Peer Review File

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Review Comments

Reviewer A

Thank you for allowing me to review this article. The paper is very well written; all the ideas flow in a logical order. The paper is clear in its writing and therefore in its transmission of knowledge.
Reply: Thank you.

Reviewer B

I would like to congratulate the authors for building this article and especially for dedicating time to teaching and disseminating knowledge. Below I put my suggestions and missing points that need attention.

Title: Adequate, but the subtitle is too big making it a little uninteresting
Comment 1: We agree.
Reply 1: We eliminated the subtitle, and inserted it in the introduction.
Changes in the text: Line 5

Summary: Semi-structured, confused, missing a conclusion
Comment 2: We agree.
Reply 2: We rewrote the abstract.
Changes in the text: Line 43-65

Introduction: There isn't, the authors start directly with the review text, you end up not knowing what to expect, why read the article.
Comment 3: We agree.
Reply 3: We added this important part of the text.
Changes in the text: Line 78-98

Text: numerous errors were found, which I will list below and which need to be corrected

1. This is a review article, but the article talks more about the authors' work and experience than about a review. Was it then a letter to the editor?

Comment 1: We agree.
Reply 1: As mentioned in the beginning of the second paragraph of this section, there are few publications studying management of lung collapse during OLV except for a series of studies included in a systematic review and a meta-analysis (ref 4).
Very few investigators have worked as much as our research team on the subject and we consider our work as a major reference in that field.

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2. When talking about pulmonary collapse in single-lung ventilation during the intraoperative period, it was not said whether pneumothorax with CO2 was used for the collapse.

Comment 2: We agree.
Reply 2: The practice of using CO2 to create a pneumothorax is rarely used and seldom described in literature. To add on this point will confuse the reader.
Changes in the text: None

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3. When citing incomplete collapses, he did not mention robotic surgery, which could not be performed without complete collapse.

Comment 3: We agree.
Reply 3: We mentioned RATS.
Changes in the text: line 114

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4. Citing VATS as the most prominent technique currently, forgetting that thoracic robotic surgery brings numerous benefits compared to the technique cited in the article.

Reply 4: The same as comment #3

5. Contains English spelling errors, such as in line 120. Correct.

Comment 5: We agree.
Reply 5: We reviewed and corrected every sentence.
Change in the text: Line 120: luckily: we do not use this term now.

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6. When citing the work with different tidal volume values, it was not described that

this works used different ventilators and possibly the difference between the values found caused by this.

Comment 6: Probably, it may have some variation in tidal volume between different ventilators.
Reply 6: But it is outside the scope of this review to look for this point.
Changes in the text: None

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7. In the work that cites the decrease in Atelectasis in NIVATS, it is worth remembering that there was no clinical significance and only radiological significance.

Comment 7: We disagree.
Reply 7: We reviewed the publication and adjusted the discussion about the authors finding. There was evidence that NIVATS was associated with shorter intra-operative and PACU recovery times. Radiological significance that NIVATS caused more atelectasis was only in the immediate post-operative setting with no follow-up.
Changes in the text: Line 334-343

Conclusion: there is not. There are several topics, no integration.

Comment 1: We agree.
Reply 1: We added a conclusion with integration of the topics.
Changes in the text: Line 386-398

References: check one by one, have wrong numbers.

Comment 1: We agree.
Reply 1: We reviewed and corrected all errors.
Changes in the text: Throughout the text

Tables: Table III, translate into English (official language of the article and journal).

Comment 1: We agree.
Reply 1: Table III was translated in English and is now figure II.
Changes in the text: Illustration No. 2

Reviewer C

The first part of this manuscript is well written and mainly describes the authors own research, presenting some interesting findings on lung deflation during video-assisted thoracoscopic surgery (VATS) and one lung ventilation (OLV).

Minor concerns

1. Row 36. I would suggest not using the term acute lung injury (ALI) here. My impression is that this term is nowadays seldom used when discussing potential negative effects of mechanical ventilation in essentially healthy lungs during anaesthesia and surgery. The widely accepted Berlin criteria on ARDS published in 2012, suggests that the term ALI should no longer be used. Perhaps is volu- or barotrauma better?

