**Peer Review File**
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## Round 1

### Reviewer A

Comment 1: Abstract, line 26: I would delete the words "an" and "effect". The sentence "… and this phenomenon is largely unobservable" reads easier.
Reply 1: Thank you for reminding us. We have replaced this sentence with "and this phenomenon is largely unobservable".
Changes in the text: We have modified our text as advised (see Page 2, line 29).

Comment 2: Line 47. I don't think the reference "5" is related to lung transplantation. The reference is an overview of EIT. Please replace the reference with a reference involving lung transplantation if available. Otherwise, remove the reference.
Reply 2: Thank you for reminding us. We have replaced the previous reference with a reference involving lung transplantation and EIT.
Changes in the text: We have modified our text as advised (see Page 3, line 60).

Comment 3: Line 48: reference 6 referred to a manuscript describing the possibilities of EIT but it does not mention anything on lung transplantation. I recommend only adding references that matter!
Reply 3: Thank you for reminding us. We have deleted this inappropriate sentence.
Changes in the text: We have modified our text as advised (see Page 3, line 60-61).

Comment 4: Line 52: same as in the abstract. Delete the words "an" and "effect". The sentence "… and this phenomenon is largely unobservable" reads easier.
Reply 4: Thank you for reminding us. We have replaced this sentence with "Pendelluft, defined as asynchronous alveolar ventilation, refers to intrapulmonary air redistribution without a change in the tidal volume and this phenomenon is largely unobservable".
Changes in the text: We have modified our text as advised (see Page 3, line 52-54).

Comment 5: Line 52: reference 7. I believe there are better references to describe pendelluft, or at least more references. I would prefer to at least add the next reference: PMID 24199628. To my knowledge the first paper to mention pendelluft in EIT.
Reply 5: We are very much in favor of your suggestion. We have replaced the previous reference with a reference (PMID 24199628).
Changes in the text: We have modified our text as advised (see Page 3, line 60-61).

Comment 6: Line 63: the date format is not appropriate. Replace 4 March 2022 to "March, 4th, 2022 (do this throughout the manuscript". (line 68, 70, 76, 81, 122, 125, 126) As well as in the figures legend.

Reply 6: Thank you for reminding us. We realized that the date format was not appropriate. We have revised the date format throughout the manuscript and the figures legend.
Changes in the text: We have modified our text as advised (see line 73, 80, 87).

Comment 7: Line 70: The authors use cmH2O as the unit for PaO2 throughout the whole manuscript. This is very confusing. The usual customary unit for PaO2 in medical scientific papers is mmHg (or kPa), but I have never seen cmH2O. I assume this is a mistake and should be mmHg??? In figure 4 the reference upper and lower value for PaCO2 is 45 to 35 (cmH2O). In kPa this corresponds with a range of 3.43 to 4.41 (mmHg 26 to 33). In the figure legend it states that the hospital's reference values are 45 to 35cmH2O??? Please explain.
Reply 7: We apologized for our mistakes in the unit for PaO2. The usual customary unit for PaO2 in medical scientific papers is mmHg (or kPa). We have revised the related sentences throughout the whole manuscript and the figures legend.
Changes in the text: We have modified our text as advised (see line 81, 101, 125, 154, Figure 4).

Comment 8: Line 70: …. The patients PaO2 dropped to 61 (from what level of PaO2?)
Reply 8: The patient's PaO2 dropped from 95.0 mmHg to 61.0 mmHg.
Changes in the text: We have modified our text as advised (see Page 4, line 80-81).

Comment 9: Line 81: PC-AC mode (please add which manufacturer)
Reply 9: Thank you for reminding us. We have added the model and manufacturer of the ventilator (Evita Infinity V500, Dräger Medical, Lübeck, Germany) in the revised manuscript.
Changes in the text: We have modified our text as advised (see Page 5, line 94).

Comment 10: Line 83: Why use "eight" cmH2O instead of 8 cmH2O at once?
Reply 10: Thank you for reminding us. We have replaced "eight" with "8" in this sentence.
Changes in the text: We have modified our text as advised (see Page 5, line 96).

