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Letters to the Editor

Takotsubo syndrome and coronary vasospasm: Two faces of the same coin?☆

Takotsubo syndrome (TTS) is an acute form of reversible heart failure (HF) and can have a protean presentation.[1,2] It poses a diagnostic challenge, which is of significant clinical relevance given the different management strategies when compared to other causes of acute HF.[1] Although this entity was first described over 25 years ago, the specific pathophysiologic pathways leading to its development remain elusive.[2,3] Currently, several possible mechanisms have been proposed for the occurrence of TTS, as recently elegantly reviewed in the Journal by Gupta et al.[4] Interestingly, catecholaminergic imbalance seems to play a pivotal role in its expression,[2] and reports of overlap between coronary vasospasm and TTS have suggested possible common pathways.[2,5]

We present the case of a 70 year-old female patient who presented to the emergency department due to intense chest pain which started while she was resting, and had about one hour evolution. She also described intermittent bouts of similar chest pain in the three days prior to admission. Her previous medical history included arterial hypertension, dyslipidemia, asthma, euthyroid goiter and clinical depression. At admission she was still symptomatic, and hemodynamically stable. Her electrocardiogram (ECG) showed sinus rhythm, and discreet ST segment elevation in the lateral leads (Fig. 1). Due to her symptoms and the ECG changes, she was referred for cardiac catheterization (CC). The CC showed no significant epicardial coronary artery disease, but the ventriculography demonstrated a moderately reduced left ventricular ejection fraction (LVEF), as well as hypercontractility of the basal segments and hypocontractility of all mid and distal left ventricular (LV) segments (Fig. 2).

Given the clinical presentation and the data from the CC, she was admitted to a cardiac intensive care unit (CICU) with the diagnosis of a TTS.

At first she showed progressive clinical improvement, and her ECG evolved with diffuse ST-T changes (Fig. 3A). During her stay at the CICU, however, she had recurring episodes of chest pain similar to the one at admission but of higher intensity. Her ECG (during pain) presented *de novo* antero-lateral ST segment elevation (Fig. 3B), and both clinical status and electrocardiographic changes were reversed with the administration of sublingual nitroglycerin. This presentation was assumed as coronary vasospasm, and beta-blockers were discontinued while therapy with long-acting nitrates and calcium-channel blockers was started. After therapeutic optimization there were no recurring episodes of chest pain, and the patient's subsequent hospitalization was uneventful. She was discharged still maintaining a mildly reduced EF as well as hypocontractility of all LV distal segments. At follow-up the patient did not experience new episodes of chest pain and had a complete reversion of ECG repolarization changes (Fig. 3C), as well as presenting with a normal LVEF and no significant wall motion abnormalities.

Although clinical insight into TTS has greatly expanded over the years, its specific mechanism remains controversial.[4] One of the most established and unifying hypothesis pertains to sympathetic nervous system derangement and subsequent catecholaminergic imbalances.[6,7] The possible overlap between TTS and coronary vasospasm has been highlighted in the contemporary literature, although the specific nature of a possible relationship still warrants further ascertainment.[1,2,8–10] As described in this case report, and in accordance with the current guidelines, the presence of both these entities can have therapeutic importance.[1,11] In TTS, the possible role of cathecolamine-induced cardiac damage is highlighted in the current European Society of Cardiology position paper, where avoidance of inotropes (such as noradrenaline and adrenaline) should be considered,[1] as this could further worsen the patient's clinical status.[1,12] On the other hand, in patients with reduced LVEF (such as the case presented), beta-blockade should be considered.[1] Given the high likelihood of coronary vasospasm in this case, and the possible adverse effects of beta-blockers in this setting,[9] this therapy was discontinued, with the patient having no more chest pain episodes after further optimization.

This case report highlights the presence of coronary vasospasm in a patient with concurrent TTS. Given the important considerations in terms of both diagnosis and treatment, the nature of the association between these two entities, as well as the role of specific therapeutic agents, should be the focus of further research, given its clinical importance.

Conflicts of interest

None.

☆ Comment on: "Gupta S, Gupta MM. Takotsubo syndrome. Indian Heart J. 2018;70:165–174".

