Author's response to reviews

Title: Compressed air blast injury with palpebral, orbital, facial, cervical, and mediastinal emphysema through an eyelid laceration: Case report and literature review

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Author's response to reviews: see over
Dear Sir,

We would like to express our gratitude for your kindness in providing very constructive suggestions on the above mentioned manuscript. We enclose the revised typescript here-with. We hope that the manuscript has been improved by the suggestions of the Editor and Reviewers, to whom we are very grateful.

Changes made in response to the comments of the Reviewers are:

[To Referee #1]
(Major revisions)
1. (In the abstract, the authors should start the text with their own case describing it in more detail, and then summarize the literature.)
   → As pointed out, we have revised the “Abstract” section (Page 2).
2. (The abstract can be shortened with 25 %)
   → As pointed out, we have shortened the “Abstract” section (Page 2).
3. (Details about the tool responsible for the trauma should be given.)
   → As pointed out, we have described the details of the responsible tools in Table 1 as much as possible. In addition, we have added a new figure “Figure 1” to promote a better understanding of the responsible tool in the current case.
4. (The authors should indicate how they identified the 14 cases in the literature. There are probably more cases in the literature.)
   → As pointed out, we have described the method of literature search in the “Background” section (Page 3, line 7). As you suggested, we could find similar case reports in the literature search with the PubMed, such as “Bilateral orbital emphysema from compressed air injury.” by Li T, Mafee MF, Edward DP. Am J Ophthalmol. 1999 Jul;128(1):103-4., “Accident with compressed air leading to orbital emphysema and pneumocephalus” by Willenborg KM, Bartling S, Kapapa T, Lenarz T, Stöver T. Laryngorhinootologie. 2006 Mar;85(3):201-3., “Subcutaneous, orbital, and mediastinal emphysema secondary to the use of an air-abrasive device.” By Liebenberg WH, Crawford BJ. Quintessence Int. 1997 Jan;28(1):31-8., and “Traumatic optic atrophy caused by compressed air.” by Gross JG, Doxanas MT. Ann Ophthalmol. 1987 Feb;19(2):69-70, 74. However, in these reports, the causes and entry sites were apparently different from those of our cited cases due to air
hoses or air guns. For example, explosion of an automobile tire, accident by a truck tire, or accident by an air-abrasive device for dentist to remove stains and debris from teeth induced emphysema around the eyes. Judging from the nature of these accidents, we distinguished these cases from our cases. This was the way that we identified and quoted 14 cases in our manuscript.

5. (Usually the SI Unit pascal (Newton per square metre, N/m^2) is favoured.)

→ Thank you for your indication. However, almost all previous reports employed PSI unit. Although the reason is unclear, we think that usage of the same unit is more helpful for readers to compare the powers between our and previous cases. Therefore, please permit us to use the PSI unit in our manuscript.

(Minor revisions)

6. As pointed out, we have removed the sentence “However, no…movements” (Abstract, Page 2).

7. Thank you for your correction. But, we had to remove the sentence including the word of “11cases” according to the shortening of the “Abstract” section. Please allow it.

8. As pointed out, we have removed the word of “rare” (Page 3, line 8).

9. As pointed out, we have removed the phrase of “various kinds of” (Page 3, line 9).

10. As suggested, we have added the description of “a compressed air jet” in the “Case presentation” section (Page 3, line 13-14). In addition, we have added a photo of the tool in a new figure as “Figure 1”.

11. As pointed out, we have replaced the figure number; “Figure 1d” →“Figure 2c” (Page 4, line 18). (In this revision, we had to add a new figure as “Figure 1” to show the details of the responsible tool, so the remaining figure numbers have been revised accordingly.)

12. As pointed out, we have replaced the word of “enter” with “enters” (Page 5, line 23).

13. As pointed out, we have replaced the word of “Prognosis” with “Outcome” (Page 6, line 22).

14. As pointed out, we have replaced the phrase of “users wear” with “users to wear” (Page 7, line 6).

15. As pointed out, we have replaced the word of “Prognosis” with “Outcome” in the “Table 1”.

[To Reviewer #2]

(Background)
1. (correct “Thus far” to “So far” or “Till date”. Minor correction)
   →As pointed out, we have replaced “Thus far” with “So far” in the fourth sentence
   in the “Background” section (Page 3, line 6).