Comment 1: We agree.
Reply 1: We rewrote the summary and avoided the term ALI, in all the text.
Changes in the text: See manuscript.

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2. Row 34. Consider adding "surgery".

Comment 2: We agree, our error.
Reply 2: We added it.
Changes in the text: Line 86

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3. Row 42-42. The statement that "atelectasis may also contribute to the apparition of ALI" needs a reference, if stated at all (see above regarding ALI).

Comment 3: We agree with you.
Reply 3: Abstract was reviewed and rewritten.
Changes in the text: we avoid reference to ALI

The second and third part is surprisingly of much lower quality. The text does not give the impression that the author is well familiar with the field. These two sections would need to be re-written completely to meet up with expected standards of a review article in a scientific journal. The below are just examples of many issues:

Reply: We rewrote completely these two parts, taking care of your comments and interrogations

1. Row 117. "Perioperative atelectasis may result in a spectrum of lung injuries (ALI)." This statement needs a reference. I am confused why the term ALI is used here, considering the publication of the Berlin criteria (Ranieri 2012) and the consensus definitions for postoperative pulmonary complications (Abbott 2018).

Comment 1: Fully agree.
Reply 1: We rewrote the summary and avoided the term ALI, in all the text.
Changes in the text: See manuscript.

2. Row 124. This paragraph is confusing. One would expect a didactic explanation on the mechanisms behind anaesthesia-induced atelectasis formation, instead of a description of possible (and somewhat speculative) negative effects of

Comment 2: Fully agree.
Reply 2: We rewrote the sentence.
Changes in the text: Line 183-190

3. Row 136. I suggest mentioning that the term "PEEP" was not defined nor used (other than experimentally) at the time (1963). Although Bendixen mentioned

Comment 3: Agree.
Reply 3: We rewrote this sentence.
Changes in the text: Line 207-209

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4. Row 140. If the authors mean every textbook, please add reference to every textbook.

Comment 4: Agree.
Reply 4: We changed the sentence.
Changes in the text: Line 215-217

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5. Row 145. Again, confusing use of terminology. Protective ventilation is rarely referred to as a "ventilation mode".

Comment 5: Agree.
Reply 5: We change the term mode for strategy
Changes in the text: Line 244-247

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6. Row 154. And recruitment maneuvers.

Comment 6: We partially agree, as recruitment maneuvers were not part of the study protocols in many studies on protective ventilation during OLV.
Reply 6: We mentioned this situation in the text.
Changes in the text: Line 257-258

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7. Row 156. This part needs a discussion on the differences in ventilating severely pathological ARDS lungs during intensive care on the one hand, and essentially healthy lungs in the operating room, on the other hand. And references accordingly.

Comment 7: Agree.
Reply 7: We added some sentences in the first paragraph of the section on protective ventilation.
Changes in the text: Line 244-247

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8. Row 156, sentence starting with "Use of PEEP...." This is an example of the unsatisfactory quality of this manuscript. The text is not entirely wrong but nevertheless gives the impression that the author lacks a fundamental understanding of atelectasis formation and the possible counteracting effects of PEEP. Or lacks the ability to explain it. PEEP helps to restore functional residual capacity (FRC), thus avoiding airway closure. This in turn helps to avoid atelectasis formation and thus atelectrauma.

Comment 8: We fully agree with your opinion, thank you for helping us to come back on the good way.
Reply 8: We rewrote the explanation of the effect of PEEP.
Changes in the text: Line 262-265

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9. Row 158. "PEEP needs to be titrated…". Add reference please. It is unclear in the manuscript (including tables) whether the authors recommend a fixed PEEP or a titrated PEEP.

Comment 9: We agree.
Reply 9: We restructured this section, and specified our recommendations about titration of PEEP.
Changes in the text: Line 265-270

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10. Row 161. The abbreviation is incorrect. And why not use the widely used term postoperative pulmonary complications (PPC)?

