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Case Report

Wellens Syndrome: an ominous ECG feature that should not be missed – 2 case reports

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Introduction

Wellens syndrome is a pattern of deeply inverted or biphasic T waves in leads V2-V3, which is highly specific for critical stenosis of the left anterior descending artery (LAD)[1]. Patients may be pain free by the time the ECG is taken and have normal or minimally elevated cardiac enzymes. Recognition of this ECG abnormality is of paramount importance as it often progresses to a devastating anterior wall myocardial infarction. In this context, medical management alone is inadequate to stop the natural process of progression to an anterior myocardial infarction which can occur rapidly, with a mean time of 8.5 days from the onset of Wellens syndrome[2]. Ordering a stress test inappropriately in these patients may provoke a large anterior wall myocardial infarction or cardiac arrest[3].

Here we describe two patients who complained of intermittent ischaemic type chest pain which was not present at the time of ECG recording and demonstrated type A Wellens syndrome. They underwent coronary angiography which revealed stenosis of the LAD. One patient underwent percutaneous coronary intervention (PCI) with successful reperfusion. Coronary artery bypass grafting (CABG) was performed for the other patient. The prompt recognition and timely management of these patients averted the high possibility of a full blown myocardial infarction.

Case report

Patient A, was a 58 year old male who complained of central tightening chest pain radiating to the neck with diaphoresis causing moderate discomfort. The pain was intermittent, each episode lasting more than 15 minutes with increasing frequency over the preceding two days. On examination he was haemodynamically stable and was started on medical management. Although he was pain freeat the time of ECG recording, it demonstrated Wellens syndrome which alerted the cardiology team of the necessity for prompt intervention(figure 1). His troponin I value was 0.107 ng/ml (normal range).He was treated with dual antiplatelet therapy, statins and enoxaparin.

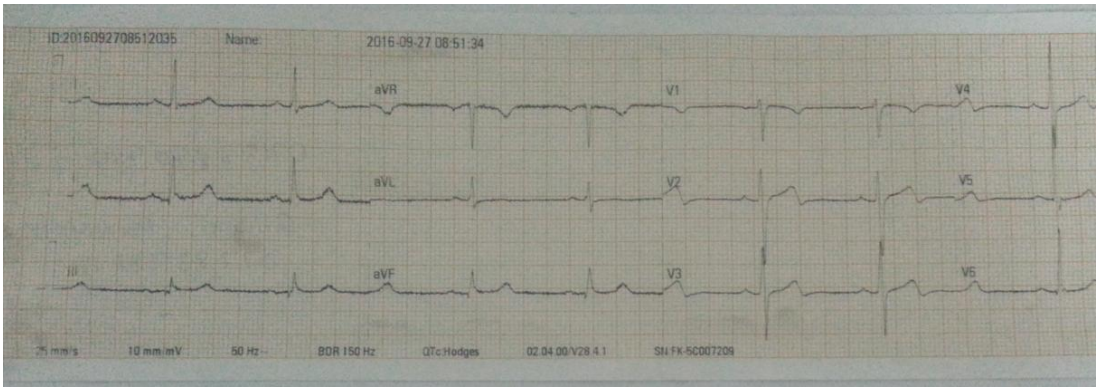

Figure 1

The coronary angiogram revealed a normal left main stem with proximal 99% stenosis in the left anterior descending artery with TIMI I distal flow and proximal to mid vessel long segment disease of right coronary artery(figure2).

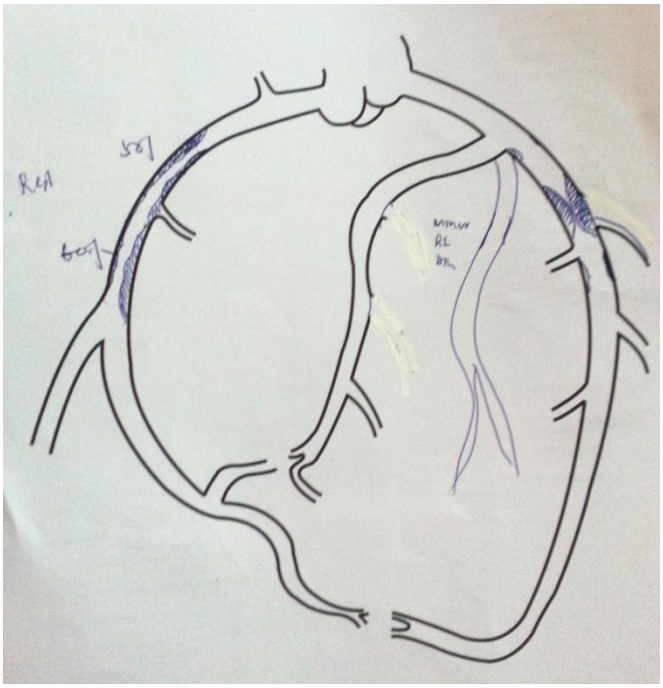

Figure 2

He underwent primary PTCA and stenting of the proximal LAD lesion with excellent post procedure angiographic results with TIMI III flow achieved at distal LAD and its branches.

Patient B was a 60 year old male who complained of episodic central constricting chest pain at rest with diaphoresis with increasing frequency over one week. He was haemodynamically stable on admission. His initial ECG too showed Wellens syndrome type A (figure 3).His troponin value was elevated at 1.75 ng/ml. He was treated with enoxaparin, dual antiplatelet therapy, statins, ACE Inhibitor, beta blocker and anti anginals.

