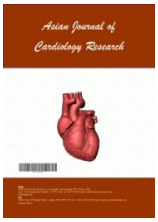

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Stemi Like in 3 Entities: Wellens Syndrome, De Winter Syndrome and Acute Coronary Syndrome with ST Elevation in AVR (About Three Cases)

Nguadi Jaouad[1*], Meryem Bennani[1], Abdelilah Benelmekki[1], Hicham Bouzelmat[1], Ali Chaib[1], Bouthayna Messmoudi[2],Achraf Zaimi[2], Iliyasse Asfalou[2], Sofia Kaddaf[3], Zakaria Lahlafi[3], Zouhair Lakhal[3], Rim Mesnaoui[4], Hind Regragui[4], Najat Mouine[4] and Aatif Benyass[5]

[1]Rythmology Department, Heart center, Mohammed V Military Hospital, Rabat, Morocco.
[2]Department of Non Invasive Cardiac Explorations, Mohammed V Military Hospital, Rabat, Morocco.
[3]Intensive Care Unit, Heart Center, Mohammed V Military Hospital, Rabat, Morocco.
[4]Clinical Cardiology, Heart Center, Mohammed V Military Hospital, Rabat, Morocco.
[5]Department of Heart Center, Mohammed V Military Hospital, Rabat, Morocco.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

In this Case Report session it is describes three cases of patients with the syndrome that are rare but very serious : the Wellens syndrome, ST elevation in aVr, and the De Winter syndrome. The equivalent syndromes of coronary syndromes with ST elevation don't present the conventional electrical aspects of ST elevation but have the same pathophysiology and a complete occlusion of a coronaryartery. We report the case of a 70 year-old man whois an active smoker since 50 years, non hypertensive and non diabetic. The second case reported A 68-year-old man, who was a smoker, with dyslipidemia treated by statins for 10 years. Third case describes a 34 year-old woman who is treated for a Takayasu desease. The patients with STEMI like are those patients who do not presentwithclassical ECG changes but have actutelyocludedcoronaryartery.

**Corresponding author: Email: jaouad7um@gmail.com;*

Keywords: Stemi like; wellens syndrome; De winter T waves; ST elevation in a VR.

1. INTRODUCTION

The equivalent syndromes of coronary syndromes with ST elevation don't present the conventional electrical aspects of ST elevation but have the same pathophysiology and a complete occlusion of a coronaryartery. Regarding their prognosis, itis important to recognizethem. In these case reports, we describe three syndromes that are rare but very serious: the Wellens syndrome, ST elevation in aVr, and the De Winter syndrome.

2. CLINICAL CASES

2.1 Case Report 1

We report the case of a 70 year-old man whois an active smoker since 50 years, non hypertensive and non diabetic .He was admitted to our hospital for the management of a silent myocardial ischaemia, with a negative troponin, and a electrocardiogram (ECG) which showed repolarization abnormalities in the T waves in the anterior leads referred to as a type B Wellens syndrome. However, the biological tests which have been done at the admission and controlled after 3 and 24 hours didn't show any enzymatic ascension. The coronary angiography showed a thrombotic occlusion of the left anterior descending coronary artery(LAD) which has been treated by angioplasty and two drug-eluting stents were placed.

2.2 Case Report 2

A 68-year-old man ,who was a smoker, with dyslipidemia treated by statins for 10 years,was admitted to the emergency department for an acute constrictive chest pain since one hour. The electrocardiogram showed an ascending depression of the ST-segment of 1 to 2 mm in the precardial leads , with symmetric , high, and positive T waves, an abrasion of the R wave in the antero-septo-apical territory , and an elevation of the ST segment in the AVR lead .These ECG changes were suggesting the de Winter syndrome, a syndrome due to an acute occlusion of the left anterior descending coronary artery despite the lackof ST-segment elevation . The urgent coronary angiography confirmed the diagnosis, showing a complete occlusion of the middle LAD which was successfully treated with percutaneous angioplasty with a placement of a drug eluting stent. The ECG in Fig. 2. shows an aspect of T winter Waves [1].

