Reviewer's report

Title: Electrocardiogram features of premature ventricular contractions/ventricular tachycardia originating from the left ventricular outflow tract and the treatment outcome of radiofrequency catheter ablation

Version: 1 Date: 28 July 2012

Reviewer: Rohit Mehta

Reviewer's report:

Major Revisions:

None- the paper is scientifically sound. This expands current literature in the area with a good size series of patients and also incorporates success rates of ablation specifically within zones of the left ventricular outflow tract.

Two major questions that need to be answered (may reflect typographical errors but must be addressed)

Page 5

Line 7- 2 patients demonstrated reduced EF and yet the EF is noted to be 52 and 59%- how is this considered reduced? Was this a typographical error- if so the correct data should replace this.

Line 7/8- “All cases were cured by ablation”- how is this possible with an overall success rate of 90%- is this considered clinical cure- this should be clarified.

Suggestions for structural changes to the paper:

The case discussions are nice but are too lengthy- this can be significantly truncated. The case presentation should be very short with regards to clinical details. A summary statement can be made regarding structural heart disease that would apply to all cases. The images of target sites are good and add tremendously to the paper.

Minor Essential Revisions:

Revisions:

Page 5-

What was the average and range of the LV dimensions for all patients and then specifically for the patients deemed to be dilated

Line 3- eliminate “all day” as this is redundant given the 24 hour nature of the monitoring.
Subheading: ECG examination and measurement:
Line 3- change shapes to “morphology”
Line 7- “as well as consideration of the transitional region.”

Page 6-
Line 2/3- relative should be changed to relatively

Subheading: Intracardiac Electrophysiologic examination and radiofrequency ablation treatment
Line 1 - “antiarrhythmic drugs for at least five half lives” eliminate the wor periods.
Line 2- should Juduk be Judkins?
Line 6- base should be “basal”
Line 7- eliminate “thus whether paroxysmal or sustained VT was induced…” this is intuitive to an EP audience well versed in inducibility.
Line 9- eliminate “through a puncture” again this is intuitive to your audience.
Line 11- eliminate the word “pipe”
Line 14- are you trying to say “pace stimulus” instead of “power stimulus”
Line 15- can you define pace perimeter? This is confusing.
Line 8- “following mapping and location…..”
Line 9- “link between the target site and the coronary artery was identified before ablation in all patients” eliminate the word “every”
Line 11- Use “Repeat” instead of “another”

Page 7
Line 4- be specific about the catheter size used (4mm, 8mm, irrigated)

Subheading: Follow up methods
Line 2- change “ultrasound cardiogram” to echocardiogram
Line 5- Define long term follow up (assume that this is what archival) means.

Subheading: Results; Mapping and Ablation Results of PVCs/VT originating from the LVOT
Line 1 “ablation applied through temperature controlled catheter ablation”

Page 10
Line 10- “in Lead I (72.73%) versus the left coronary sinus group (12.50%)”
Line 12-14- clarify the groups when using former and latter:
“However, most of the patients in the latter two groups (left coronary sinus and under left coronary sinus) had rs or rS type…….which were significantly more
than the 9.09% in the Right coronary sinus group”

Line 29- the transitional index has already been defined in a previous section of the paper- no need to repeat this.

Page 11:
Line 2- change “I lead” to “lead I”

Page 13: Define CRBBB as an abbreviation (CLBBB was defined but I could not find a reference to CRBBB)

Page 14
Discussion:
ECG characteristics of the PVC that originated from LVOT
Line 2: “The area under the aortic valve, which extends from the anterior lower lobe margin of the left atroioventricular valve to the aortic valve, has a length of about 10 mm”

Line 5- change to “delayed after-depolarization”

Line 18-20- this is confusing….suggest rewording to: ”If the time limit ratio of the R wave is >50% and its amplitude ration is >30%, PVC originates from the left ventricle, and conversely, if the time limit ratio is <50% and the amplitude is <30%, the PVC originates from the right ventricle?"

Line 21: PVCs/VT that originates from the LVOT (aortic sinus) manifests as a taller and longer r® wave than that which originates from the RVOT…..

Page 15:
Line 8: “the ratio of transition refers to the ratio of the percentage of the R wave amplitude in lead V2 during PVC/VT, in the sum of R and S wave amplitudes”- this seems misstated and likely is describing the transitional ratio- please clarify this and make more clear.

Page 16:
Line 18: change the word “branch” to “portion of the R wave”

Line 21: change “no coronary sinus groups” to “non coronary sinus groups”

Line 24: “patients who presented with the R type”

Line 26: “transitional index of precordial leads, should first be considered to have an origin in the LVOT”

Line 27- eliminate the line “The ECG feature differed……”

Page 17:
Line 10- replace all instances of “big head catheter” to “ablation catheter”
Line 12: “If the ablation catheter shifts, ablation should be discontinued immediately”

Line 18: Change ventricular to ventricle

Line 24: change to “should be performed after ablation to confirm post-ablation patency of the coronary artery”

Page 18:

Line 2: “The discussed mapping methods…..”

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

No salient competing interests.