

Peer Review File

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Reviewer A

This study is very interesting. The Yang's index is considered to be an easy method for predicting the severity of pulmonary contusion. However, I am raising a few issues to be addressed below, which I believe should be revised before publication.

Major comments

Comment 1

Authors should describe the difference of Yang's index between two radiologists. In addition, why did data with a great difference between Yang's index and volume construction occur?

Reply 1: In this study, two doctors evaluated the same patient separately. If their scores were very close, the average value was selected as the final data. In rare cases where there was a significant difference in the scores, a senior doctor would participate in the discussion and scoring.

The Yang index is mainly used to assess the degree of pulmonary contusion, not the actual volume of pulmonary contusion. To better evaluate the contusion of the left and right lungs, the contusion index of each lung was set to 1, and the maximum value of the Yang index was set to 2. The maximum value of the volume reconstruction method was 1. This is the reason why there is a great difference between the two evaluation values.

Comment 2

Authors should describe multivariate analysis data in the case of the severity of pulmonary contusion evaluated by volume construction. I and authors want to know the difference between data evaluated by Yang's index and that evaluated by volume construction.

Reply 2: The main reason for using the Yang index in this study is that the calculation using volume reconstruction method is very cumbersome. Even trained and skilled doctors need at least an hour to calculate a patient's pulmonary contusion using volume reconstruction method. Calculating the patients included in this study using volume reconstruction method would be very difficult. In our previous study, we have demonstrated the linear consistency of the two evaluation methods and ultimately confirmed the effectiveness of the Yang index through multivariate analysis.

Comment 3

Which combination of pulmonary atelectasis, severe comorbid fractures, severity of rib fractures, and Yang's index most precisely predict pulmonary complications or progression, lung damage or poor prognosis?

Reply 3: The analysis of this study shows that the above factors are all involved in the occurrence of pulmonary complications, and their weights are represented by corresponding scores in the nomogram. Moreover, the weights of pulmonary infection and respiratory failure are not completely the same. We believe that the occurrence of complications after pulmonary contusion is the result of multiple factors working together.

Comment 4

Minor comment

This manuscript has so many typos.

Reply 4: Thank you for your correction. We have carefully checked and made the necessary modifications.

Changes in the text: see Page 4, line51; Page 5, line71; Page 6, line85,88; Page 7, line111,122; Page 8, line130,133; Page 10, line186; Page 13, line242; Page 14, line262 and Page 15, line292.

Reviewer B

1. And patients are from 8 hospitals, please list all of the hospitals' names in Methods.

125 *Study population* ↵

126 A retrospective analysis was performed on the clinical data of blunt chest trauma patients with

127 pulmonary contusion admitted to the thoracic surgery departments of **eight hospitals** in China from

Reply: We have revised it as required.

2. You should provide a summarized legend for **ALL your figures**.

Figure 1 **Xxxx** ↵

(A) Measurement of unilateral total lung volume ↵

(B) Measurement of pulmonary contusion volume ↵

And please revise the figure legends as format below.

Figure 1/2/3...: xxx. (A)...(B)...

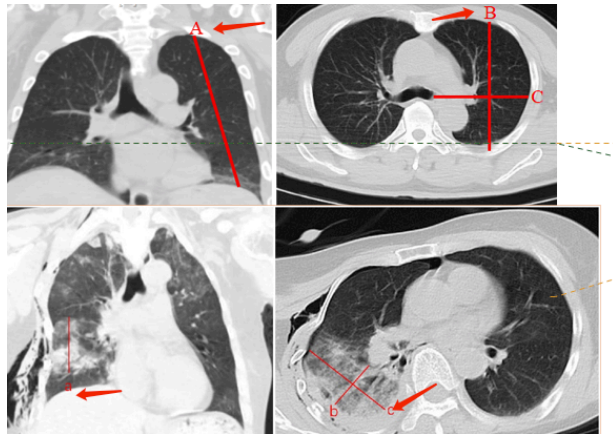
Figure 1 Xxxx

(A) Measurement of unilateral total lung volume

(B) Measurement of pulmonary contusion volume

Reply: We have revised it as required.

3. Figure 1: Please define those letters (A/B/C/a/b/c) in figure legends.



Reply: We have revised it as required.