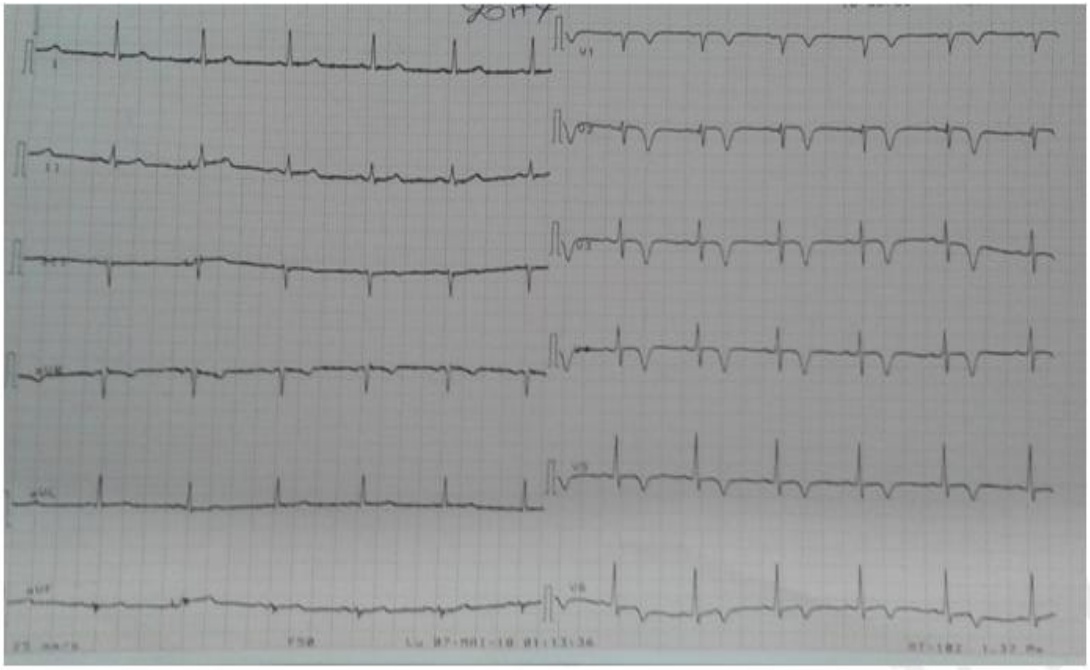

Fig. 1. ECG of patient n 1

Fig. 2. Coronarography of 2nd patient

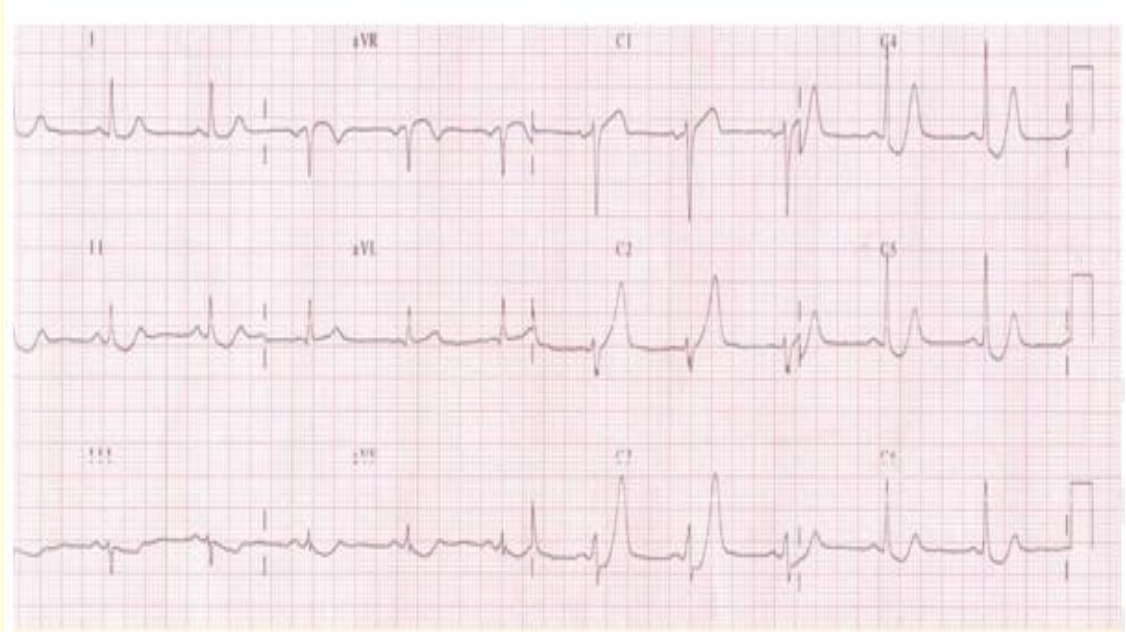

Fig. 3. ECG of T winter syndrom

Fig. 4. Coronarography of 2nd patient

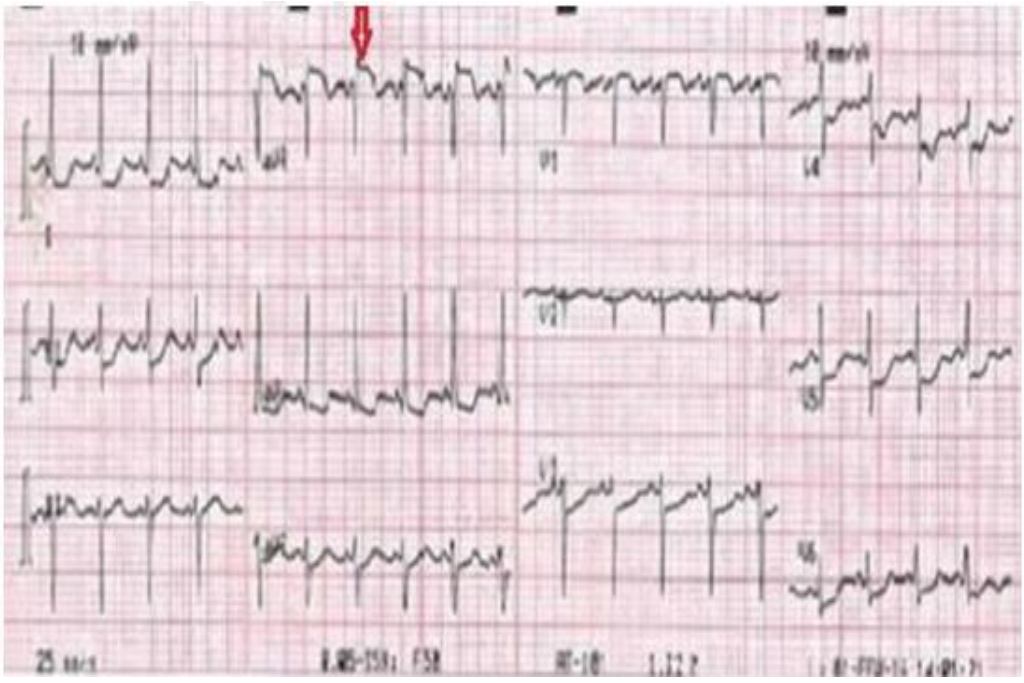

Fig. 5. ECG of the 3rd patient

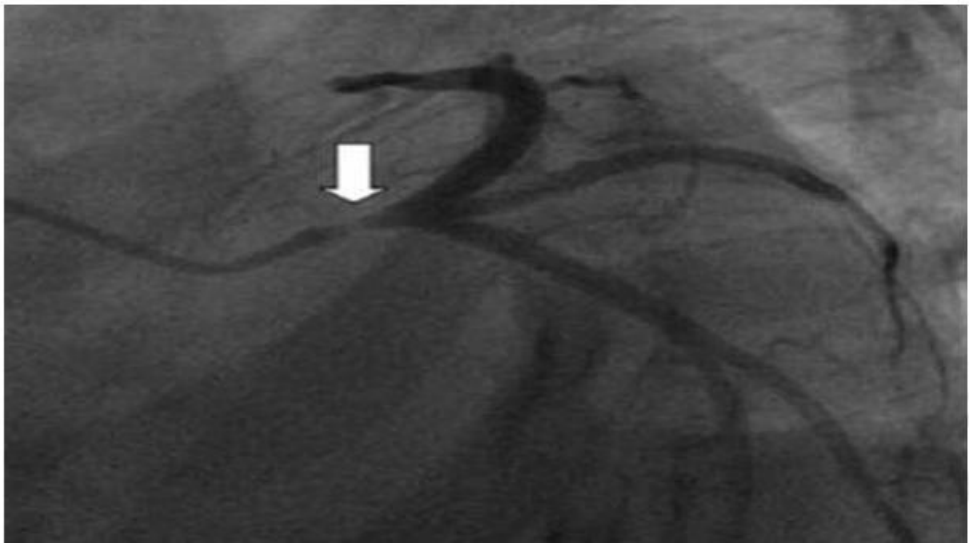

Fig. 6. Coronarography of the 3rd patient

2.3 Case Report 3

A 34 year-old woman who is treated for a Takayasu desease ,was admitted to the emergency department for an acute chestat H1 .The patient was clinically stable with a blood pressure at130/80 mmhg and a heart rate of 130 beats per minute, and no sign of heart failure . The ECG showed a decreased ST segment in the extended anterior and inferiorleads, with an ST elevation in the aVR lead . The emergency coronary angiography revealed a tight stenosis of the left common trunk.The patient was successfully treated with percutaneous angioplastywith a placement of a drug eluting stent in the left commontrunk.