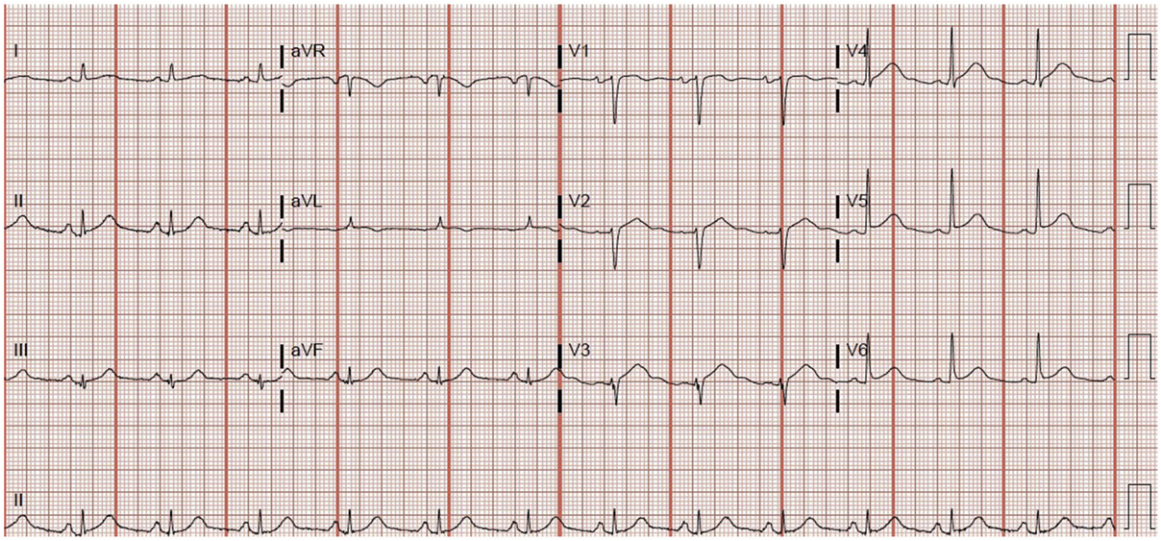

Fig. 1. Electrocardiogram at presentation.

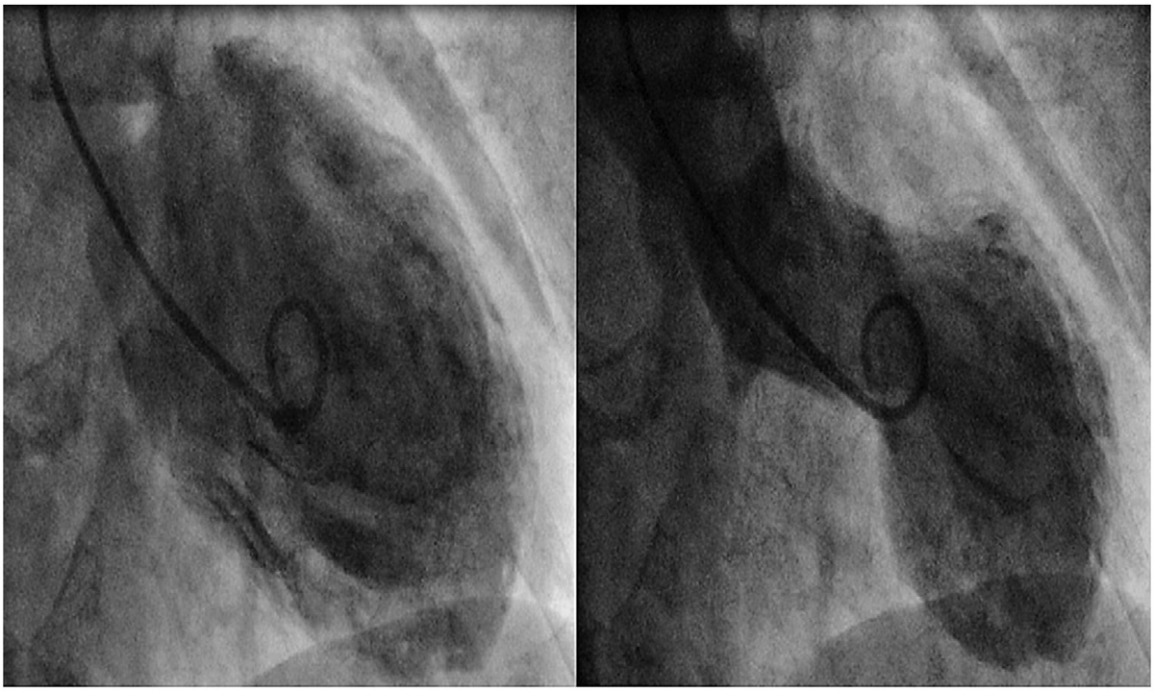

Fig. 2. Cardiac catheterization showing wall motion abnormalities typical of a Takotsubo syndrome.

