Reviewer’s report

Title: Myocardial Infarction, Symptomatic Third Degree Atrioventricular Block and Pulmonary Embolism Caused by Thalidomide: a Case Report

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Reviewer: Sebastiano Gili

Reviewer's report:

Shengyu Zhang and colleagues reports this interesting case of a patient presenting almost simultaneously with acute myocardial infarction (AMI), pulmonary embolism and III degree atrioventricular block following initiation of therapy with thalidomide. Authors accurately reported data about clinical presentation and management of the patient, performed an accurate diagnostic assessment including SPECT and CMR and reported one-year follow up data.

Here below are my specific comments:

- authors suggest coronary artery spasm as a probable explanation of the AMI experienced by the patients: even if plausible, this hypothesis could have been validated by execution of provocative test, which, as authors already reported, was not performed. Moreover, when coronary angiography was performed, no coronary spasm was documented while ECG modifications were almost unchanged as compared to admission, which is an unexpected finding in the case of coronary spasm, in which usually ECG alterations tend to disappear with spasm resolution. This finding may lower the possibility of a spasm-related mechanism for AMI.

- as thalidomide is associated with both arterial and venous thromboembolism, a thromboembolic origin of the AMI with spontaneous resolution of thrombus can not be completely ruled out. Did any diagnostic exam was performed to exclude left-sided heart thrombi? We can also suppose that the same mechanism leading to pulmonary embolism was involved in the genesis of AMI: did a right-left shunt (i.e. PFO or inter-atrial defect) was searched to exclude paradoxical embolization of venous thrombi?

- what was time-dealy between admission and execution of coronary angiography?

- did any interaction increasing thromboembolic risk can be supposed between thalidomide and cigarette smoking or statins?
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

Not relevant to this manuscript

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