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De Winter's Pattern: A STEMI Hiding in Plain Sight

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Dear Sir/Madam,

Recent evidence has cast doubt over the benefit of emergency coronary angiography in patients with resuscitated out of hospital cardiac arrest, without ST segment elevation[1]. We present the case of a man who's post resuscitation ECG did not display classical ST segment elevation but who nonetheless required emergent coronary revascularization which, in all likelihood, was lifesaving.

A 58-year-old man was found unresponsive outside the Emergency Department triage. On assessment, he was confirmed to be in cardiac arrest and resuscitation was commenced as per the ALS protocol. On the first rhythm check, he was found to be in Ventricular Fibrillation (VF). Return of spontaneous circulation (ROSC) was achieved after two rounds of CPR and one 200J shock. As part of the post resuscitation care, a twelve lead ECG was obtained.

This demonstrated upsloping ST-segment depression with prominent T-waves in V3 and subtle ST-segment elevation in aVR. This phenomenon is commonly referred to as a de Winter's Pattern, indicative of an acute occlusion of the Left Anterior Descending (LAD) artery[2].

The patient was loaded with dual antiplatelets and received a bolus of intravenous Heparin before being transferred urgently to a tertiary centre for emergent revascularisation. His coronary angiogram revealed a complete occlusion of the proximal LAD artery which was revascularized and stented.

The patient's procedure was complicated by the development of acute pulmonary oedema and cardiogenic shock, which required an intra-aortic balloon pump (IABP) to be inserted intra-procedurally and a short course of high-flow oxygen and intravenous diuretics thereafter. Despite the above complications, the patient recovered well and was discharged seven days later.

First described by De Winter et al in 2008, a de Winter's pattern on an ECG is characterised by: Upsloping ST-segment depression with tall, prominent, symmetrical T-waves in the precordial leads.

It may or may not also have subtle ST-segment elevation in aVR. The pattern is caused by an acute occlusion to the LAD artery and is typically regarded as a "STEMI equivalent" but often does not present with classical ST-segment elevation. It is thought to occur in approximately two percent of acute LAD artery occlusions[2].

The De Winter's pattern is commonly under-recognised by clinicians and this case highlights the importance of its identification[2]. Given that it represents an acute occlusion of the LAD artery, its presence will typically change one's management very significantly as emergent revascularisation will often be indicated. This will typically involve either primary Percutaneous Coronary Intervention (PCI) or thrombolysis. Bearing in mind the considerable morbidity and mortality associated with acute LAD artery occlusions and the importance of correctly managing these presentations in a timely fashion, recognition of this unusual ECG finding can be of the upmost importance.

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