Comment 11: Line 87: the patient complained of dyspnea? It was a patient on PC ventilation, how did this patient tolerated this and was he able to complain about dyspnea? What kind of sedation and/or analgesia was used? Please explain.
Reply 11: We apologized for our misleading sentence and the previous description was a mistake. At that time, the patient was under sedation with morphine and propofol and RASS (Richmond Agitation and Sedation Scale) score was -1. He was disable to complain about dyspnea. We have revised this sentence to "In the afternoon, the patient's partial pressure of carbon dioxide (PaCO2) increased to 66.0 mmHg, and oxygen saturation decreased to 89%".
Changes in the text: We have modified our text as advised (see Page 5, line 100-102).

Comment 12: Line 88: Please add which monitoring (EIT) device was used.
Reply 12: Thank you for reminding us. We have added the model and manufacturer of the EIT device (PulmoVista 500, Dräger Medical, Lübeck, Germany) in the revised manuscript.
Changes in the text: We have modified our text as advised (see Page 5, line 102).

Comment 13: Line 90: How much and which concentration of saline bolus was used (please add this in the manuscript.
Reply 13: A bolus of 10 ml of 10% NaCl was adopted in this case. We have described this point in detail in the revised version.
Changes in the text: We have modified our text as advised (see Page 5, line 106).

Comment 14: Line 91: was there a apnea used during the saline injection? Please add if this was used or not. If not, discuss this afterwards since a apnea is normally used to eliminate the interruption of the cyclic breath.
Reply 14: We injected a bolus of 10 ml 10% NaCl through the central venous catheter during an expiratory hold for at least 8 seconds. We have described this point in detail in the revised version.
Changes in the text: We have modified our text as advised (see Page 5, line 105-107).

Comment 15: Line 119-120: please add unit for the numbers
Reply 15: Thank you for reminding us. We have added the unit for the numbers in the revised manuscript.
Changes in the text: We have modified our text as advised (see Page 5, line 148-149).

Comment 16: Line 124: PaCO2 decreased: please add the value PaCO2 from…. to …… For instance, before the first necrosis removal and after the last removal?
Reply 16: We apologized for our misleading sentence. We have revised it to “After last necrosis removal, the patient's PaCO2 decreased to 30 mmHg”.
Changes in the text: We have modified our text as advised (see Page 7, line 154).

Comment 17: Line 133: reference 13. I think this reference is not the right one, I would suggest to use a more appropriate reference (to which ref 13 referred), namely: He H, Chi Y, Long Y, Yuan S, Zhang R, Frerichs I, et al. Bedside evaluation of pulmonary embolism by saline contrast electrical impedance tomography method: a prospective observational study. Am J Respir Crit Care Med 2020;202:1464–1467
Reply 17: Thank you for reminding us. We agree to your suggestion and replace the previous reference with this one.
Changes in the text: We have modified our text as advised (see Page 8, line 185).

**Reviewer B**

Comment 1: Currently, there is no mention of client consent. This should be stated in

the case presentation. There is also no mention of ethical practice as per standard of care. This should be stated in the case presentation.
Reply 1: Thank you for reminding us. We have added the informed consent of the patient and ethical statement in the revised manuscript.
Changes in the text: We have modified our text as advised (see Page 7, line 156-159).

Comment 2: Incorporates the core key messages in the conclusions of the abstract:
- The use of EIT as a dynamic functional imaging tool to evaluate ventilation and perfusion in the transplanted lung and
- - The use of EIT to quantitatively determine pendelluft
Necessary to incorporate more detail into why this is important – further define pendelluft and how it has negative consequences/is significant in lung transplantation and how EIT will help guide treatment and prognosis.
Reply 2: Thank you for your suggestion. We have rewritten the paragraphs to include these points in the revised "abstract" and "introduction" sections.
Changes in the text: We have modified our text as advised (see Page 2, 3).

Comment 3: Pendelluft is an unobservable effect – explain why this is a concern
Reply 3: Thank you for your suggestion. We have rewritten the sentences to include these points in the revised manuscript. Pendelluft, defined as asynchronous alveolar ventilation, refers to intrapulmonary air redistribution without a change in the tidal volume and this phenomenon is largely unobservable. Because pendelluft can contribute to injury by introducing regional overdistension and tidal recruitment, it is essential to detect pendelluft to adjust the ventilation strategy accordingly.
Changes in the text: We have modified our text as advised (see Page 1, line 52-56).

Comment 4: Keywords: case report should be included as a key word.
Reply 4: Thank you for reminding us. We have added it.
Changes in the text: We have modified our text as advised (see Page 2, line 42-43).

