

CLINICAL IMAGES

Wellens syndrome

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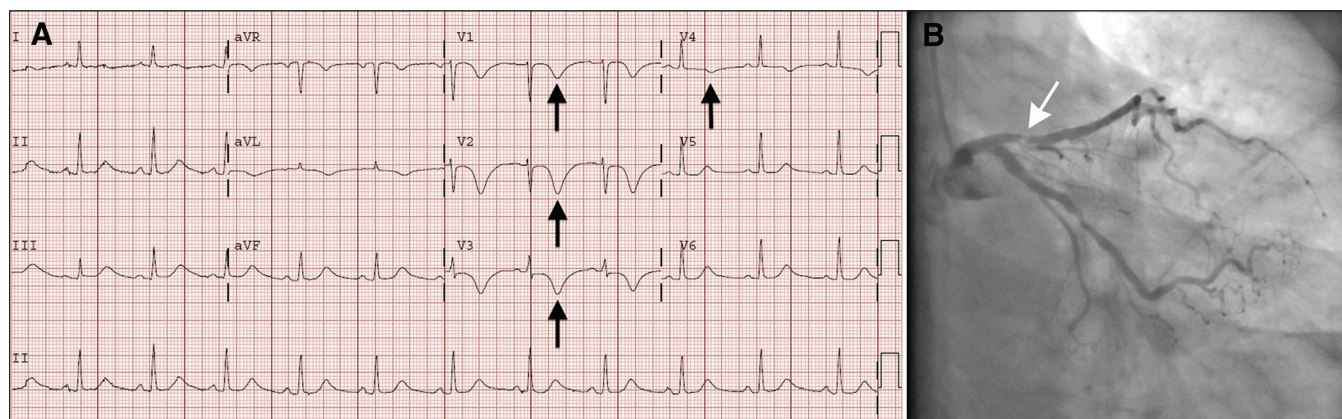
See also pages 485, 528, www.cmaj.ca/lookup/doi/10.1503/cmaj.151209 and www.cmaj.ca/lookup/doi/10.1503/cmaj.150816

Figure 1: (A) Electrocardiogram showing the Wellens pattern (black arrows) in the precordial leads of a 70-year-old woman who presented to the emergency department with intermittent pain in the left arm over the preceding 24 hours. (B) Coronary angiogram showing 90% stenosis of the proximal left anterior descending artery (white arrow).

A 70-year-old woman presented with a 24-hour history of intermittent left arm pain. She had hypertension and a family history of premature coronary artery disease. Electrocardiography (ECG; Figure 1A) showed deep symmetric T-wave inversions in leads V1 to V4 and elevated troponin I level (0.82 µg/L). She was treated according to contemporary guidelines for non-ST segment elevation myocardial infarction. The risk of death or recurrent ischemic event was 19.9% (TIMI [Thrombolysis in Myocardial Infarction]¹ score of 4). Urgent coronary angiography showed 90% stenosis of the proximal left anterior descending coronary artery (Figure 1B), which was successfully revascularized with a single drug-eluting stent. The history and initial ECG and angiographic findings were in keeping with Wellens syndrome. Transthoracic echocardiography 24 hours later showed a normal left ventricle ejection fraction. Dual antiplatelet therapy for one year was prescribed, along with cardiac rehabilitation.

In the first report of Wellens syndrome, de Zwaan and colleagues² described a subgroup of patients with unstable angina who were at high risk of extensive acute myocardial infarction of the anterior wall. These patients had distinctive ECG findings, including deep symmetric T-wave inversion or biphasic T waves in the anterior precordial

leads, ST-segment changes (elevation or depression), absence of Q waves and normal R-wave progression. The characteristic T-wave changes have 69% sensitivity, 89% specificity and 86% positive predictive value for clinically significant disease of the left anterior descending artery evident on coronary angiography.³ Although the pathophysiology is unknown, edema from the ischemic myocardial cell injury may result in the characteristic T-wave changes.⁴ These ECG findings are commonly seen in patients who have had recent ischemic chest pain but who may be pain-free at the time of presentation. Recognition of this ominous pattern is crucial for early diagnosis and intervention.⁵

References

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Competing interests:
None declared.

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