Reviewer's report

Title: A New Method of Building Permanent A-V Block Model: Ablating His-bundle Potential Through Femoral Artery With Pre-implanted Biventricular Pacemaker

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Reviewer: Daise N da Cunha

Reviewer's report:

Manuscript revision:
A New Method of Building Permanent A-V Block Model: Ablating His-bundle Potential Through Femoral Artery With Pre-implanted Biventricular Pacemaker

General comments:
This manuscript is relevant for the field of animal models of heart disease. The authors describe a new approach to achieve complete AV block using dogs as a model. They justify that the approach through the right femoral vein has limitations and propose a new method using the femoral artery and ablating the His bundle from the left ventricle. This is an important alternative for animal models because it mimics the typical finding encountered in incidental ablations of the AV node that may occur while ablating the accessory pathway present in WPW syndrome, although this is mentioned in their discussion. The authors need to present an exact methodology of how they measured success rate, complications, stability of the AV block, and computed amount of bleeding otherwise their manuscript is highly descriptive. I felt that the discussion is limited and descriptive and needs some more work done to make it to a final version. Otherwise, their work is truly interesting and their illustrations are beautiful.

• Major Compulsory Revisions
This manuscript needs to be entirely reviewed for English grammar. Many errors need to be corrected before being published. It is strongly recommended to consult a specialized service for English editing and proofreading.

• Materials and methods > Animals > Missing information regarding animals gender, age, health status.
• Please indicate the guidelines used for the care and use of these animals.
• Preoperative preparation: Please change the word deprived to animals were fasted.
• Please used the proper surgical terms for preparation of animals: animals were sterilized?
• Please explain the sentence: “After intraperitoneal injection of 3% pentobarbital sodium (30ml/kg) (Xitang Biological) for half an hour, subjects received general anesthesia.” Was the IP injection given over a period of half an hour? Re-write.
• Please describe how general anesthesia was induced (which anesthetic agent
was used?), monitored, and maintained over one sentence.

- Implantation of biventricular synchronization pacemaker: Which part of the back was the plate electrode placed?

- Clarify the sentence: Electrocardiograms were recorded via limb leads with X-ray guidance.

- Medtronic CapSureFixm Novus 5076 initiative wires. What do you mean with initiative wires?

- Describe in M&M how the parameters presented in Table 1 were measured: amount of bleeding, success rate (complete AV block? How long before deciding whether there was complete AV block? Was there any need to repeat the ablation during the procedure? If yes, is it possible to present this data? If not, please report that ablation was achieved after one attempt), cases of complication (what complications?), and operation time (from when to when). This information will help avoiding the results section from being highly descriptive.

- The BNP levels were evaluated; however, this is not presented in the M&M.

- Tissues from the ablation site were collected and stained, but the authors failed to describe which kind of evaluation was performed. Simply describing the type of microscope does not inform this.

- Results:
  Table 1 please removed the word happened.
  Table 2: change breath frequency to respiration rate. Do this in the text as well.
  Figure 3: Show with signs the types of cells described in the legend.
  Figure 4: Should describe what the reader needs to observe in the image.

Discussion

“We have proven that our method has higher success rates and less complication.” Please tune down this affirmation. Consider changing the word proven to demonstrated. Also, it is not clear if the author is talking about the ablation method or the synchronized pacing method. The following sentence talks about the later.

The authors should discuss the limitations of both models for inducing AV block.

“there was a significant difference in the QRS-durations and Tp-Te intervals of electrocardiograms between post-operation and pre-operation, indicating the existence of electrical remodeling in our complete A-V block model”…..

Table 2 shows that the Tp-Te intervals were greater in both models, please discuss this further. The biventricular pacing was not capable to prevent the prolongation of Tp-Te interval?

“Furthermore, our method exhibited a less operation and X-ray exposure time#p#0.05), as well as less complicated (p#0.05).” Does the author mean less complications? If yes, please discuss the complications that occurred in the older method and why these issues did not come up in the newer proposed AV
ablation method?

Minor Essential Revisions

Abstract: consider changing the word built to achieved.

• There are verbal concordance errors, missing articles, etc.
• Many sentences need to be re-written.
• Introduction: Replace the term fibration to fibrosis.

Level of interest: An article of importance in its field

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:

I declare that I have no competing interests.