Comment 5: Line 51-53 – There is an assumption that pendelluft and the importance of this phenomenon during lung transplantation is understood. This phenomenon and how it relates to the success of lung transplantation with the utilization of EIT needs to be explained in more detail.
Reply 5: Thank you for your suggestion. We have rewritten this paragraph to include these points in the revised manuscript.
Changes in the text: We have modified our text as advised (see Page 3, line 52-64).

Comment 6: Description of the case is not very succinct or to the point.
There are many extra words that are unnecessary while important information is not included. For example, Line 68-69 – on 11 March after stable condition and successful weaning. - Weaning of what? You assume that the reader knows you weaned the patient off the ventilator and ECMO but this should be clearly stated.

Reply 6: Thank you for your suggestion. “Successful weaning” on Lines 68-69 means weaning off the ventilator. To avoid ambiguity and simplify statements, we have revised it to “Finally, the patient was transferred to the general ward on day 11 and discharged from the hospital on July, 20, 2022”.
Changes in the text: We have modified our text as advised (see Page 7, line 154-155).

Comment 7: Timeline should be indicated by days, not dates. For example, rather than listing the dates that events occurred, might be easier to follow if day of admission is day 1 and then events to follow occur on day 3, day 4, etc.
Reply 7: Thank you for your suggestion. We have indicated the timeline by days according to your suggestion. In our revised manuscript, we have taken the day of the patient's second admission to the ICU as day 1.
Changes in the text: We have modified our text as advised (see Page 4, line 87, 93, 151).

Comment 8: Units are incorrect. PaO2 is in units of mmHg, not cmH20. This needs to be corrected throughout the case report.
Reply 8: We apologized for our mistakes in the unit for PaO2. The usual customary unit for PaO2 in medical scientific papers is mmHg (or kPa). We have revised the related sentences throughout the whole manuscript and the figures legend.
Changes in the text: We have modified our text as advised (see line 81, 101, 125, 154, Figure 4).

Comment 9: Line 75-76 – I do not understand this sentence. The pathologist failed to find the basis for rejection or malignant tumor in the specimen. Do you mean the pathologist failed to find the basis for rejection OF malignant tumor in the specimen?
Reply 9: Thank you for reminding us. What we attempt to express here was “The pathologist could not identify the basis for the graft rejection in the specimen AND The pathologist could not identify the basis for the malignant tumor in the specimen”. We have replaced it with “The pathologist could not identify the basis for the graft rejection and malignant tumor in the specimen”.
Changes in the text: We have modified our text as advised (see Page 4, line 86-87).

Comment 10: Line 79 – operator? Should credentials be used to describe the operator? Line 96 – refers to the operator as the intensivist – keep things consistent.
Reply 10: We apologized for our misleading sentence. We have replaced “operator” with “intensivist”.
Changes in the text: We have modified our text as advised (see Page 4, line 91).

Comment 11: Line 83 – 8 cmH2O (not eight) – keep things consistent
Reply 11: Thank you for reminding us. We have replaced “eight” with “8” in this sentence.
Changes in the text: We have modified our text as advised (see Page 5, line 96).

Comment 12: Line 83 – PEAK inspiratory pressure

Reply 12: Thank you for reminding us. We have replaced “the inspiratory pressure” with “the peak inspiratory pressure” in this sentence.
Changes in the text: We have modified our text as advised (see Page 5, line 96).

Comment 13: Line 103 – Mention shunt being significantly improved – no mention of any statistics being performed.
Reply 13: Thank you for reminding us. In this case, the data were derived from only one patient and could not be statistically analyzed, so it is inappropriate to describe them as “significantly”. We have replaced it with “In addition, the global shunt decreased compared to that before necrosis removal”.
Changes in the text: We have modified our text as advised (see Page 6, line 129).

Comment 14: Line 109 – refer to Figure 2 – V/Q did not increase with the removal of necrosis but according to the table, V/Q pre removal was 24.79 and post was 57.46. This indicates an improvement but without statistics, these numbers are hard to interpret.
Reply 14: Thank you for reminding us. We apologized for our mistakes in “V/Q did not increase with the removal of necrosis”. Figure 2 showed that the number of yellow pixels (V/Q matching pixels) increased after the necrosis removal. 24.79 and 57.46 were the percentages of the area that was both EIT-based ventilated and perfused globally and derived from a custom EIT-analyzed software program. We have replaced this sentence with “After the necrosis removal, the V/Q matching increased with improved ventilation, with almost constant perfusion in the bilateral lungs (Figure 2)”.
Changes in the text: We have modified our text as advised (see Page 6, line 127-129).

