A 57-year-old male with no significant past medical history called the emergency services with a 4-h history of sudden-onset central chest pain associated with nausea, vomiting, sweating and an episode of collapse. The on-site electrocardiogram (ECG) demonstrated ST-segment elevation in the anterior, inferior and lateral leads (Figure 1) and he was transferred urgently to the regional percutaneous coronary intervention (PCI) centre.

On arrival in the catheterization laboratory, he was in cardiogenic shock with a blood pressure of 60/40, sinus tachycardia of 110 bpm, poor peripheral perfusion and bilateral pulmonary crepitations. 

Angiography via a right radial approach revealed a proximal occlusion of the left anterior descending (LAD) and sub-total occlusion of the first obtuse marginal (OM) branch of the circumflex artery with visible thrombus (Figure 2), and also a sub-total proximal occlusion of a co-dominant right coronary artery (RCA) (Figure 3).

Flow was restored in the LAD following the aspiration of white thrombus. This was followed by a ventricular fibrillation arrest that was promptly treated with a 150 J biphasic DC shock. Reinjection of the LAD now revealed a heavily diseased vessel throughout its length and, following balloon pre-dilatation, four drug eluting stents were deployed without complication. The OM and RCA lesions were pre-dilated and stented with single bare metal and drug-eluting stents, respectively, with resolution of the ECG changes (Figure 4). An intra-aortic balloon pump was inserted via the right femoral artery and intravenous dobutamine and tirofiban infusions were commenced. Troponin I was raised at >20 ng/ml and echocardiography demonstrated severe global left ventricular systolic dysfunction with normal valvular function. Four days later, the intra-aortic balloon pump and dobutamine were successfully weaned. He was established on captopril and eplerenone and by day 6 post-myocardial infarction he was clinically stable.
euvolaemic and bisoprolol was introduced without complication alongside aspirin, clopidogrel and simvastatin. He refused an implantable cardioverter-defibrillator but continues to do well 6 months later with no symptoms or signs of heart failure or recurrent ischaemia.

The clinical presentation of ST-elevation myocardial infarction due to culprit lesions in multiple arteries is relatively rare.\(^1\) As far as we are aware, this is the first reported case of global ST-segment elevation due to culprit lesions in three major epicardial vessels that were all successfully treated with primary PCI.

Conflict of interest: None declared.

Reference