Author’s response to reviews

Title: How Spontaneous Pneumothorax is managed in Emergency Departments: A French multicentre descriptive study.

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Responses to Reviewers’ Comments

Reviewer #1:

Ryan Shuster (Reviewer 1):

• Thank you for the opportunity to review this interesting paper.

My first observation is that the results section of the abstract is very difficult to follow and requires significant upheaval. Additionally, there are a number of sections with statistical observations which do no make sense. I assume this is due to miscalculations. A few of these are: "Observation was the chosen strategy for 985 patients (53%). Interventions were performed by emergency physicians in 71% of cases." "A total of 1990 SP were studied: 1,632 (52.8%) PSP and 358 (11.6%) SSP."

Response: We thank the reviewer for this pertinent remark. We agree that results presented in the abstract are difficult to follow. We also changed the abstract page 3 line 70 as follows:
“In 883 patients with an intervention (47%), it was performed by emergency physicians in 71% of cases and thoracic drainage was the most frequent choice (670 patients, 76%).”

The reviewer is correct in pointing out that there was an error in the percentage mentioned in the results "A total of 1990 SP were studied: 1,632 (52.8%) PSP and 358 (11.6%) SSP." We thank the reviewer for bringing this error to our notice, and it has now been corrected in the revised manuscript page 10 line 190 as follows:

“A total of 1990 SP were studied: 1,632 (82%) PSP and 358 (18%) SSP.”

• Currently, tables 1 and 2 are difficult to interpret due to unclear and changing parameters within brackets. The use of % in order to better define these may be useful.

Response: We agree with this pertinent remark. We have modified the tables 1, 2 and 3 by adding percentages to make easier interpretations of results.

• I found the flow diagrams very easy to follow and extremely helpful in the overall understanding of the findings. Adding percentages at each clinical decision point may further aide the reader.

Response: Again, we thank the reviewer for this very pertinent remark. We have modified the figures 1 and 2 by adding percentages to make easier interpretations of results.

• Finally, I found the authors comments regarding size of the SP difficult to understand. Especially the comment; 'Clinical tolerance and persistence of symptoms such as dyspnea or chest pain is probably more important in deciding whether a patient can be discharged after the ED, rather than the size of pneumothorax.' Is there any current evidence to support this claim? Without it, it is difficult to understand the clinical relevance of an observational study regarding interventions without any data on the size of the SP. If size is truly not necessary when intervening, a better case must be made within the background and discussion.

Response: We agree with the reviewer’s remark that the comment “Clinical tolerance and persistence of symptoms such as dyspnea or chest pain is probably more important in deciding whether a patient can be discharged after the ED, rather than the size of pneumothorax.” is probably difficult to understand. We have modified the discussion page 15 line 321 as follows:

“According to the BTS recommendations (1), the presence of breathlessness influences the management strategy and indicates the need for active intervention as well as supportive treatment. So, selected asymptomatic patients with a large PSP may be managed by observation
alone. Then, clinical tolerance and persistence of symptoms such as dyspnea or chest pain is also important in deciding whether a patient can be discharged after the ED as purposed by an ongoing multicentre, prospective, randomised, controlled, open label parallel group, non-inferiority study study by Brown et al. comparing conservative versus invasive treatment of PSP (30). The hypothesis is that resolution of large PSP will be similar after 8 weeks with either therapeutic regimen.”

We thank the reviewer for the very pertinent remark concerning the difficulty « to understand the clinical relevance of an observational study regarding interventions without any data on the size of the SP ». Because of the retrospective design, data were not available regarding the size of pneumothorax. This therefore precludes evaluation of whether the individual treatment strategy used for each patient was in line with current guidelines. As mentioned above, the size is not the only criterion to be taken into account, and the presence of breathlessness influences the management strategy according to the BTS recommendations. Nonetheless, there is no consensus about standardized measurement of the size of pneumothorax, and the different existing classifications may lead to discordance therapeutic recommendations in certain cases. Accordingly, although we do not have data about the size of the pneumothorax in this study, it is unlikely that our study population differs substantially from the general population of patients admitted for this disease, given the study design. We firmly believe that the absence of data on the size of the pneumothorax does not call into question the validity of our results, which still enable analysis of the overall trends in management. We have modified the discussion page 15 line 314 as follows:

“Although data regarding the size of pneumothorax were not available in this retrospective study, the individual treatment strategy used for each patient was in line with current guidelines and it is unlikely that our study population differs substantially from the general population of patients admitted for this disease. Furthermore, the size of pneumothorax is not consensual according to recommendations of the ACCP and BTS, as previously shown in several studies (31-33).”

- Aside from these points I found the paper engaging and great to read.

Reviewer #2:

Oka Shojiro, M.D. (Reviewer 2)

- This paper is very interesting to me. I thought the result should be shared in the world.

The information I want to add is about the size of pneumothorax.
Patients who are clinically stable and have their first PSP can be supplemental oxygen and observed if their pneumothorax is small ($\leq 2$ to 3 cm between the lung and chest wall on a chest radiograph). Patients who are clinically stable and having their first PSP should undergo needle aspiration if their pneumothorax is large ($> 3$ cm rim of air on chest radiograph).

Response: We thank the reviewer for this pertinent remark. Indeed recommendations about the treatment of pneumothorax include size of pneumothorax. But because of the retrospective design, data were not available regarding the size of pneumothorax. This therefore precludes evaluation of whether the individual treatment strategy used for each patient was in line with current guidelines. Accordingly, although we do not have data about the size of the pneumothorax in this study, it is unlikely that our study population differs substantially from the general population of patients admitted for this disease, given the study design. Nonetheless, there is no consensus about standardized measurement of the size of pneumothorax, and the different existing classifications may lead to discordance therapeutic recommendations in certain cases. We firmly believe that the absence of data on the size of the pneumothorax does not call into question the validity of our results, which still enable analysis of the overall trends in management. We have modified the discussion page 15 line 314 as follows:

“Although data regarding the size of pneumothorax were not available in this retrospective study, the individual treatment strategy used for each patient was in line with current guidelines and it is unlikely that our study population differs substantially from the general population of patients admitted for this disease. Furthermore, the size of pneumothorax is not consensual according to recommendations of the ACCP and BTS, as previously shown in several studies (31-33).

Despite the lack of data about the size of pneumothorax, we found that SP were well tolerated and could probably be managed with outpatient management. According to the BTS recommendations (1), the presence of breathlessness influences the management strategy and indicates the need for active intervention as well as supportive treatment. So, selected asymptomatic patients with a large PSP may be managed by observation alone. Then, clinical tolerance and persistence of symptoms such as dyspnea or chest pain is also important in deciding whether a patient can be discharged after the ED as purposed by an ongoing multicentre, prospective, randomised, controlled, open label parallel group, non-inferiority study study by Brown et al. comparing conservative versus invasive treatment of PSP (30). The hypothesis is that resolution of large PSP will be similar after 8 weeks with either therapeutic regimen.”