Comment 10: We agree.
Reply 10: We corrected the abbreviation and verified it in all the manuscript.

Changes in the text: Line 261

11. Row 162. Please explain if the observed lower levels of inflammatory markers were clinically relevant.

Comment 11: Good question.
Reply 11: We could not find a good answer, so we removed this sentence.
Changes in the text: Section was modified.

12. Row 167. Peep at 5 cm h2o. Reference?

Comment 12: Majority of the studies cited in the text.

Reply 12: No change.
Changes in the text: No change.

13. Row 169. Incorrect. Driving pressure is plateau pressure minus PEEP.

Comment 13: We agree.
Reply 13: We change the text according.
Changes in the text: Line 268

14. Row 174. Why not make your own table one? One that is not called “Box 2”?

Comment 14: We agree.
Reply 14: We removed this table.
Changes in the text: *****

15. Row 176. Throughout the manuscript it is sometimes unclear if the text (and references) refer to ventilation of ARDS lungs in ICU, healthy lungs in the operating theatre, two lungs or one lung. It matters.

Comment 15: We agree.
Reply 15: We specified that we are discussing one lung ventilation during thoracic surgery.
Changes in the text: Line 245-249

16. Row 181. “while there was no gap between cutoff values in negative trials.”

Comment 16: We removed this reference and the comment about it.
Reply 16: We replaced it by two recent systemic review and meta analysis.
Changes in the text: Line 275-294

17. Row 197. The literature and one study is not the same.

Comment 17: We removed this reference and the comment about it.
Reply 17: We replaced it by two recent systemic review and meta analysis.

Changes in the text: Line 275-294

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18. Row 207. “Considering the unclear clinical benefits of ARM demonstrated in OLV, a search in the literature was conducted to find answers to this dilemma.” If the literature says there are unclear benefits, why would the answers to this dilemma be found in the literature?

Comment 18: We removed this sentence and the comment about it.
Reply 18: We replaced it by one recent systemic review and meta analysis and another publication to prevent the readership about the ARM risk.
Changes in the text: Line 286-303

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19. Row 215. Table II recommends ARM. But the text says that ARM remains controversial.

Comment 19: Following recent publications (ref 30), we modified our perception of the literature. For us ARM is not controversial but we advise the readers that new information will come soon.
Reply 19: We kept the table I and II with the ARM.
Changes in the text: Line 286-303

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20. Row 217 and table III. Why suddenly in French??

Comment 20: We are Frenchmen…
Reply 20: We edited an English version and table III, became table II.
Changes in the text: Table II in English

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21. Row 222. Please explain your definition of postoperative pulmonary complications.

Comment 21: Agree.
Reply 21: It is now defined earlier in the manuscript.
Changes in the text: Line 179-181

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22. Row 229. Add reference please.

Comment 22: Agree.
Reply 22: We rephrased the information and add a reference (12).
Changes in the text: Line 316-318

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24. Row 258. I believe that most anesthesiologists would say that preoxygenation before induction of anesthesia is done to achieve an oxygen reserve in case of an

unexpected difficult airway, not to counteract the effects of airway closure. Again, and I am sorry having to say it, but there seems to be a lack of fundamental understanding here.

Comment 24: I agree with you, thank you for correcting us.
Reply 24: We rephrased the concept.
Changes in the text: Line 347-350

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25. Row 269. I would not say many, just a few mechanisms.

Comment 25: We agree.
Reply 25: We removed this phrase.
Changes in the text: ********

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26. Row 272. Only clinically relevant if the alveoli are filled with a high oxygen concentration.

Comment 26: Agree.
Reply 26: We changed the sentence.
Changes in the text: Line 356-359

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27. Row 280. Incorrect. This was not a study on OLV. Moreover, PEEP was not used.

Comment 27: We agree.
Reply 27: We changed the sentence.
Changes in the text: Line 356-359

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28. Row 283. Please explain this "…helps the atelectasis to reappear slowly."

Comment 28: We agree. It is confusing.
Reply 28: We reformulated the sentence.
Changes in the text: Line 366-368
