

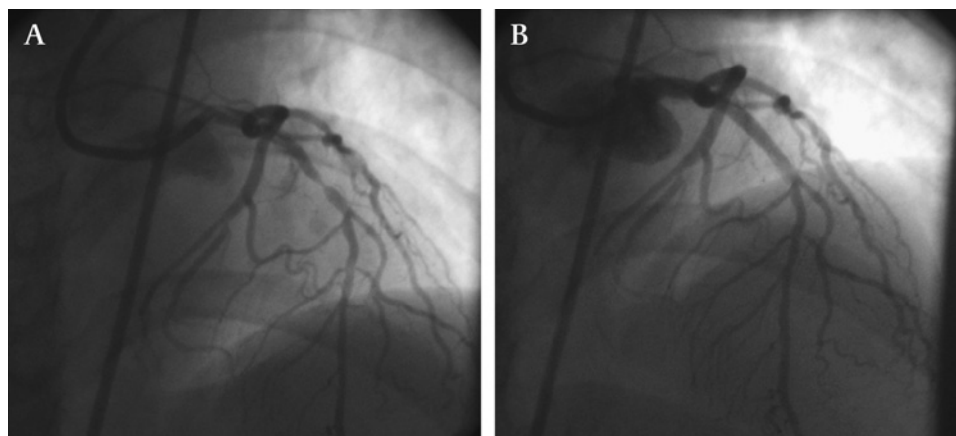
## The effect of revascularisation on the Wellens electrocardiogram

A 45-year-old man presented with new onset, intermittent, typical angina at rest of 6 h duration. His ECG (figure 1A) revealed normal 'R' wave progression, no significant ST segment elevation with biphasic 'T' waves in leads V2, V3 and V4 suggestive of Type B or an uncommon form of Wellens syndrome.<sup>1 2</sup> The patient's coronary angiogram demonstrated critical proximal left anterior descending artery stenosis

(figure 2A) and he underwent immediate, successful angioplasty and stenting of the left anterior descending artery (figure 2B). The ECG done 5 min after stenting (figure 1B) showed complete normalisation of the 'T' waves in precordial leads. The effect of revascularisation on the Wellens ECG has not been described previously. Delayed repolarisation of the epicardium during ischaemia reverses the direction of progression of ventricular repolarisation leading to reversal of the 'T' wave vector, resulting in biphasic 'T' waves in mid-precordial leads. This demonstrates that the ECG can be used as a reliable marker of successful revascularisation in Wellens syndrome and reappearance of biphasic 'T' waves denotes probable restenosis.



**Figure 1** (A) ECG demonstrating biphasic 'T' waves in V2–V4, with no significant ST elevation suggestive of Type B Wellens syndrome. (B) ECG after 5 min of revascularisation showing disappearance of biphasic 'T' waves and normalisation of repolarisation.



**Figure 2** (A) Coronary angiogram revealing critical stenosis of proximal left anterior descending artery. (B) Coronary angiogram showing normal flow in the left anterior descending artery after stenting.

**Arunkumar Panneerselvam, Rajiv Ananthakrishna, Manjunath C Nanjappa**

**Correspondence to** Dr Arunkumar Panneerselvam; drparun@yahoo.com

**Competing interests** None.

**Patient consent** Obtained.

**Ethics approval** This study was conducted with the approval of the SJICSR ethics committee.

**Provenance and peer review** Not commissioned; externally peer reviewed.

*Heart Asia* 2011;53–54. doi:10.1136/ha.2010.002303

## REFERENCES

1. **De Zwaan C**, Bär FM, Wellens HJJ. Characteristic electrocardiographic pattern indicating a critical stenosis high in the left anterior descending coronary artery in patients admitted because of impending myocardial infarction. *Am Heart J* 1982;**103**:730–6.
2. **Rhinehardt J**, Brady WJ, Perron AD, *et al*. Electrocardiographic manifestations of Wellens' syndrome. *Am J Emerg Med* 2002;**20**:638–43.