Author’s response to reviews

Title: Use of esophageal balloon pressure-volume curve analysis to determine esophageal wall elastance and calibrate raw esophageal pressure: a bench experiment and clinical study

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Version: 2 Date: 23 Jan 2018

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Editor Comments:
Please consider Reviewer 3's comments.

Reviewer reports:
Tommaso Mauri (Reviewer 1): The authors answered to all my comments. The manuscript improved.

Davide Chiumello (Reviewer 2): No further comments

Savino Spadaro, M.D., Assistant professor (Reviewer 3): I appreciate the efforts of the authors to clarify the aspects required in my previous revision. The quality of the manuscript is improved and the rational of the study is clear.

First of all, I would like to suggest that it is important to define clearly the strength of the study in discussion section. Please use a schematic points to underline each strength of your paper.
Response: Thank you very much. We added “The major strength of our study is the combined reporting of bench and clinical results.” In the Discussion section (page 16, line 350-351).

Thank you regarding your clarification about the calibration of the pressure transducer.

I understand your point about the patients population. "The patients enrolled in the present study were those with delayed extubation and need for mechanical ventilation during postoperative period" Please can you report the reasons that implied a delayed extubation? What are the reasons of prolonged mechanical ventilation? In how many patients, is it possible to identify a lung disease? It is important to clarify your setting population. In my opinion, the use of esophageal measurements is not standard care in neurosurgical patients population. However, I think that your results could be interesting to compare with other setting in the next future.

Response:

We added the reasons of delayed extubation and prolonged mechanical ventilation in the Methods section: “For patients after elective intracranial operations, the reasons for delayed extubation and mechanical ventilation mainly included large brain stem tumor resection, length of operation longer than six hours, and major intra-operative bleeding or brain swelling [19]. Mechanical ventilation was also continued in severe traumatic brain-injured patients after emergent operations. For patients after orthopedic and vascular surgery, delayed extubation was performed because of long duration of operation or major bleeding. Prolonged mechanical ventilation was usually required in patients with brain stem lesions and severe traumatic brain injury.” (page 7-8, line 154-162). Reasons for delayed extubation were reported in Table 2 (page 27). We also added a reference of our previous study (new ref 19) in which the criteria of extubation in neurosurgical patients were introduced.

We reviewed the case report forms and defined ARDS according to the Berlin Definition (new ref 20) and acute hypoxemic respiratory failure (AHRF) (page 9, line 177-181). Hypoxemia was presented in 13 (13/40, 32.5 %) patients, with ARDS and AHRF diagnosis in 4 (10 %) and 9 (22.5 %) patients, respectively. These data were reported in the Results section (page 12, line 249-250) and Table 2 (page 27).

"Type of operation" in table 1 --- please change with "Type of surgery"

Response: We revised as “Reasons for delay extubation and MV” (Table 2, page 27).

Additionally:

Our manuscript has been edited for proper English language, grammar, punctuation, spelling and overall style by editors at American Journal Experts (Certificate Verification Key: 68B1-1E8B-8C42-D8D1-A3A8).