Comment 15: Line 111 – 121: This whole paragraph is difficult to follow. Be concise.
- Describe pendelluft – How is it relevant?
Reply 15: Pendelluft is intrapulmonary air redistribution in areas with different time constants. We have added it in this revised paragraph.
Changes in the text: We have modified our text as advised (see Page 8, line 166-167).

Comment 16: How is pendelluft characterized?
Reply 16: Pendelluft, defined as asynchronous alveolar ventilation, is intrapulmonary air redistribution without a change in the tidal volume. We have described this point in detail in the revised version.
Changes in the text: We have modified our text as advised (see Page 8, line 165-167).

Comment 17: How does EIT help to quantitatively assess pendelluft?
Reply 17: A simple EIT-based method to evaluate pendelluft quantitatively was adopted in this case. According to Otis et al. [1], when pendelluft presents, the sum of regional tidal volumes is larger than the overall tidal volume, and their difference represents the pendelluft volume. Therefore, EIT-based pendelluft amplitude was defined as the impedance difference between the sum of tidal impedance changes (TIV) in all regions and global TIV. The regional time difference for inspiration begins was defined as the average difference between the time points of global inspiration-begin and pixel

inspiration-begin, and a similar rule was applied for the regional time difference for expiration begins. Similar to the mathematical harmonic curve, EIT-based pendelluft amplitude reflects the magnitude of pendelluft and does quantitative monitoring of this pathophysiological effect. We have described this point in detail in the revised version.
1. Otis AB, McKerrow CB, Bartlett RA, et al. Mechanical factors in the distribution of pulmonary ventilation. J Appl Physiol 1956;8:427-43.

Changes in the text: We have modified our text as advised (see Page 6-7, line 136-147).

Comment 18: What was evaluated to determine improvement in pendelluft after necrosis removal?
Reply 18: In this case, we evaluated "EIT-based pendelluft amplitude" to determine improvement in pendelluft after necrosis removal. We have described this point in detail in the revised version.
Changes in the text: We have modified our text as advised (see Page 7, line 146-147).

Comment 19: Refer to Figure 3 – how is it clear that pendelluft improved?
Reply 19: Thank you for reminding us. We have revised figure 3 and used the same scale standard in the visualization heatmap of pendelluft amplitude. Red to yellow showed an increase in pendelluft amplitude. After the necrosis was removed, the visualization heatmap showed a decrease in the number of pixel blocks lit up by orange-red. Pendelluft was assessed by amplitude. The heatmap of pendelluft amplitude in Figure 3 indicated that pendelluft improved after the necrosis removal.
Changes in the text: We have modified our text as advised (see Page 7, line 147-150, and Figure 3 legend).

Comment 20: Line 124 – two consecutive removals of what?
-patient's PaCO2 decreased to what?
Reply 20: Thank you for reminding us. We have revised this sentence to "After the last necrosis removal, the patient's PaCO2 decreased to 30 mmHg".
Changes in the text: We have modified our text as advised (see Page 7, line 153-154).

Comment 21: Line 141 – 146 – good explanation of pendelluft and its potential importance in the management of the case. Might result in some repetition but, I feel this should be mentioned earlier in the case report to identify the significance of this concept.
Reply 21: Thanks for your suggestion. We have rewritten and added the significance of pendelluft in the "Introduction" and "Discussion" section.
Changes in the text: We have modified our text as advised (see Page 7, 8, 9).

Comment 22: Line 158 – 160 – Summarizes the implications of the case with a core key message.
Reply 22: Thanks for your suggestion. We have revised it with "To summarize, EIT can be used to quantitatively evaluate pendelluft and V/Q matching due to bronchial

stenosis in lung transplantation. This case also demonstrated the potential of EIT as a dynamic pulmonary functional imaging tool for lung transplantation".
Changes in the text: We have modified our text as advised (see Page 9, line 198-202).

Comment 23: English, grammar and punctuation could be improved. Concise, scientific language will improve the overall quality of this case report
Reply 23: Thank you for your suggestion. We have invited a qualified native English editor to help revise grammatical problems in our article. The most recently submitted revised manuscript was checked by an English editor.
Changes in the text: We have modified our full text as advised.

**Reviewer C**

The authors examined a bronchial anastomotic stenosis case in lung transplantation through the means of EIT. They quantitatively detriment pendeluft, and ventilation/perfusion matching (V/Q matching).

