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IMAGES IN CARDIOLOGY

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Unusual acute coronary syndrome

A 68 year old man was admitted for an acute anterior ST segment elevation myocardial infarction, three hours after the pain first started. The physical examination showed no evidence of heart failure (Killip class 1). The ECG revealed an anterior ST segment elevation without conduction disturbances (panel A). Echocardiography confirmed anterior hypokinesia with compensatory hyperkinesia of the inferior wall. The patient was put on standard anti-ischaemic therapy and thrombolytic treatment was started immediately after admission. Ninety minutes later, the ECG (panel B) showed a totally different ischaemic topography, with ST segment elevation in the inferolateral leads associated with an anterior depression, regressing after an increase in intravenous nitrate treatment, with return to the previous ECG in less than five minutes. Because of the presence of clinical and electrical reperfusion signs, coronary angiography was done the day after and showed a non-critical plaque in the mid portion of the left anterior descending artery (40%). The right coronary artery was normal and there was no evidence of other lesions. The post-infarction ECG showed limited anteroseptal Q waves.

How can we explain the inferior ST elevation in this patient who was free of any coagulation problems, with dominant right coronary and normal circumflex arteries? The most probable explanation is right coronary artery spasm associated with a plaque rupture and thrombosis on the left anterior descending artery. The patient was switched from β blocker therapy to a calcium antagonist, and there were no new ischaemic episodes. This is the first reported case of a coronary vasospasm that occurred during a myocardial infarction, secondary to a different artery other than the culprit one. Indeed, occurring 36 hours after an acute coronary syndrome, it has never been described so early.

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No conflict of interest

Initial standard 12 lead ECG indicating an anterior ST segment myocardial infarction.

Ninety minutes later, the ECG shows a totally different ischaemic topography, with inferolateral ST elevation and anterior mirror.