Reviewer’s report

Title: Impact of ablation duration on rhythm outcome after concomitant maze procedure using cryoablation in patients with persistent atrial fibrillation

Version: 0 Date: 16 Mar 2017

Reviewer: Sandeep Agarwala

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In this original article by Jeong et al, the authors have studied the effect of duration of cryoablation and its impact on conversion and maintenance of sinus rhythm during Modified Maze procedure for Atrial fibrillation, at two years of follow up.

This is a retrospective observational study of 256 patients who underwent the procedure between 2001 and 2006. Nitrous oxide at -60 degrees was used for creating the cryolesion. Two groups were studied one with the duration of application between 1 minute 30 seconds to 2 minutes (control) and the other 2 minutes 20 seconds to 2 minutes 40 seconds (study).

The authors observed that at the time of discharge there was no significant difference in conversion rate however after a follow up period of two years the longer duration group fared better at maintaining sinus rhythm.

1. On reviewing the literature, it is clear that the optimum duration of ablation with cryo has not been established before. It is generally thought that around 2 minutes of -60 degrees Nitrous oxide should cause trans mural freezing and cellular destruction to create a trans mural conduction block. This may however be affected by the atrial wall thickness and perhaps the size of the LA.

2. Authors have not clarified on how the decision was made to use longer duration; was it based on surgeon discretion in anticipation of thickened LA wall or was it done in a random way or alternate patients were selected for the study group.

3. Were all the procedures done by a single surgeon?

4. Severe TR with right atrial enlargement was excluded. However, Grade 4 TR was there in 30 patients. Was there a cutoff size of RA for excluding the patients from the study?

5. LA > 80mm were excluded and in sizes over 60mm, concomitant atrial reduction was done. In how many patients were atrial reductions done and were the final sizes of LA noted in these patients on postoperative echo study? Was there any correlation between the final size of atrial and maintenance of sinus rhythm in these patients.

6. Amiodarone was used for maintenance of SR in post operative period. Was any loading dose of Amiodarone used in all patients preoperatively or intraoperatively?
7. 5 patients needed cardioversion in the post operative period; did they all belong to the same group? this information may be added in Table 3.

8. In Results (under patient characteristics), the ablation duration mentioned is 120 seconds and 160 seconds for all patients; it would be advisable to correct the same in the abstract and introduction rather than giving a range of 90-120 seconds and 140-160 seconds.

9. As the data collection was over in 2006, it would be of interest to know the follow up at 10 years for the same group of patients.

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