Comment 1: Line 33. Do not judge by using "creatively"
Reply 1: Thank you for your suggestion. We have realized that "creatively" was overstated. We have deleted it.
Changes in the text: We have modified our text as advised (see Page 2, line 33).

Comment 2: What EIT device was used?
Reply 2: In this case, the EIT device was PulmoVista 500 produced by Dräger Medical from Germany. We have added a detailed description in this paragraph.
Changes in the text: We have modified our text as advised (see Page 5, line 102).

Comment 3: How many electrodes were attached to the patient?
Reply 3: An EIT belt with 16 surface electrodes was adopted in this case. We have added a detailed description in this paragraph.
Changes in the text: We have modified our text as advised (see Page 5, line 103).

Comment 4: Where were those electrodes attached?
Reply 4: An EIT belt with 16 surface electrodes was placed at the 4th intercostal space level around the patient's thorax. We have added a detailed description in this paragraph.
Changes in the text: We have modified our text as advised (see Page 5, line 104).

Comment 5: Which stimulation-measurement-pattern was used?
Reply 5: PulmoVista 500 determines the distribution of intra-thoracic bioimpedance by applying a known alternating current "I1" to the first pair of electrodes and measuring the resulting surface potentials "Vn" at the remaining 13 electrode pairs. Subsequently, the adjacent electrode pair is used for the next current application and another 13

voltage measurements are performed. The location of the injecting and measuring electrode pairs successively rotates around the entire thorax. One complete rotation creates voltage profiles at 16 electrode positions, each consisting of 13 voltage measurements. The resulting 208 values, also called a frame, are used to reconstruct one cross-sectional EIT image.
Changes in the text: We have modified our text as advised (see Page 5, line 103-109).

Comment 6: What reconstruction algorithm was used?
Reply 6: PulmoVista 500 uses a Finite Element Method (FEM) based linearised Newton-Raphson reconstruction algorithm to convert the 208 voltages of a frame into an ellipsoid EIT image. Meanwhile, a Gaussian filter is used to smooth the image.
Changes in the text: It is not detailed in the text.

Comment 7: As V/Q matching is not very easy. Exactly how was this performed based on the EIT data (algorithm - I know you used a contrast agent)?
Reply 7: EIT measurements were recorded continuously at 20 Hz. During an expiratory hold at least for 8 seconds, a bolus of 10 ml 10% NaCl was injected through the central venous catheter. EIT data were digitally filtered using a low-pass filter with a cut-off frequency of 0.67 Hz to eliminate cardiac-related periodic impedance changes (used to assess ventilation and perfusion). We have added a detailed description in this paragraph.
Changes in the text: We have modified our text as advised (see Page 5, line 105-109).

**Reviewer D**

Comment 1: Please ask a native English speaker to read through the entire manuscript – especially the figure legends are written in poor English, and they are very important for the reader, but also some sentences within the manuscript are not clear e.g.
Reply 1: Thank you for your suggestion. We have invited a qualified native English editor to help revise grammatical problems in our article. The most recently submitted revised manuscript was checked by an English editor.
Changes in the text: We have modified our full text as advised.

Comment 2: Please state which EIT model was used, how many electrodes, which belt, …
Reply 2: Thank you for your suggestion. In this case, we performed electrical impedance tomography (EIT) (PulmoVista 500, Dräger Medical, Lübeck, Germany) for evaluation of both ventilation and perfusion. In this case, we performed EIT (PulmoVista 500, Dräger Medical, Lübeck, Germany) for the evaluation of both ventilation and perfusion. An EIT belt with 16 surface electrodes was placed at the 4th intercostal space level around the patient's chest wall. EIT measurements were recorded continuously at 20 Hz. During an expiratory hold for at least 8 seconds, a bolus of 10 ml of 10% NaCl was injected through the central venous catheter. EIT data were

digitally filtered using a low-pass filter with a cut-off frequency of 0.67 Hz to eliminate cardiac-related periodic impedance changes (used to evaluate ventilation and perfusion) We have revised this paragraph in the re-submitted manuscript.
Changes in the text: We have modified our text as advised (see Page 5, line 102-109).

