

## Author response 1

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### Reviewer 1

1. Lower complication rate and success rate of VATS were excellent.

Answer: Thanks for your comments.

2. How did the authors perform informed consent about using coil for localization.

Usually, there is no adaptation using coil for localization of lung tumors. So, informed consent and permission of the committee were essential to use coil for localization. The authors are required to describe about informed consent in this paper.

Answer: The written informed consent for coil localization procedure was obtained from all patients. As this study was retrospective in nature, the need for written informed consent for participant in this study was waived. We revised it.

3. Please describe in discussion, why the complication rate was low after coil localization compared to hook wire system.

Answer: We added them.

4. Please add limitation about selection bias. In inclusion criteria, deep located lesions were excluded in this study. Some papers reported that deep location is the risk factor of pneumothorax for lung biopsy. Thus, this study may underestimate the complication rate of pneumothorax.

Answer: We added it.

5. What is the meaning of statistical value. What is the meaning of comparison between unilateral nodules and bilateral nodules. These statistical data did not indicate the safety of one-stage treatment of bilateral nodules. Bilateral pneumothorax could occur after bilateral localization.

Answer: The statistical value is the P value, which indicates whether there is a significant difference. Comparison between unilateral nodules and bilateral nodules means comparison of baseline data, localization procedure, and VATS procedure between patients with unilateral and bilateral lung nodules.

We reviewed the data of the 2 patients with bilateral lung nodules who experienced pneumothorax again, and we found that the 2 pneumothorax were both unilateral pneumothorax. We added the footnote about it in Table 3.

6. P2 line 7th

Preoperative computed tomography (CT)-guided coil localization can increase the technical success of video-assisted thoracoscopic surgery (VATS)-guided diagnostic wedge resection of lung nodules. Please describe about the control group. Compared with non-localization group?

Answer: We added it. Compared with non-localization group, preoperative computed tomography (CT)-guided coil localization can increase the technical success of video-assisted thoracoscopic surgery (VATS)-guided diagnostic wedge resection of lung nodules.

7. P2 line 51th

Please describe the median value of follow-up period also in the abstract.

Answer: We added it.

### Reviewer 2

1. The authors fail to mention numerous publications on the use of microcoil localization that already exist in the literature. I believe their approach of use of this technique for multiple nodules is somewhat unique however they should not neglect the experience that already exists in the literature. At the very least, they should cite some of the articles that describe this technique. I would think a comparison of their techniques to other manuscripts would be valuable. Do they have similar rates of complications? Localization success? Maybe a meta-analysis of the existing studies.  
Answer: We added them.

2. The authors fail to describe why they use this technique, how do they select patients. Do they use it on every patient with nodules <3 mm in size that are close to the pleural surface? It would seem to me that the vast majority of such nodules would be palpable. It seems more definitive criteria for application of this technique would be useful.

Answer: We have mentioned the benefit of preoperative CT-guided localization for lung nodules in the first sentence of the second paragraph in "Introduction" section: To ensure that technical success rates for MLN wedge resection remain high, it is essential that all nodules be preoperatively localized through a CT-based technique.

We performed the CT-guided coil localization of all nodules that were close to the pleural surface on each patient.

Although most of the nodules were close to the pleural surface, many nodules were small and many nodules were sub-solid. Thus, most of the nodules were still hard to be palpated. Therefore, the coil localization was still performed to ensure the successful wedge resection.

3. Could the authors provide more information about the time period between the microcoil placement and the surgery? What was the average time? Did any patients have drains placed at the end of the procedure? Were all patients admitted? Did they have significant pleurisy that required narcotic therapy? Did they manage the induction of anesthesia differently knowing the patient had just had a needle placed in the lung?

Answer: we added the time according to the reviewer's suggestion.

No patient required drains.

All patients were admitted.

No patient had significant pleurisy that required narcotic therapy.

Before we punctured the lung, all patients were given lidocaine as the local anesthesia protocol.

When the needle was placed in the lung, no special anesthesia was given.

4. Did the authors use intra-op fluoroscopy to determine the depth of the wedge resection? How frequently did they have to take a second wedge for margins? Did they every wedge across the end of the coil?

Answer: We did not use intra-op fluoroscopy. The depth of the wedge resection was evaluated by the preoperative CT imaging. If the patient had unilateral lung nodules, the second wedge resection was performed instantly after the first wedge resection. If the patient had bilateral lung nodules, we firstly confirmed that there was no air leak after the first wedge resection, then the contralateral wedge resection was performed. Every wedge resection was performed across the end of the coil.

5. The authors claim in the beginning that this technique can permit lung preservation. Can they provide the average size of their wedge resections? How does that compare to their non-localized wedge resections over a similar time period? Could they not enhance their success rate by taking very large wedge resections?

Answer: I am sorry about that we did not measure the size of wedge resections. Definitely, we

controlled the resected range as small as possible. We performed the coil localization for all patients with peripheral non-diagnostic lung nodules during the study period. If we planned to perform the wedge resection, we would perform the coil localization. Therefore, no cases were non-localized wedge resections. In our study, no wedge resection was very large.

6. How did the authors assure that the coil did not remain embedded in the chest wall at the end of the procedure and dislodge once the lung collapsed?

Answer: Definitely, we could not guarantee all coils did not remain embedded in the chest wall.

However, the majority of the coil was inserted in the lung parenchyma and the inserted coil formed a ring configuration. The ring configuration and fiber coating of the coil could enhance the stable of the coil in the lung parenchyma. When the lung collapsed, it was not easy that a coil would dislodge. In addition, even if the coil tail embedded in the chest wall, it was only a small part of the coil which embedded in the chest wall. It would drop from the chest wall and remained above the visceral pleura when the lung collapsed.