(Case presentation)

2. (Major revision: How are you so certain about the exact air pressure. Please describe
   the air hose nozzle tip and if possible provide picture of it.)
   →We visited the sawdust factory which the patient worked for, and examined the
details of the tool including the power of the air compressor. We have added some
descriptions of the air hose nozzle in the first sentence of the “Case presentation”
section (Page 3, line 13-14), and provided a picture of it in new Figure 1.

3. (Major correction: Was hertel's exophthalmotery done to quantify exophthalmos, if
   so please provide the values of the same.)
   →As suggested, we have provided the values of Hertel’s exophthalmometry in the
fifth sentence of the “Case presentation” section (Page 3, line 20-22).

4. (Minor: Please remove adjective such as 'small'. Also please describe if the skin
   laceration was on the eye lid skin or on the skin of the nose.)
   →As suggested, we have removed the word “small” from the sixth sentence of the
   “Case presentation” section (Page 3, line 22). We have also added the phrase of “on
   the eyelid skin” in the same sentence (Page 3, line 23).

5. (Major revision: Why was neck, chest and brain CT scan ordered. Was there any
   systemic findings to warrant CT scan of the chest, brain, neck.)
   →We ordered only orbital and facial CT scan at that time, but a radiologist noticed
   that the emphysema extended to the brain, neck, and mediastinum. Therefore, he
   further evaluated the emphysema on his own judgment.

6. (Major revision: Was there presence of proptosis on CT scan ??)
   →Yes. Thus, we have added this description (“and proptosis of the right eye”) in the
   14th sentence of the “Case presentation” section (Page 4, line 10).

7. (Major revision: Kindly advise if any internist examined the patient and what advise
   did he gave for mediastinal emphysema as to the best of our knowledge its a
   medical emergency.)
   →As pointed out, we have added the following description as an internist’s advise
   in the 17th sentence of the “Case presentation” section (Page 4, line 12-15); “We
   consulted an internist about the condition and treatment for the neck and mediastinal
   emphysema. As the patient’s cardiopulmonary functions were stable at that time, the
   internist recommended us to cautiously observe the patient with prophylactic
   antibiotics.”
8. (Major revision: What was the cause of decreased vision at presentation and kindly annotate the VA at presentation in Snellen's as well.)
   →As pointed out, we have added our speculation of the cause of decreased vision at presentation in the 22th sentence of the “Case presentation” section (Page 4, line 20-24). In addition, we have inserted each value of Snellen’s VA in addition to decimal VA throughout the text.

9. (Major revision: Was the repeat CT scan warranted at follow up, were there any specific signs to indicate CT scan and if the CT scan of chest and neck was also done.)
   →Although the patient’s general condition was good, peripheral blood leukocytes slightly increased and serum C-reactive protein (inflammatory reaction) also increased at 2-week visit after injury. Therefore, we ordered CT scan to rule out infection focus such as mediastinitis and orbital cellulitis. As a result, neither infection focus nor residual emphysema was detected. The leukocytes and inflammatory reaction were normalized thereafter, although the reason for the increase in these parameters was unclear. No other CT scan has been conducted until now. We believe that the second CT scan was needed at that time, and it provided quite important information to judge further treatments.

10. (Kindly keep conclusion restricted to what you got from the case report. Rest of the point can be put in the discussion.)
   →As pointed out, we have deleted last 2 sentences of the “Conclusion” section. Several parts of these sentences have been moved to the end of the “Discussion” section.

   In the process of this revision, we had to add a new figure to reply to some comments. Therefore, the previous figure numbers have been revised accordingly. The “Figure legends” section has also been revised.

   Thank you again for the Editor and Reviewers’ very helpful comments. We hope that we have addressed all of the concerns expressed and that the manuscript is now eligible for inclusion in your journal.

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