

## Euro Case Reports 2020: Unusual presentation of coronary artery obstruction at the emergency room - Ana Carolina Lima - Hospital Beneficiencia Portuguesa

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### Abstract

We define the unpredicted case of a 74-year-old man, with medical record of ischemic heart disorder and operation for aneurysm of aorta, which includes the emergency department peevish of low-back pain deprived of other indications or signs of organic failure. After a couple of hours we see a deterioration of physical conditions with pulmonary oedema, increase of vital sign, changing within the ECG pattern, and worsening of left ventricular function with liberal growth of biomarkers for myocardial necrosis. Therefore, this pain has shown the premature indication of an acute coronary syndrome (ACS). After a brief time a subsequent asystole complicates the clinical situation. After resuscitation, the patient undergoes successfully to coronary angiography and performed a percutaneous transluminal coronary angioplasty (PTCA).

**Keywords:** Acute coronary syndrome, coronary intervention, diagnostic techniques, neck pain.

**Introduction:** Acute coronary syndrome (ACS) may be a common and potentially life-threatening condition encountered in emergency departments. Despite its dreaded nature, nearly one-third of ACS presents without pain and should mislead clinicians. Additionally, Wellens' syndrome may be a pre-infarction stage of serious proximal left anterior descending (LAD) artery stenosis, which may cause extensive anterior wall myocardial infarct without timely intervention.

Typical pain in acute coronary syndrome (ACS) is pressure-like left-sided pain, possibly with radiation to the left shoulder/arm and associated dyspnea, nausea/vomiting, diaphoresis, or lightheadedness. However, ACS can present with no or atypical symptoms, which may cause delayed diagnosis and suboptimal treatment, and subsequent detrimental outcome, especially in elderly patients. Moreover, Wellens' syndrome is irregular T wave alterations in patients with assumed ACS, representing significant obstruction of the proximal left anterior descending (LAD) artery. Herein, we report the case of a 74-year-old woman who presented with isolated throat

pain and was found to possess Wellens' syndrome and ACS.

**Case Report:** A 74-year-old woman with diabetes, hypertension, dyslipidemia, and hypothyroidism presented with a 3-week history of intermittent throat pain. She denied any pain, dyspnea, lightheadedness, nausea/vomiting, or stomach/back pain. She also denied any known arteria coronaria disease. Her home medications are metformin, vitamin B12, enalapril, atorvastatin, and levothyroxine. Her vital signs were stable and physical exam results were negative, including cardiac and pulmonary exam. Of note, the patient was totally asymptomatic at the period of assessment. The initial electrocardiogram (EKG) showed T wave inversions over right precordial leads, which were new, compared to prior EKG two years ago. Early troponin was 0.9ng/ml, which went up to 1.7ng/ml six hours later. The patient was treated with aspirin, clopidogrel, atorvastatin, carvedilol, and protocol-based heparin infusion for non-ST elevation myocardial infarct (NSTEMI). The patient was admitted to the coronary care unit for close monitoring. Subsequently, a coronary angiogram showed quite 90% stenosis within the proximal left anterior descending artery (LAD), that a 2.5×12mm Xience drug-eluting stent was deployed, with good flow. The patient tolerated the procedure and was discharged with standard medical therapy. Follow-up 2 weeks later showed favorable outcome without recurrent events.

**Discussion:** ACS may be a common and potentially life-threatening condition encountered at emergency departments (ED). In spite of its dreaded nature, 33% of ACS may mislead clinicians with atypical performances, which might be nausea/vomiting (24.3%), presyncope/syncope (19.1%), dyspnea (49.3%), or diaphoresis (26.2%), within the order of dominant presenting symptoms. The atypical symptoms tend to occur more commonly among those that are older, female, diabetic (possibly due to autonomic neuropathy), hypertensive, and with prior coronary failure. They were reported in 5.7% and 12.3% of patients with unstable angina and NSTEMI, respectively. Consequently, they delay the right diagnosis and

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optimal therapy, with an increased risk of in-hospital mortality. As would be expected, due to the frailty and comorbidities, elderly populations are more likely to possess complications of ACS, especially once they present without pain.

It is also more prevalent in women than in men. The throat is that the commonest site of craniofacial pain. Other sites of pain are the mandible, mandibular joint, ears, neck, and teeth. Hiccups, a rare presenting symptom, was reported during a patient with PCI (percutaneous coronary intervention)-related STEMI.

First reported by Zwaan et al. in 1982, Wellens' syndrome may be a pre-infarction stage of serious proximal LAD artery stenosis and should cause extensive anterior wall myocardial infarct without timely intervention. T wave changes in Wellens' syndrome are related to widely scattered electrical and mechanical activities (QTc dispersion) in myocardium and severe myocardial dysfunction.

The T wave overturn has 86% positive, 69% sensitivity, and 89% specificity, analytical value for significant LAD obstruction [11]. Even within the challenging situations with pre-existing left bundle branch block (LBBB), Wellens' EKG patterns are often wont to detect acute coronary syndrome.

The differential diagnoses of T wave inversions are acute coronary syndrome (ACS), embolism, myocarditis, left ventricular hypertrophy, juvenile T wave, Wolf-Parkinson-White syndrome, and digoxin toxicity. Unlike the regular practice in patients with possible ischemic chest pains, cardiac stress testing is contraindicated in Wellens' syndrome patients because it can precipitate acute myocardial infarct. When

Wellens' sign is discovered in patients with suspected ACS, a low threshold should be maintained for prompt coronary angiography to work out treatment options. If there's significant proximal LAD occlusion, percutaneous coronary intervention (PCI) or coronary bypass surgery should be performed to stop extensive anterior myocardial infarct. When solely managed with medical therapy, 75% of Wellens' syndrome patients developed extensive anterior wall infarction within one week.

Our patient initially presented with isolated throat pain with none other associated symptoms. Her vital signs and physical exam results were normal. Given the danger factors (age, sex, diabetes, dyslipidemia, and hypertension) and concern for ACS, routine EKG was done, which showed Wellens' pattern B. Notably, she was asymptomatic when the EKG was performed. The patient was subsequently diagnosed with NSTEMI and underwent PCI. After discerning the Wellens' sign, we were ready to provide correct diagnosis and optimal management.

**Conclusion:** In conclusion, craniofacial pain are often the only presentation of ACS, of which throat pain is that the commonest symptom. It is often a diagnostic challenge for clinicians, mandating a coffee threshold of clinical suspicion for ACS. The presence of Wellens' check in the EKG is often an important hint patient with atypical presentation of ACS. Therefore, it's imperative for clinicians to spot the EKG characteristics of Wellens' syndrome and supply necessary tests and appropriate intervention. Medically treated LAD stenosis with Wellens' syndrome eventually requires coronary intervention to stop re-occlusion and extensive myocardial injury.

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