Ventricular ectopy after exercise and occult ischaemia in a patient with multiple risk factors for ischaemic heart disease and defective anginal warning system

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DESCRIPTION

In May 2012, a 73-year-old man presented with effort dyspnoea and chest discomfort, negative exercise test for ST depression and ventricular ectopy after exercise. He had a history of Sjögren's syndrome, diabetes, dyslipidemia, hypertension, chronic obstructive pulmonary disease and was under methotrexate treatment for rheumatoid arthritis. Such diseases imply a severe dysfunctional burden, tend to develop accelerated atherosclerosis, endothelial dysfunction and ischaemic heart disease (IHD).[1 2] A functional assessment was thus provided with an exercise/rest technetium-99 m tetrofosmin-gated single-photon emission cardiac tomography (G-SPECT). This test did not show perfusion defects; left ventricular function was normal (figure 1). At peak exercise, there was lack of ST-depression, but episodes of ventricular triplets were detected after exercise (figure 2). A cardiac tomography (CT) scan detected a severe stenosis in the middle portion of the left anterior descending (LAD) coronary artery (figure 3). An invasive coronary angiography revealed 90% stenosis of the LAD; therefore, a stent was implanted. Ventricular ectopy after exercise is associated with reactivation of parasympathetic activity and an increased risk of death.[3] In the presence of a subocclusive LAD stenosis, the patient's exercise SPECT results should be thus

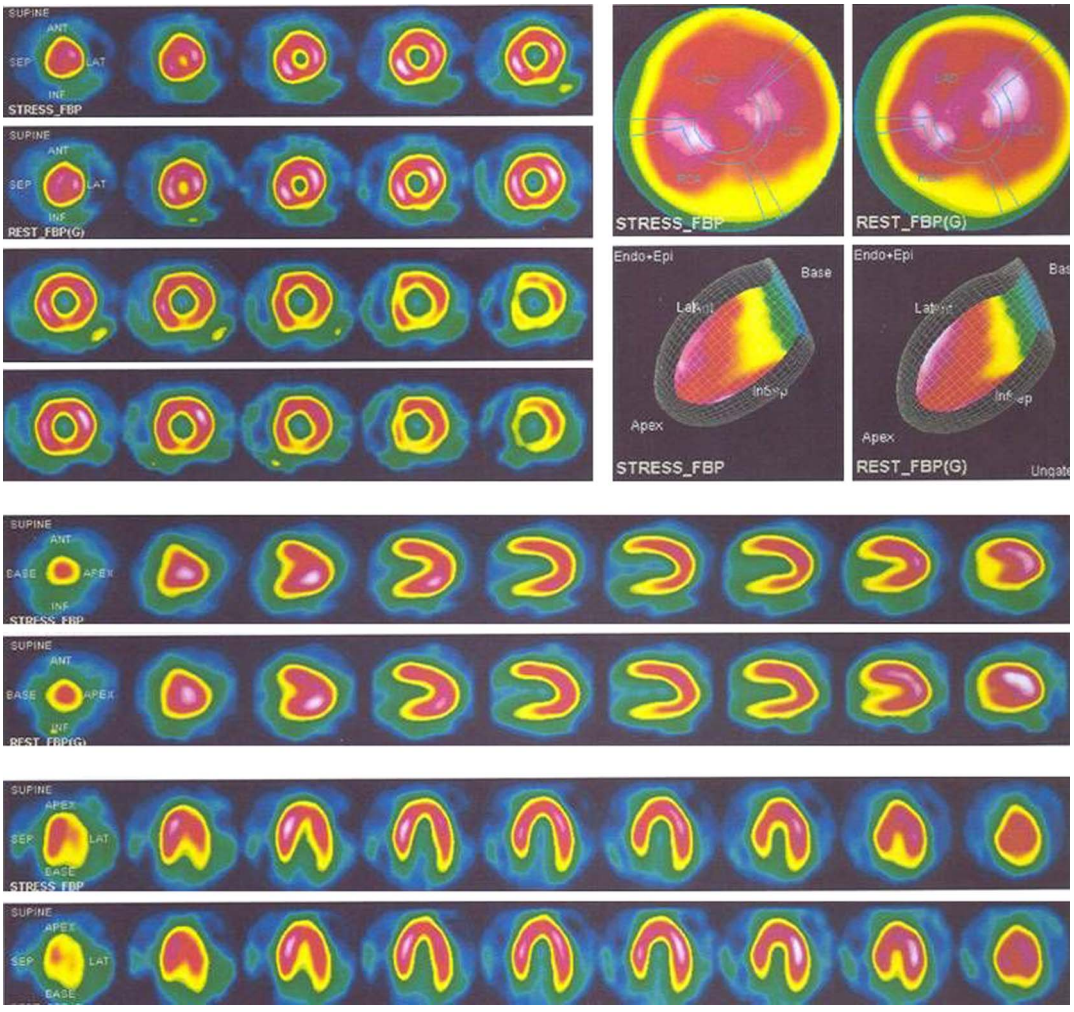

Figure 1 Exercise-gated /rest-gated single-photon emission cardiac tomography shows lack of significant perfusion defects and a normal left ventricular function.

