

Wellen syndrome: A Case Report

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Abstract

Wellens' syndrome is characterized by T wave changes in electrocardiogram (EKG) during a period without pain and with on and off chest pain in the patient. This syndrome represents a pre-infarction stage of left anterior descending (LAD) artery, which can lead to extensive anterior myocardial infarctions (MIs) and life threatening complications without coronary angioplasty. Therefore, it is critical for a physician to recognize Wellens' syndrome EKG features in order to take appropriate measures for managing the patient to reduce mortality and morbidity.

Keywords: wellen syndrome; electrocardiogram; left anterior descending

Introduction:

75% of patients with Wellens' syndrome develop acute anterior wall myocardial infarctions (MIs) within a week unless managed urgently [1–3]. Wellens' syndrome is diagnosed based on the classic T-wave findings seen on an EKG taken especially when the patient is having no pain. They represent reperfusion of the myocardium [4]. These changes are easily missed, and therefore it is critical for the physicians to be aware of them. It is highly unlikely that any physician would miss the biphasic T-waves that occur in this syndrome when the patient is pain-free, but the significance of these findings must also be recognized.

Case presentation: A 52-year-old male with 35 pack-year smoking history arrived at the emergency with intermittent substernal chest pain for 1 week. The character of pain was pressure like with poor localization. It occurred with exertion and relieved with rest. It did not radiate anywhere. Patient denied any changes in severity of pain with respiration or change in position. His vital signs were within normal limits. Review of system was unremarkable. Physical exam was normal. Cardiac enzymes were within normal limits. Electrocardiogram (EKG) was performed and demonstrated loss of R wave in V1 with ST elevation, V2 biphasic T wave, V3 symmetric T wave inversion, V4-V6 asymmetric T wave inversion. Prolong PR interval as shown in **figure 1**

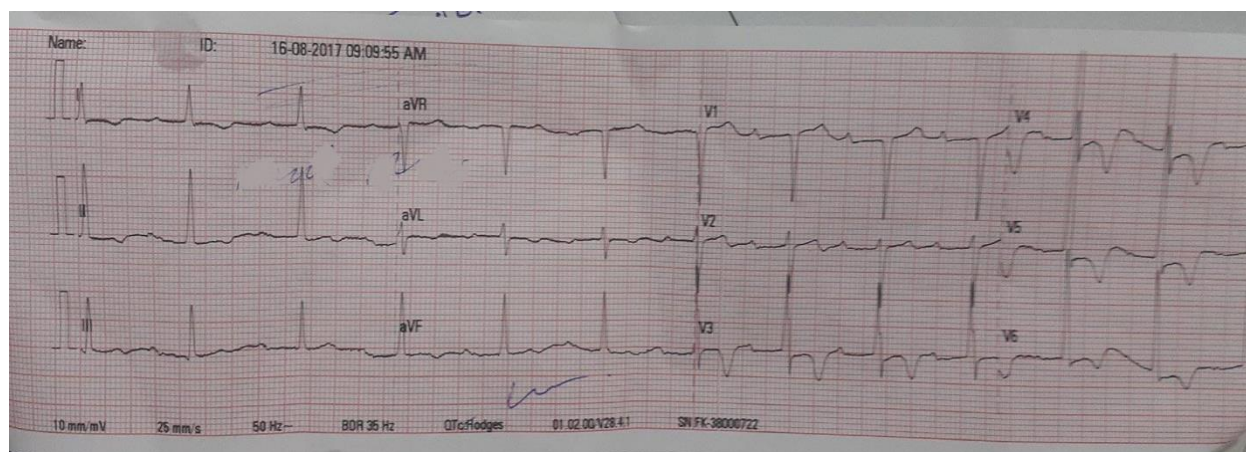


Figure 1

Discussion:

Wellens' Syndrome is a pattern of electrocardiographic T-wave changes associated with narrowing of proximal left anterior descending (LAD) artery. Wellens' Syndrome is diagnosed by angina, little or no cardiac

enzyme elevation, little or no ST-segment elevation, no loss of precordial R waves, no pathologic precordial Q waves and typical T-wave changes. Urgent cardiac catheterization is critical to prevent myocardial necrosis. Cardiac enzymes will be normal or slightly raised [5]. In this patient

cardiac enzymes were normal. Wellens' sign was first reported in 1982 by De Zwaan and Wellens, it is characteristic T-wave changes in a subset of patients with stenosis in the proximal LAD artery [6]. They observed that this sign was found in about 18% of the 145 patients in their original study published in 1982 [7]. In Wellens' study, the patients admitted with this syndrome had greater than 50% stenosis of the proximal LAD and more than 50% had greater than 85% stenosis [6]. 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 [8].

Conclusion:

Wellen's syndrome presents with characteristic EKG findings that all physicians need to recognize due to the high percentage of patients who will develop anterior wall myocardial infarctions if intervention is not undertaken in time. Patients with Wellen's syndrome should undergo urgent cardiac catheterization to reduce morbidity and mortality.

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