Reviewer's report

Title: Occult Pneumothorax, Revisited.

Version: 1 Date: 25 April 2010

Reviewer: Chad Ball

Reviewer's report:

Omar and colleagues have accurately described the definition, incidence, status, impact and treatment of OPTXs in the current literature. They have also cleverly included 3 case descriptions as a means of educating readers about the varying presentations of OPTXs. Although the manuscript is sound in principle, I have major concerns. First, there is a need for significant word-smithing, and a general improvement in the flow of the manuscript from sentence to sentence. My additional comments are arranged according to the author’s sub-section headings. Each are Major Compulsory Revisions. More specifically:

Introduction:
1. The term “accidents” has long since been discarded when discussing injuries because it incorrectly implies that traumatic events are neither predictable, nor preventable. Use the term “collisions” or “events.”
2. Please provide a reference for the increasing incidence and frequency of “traumatic accidents” as you have stated.
3. The word “increasing” is used 3 times in the first sentence. Please improve the flow of this sentence, and employ synonyms.
4. With advent of the Extended FAST examination (Focused Assessment with Sonography for Trauma)(i.e. thoracic US), most centers now utilize EFAST before traditional screening CXRs. As a result, this sentence must be altered to indicate that an AP CXR may have “traditionally” been the initial test of choice.
5. Please use “cervical-collar” instead of “head-collar”.
6. Please remove “vs.” in the last sentence and replace it with a less colloquial expression.

Definition:
1. In this paragraph, you use the term “antero-posterior” after having utilized “AP” in the previous one. Please define the abbreviations once initially, and then use them throughout the remainder of the manuscript. This could also be applied to CXR for a “chest x-ray”.

Incidence:
1. Although the initial sentence is accurate, it is eerily similar in structure and wordage to a previously published manuscript by Ball et al. To avoid charges of plagiarism, I would recommend re-structuring this sentence. The same comments can be made for a number of the sentences in this section (including
the last one), as well as peppered throughout the entire manuscript. Each sentence in your paper should be unique, or alternatively must be appropriately/carefully referenced. Because of the many similarities in structure, data, organization and wording, the authors should also reference a related review on the most recent OPTX data (Ball, Kirkpatrick and Feliciano. Canadian Journal of surgery, 2009;52(5):E173-E179)(included with this review).

2. Reference is made to Wilson et al. yet no reference is provided. Please include this.

3. Reference is made to the incidence of OPTX in penetrating trauma patients “approaching 17%”. Please specifically reference this data and better explain the occurrence of this diagnosis in a patient population that typically utilizes upright CXRs with a sensitivity of detecting a PTX equaling at least 95%.

4. Reference #11 is incorrect. This paper was published in “Injury” (not Journal of Trauma).

Why Occult?

1. Please reference the comment pertaining to posteromedial OPTX distribution in patients with single lung ventilation.

2. Again, there are numerous sentences within this section that are identical to previously published works.

Radiographic clues for suspicion of occult pneumothorax:

1. The authors present a very comprehensive list of potential clues for detecting a PTX.

Truly occult or missed pneumothorax:

1. Please add a “?” to the section heading.

2. The first sentence is confusing. Please edit accordingly.

3. The reference attached to the table lists reference #21. I think it is actually reference #20 in the author’s list (as noted earlier in this section).

4. Again, there are a number of sentences within this section that are identical to previously published works.

Case presentations:

1. This case series is very well done, and an excellent methodology for educating the audience.

2. The image resolution of the CXR for case #1 is relatively poor. Do the authors have another, more clear version?

3. In case #2, please replace the term “T-Bone” with a less colloquial option, such as “perpendicular”.

4. The patient’s name is visible in both images for case #3. These MUST be removed.

Management:
1. The second sentence is confusing. Please restructure it to be more clear.
2. Again, there are number of sentences within this section that are identical to previously published works.

Conclusion:
1. The authors make a bold (although potentially valid) concluding statement that “any trauma victim presenting to the emergency department with symptoms of respiratory distress should be offered a chest CT, even if the CXR showed no abnormalities”. This statement/concept is concerning for 2 reasons. First, the role of early thoracic ultrasonography (EFAST) has increased significantly over the past decade. More specifically, with a sensitivity approaching 100%, it is a very good test for detecting PTXs. It also has the advantage of being available at the bed-side. Considering the increasing profile of radiocarcinogenesis in the media/literature, the authors must temper their concluding remarks, as well as place them in the context of thoracic ultrasound. This has been done most recently in a manuscript by Ball et al (Ball, Kirkpatrick and Feliciano. Canadian Journal of surgery, 2009;52(5):E173-E179) who provide a flow chart to assist in the diagnose of these injuries. This algorithm also uses early thoracic ultrasound to limit CT over-usage.

More concerning, is the implication that patients with respiratory distress should be transported to a CT scanner. While our own CT scanner is 50 feet from the trauma bay (a distance I suspect is similar to the authors’ given their description of a chest CT completed 1 minute after a CXR (case #3)), most trauma centers do not have this logistical advantage. As a result, I would be concerned that a number of patients would die of a pulmonary arrest during transport/scanning if we made the blanket statement that they required a chest CT (while in distress). This concern also applies to the concluding sentence in the abstract.

Overall, this manuscript addresses a very relevant and important topic that is often overlooked by traumatologists. As the authors have stated, missing a PTX can be life-threatening.

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests.