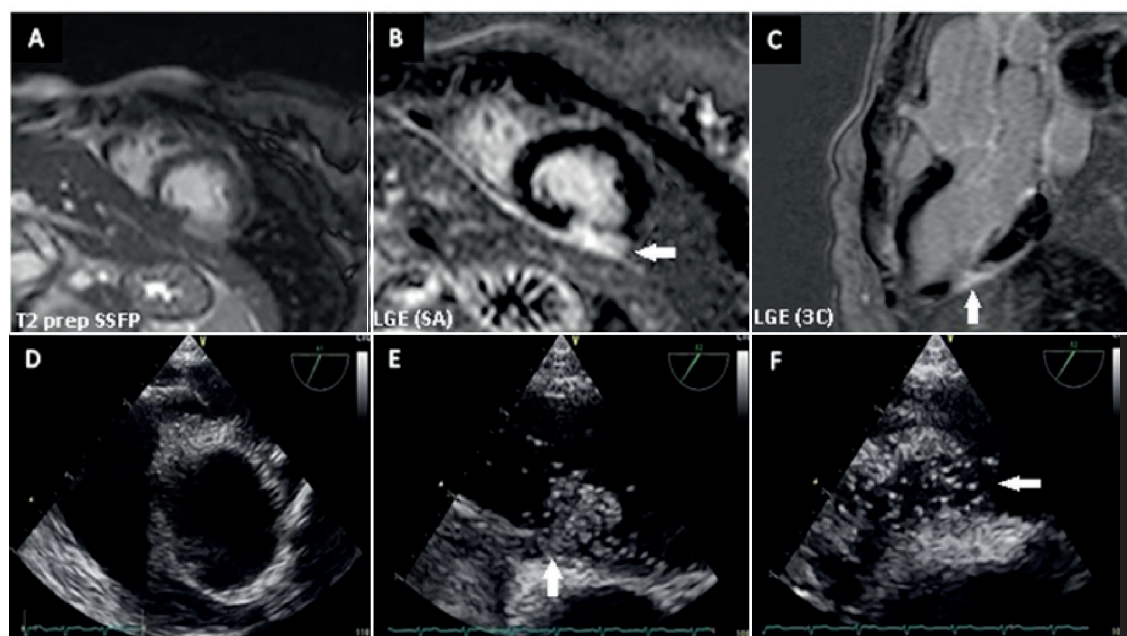


Figure 1 – (A-C) A small area of transmural enhancement on the inferolateral wall, in the transition between a middle and an apical third, an area with evidence of hypersignal in the T2-weighted sequences (in this case, a T2 prep SSFP). (D-F) TEE with stretched patent foramen ovale.