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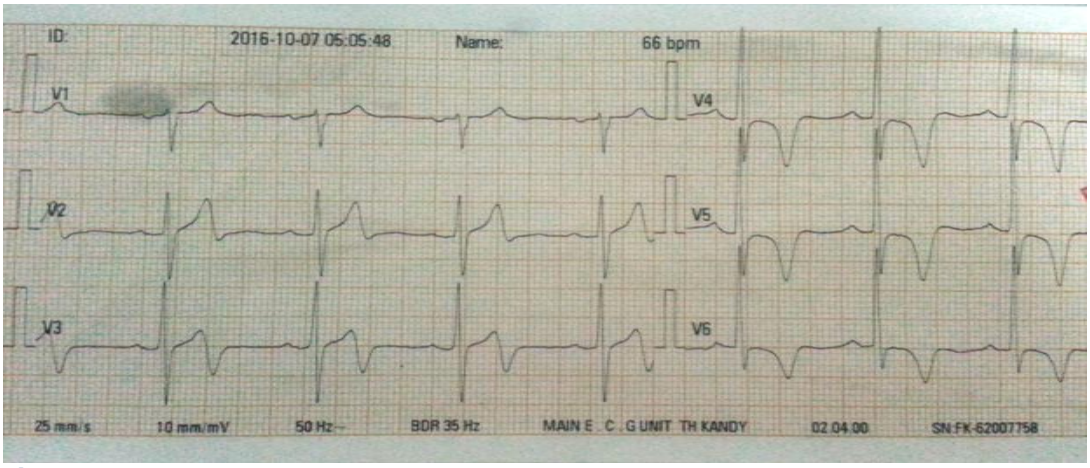

Figure 3

He underwent coronary angiography which revealed proximal 50 – 60% stenosis of proximal LAD and 99% stenosis at mid LAD. Distal vessel of LAD had TIMI 1 flow. Diagonal branch 1 had 90% ostial stenosis. Diagonal branch 2 had 60% ostial stenosis. Obtuse marginal 1 artery had 80% ostial stenosis. Right coronary artery had proximal 98% stenosis with bridging collaterals. Distal vessel had TIMI I flow (figure 4).

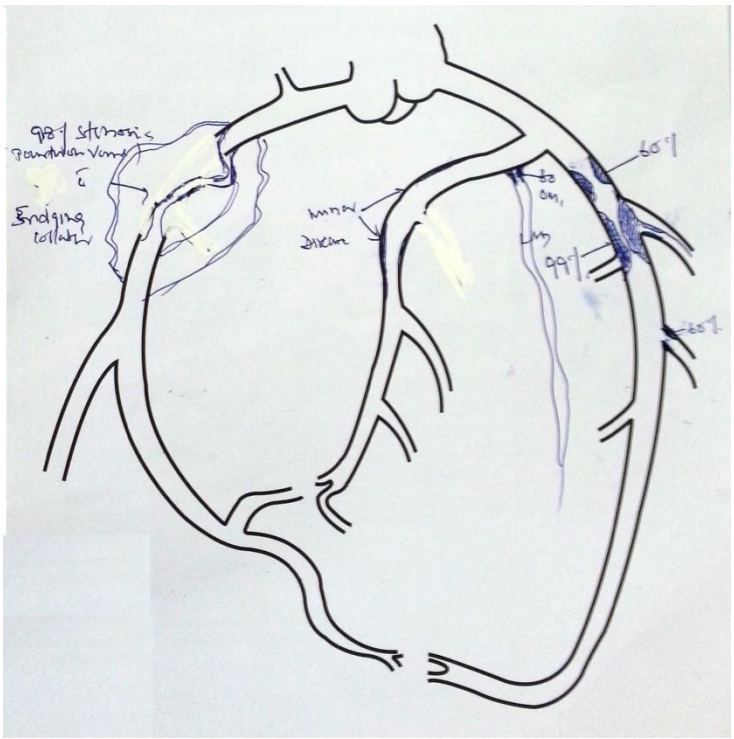

Figure 4

Patient B who had diffuse triple vessel disease with LAD stenosis was recommended urgent surgical revascularization. Due to the limited facilities available, there was a delay in arranging CABG procedure. Therefore, his medical management was optimized while awaiting cardiac surgery and he eventually underwent successful surgical intervention.

Discussion

Diagnostic criteria for Wellens syndrome are deeply-inverted or biphasic T waves in V2-3; isoelectric or minimally-elevated ST segment (< 1mm) with no precordial Q waves; preserved precordial R wave progression; recent history of angina; ECG pattern present in pain-free state; Normal or slightly elevated serum cardiac markers. The two patients described above fulfilled these criteria[4]. Two patterns of T-wave abnormality in Wellens syndrome has been described[5].

Type A = Biphasic, with initial positivity and terminal negativity

Type B = Deeply and symmetrically inverted

The characteristic patterns of Wellens syndrome classically presents only during chest pain–free periods[6]. Noticing this pattern as a sign of LAD disease is crucial[7]. It is of utmost importance to promote widespread awareness of Wellens syndrome among primary and secondary care doctors to recognize this pattern early and treat appropriately, to prevent progression to acute anterior myocardial infarction.

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