3. DISCUSSION

The Wellens syndrome is an electrocardiographic abnormality with a biphasic T wave in the left precordium which is observed in the resting ECG [2], in the absence of any chest pain in patients who have a tight and/or unstable stenosis of the proximal LAD. These patients present a major risk of developing an anterior myocardial infarction [2,3].

The Wellens syndrome was described for the first time by Gerson and his colleague sin 1980 in the form of an invertedT wave.

- There are two types of the Wellens syndrome :

  - The type A is the most common ,appearingin 75% of cases, and is characterized by deeply inverted T-waves in the leads V2 and V3 [3].
  - The type B appearsin 25% of cases and is characterized by biphasic T-waves in V2 and V3 [4,5]. The leads required for the diagnosis of the Wellens syndrome are V2 and V3, which corresponds to a lesion betweenthe second septal branches of the LAD. However, if the lesion is proximal in the LAD, the T wave changes will be widely distributed along the precordial leads [6,7].

  - Doctor Wellens described even a normal ECG in patients who have a severe stenosis in the LAD ,except a slight negative deviation at the end of the T wave in the V1 and V2 leads when a chest pain occurs whiledoing the ECG [8].

An urgent coronary angiography is justified in one of these presentations to avoid an anterior myocardial infarction by an early intervention [5,9]. Some cases are not in line with the conventional criteria. A similar case was described by Riera and al whoreported a possible variant of the Wellens syndrome who present also a aleft septal fascicular block(LSFB). The criteria for a LSFB are : the increase in the amplitude of the R-wave in V2(R>15 mm) or V1 (R ≥ 5 mm), the ratio R/S in V2 >2 and the depth of V2 < 5 mm [10].

- The second case is a patient with a de Winter syndrome, a condition associating a typical chest

pain and a characteristic ECG without a classic elevation of the ST segment, but a total acute occlusion of the LAD [11]. It is an anomaly of repolarization with no elevation of the ST segment whichwas first describedin2008 and reflects a proximal occlusion (or subtotal lesion) of the LAD or the circumflex artery [12]. This ECG aspect which is an equivalent ST +coronary syndrome is found in 2% of anterior wall infarctions and has to lead to an urgent strategy of reperfusion. In the leads V1 to V6 ,there isan ascending ST segmentfrom a depression of 1 to 3 mm of the J point which ends with a large, positive and symmetrical T-wave [13].

-The QRS complexes are usuallythin or slightlyenlarged .They can presentsigns of necrosis like a R-wave planing or fragmentation. In most patients, the aVR wave present an elevation of 1-2 mm of the ST segment which reflects the proximal character of the occlusion [14]. It is a rare syndrome which represents about 2% of the infarctions but is very serious, potentially fatal and misunderstood ,hence the importance of our case report [15]. Among the predictive factor of a common coronary trunk stenosis or a tritroncularlesion in the acute coronary syndromes with no elevation of the ST segment, a retrospective study including 310 patients showed that in a multivariate analysis, the elevation of the ST segment in aVR of at least 0,5 mm is the most powerful predictive factor (RR : 19,7) , followed by the rise of the troponin T at the admission (RR : 3,08) [15,16].

The respective sensitivities were about 78%, the specifitiesat 86% and at 59%, the positive predictive values at 57 and 26% and the predictive negative values at 95 et 87 %. In the Grace register of the acute coronary syndromes (ACR) ,we observedthat 7 to 8% of the ACR with no elevation of the ST segment have an isolated ST elevation in AVR , with a normal of a decreased STin other leads . In the coronary angiography, the patients have a high prevalence of tritroncular lesions , and tight stenosis of the left common coronary trunk [13,14].

In the ACR with ST elevation in the anterior leads , the ST segment elevation in aVR is mostly related to the occlusion of the common coronary trunkor the proximal part of the LAD. In the ACS with ST elevation in inferior leads, the ST segment depression in aVR is mostly related to an occlusion of the circumflex artery [15]. On a cohort of 5683 patients with an ACS with ST elevation, the subgroups at greatestrisk of mortalityat 90 dayswere the ACS ST elevation in inferior leads witha ST elevation in aVR and in the anterior leads witha ST depression in aVR .

In the inaugural ACR witha ST elevation in the anterior leads, the ST elevation in aVR is mostly due to an occlusion of the common trunk or the proximal part of the LAD where as the ST depression in aVR is mostly related to the occlusion of the distal part of the LAD [16].

4. CONCLUSION

The patients with STEMI like are those patients who do not present with classical ECG changes but have actutelyoccludedcoronaryartery. They are offten associated with poorer outcomes. Regarding their prognosis ,it is important to recognizethem.

CONSENT

Informed written consent was taken from the patient to carry out the study.

ETHICAL APPROVAL

It Is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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