



BMH Med. J. 2018;5(4):104-107 **Case Report**

Case of Wellens' Syndrome - A Cautionary Tale

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Abstract

Wellens' syndrome is characterised by distinctive ECG pattern with T wave abnormalities in V2 and V3 leads. It is considered an ominous ECG sign as it is associated with critical stenosis of left anterior descending artery in an usually asymptomatic patient. Awareness of this condition is extremely important to facilitate timely intervention that keeps complications away. We report a case of young male who presented at out-patient department with history of ischemic symptoms and his ECG showed Wellens' pattern. Coronary angiogram revealed near total-occlusion of left anterior descending artery for which percutaneous intervention was done and patient recovered well.

Key words: Wellens' syndrome, Critical stenosis, Left anterior descending artery

Introduction

Angina pectoris can present with a variety of ECG changes like ST segment depression, negative T waves, peaked T waves and T wave pseudonormalisation [1]. Of these, Wellens' pattern characterised by deep symmetrical T wave inversion or biphasic T waves in V2 and V3 is the most sinister, as it is seen mostly in symptom-free period that might delude a clinician resulting in delayed percutaneous intervention (PCI). In a prospective study of 1260 patients, 180 showed Wellens' pattern out of which 33 had complete Left Anterior Descending (LAD) coronary artery occlusion. Only 21 of them had mildly elevated cardiac biomarkers [2]. Given these reasons Wellens' pattern is considered "equivalent" to ST-Elevation Myocardial Infarction (STEMI). With this case we emphasize the importance of early recognition and in time management of Wellens' syndrome to curtail acute myocardial infarction and sudden cardiac death.

Case report

A young male with no prior co-morbidities presented at out-patient department with three days history of central chest pain radiating to both upper limbs that resolved spontaneously. Examination showed a conscious patient with blood pressure of 130/80 mm of Hg, pulse rate of 52 per minute and normal systemic examination findings. Lipid profile showed elevated triglyceride and LDL cholesterol levels suggesting dyslipidemia. ECG showed sinus rhythm at a rate of 52 per minute and biphasic T wave in leads V2 and V3 with T wave inversion in leads V4, V5 suggesting Wellens'

pattern (**Figure 1**). Echocardiogram showed no regional wall motion abnormality and normal left ventricular systolic function with an ejection fraction of 60%. Serum troponin I level was less than 0.01 ng/mL. He was taken for coronary angiogram which revealed 95% stenosis of mid LAD to which angioplasty was done and Thrombolysis In Myocardial Infarction (TIMI) grade 3 flow was achieved (**Figures 2 and 3**). He was managed with aspirin, clopidogrel and atorvastatin subsequently and got discharged on day 4.

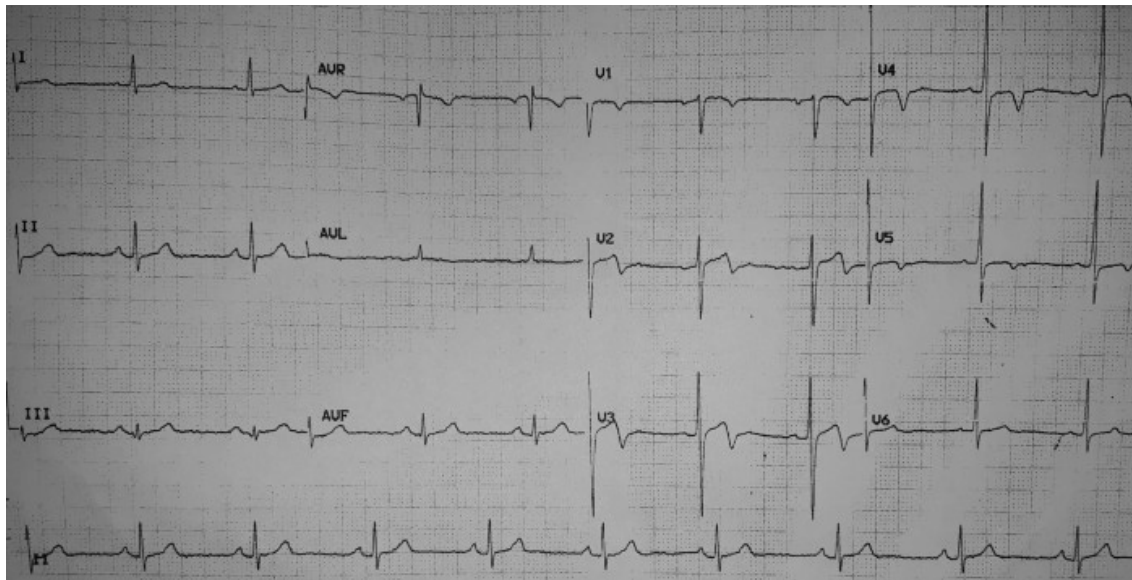


Figure 1: Biphasic T waves in V2 and V3 leads suggesting type A Wellens' pattern.



Figure 2: Coronary angiogram showing near total occlusion of mid LAD.



Figure 3: Post PCI coronary angiogram showing TIMI grade 3 flow through LAD.

Discussion

The ECG pattern described was first observed by Wellens' group in 1982. So it was named Wellens' pattern subsequently. It was identified to be associated with critical stenosis of LAD. Hence Wellens' pattern is also called LAD coronary artery T-wave inversion pattern. It is classified into two types - Type A, which constitutes 25% of Wellens' syndrome is characterized by biphasic T-waves in V2–V3; type B which constitutes remaining 75% is characterized by deep, symmetric T-wave inversions in V2–V3 [2]. Our patient had type A pattern. Most of the patients with Wellens' syndrome are asymptomatic at the time of presentation with unremarkable physical examination findings like our patient.

The following are the criteria for diagnosing Wellens' syndrome [3]:

1. Type A - Biphasic T-waves in V2 and V3
2. Type B - Deep and symmetrical T-wave inversions in V2 and V3
3. Absence of Q-waves and ST segment elevation, with normal R-wave progression on precordial leads
4. History of angina

Though Wellens' syndrome is associated with critical occlusion of LAD, there exists an entity with similar ECG pattern called pseudo-Wellens' syndrome associated with cocaine consumption which occurs due to coronary vasospasm [4]. It is crucial to differentiate these two because beta blockers used in atherosclerotic acute coronary syndrome are contraindicated in cocaine-induced coronary vasospasm [5]. Other differential diagnosis for Wellens' pattern includes left ventricular hypertrophy with strain, takotsubo cardiomyopathy, persistent juvenile T wave and ECG changes associated with cerebral hemorrhage. Depending on clinical setting and considering risk factors for atherosclerotic vascular diseases, Wellens' syndrome can be distinguished from other conditions. Definitive management of Wellens' syndrome is immediate cardiac catheterisation and angioplasty.

Conclusion

Wellens' pattern is usually seen in asymptomatic phase of acute coronary syndrome and this should not mislead a clinician towards conservative management. It should be considered a warning sign of impending acute anterior wall myocardial infarction and sudden cardiac death. Wellens' syndrome, though associated with near-total or total occlusion of LAD, it carries a good prognosis with timely PCI.

References

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