

Peer Review File

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Review Comments

Comment 1: When mentioning specific studies (especially to summarize management recommendations), it would be helpful to delineate 1) study design (e.g. RCT, retrospective cohort study) and 2) sample size. This will help readers gauge strength of management recommendations.

Reply 1: This is a very important point and we agree that this will bring strength to our review article. Please note that we have attempted to make these changes throughout the article accordingly.

Comment 2: I recommend thorough grammatical and stylistic review of the manuscript. For example, several acronyms are introduced without explanation, and extraneous study details detract from succinct summaries. Other sections, as detailed below, require expanded discussion.

Reply 2: Thank you for this input. We have taken time to thoroughly examine our article and provide a more comprehensive overview.

Comment 3: Blunt and penetrating cardiac injuries

I don't think reference #7, a case series of patients undergoing surgery for blunt cardiac injury, is an appropriate reference for the first sentence. The authors should either cite a representative population-level study (e.g. at least national cohort), and make sure to cite the primary literature (not reference of a reference)

Reply 3: Thank you for this observation. We have made the recommended changes. A reference has been cited from the Surgical Clinics of North America for blunt and penetrating injury.

Comment 4: Detailed anatomy of where cardiac injuries are sustained (e.g. LV, RA, LA) appears unhelpful and unnecessary, especially when these statistics are based on a small single institutional series.

Reply 4: We agree that this detracts from the main goals of the paper and the section and have removed them accordingly.

Comment 5: -"This review is in concordance with the literature": the authors previously cited a retrospective cohort study, not a review.

Reply 5: Thank you for this observation, we have made the change to state "this retrospective cohort study is in concordance with the literature.."

Comment 6: - "Benign penetrating cardiac injury can also occur ranging from 15-30%": should specify denominator (i.e. 30% of which population?)

Reply 6: We agree that this statement was elusive and therefore have removed this.

Comment 7: In the resuscitation area, I can't imagine an instance where Beck's triad will be relied on to suspect cardiac injury. Please remove reference to Beck's triad.

Reply 7: Thank you for this important insight, it has been removed.

Comment 8: Cardiac tamponade

- please see above re: Beck's triad reference

Reply 8: Thank you for this important insight, it has been removed.

Comment 9: Myocardial rupture:

- skin staples can also be used for rapid temporary control

Reply 9: Thank you for this alternative management option. We have added this to our manuscript.

Comment 10: Pericardial injury

- either here or in the cardiac tamponade section, it is important to mention that pericardial injury cannot be ruled out by a negative FAST in the presence of concurrent hemothorax

Reply 10: Thank you- this has been highlighted.

Comment 11: Myocardial contusion

- ICU monitoring is not required suspected myocardial contusion, as long as telemetry monitoring is available. Level of care would be hospital-specific.

Reply 11: This is an excellent point and has been updated in our revised manuscript.

Comment 12: Tracheobronchial injury

- It would be worth discussing the role of ECMO in the case trauma pneumonectomy is performed.

Reply 12: Unfortunately , despite a thorough review of the literature, we were not able to find any evidence to outline the used of ECMO in pneumonectomy. Most of the literature supports ECMO in post-pneumonectomy ARDS. If you happen to have any salient references, we would be happy to review them and include them in our manuscript.

Comment 13: Traumatic pneumothorax

- Occult pneumothoraces are commonly diagnosed in the era of pan-scan for injured patients. Emerging evidence suggest that pneumothoraces seen only on CT (i.e. not on CXR) do not require tube thoracostomy. Occult pneumothoraces and their management deserve some expanded discussion.

Reply 13: This is an excellent point. Please see the updated section on occult pneumothoraces.

Comment 14: Traumatic hemothoraces

- "For those with massive hemothorax >1500mL of blood or >200ml/h for at least 4 hours from the chest tube, thoracotomy is recommended." The proper citation is Karmy Jones et al (Archives of surgery 2001: PMID 11343541). As mentioned above, the authors should cite primary literature rather than references of references. Moreover, this is an erroneous interpretation of Karmy-Jones study that has perpetuated trauma literature. Undergoing

thoracotomy was an inclusion criteria- by definition, an inclusion criteria cannot be the outcome. There is no evidence supporting a threshold chest tube output that "mandates" thoracotomy.

Reply 14: Thank you for this important point. This has been removed in the revised manuscript

Comment 15: Pulmonary contusion

- though rib fixation is not discussed in-depth, the authors do mention an increasingly common operation performed among patients with thoracic injuries. "Although controversy exists regarding timing of surgical fixation for flail segments": a vast majority of evidence suggests early rib fixation is associated with improved outcomes. Several evidence syntheses (e.g. PMID 33212228, 30940753) have also demonstrated importance of SSRF for mitigating sequelae of mediastinal injuries such as pulmonary contusions, and are worth mentioning.

Reply 15: Thank you for these excellent resources. We have included rib fixation into this section as well as these two articles for reference.

Comment 16: Pulmonary Laceration

- paragraph starting with line 414 (reference 53). Much extraneous detail is included (e.g. 823,221 population, number excluded for missing data). The only relevant population appears to be the 3,433 require lung resection.

- "Given that anatomical lung resection has been demonstrated to increase the morbidity and mortality of patients..." The authors should refrain from using causal language when referring to observational studies. Only a well-designed RCT can suggest causation. Database reviews, as the authors refer to, can only suggest associations (e.g. association between anatomical lung resection and increased morbidity/mortality- this is obvious, as anatomic resection likely suggests more severe injury was sustained)

- Most of this section states the obvious, an association between undergoing anatomic resection and higher mortality/mortality. Such discussion is unhelpful. This section can be replaced with the subsequent section on pulmonary hemorrhage control/lung resection, which offer helpful discussion on operative techniques

Reply 16: Thank you for this insight. We agree with you that this section seems extraneous and therefore it has been removed.

Comment 17: Conclusion

- We advocate that all esophageal, tracheobronchial injuries as well as pulmonary lacerations requiring resection are best managed by thoracic surgery: I would consider qualifying lacerations with lacerations requiring anatomic resections. Wedge resections are well within the practice scope of any trauma surgeon.

Reply 17: This is an important distinction that has been clarified in the revised manuscript.

Comment 18: (Suggestions after Re-review)

The section on pulmonary trauma should be removed, as this is not part of the scope of this article on mediastinal trauma.

Reply 18: Done.