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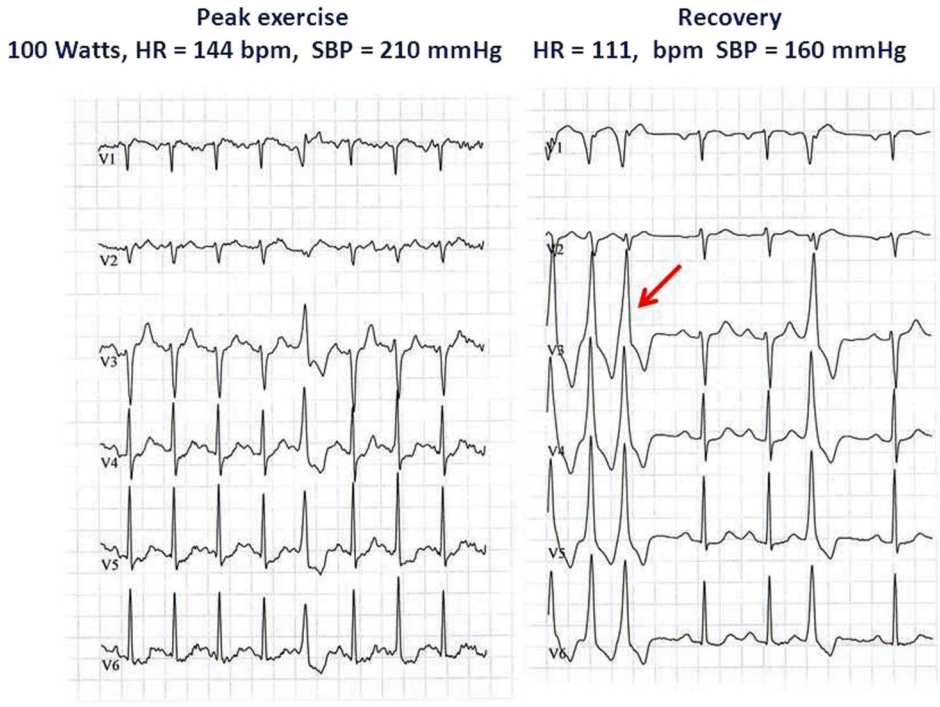

Figure 2 A run of ventricular triplets and an isolated ventricular ectopy during the exercise test recovery period. Heart rate (HR); beats per minute (bpm) and systolic blood pressure (SBP).

considered as false negative. Occult exercise-induced ischaemia and a reperfusion mechanism for postexercise ventricular ectopy cannot be ruled out. Reperfusion re-establishes slow conduction through depressed regions, permitting re-entrant pathways to form again, resulting in the re-emergence of ventricular arrhythmias.[4] Cardiac CT may provide early-stage screening for occult IHD in patients with multiple risk factors for IHD and defective anginal warning system.

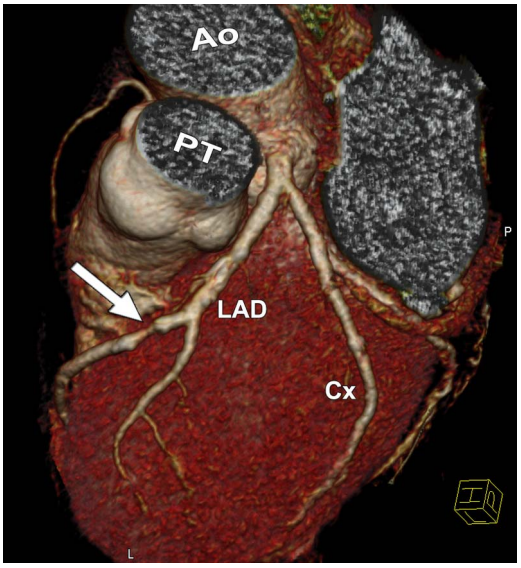

Figure 3 Volume-rendered cardiac CT images indicate a severe stenosis in the middle portion of the anterior descending (LAD) artery. Aorta(Ao), pulmonary trunk (PT) and left circumflex artery (Cx).

Learning points

- Rheumatoid arthritis and other rheumatic diseases significantly increase the risk of atherosclerosis.
- Diabetes, rheumatoid arthritis and Sjögren's syndrome may lead to uncommon presentations of ischaemic heart disease.
- If pretest probability is high, negative test results should not stop investigations.
- Ventricular arrhythmias may be a sign of cardiac hypoperfusion even in a negative test.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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