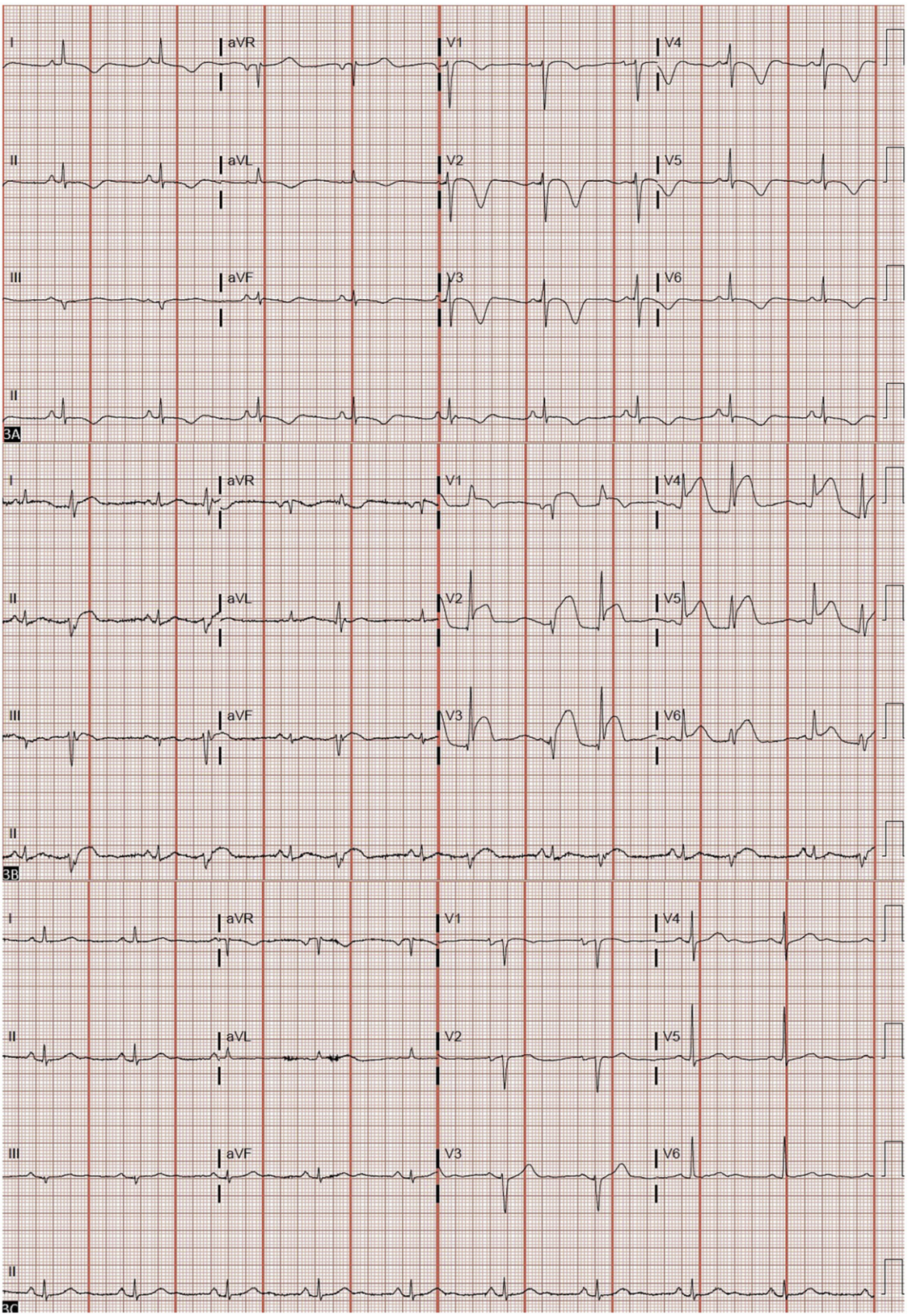

Fig. 3. A. Electrocardiographic evolution after hospital admission, showing diffuse repolarization abnormalities. B. Electrocardiogram showing *de novo* ST-T changes during a bout of chest pain. C. Follow-up electrocardiogram, with reversal of repolarization abnormalities.

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Eduardo Vilela*
Marisa Silva
Cláudio Guerreiro
Daniel Caeiro
Marlene Fonseca
João Primo
Pedro Braga
Vasco Gama
Cardiology Department, Vila Nova de Gaia/Espinho Hospital Centre Rua Conceição Fernandes, 4434-502, Vila Nova de Gaia, Portugal

* Corresponding author.
E-mail address: eduardomvilela@gmail.com (E. Vilela).

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Stevia rebaudiana the unique medicinal plant with sweet taste having hypoglycemic and hypolipidemic activities

The Editor,

We read the interesting article 'The truth about artificial sweeteners – are they good for diabetes' by Purohit and Mishra[1] published in your esteemed journal. This paper brings out clearly and convincingly side effects associated with currently popular sweeteners namely saccharin, aspartame, neotame and sucralose particularly their cancer producing potentials. On the other hand, there is a brief mention about stevia which is derived from plant *Stevia rebaudiana*. It possesses unique property of not only having a sweet taste but also sugar lowering and lipid lowering property – a distinct advantage over chemical sweeteners.[2] *Stevia rebaudiana* contains steviol glycosides namely steviosides, rebaudioside, steviolbioside and isosteviol, which are responsible for its sweetness and sugar lowering properties. It has been said to be safe in long term use.[3] Interestingly while stevia is a safe sweetener the currently popular chemical sweeteners have potential to cause cancer when used for long time. It is also well known that these sweeteners are used in many smokeless tobacco products like *gutkha* and *paan masala* preparations and these patients are reported to have oral and bladder carcinoma.[4] Further looking at the current pandemic of diabetes prevailing all over Indian subcontinent, use of stevia as an alternative sweetening agent for people who have diabetes, pre-diabetes and/or obesity needs to be explored in robust statistically designed studies.

Conflicts of interest of each author

None.

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Shridhar Dwivedi*
Nisha Tomer
National Heart Institute, New Delhi, India

* Corresponding author.
E-mail address: shridhar.dwivedi@gmail.com (S. Dwivedi).

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