Comment 3: Which concentration and volume of hypertonic saline was used and how many boluses were administered – did you administer the bolus during apnoea or while patient was still ventilating? How did you filter ventilation signal?
Reply 3: During an expiratory hold for at least 8 seconds, a bolus of 10 ml of 10% NaCl was injected through the central venous catheter. EIT data were digitally filtered using a low-pass filter with a cut-off frequency of 0.67 Hz to eliminate cardiac-related periodic impedance changes. We have revised this paragraph in the re-submitted manuscript.
Changes in the text: We have modified our text as advised (see Page 5, line 105-109).

Comment 4: As we are still not sure if we are looking at perfusion or change in vessel tone when evaluating 'perfusion signals' from the EIT please call perfusion CARDIAC RELATED EIT SIGNAL throughout the manuscript. Meaning when you talk about V/Q you will need to make sure that it is clear that Q is EIT related – one way around would be QEIT.
Reply 4: Thank you for your suggestion. All the "perfusion" in this article refers to pulmonary perfusion, also named forward lung blood flow. The "perfusion" was EIT-based perfusion, not "change in vessel tone". I will describe this in detail below.

The saline bolus EIT method in our case study, also named contrast-enhanced EIT, was performed by introducing a bolus of hypertonic saline into the pulmonary circulation during an expiratory hold. During the breath-hold, tidal impedance caused by breath was lacking and chest impedance was relatively constant. Hence, the variation in impedance caused by the saline bolus reflects forward lung blood flow. The high variation in the regional impedance indicates more saline passing through the corresponding region, which also indicates high local lung perfusion. According to the typical first-pass kinetics, hypertonic saline following the blood flow from the right atrium through the pulmonary circulation is indicative of a significant decline in electrical impedance due to its high conductivity. The impedance-time curve generated by saline boluses was reconstructed, which can be quantitatively analyzed. We used slope analysis in this study. Several studies measuring lung perfusion using EIT saline injection in human subjects used slope analysis [1-2]. The high slope of the local time-impedance curve of the lungs obtained after saline injection indicates a high accumulation of saline, which also reflects high pulmonary perfusion.

[1] Spinelli, E., Kircher, M., Stender, B., Ottaviani, I., Basile, M. C., Marongiu, I., et al. (2021). Unmatched ventilation and perfusion measured by electrical impedance tomography predicts the outcome of ARDS. Crit. Care 25:192. doi: 10.1186/s13054-021-03615-4

[2] Mauri, T., Spinelli, E., Scotti, E., Colussi, G., Basile, M. C., Crotti, S., et al. (2020). Potential for lung recruitment and ventilation-perfusion mismatch in patients with the acute respiratory distress syndrome from coronavirus disease 2019*. Crit. Care Med. 48, 1129–1134. doi: 10.1097/CCM.0000000000004386

Changes in the text: We have modified our text as advised (see Page 5, line 105-109).

Comment 5: To make it easier for the reader, please give the time line in days from surgery additionally to the date. Eg. 22. June (XX postOP day) or you choose "removal" as your day zero – but just using the dates is not guiding the reader very well. Please also change in figure 4.
Reply 5: Thank you for your suggestion. We have indicated the timeline by days according to your suggestion. In our revised manuscript, we have taken the day of the patient's second admission to the ICU as day 1.
Changes in the text: We have modified our text as advised (see Page 4, line 87).

Comment 6: … ventilated and perfused regions were determined with 20% of the maximum pixel value as the threshold.
Does this mean that you only looked at pixels that showed an impedance change of at least 20% of the maximum pixel for either ventilation or perfusion? Please clarify in text.
When this is correct you cannot say that dead space is ONLY ventilated and the shunt is ONLY perfused as you still have 1-19% of impedance change there – please clarify.

Reply 6: Thank you for your suggestion. Since this pixel-based algorithm is so sensitive and the need to improve the signal-to-noise ratio, ventilated and perfused regions were defined as pixels higher than 20% maximum of the functional ventilation and perfusion maps, respectively. The approach, in this case, was precedented by relevant studies. We have realized "only ventilated" and "only perfused" were not rigorous and replaced these with "EIT-based ventilated" and "EIT-based perfused".

Relevant studies
1. He H, Chi Y, Long Y, et al. Influence of overdistension/recruitment induced by high positive end-expiratory pressure on ventilation-perfusion matching assessed by electrical impedance tomography with saline bolus. Crit Care 2020;24:586.
2. Wang YX, Zhong M, Dong MH, et al. Prone positioning improves ventilation-perfusion matching assessed by electrical impedance tomography in patients with ARDS: a prospective physiological study. Crit Care 2022;26:154.
3. Slobod D, Spinelli E, Scaramuzzo G, et al. Redistribution of Perfusion by Prone Positioning Improves Shunt in a Patient with Unilateral Lung Injury. Am J Respir Crit Care Med 2022.
Changes in the text: We have modified our text as advised (see Page 5, line 115-120).

