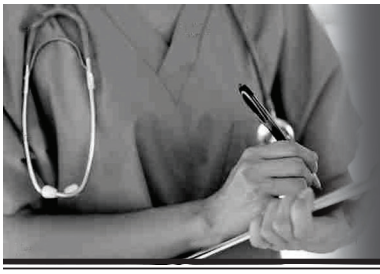

Case Report

Wellens' Syndrome: A Case Report

Joseph Toscano, MD

Introduction

Patients uncommonly present to urgent care clinics with ischemic cardiac symptoms, but these situations do occur and represent a high risk to both clinician and patient. All clinicians should be aware of any ECG findings which may predict potential cardiac risk. Wellens' sign is one ECG pattern which, when present, is highly specific for significant coronary heart disease, even in patients whose symptoms have resolved by the time the ECG is performed. This article will present a specific patient case and review the pertinent ECG findings of Wellens' syndrome.

Case Scenario

SS is a fifty-two-year-old white male who had had intermittent chest discomfort for two days. The discomfort occurs only with walking and resolved with rest. At his wife's urging, he began to take an aspirin daily, but, when the symptoms persisted, he came to the urgent care clinic. He describes the discomfort as "pressure" located in the mid-chest without radiation. It has been mild to moderate in intensity. There is mild associated dyspnea, but no diaphoresis, nausea, or vomiting. He is currently asymptomatic.

SS's past medical history is significant for 40 pack-years of cigarette smoking, but he has had no medical problems and has no diagnosed hypertension, diabetes, or hyperlipidemia. His family history is significant for a myocardial infarction in his father when he was 60. SS has felt well lately, and his review of systems is unrevealing except for the chest discomfort.

Physical examination shows following:

Vital signs are as follows:

- T: 98.9°F
- P: 72
- R: 18
- BP: 148/88

General: Mildly overweight, alert, lucid, and in no distress.

HEENT: Normocephalic, no abnormalities.

Neck: Supple, no masses, no JVD or carotid bruits.

Chest: Nontender, lungs are clear with good air movement bilaterally.

Cardiovascular: Equal, normal pulses at the wrists, cardiac rhythm is regular.

Abdomen: Nondistended and nontender.

Extremities: Warm, nontender, no peripheral edema.

Neurological: No deficits in mental status, motor function, co-

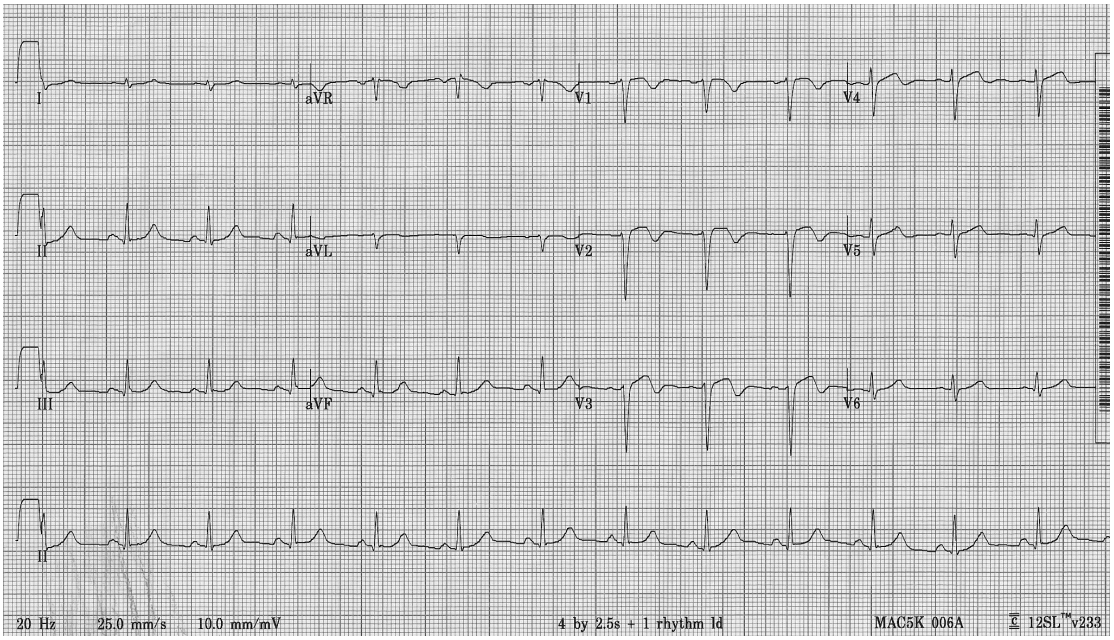

Figure 1: ECG from patient showing symmetric inverted T waves in anterior leads. The biphasic shape of the T wave inversions is also a characteristic of one variant of Wellens' syndrome.

ordination or gait. An ECG was performed in clinic (Figure 1) and shows biphasic changes. The patient reports that the only other ECG he can recall ever having was done for an insurance physical, and this is unavailable for comparison. He was given aspirin by mouth in clinic and transferred by ambulance to the emergency department, where ECG was repeated and unchanged. Initial cardiac markers were normal, and he was admitted to the telemetry unit and observed. Due to the ECG changes, the treating cardiologist opted for cardiac catheterization rather than stress testing, and the patient was found to have a 99% stenosis of his proximal left anterior descending coronary artery, which was successfully stented.

Discussion

First described in 1982,[1] Wellens' sign consists of deep, symmetric T wave inversion in the anterior ECG leads, with a less common variant being biphasic T wave inversion in these leads,[2] as is the case with the patient presented here. Approximately 90% of patients with these changes have high-grade stenosis of the proximal left anterior descending coronary artery.[3] The abnormalities are often present even when a patient is asymptomatic, and they normalize with correction of the stenosis.[2,3] Because of the large area of myocardium at risk with the causative lesion, these patients have a worse prognosis when treated medically and are often treated more aggressively by cardiologists. Frequently, stress testing is avoided out of concern for precipitating a myocardial infarction.[2,3]

SS presented with symptoms which were worrisome for coronary artery disease regardless of his ECG finding. The clinician's detection of Wellens' sign in this case led to more specific suspicion and expeditious referral, even though the patient had no rest symptoms.

Conclusion

Wellens' sign is an important ECG pattern for clinicians to recognize and may occur even in asymptomatic patients. Because of substantially increased risk of significant coronary disease and poor outcomes for these patients, immediate consultation with cardiologist is recommended.

Joseph Toscano, MD, has been practicing urgent care and emergency medicine in the San Francisco Bay area for more than 15 years. He develops and reviews continuing medical education material in urgent care and emergency medicine for a variety of publications and presents regularly at urgent care conferences. Dr. Toscano is a founding board member of both the Urgent Care College of Physicians and the Board of Certification in Urgent Care Medicine.

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