Peer Review File

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Reviewer A

Summary:

This paper is intended to be a systematic review of chest wall stabilization and recovery after trauma. This is a relevant topic because chest trauma causes mortality and great disability specially when patients suffer large and complex chest wall trauma or are involved in severe polytrauma. The report is made using the PRISMA protocol however, the manuscript looks like a narrative review which should not follow the PRISMA protocol strictly.

Comment 1:

Abstract:

- Introduction offers well-known data. My suggestion is to shorten it leaving, mainly, the aim of the study
- Methods: Ok.
- Key findings: Probably some more interesting data can be added to the current test (add details…)
- conclusion: again, it offers no data. Please, review the text and extract the more interesting techniques or protocols or guidelines or…

Reply 1: Suggested changes have been made.
Changes in the text: 26-47.

Comment 2:

Introduction:

I would recommend focusing the aim of the study. The review is not about any type of chest wall reconstruction, it is about a specific one: the one after chest wall trauma
PRISMA reporting needs a reference citation but I my opinion, you don´t need to use and cite it.
Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71

Reply 2: Suggested changes have been made.

Comment 3:

Methods:

Following or not the PRISMA protocol, Table 1 should be replaced by a flow chart. (Figure 1).
I would suggest identifying who did the reading, who was the third deciding person…
Give as much details as possible.

Please state the inclusion/exclusion criteria for paper selection

Reply 3: Suggested changes have been made.
Changes in the text: Figure 1; 119-128.

Comment 4:
Results:
Please identify this section that contains all the findings and comments around them. You can call it Results or "Key Content and Findings".

Mesh section. Authors have gone through a nice "trauma search" but in this section they are mixing data from meshes used after chest wall resection and its specific data. Those data cannot be extrapolated to the specific situation. My suggestion is deleting the information.

Reply 4: Suggested changes have been made.
Changes in the text: 220-224; 415-419.

Comment 5:
Discussion:
There are some statements that are based on no data. For instance: "The 229 ideal timing for intervention is within 72 hours from trauma" Can you, please, present the data supporting this statement?

Some data should be supported (if available) in comparative data. Please, provide as much comparative data as possible to support statements.

No cost data is provided and could be very interesting having some references.

References: search structure started in 2010 but there are several papers from 1906,1980 and 2001 and 2002…. How come?

Reply 5: Suggested changes have been made.
Changes in the text: 259; 296-302; 504-506; 122-124.

Reviewer B
Techniques of chest wall stabilization are of high surgical and economic relevance and impact.

Comment 1:
Your Medline based research revealed over a thousand articles out of which 214 seemed relevant to the topic. This high effort is not reflected in the results section. In

its present state the manuscript only lists possible options for chest wall stabilization and citations therefor.

Also, titanium-based rib clips are not mentioned in the text but are commonly used in surgical rib fixation. A detailed conclusion of the most preferred osteosynthetic materials and their advantages / disadvantages in e. g. operating time, frequency of material failure, impact on outcomes, etc. are missing or not clearly pointed out.

Thus, a more detailed analysis of the articles should be presented: For example, data could be added giving details about relevant articles and a statistical analysis of the osteosynthetic systems used (e.g., "from 200 articles the majority of X% of the authors used Titanium plates and screws, X% used X" etc.). What differences were to be found in comparison of the osteosynthetic systems and materials? Were these differences relevant to patients' clinical outcomes, e. g. intubation time, hospitalization, postoperative complications and pain management etc.? A review of over 200 articles could provide this very useful information.

Reply 1: We have changed the type of article as narrative review. We performed an overview (or a narrative review).
Changes in the text: 146-151.

Comment 2:
Figures are acceptable and show good examples of various stabilization techniques / materials but should be supplemented by more radiologic imaging to show the effect of surgical stabilization.

Table 1 does not provide useful information on article selection.

Furthermore, spelling and syntax should be checked throughout the manuscript (e.g., in the abstract: "Techniques often motivated by the adaptive abilities of the operator with the instruments available and according to the different clinical needs (lines 38-40)" or "research" (line 40)).

Reply 2: Suggested changes have been made.
Changes in the text: Figure 1; Figure 4.

Reviewer C
Comment 1:
1) I would recommend using one of the diagrams provided by PRISMA like "PRISMA 2020 flow diagram for new systematic reviews which included searches of databases and registers only" instead of Table 1 which is hard to read and appears unnecessary.

Reply 1: Suggested changes have been made.

Changes in the text: Figure 1

Comment 2:
2) Page 6, lines 132-136: Any particular reason why significance (p) is only provided for mechanical ventilation? If you want to add statistics, consider adding p-value for other parameters: surgical time, ICU stay etc.

Reply 2: Suggested changes have been made.
Changes in the text: 146-151.

Comment 3:
3) What types of study authors have included in this review? What percentage of case reports, randomized control studies, multicentered etc?

Reply 3: We have changed the type of article (narrative review).

Comment 4:
4) Statements like "Authors showed good results" and "Method demonstrated better outcomes" need to be elaborated with statistics, numbers etc.
Reply 4: Suggested changes have been made. We performed an overview (or a narrative review).
Changes in the text: 146-151

Comment 5:
5) This is a thorough review of the current published data for chest wall reconstruction. Unfortunately, the data available is not adequate to guide modality of intervention. I believe the goal of this review is to establish the need for a more randomized focus on the effects of different approaches to patient outcomes.

Therefore, a discussion section where the authors summarize the evidence and provide their own interpretation needs to be elaborated significantly. What is short- and long-term results of described studies? Any comparisons of described methods?

Reply 5: We have changed the type of article (narrative review). We performed an overview (narrative review).

Comment 6:
6) Lines 239-241 "The patient's clinical conditions… lead the choice of device": From my impression, this statement sounds like conclusion for the current paper. Is it so?

Reply 6: This is a claim based on evidence from the literature

Comment 7:

7) Any thoughts about nitinol device which described by Dr. Lardinois in his recent paper “Chest wall stabilization and rib fixation using a nitinol screwless system in selected patients after blunt trauma: long-term results in a single-centre experience.”

Reply 7: Suggested changes have been made.
Changes in the text: 302, 507-510