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Myocardial bridging causing infarction and ischaemia

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CARDIOVASCULAR FLASHLIGHT

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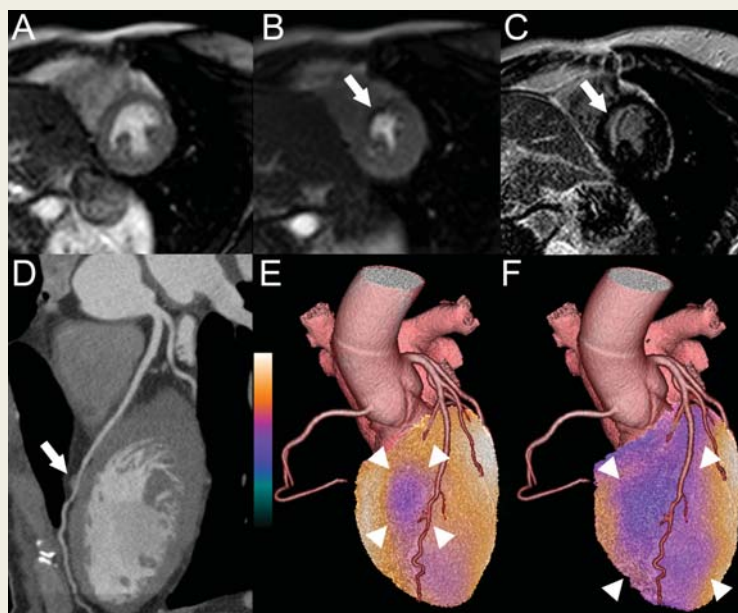
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A 40-year-old woman with a long history of atypical chest pain and no cardiac risk factors was referred for cardiac work-up. Cardiac stress testing on a treadmill ergometer revealed T-wave inversion in leads V1–V3 and an intermittent left bundle branch block. The patient was subsequently referred to cardiac magnetic resonance imaging (MRI), which revealed normal myocardial perfusion at rest (Panel A). At maximum dobutamin stress (i.e. 85% of age-predicted maximum heart rate), impaired left ventricular contractility and delayed perfusion were observed in the anteroseptal myocardium (Panel B), indicating myocardial ischaemia. Delayed imaging revealed late enhancement in the subendocardial anteroseptal myocardium (arrow in Panel C), indicating a non-transmural myocardial scar. Invasive coronary angiography showed normal coronary arteries without systolic compression (images not shown); however, computed tomography coronary angiography (CTCA) revealed a myocardial bridging in the middle segment of the left anterior descending artery (arrow in Panel D). Finally, hybrid CTCA/^{99m}Tc-Tetrafosmin single-photon emission computed tomography images were acquired using a 1-day dobutamin-stress/rest protocol, which confirmed MRI results by displaying a partially reversible perfusion defect (ischaemia) in the anteroseptal myocardium (demonstrated by the arrowheads in Panel E at rest, Panel F at dobutamin stress).



This case illustrates a haemodynamic relevant myocardial bridging, causing a non-transmural myocardial infarction and a stress-induced myocardial ischaemia in a young female patient. The patient was subsequently treated with calcium-channel blockers and reported reduced chest pain in the clinical follow-up.

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