Author’s response to reviews

Title: Robotic assisted-bronchoscopy: technical tips and lessons learned from the initial experience with sampling peripheral lung lesions

Authors:

Septimiu Murgu (smurgu@medicine.bsd.uchicago.edu)

Version: 1 Date: 23 Mar 2019

Author’s response to reviews:

Reply to reviewers point-by-point

Dear Editors,

Please find attached the revised manuscript entitled “Robotic assisted-bronchoscopy: technical tips and lessons learned from the initial experience with sampling peripheral lung lesions”. I thank the reviewers for their meaningful comments. I genuinely believe that by incorporating their suggestions, the manuscript is now more relevant and of more interest to the readers of the Journal. Please find below a point-by-point reply to reviewers’ comments.

Sincerely,

SD Murgu

Reviewer reports:

Tanmay Panchabhai (Reviewer 1):

Comment: I have read with interest the manuscript titled "Robotic assisted-bronchoscopy: technical tips and lessons learned from the initial experience with sampling peripheral lung lesions" and below are my observations regarding the same.
This is a really well written manuscript describing RAB in an era where minimally invasive biopsies for peripheral lung lesions is becoming an increasingly important aspect of day to day thoracic practice in part due to the implementation of lung cancer screening.

The manuscript describes the technique of RAB in depth.

Reply: Thank you for your kind comments.

Comment: Can the authors consider adding a real time image of how the set up would be in their bronchoscopy suite?

Reply: I agree this could valuable for the readers. A real-life image from our bronchoscopy lab (in which not only the patient, but nurses, fellows, anesthesia staff and bronchoscopy suite technicians are all present at one time) is not possible due to compliance issues. I was able, however, to acquire a real-life image illustrating the real life set up. This is now incorporated in the revised Figure 2.

Comment: Is it possible to add a short video of the RAB biopsy technique?

Reply: I truly believe “videos can speak a thousand words”; however, a procedure-related video that would be meaningful for the readers is not pertinent for this technical manuscript or the format of this section.

Comment: Can the authors comment on the utility of RAB (their initial experience) when there is no bronchus leading to the lesion to be sampled.

Reply: Very relevant comment. Thank you for bringing this up for my attention. This is now addressed on page 8, lines 181-page 9, line 185 to read:

“We have diagnosed lesions with and without the classic “bronchus sign” as long as a blood vessel is noted adjacent or leading to the lesion. Based on knowledge of the pulmonary lobule anatomy and on extensive prior experience with EMN bronchoscopy, lesions without a “bronchus sign” but with a blood vessel leading to them, do have an adjoining airway even if not obvious on the planning chest CT scan.”

Comment: Have the authors noted any complications in their initial experience with RAB?
“I have not yet experienced any robotic bronchoscopy-related complications (i.e. pneumothorax, pneumomediastinum, hypoxemia, or airway bleeding requiring cold saline or balloon tamponade). In a few cases, however, the navigation guidance [the yellow and green lines on virtual bronchoscopy images (Figure 3)] had “lagged behind” the actual robotic bronchoscopic navigation (i.e. advancement of the scope). This could make the bronchoscopist “being lost” in the periphery of the lung. I have learned to troubleshoot this issue by slowing down the scope advancement and by doing my best to keep the scope co-axial (in the center of the airway). In these regards, I found it extremely valuable to create my own map (aka “mental planning”) based on my own understanding of nodule location and airways leading to it. I suspect we will learn more about safety of RAB and potential mechanical or software issues once original studies get published in peer reviewed journals.”

Comment: Consider adding larger CT chest images in addition to the figures 3, 4 and 5 independent of the system set up so that readers would understand the location of the lesion biopsied

Reply: Agreed. Figures 3 and 4 are from two different cases. I have revised these figures with the corresponding CT images. Figure 5 is the local view/REBUS image of the nodule illustrated in Figure 3.

Comment: Please add the dimensions of the lesions sampled in figure 3, 4 and 5

Reply: The dimensions of the nodules are now noted on the actual CT images. Please see revised Figures 3 and 4. In brief, the nodule in Figure 3 is 16 X 16 mm; the one in Figure 4, 16 X 19 mm;

Comment: Figure resolution seems lower in the review copy of the article and need to ensure good resolution

Reply: The resolution of the images seems adequate on my submitted file. I will defer to the Editorial team the need to optimize the image quality using dedicated software.
Kamran Mahmood (Reviewer 2):

Comment: Thanks a lot for allowing me to review this interesting and important review of robotic-assisted bronchoscopy (RAB) technical tips and lessons by Dr Septimiu Murgu. The article is timely because of the recent FDA approval of RAB system in US, and increased interest in this technology. It is coupled with unmet clinical need for a reliable modality to diagnose peripheral lung nodules.

Reply: Thank you for your kind comments.

Comment: The author has detailed the technical tips and lessons in great but reader-friendly detail. I will like to ask the author to comment on the cost of the system and disposable tools. Moreover, what is the CPT code/reimbursement and total cost of the procedure.

Reply:

I truly appreciate these comments and I can see how they could be valuable to our bronchoscopy community and our patients. The purpose of this paper is to describe the technique of the RAB procedure performed with the Monarch platform not to report on the economics of this new technology. Your comments are now addressed on page 13, lines 285-291 by inserting the following paragraph:

“The health-economic analysis at this point is not possible without analyzing the cost with respect to outcomes. While a cost-effectiveness of any new technology is important, papers focused on health-economics and, in particular, on calculating the cost of the procedures, are based on a large number of robotic procedures performed. This analysis should also consider the outcomes of the procedures, such as a diagnostic yield based on 2-year follow-up. Regarding the procedure charges, our institution codes robotic procedures the same as we code EMN bronchoscopies”

Minor comments:

Page 8. Line 173. Th...; change to "the"

Page 9. Line 206. advancement of when....; remove "of".

Reply: thank you for catching these typos. They are now corrected.