Comment 7: Paragraph 111-121: please make sure in every statement if you are

referring to global or pixel impedance change. What do you mean with left ventral region? How is this defined?
Reply 7: Thank you for your suggestion. The EIT images can be divided into four regions of interest (ROIs). We adopted a quadrant arrangement with the image center as the origin and equally divided it into four ROIs, viz., upper left, upper right, lower left, and lower right, corresponding to left ventral, right ventral, left dorsal, and right dorsal, respectively. We have added the sentences in the revised manuscript.
Changes in the text: We have modified our text as advised (see Page 5, line 111-115).

Comment 8: Please try to start your discussion with a short paragraph on the novel findings in this case, which is the visualization of pendelluft in a lung transplant patient. This then also means that the paragraph on the pendelluft discussion needs to go before the discussion on V/Q.
Reply 8: Thank you for your suggestion. We have added a short discussion paragraph on the novel findings in this case according to your suggestion. In addition, we have adjusted the paragraph on the pendelluft discussion in front of the discussion on V/Q.
Changes in the text: We have modified our text as advised (see Page 7, line 161-164).

## Round 2

### Reviewer A

Comment 1: Line 266: add "time" before "phase shift and amplitude".
Reply 1: Thank you for reminding us. We have added "time" before "phase shift and amplitude".
Changes in the text: We have modified our text as advised (see Page 7, line 143).

Comment 2: Figure 3: Add legend to the Ventilation and Perfusion plots.
Reply 2: Thank you for reminding us. We have added the legend to the EIT-based ventilation and perfusion plots.
Changes in the text: We have modified our text as advised (see Page 15, line 296-303).

Comment 3: Regarding ROIs: Add either a plot where the ROI distribution can be seen or add this to the existing figure 3.
Reply 3: Thank you for reminding us. We have added a plot depicts the ROI distribution for the readers to understand smoothly.
Changes in the text: We have modified our text as advised (see figure 3, line 292-295).

### Reviewer B

Comment 1: There is significant repetition between the abstract and introduction. This makes the report unexciting to read. Simply changing one word here and there does not change the flow of the text. Consider rewriting the abstract.
Reply 1: Thank you for your suggestion. We have rewritten the abstract and avoid the significant repetition between the abstract and introduction.
Changes in the text: We have modified our text as advised (see figure 2, line 21-44).

Comment 2: L 137: Day of surgery (March 4, 2022) should be DAY 1 and the timeline should follow from there. Avoid switching from dates to 'days after surgery' to indicated days. Makes it hard for the reader to follow. Timeline is incredibly confusing.
Reply 2: Thank you for your suggestion. We have set the day of surgery (March 4, 2022) as day 1. Meanwhile, we have added the timeline figure that illustrates the different events in the disease course.
Changes in the text: We have modified our text as advised (see figure 1, line 77).

Comment 3: Missing from the text. Next day is 'day 7'. What happened from day 1 to day 7?
Reply 3: Thank you for your suggestion. We have revised the sentences in this paragraph and provided more information on the treatment.
Changes in the text: We have modified our text as advised (see Page 5, line 80-86).

Comment 4: When stating PaO2, you should also mention the FIO2 at the time of measurement in order for the reader to be able to determine the significance of this value.
Reply 4: Thank you for reminding us. We have added the FIO2 value at that time in the revied revision.
Changes in the text: We have modified our text as advised (see Page 5, line 87-88).

Comment 5: L 148-149: I still do not understand this sentence; the pathologist could not identify the basis for graft rejection and malignant tumour in the specimen. This statement is confusing. It is unclear why you even need to mention that the pathologist did not identify malignant tumour in the sample.
Reply 5: Thank you for your suggestion. We have revised this with "The pathologist could not identify any basis for the graft rejection in the specimen".
Changes in the text: We have modified our text as advised (see Page 5, line 94).

Comment 6: L 153: Why did you switch from physician to intensivist? Keep this consistent.
Reply 6: Thank you for reminding us. We have kept the description consistent in the revied revision.
Changes in the text: We have modified our text as advised (see Page 5, line 88, 90, 98).