

Peer review file

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Reviewer A

Comment 1: Special emphasis should be done in separating both final conclusions. I would highly recommend to be very specific in highlighting the main of both. The second one should be considered to be better explained or be deleted.

You wrote “In conclusion, we found that preoperative abnormal ECG, transfusion, postoperative serum potassium, clinical stage and operative type as independent risk factors of PA. And we identified PA as an independent prognostic risk factor to predict poor OS in patients who underwent lung cancer surgery. It therefore provides guidance of PA for improving the prognosis of lung cancer patients”.

With this regard, my recommendation would be to make much more specific in citing just the most important of both conclusions.

Reply: Thank you for the suggestions. We highlighted two results in the discussion section, see Page 14 Line 297-305.

Comment 2: Consider how much important are the Figures 1 and 2. Perhaps, they are not so important and should be removed.

Reply: Thank you very much for such a detailed question. We consider that the figure 1 was indeed unclear and redundant, we decided to removed figure1 but remained figure 2 in the revised manuscript.

Reviewer B

Comment 1: The post-operative arrhythmia after lung surgery is major concern that need for additional treatment and prolongation of hospitalization. There are at least several reports published more than 10 years ago, which similarly evaluated perioperative arrhythmia occurrence after lung surgery and its impact on prognosis thereafter (reference 5, 29, and 30). Moreover, the study patients were enrolled long time before (from 2007 to 2008), and there were many missing patients until the end of follow-up of 2019. The authors should provide what was a novel finding in the results of your study and in this kind of area to add the literatures. Additionally, the authors included sinus tachycardia into an abnormal arrhythmia event. In general, sinus tachycardia is not considered as arrhythmia events, and this should be excluded from the event count of the definition.

Reply: Thank you very much for these comments. We have modified our text as advised (see page14 line298-306). But after discussion and checking literature, we decided not exclude sinus tachycardia from the abnormal arrhythmia. And we had added the definition of sinus tachycardia in the revised manuscript (see page 5 line 90-91).

Changes in the text: page14 line298-306; page 5 line 90-91)

(Major comments)

1. How long did the authors evaluate post arrhythmia events in continuous ECG monitoring at post-operation? How was a length of hospital? Please clarify. What was

a definition of the arrhythmia events? For example, only one extra premature beat after the surgery would be counted for the positive arrhythmia event? How long the definition of the duration of AF occurrence?

Reply1: Thank you very much for the important comments. We evaluate post arrhythmia events in continuous ECG monitoring for more than 72 hours after surgery (see Page 4 Line 85-86). We are so sorry for our negligence of the length of hospital data, we have not included these data into our study. The definitions of arrhythmia events were defined as follows (see Page 4 Line 88-92): the definition of AF was that ECG recordings demonstrated the presence of characteristic ECG features of AF lasting at least for 30 seconds, sinus tachycardia was defined as the ECG showing sinus rhythm greater than 100 beats per minute and lasting more than 3 seconds. Only one extra premature beat wouldn't counted for positive arrhythmia, the definition of premature beats was more than 100 beats in 24 hours.

Changes in the text: Page 4 Line85-86 and line 89-92.

2. Please provide an actual number of the death patients during follow-up periods.

More information regarding a detailed cause of death would be needed in patients with arrhythmia and those without. How was a follow-up duration after surgery in the study population?

Reply2: Thank you for the comment about survival information. We added some survival information as suggested. A total of 135 patients died during the follow-up

period. The cause of death was explained in the revised manuscript. The follow-up duration after surgery was 155 months.

Changes in the text: Page 9 Line 194-202.

3. It may be interesting to know a correlation between pre-operative ECG abnormality and post-operative arrhythmia occurrence. Were the patients complicated with post-arrhythmia already detected the abnormal ECG findings at the preoperative examination stage?

Reply3: The patients complicated with post-arrhythmia already detected the abnormal ECG findings at the preoperative examination stage, the results were shown in Table

1. And we have added some literal explanation about this part in the revised manuscript (see Page 6 Line 132-137).

Changes in the text: Page 6 Line 132-137.

4. Please provide the ethics information. Was the study protocol approved by institutional ethical committee? Did you obtain informed consent for surgery and study enrollment? Please add this information. Although this study was a retrospective analysis, such information would be important because the study was funded by a specific foundation.

Reply4: We have added the ethical statement in the revised manuscript see Page 16 Line346-349, and also submitted the Conflict of Interest (COI) Form of each authors as an attachment together with the manuscript.

(Minor comments)

1. Premature beats in 5 patients should be more clarified (atrial or ventricular, and its frequency)

Reply1: Among the 5 patients with premature beats, two patients were diagnosed with atrial premature beats and the other 3 patients were diagnosed with ventricular premature beats

Changes in the text: page 7 line 153-157.

2. Some horizontal captions in Figure 1 (e.g., atrial, A-V, and conduction block) were unclear, which needs for more clarification.

Reply2: Thank you for asking such a detailed question. Considering that the description in Figure 1 is indeed unclear and redundant, this is consistent with the opinion of the other reviewer. Therefore, we decided to remove Figure 1.

3. The horizontal axis of Figure 3 would be expressed as per year count.

Reply3: Figure 3 is about survival data, and we have added the information about follow-up period in the revised manuscript. The follow-up data was calculated in months, we consider that 'month' would be more appropriate as the horizontal axis of figure 3. Since we deleted figur1 in the revised manuscript, figure 3 became figure 2 in the same time.

