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IMAGES IN CARDIOLOGY

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True isolated right ventricular infarction with tombstone anterior ST elevation

A 73-year-old man presented with a 2-h history of ischaemic chest pain and dyspnoea. There was no antecedent history of ischaemic heart disease; however, the patient had been previously treated for hypertension. On presentation, he was haemodynamically stable with no clinical evidence of cardiac failure. His initial electrocardiogram (panel A) showed considerable ST elevation, particularly in the anterior leads.

The patient proceeded to primary percutaneous coronary intervention. The left coronary artery was free of marked disease. The right coronary artery was occluded in the proximal third. Restoration of flow after stent deployment showed a small-calibre, non-dominant right coronary artery (panel B), with resolution of the ST segment elevation. The patient developed transient hypotension, which improved with intravenous fluids, consistent with right ventricular infarction. Echocardiography showed normal biventricular function, reflecting the ability of the right ventricle to tolerate ischaemia.

Non-dominant right coronary artery occlusion may produce isolated right ventricular infarction; however, when associated with anterior ST segment elevation, it is usually seen in the context of concomitant inferior left ventricular dysfunction.

Dramatic anterior ischaemic ST segment changes complicating non-dominant right coronary artery disease is unusual, and, when seen, is usually associated with right ventricular and inferior left ventricular dysfunction.

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