Reviewer’s report

Title: Unique electrocardiographic pattern “w” wave in lead I of idiopathic ventricular arrhythmias arising from the distal great cardiac vein

Version: 0 Date: 26 Nov 2018

Reviewer: Hussam Ali

Reviewer's report:

The manuscript is interesting and concerns ventricular arrhythmias of specific areas that can be challenging during catheter ablation.

However, few points are still need to be clarified or revised:

Main Comments:
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* Even if no complications were reported in this study, ablation within the distal GCV is not without potential risks (perforation or coronary artery damage). Please clarify the clinical indication for catheter ablation in these patients: eg, symptomatic high burden PVC; competitive sport; potential tachycardiomyopathy? Please add to discussion.
* No mention in the text (or presence in figures) of the "Unipolar Recording" which is a classical indicative for the site of origine of focal arrhythmias (QS pattern); this is a limitation.
* Regarding ECG analysis: was it performed by one or more observers? if more than one, was there significant inter-observer variability? was/were observer/s blinded to the successful pacing site?

Minor Comments:
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* The distal GCV is typically in close anatomical relation to the CX artery. in Figure 3, I cannot see a clear safety distance in LAO/RAO projection, please add measurements; probably a dynamic video of the coronary angiogram (systole-diastole) would provide a better evaluation (supplementary material).
* I think it is useful to add a figure (with 3 panels) showing 12-lead ECG of representative cases of distal GCV, subvalvular LVOT, and LCC. If editorial rules limit figures number, it could be added as a supplementary material.
* For safety issues, with which I agree, authors attempt first ablation through LVOT rather than GCV even if earliest activity was recorded at the latter. Thus, a few cases of GCV VA might be eliminated through LVOT ablation; please discuss.
* Did the patients underwent follow-up for possible late-onset coronary injury (eg, exercise screening test)?
* Can you provide some data about impedance measurements from the ablation catheter within the distal GCV and its behavior during ablation?
* 3 excluded patients with failed ablation within the distal GCV; did they show the w pattern in lead I?

**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.

I recommend additional statistical review

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

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