Letters to the Editor

Looking for ECG signs of acute coronary syndrome

En búsqueda de signos ECG para el síndrome coronario agudo

To the Editor,

We read with interest the article published by Fernández-Sánchez et al.[1] in which they described the South African flag sign. This is one of many signs already described to help identify particular electrocardiogram patterns associated with acute coronary syndrome, such as the shark fin sign, the triangular wave, and the lambda-like wave. Nonetheless, in our opinion, the South African flag sign is an ill-suited teaching tool,[2] as one must first be familiar with the flag. The sign also demands a certain degree of imagination and only applies to 3 × 4 display formats. In addition, the ST depression mirror image is also observed in II and aVF, meaning it is positioned outside the flag. This is, however, not the main point we wish to make in reference to the article by Fernández-Sánchez et al.

The pattern described by the authors is a characteristic finding in first diagonal or intermediate branch occlusion. Although this pattern has traditionally been considered to depict high lateral ischemia due to circumflex artery occlusion, when not associated with ST depression in V_1-V_2,[3] it is a manifestation of occlusion of the first diagonal or intermediate branch, which both supply blood to the mid-low anterolateral wall, not the high lateral wall.[4] Strictly speaking, thus, the pattern represents mid-anterior myocardial infarction, which in its subacute or chronic phase can be confirmed by delayed enhancement cardiac magnetic resonance imaging.[5]

We agree with the authors that it is a grave error to expect ST elevation in 2 contiguous leads when assessing a potential case of acute coronary syndrome. In this particular case, however, the I and aVL leads displaying ST elevation in the frontal plane can be considered contiguous.

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STATEMENT ON THE USE OF ARTIFICIAL INTELLIGENCE

Artificial intelligence has not been used.

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All the authors contributed to revising this letter to the editor.

CONFLICTS OF INTEREST

No conflicts of interest.

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Looking for ECG signs of acute coronary syndrome. Response

En búsqueda de signos ECG para el síndrome coronario agudo. Respuesta

To the Editor,

We thank Fiol et al. for their comments on our article. After reviewing the literature cited, we agree that the term *high lateral infarction* (from the classic Myers classification) is incorrect and should no longer be used. Given the variable blood supply to the mid-lateral segment (and more specifically to echocardiographic segments 12 and 16, which can be supplied by the circumflex artery or the first diagonal artery), we consider that *limited anterolateral wall myocardial infarction*[1] is a more appropriate term.

While it is certainly true that the l and aVL leads are contiguous in the frontal plane, they appear separately in ECG tracings (whether 12-lead or 3 × 4 display formats), leaving them open to misinterpretation by an inexperienced reader.

According to data from the Interventional Cardiology Association of the Spanish Society of Cardiology (ACI-SEC) Infarction Code Registry,[2] a variable, though not insignificant, percentage of patients do not initially meet the criteria for infarction code activation. Resulting delays could potentially increase time to reperfusion depending on the systems in place. As stated by Birnbaum et al.[3] and corroborated by Fiol et al.[4] first diagonal artery occlusion is one of several ECG patterns that can lead to false negatives. Accordingly, we believe that any finding that could potentially improve early identification of acute coronary syndrome is useful. This includes the South African flag pattern, which in our opinion more than deserves its place, particularly in out-of-hospital settings where 3 × 4 ECG configurations are more common.

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STATEMENT ON THE USE OF ARTIFICIAL INTELLIGENCE

Artificial intelligence has not been used in the preparation of this article.

AUTHORS' CONTRIBUTIONS

All the authors contributed to the study design and preparation and revision of the final manuscript.

CONFLICTS OF INTEREST

The authors have no conflicts of interest in relation to this article.

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