Reviewer’s report

Title: Effect of Three Remplissage Techniques on Tendon Coverage and Shoulder Kinematics: A Navigated Robotic Biomechanical Study

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Reviewer: Felix Dyrna MD

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Review:

BMC Musculoskeletal Disorders

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Title: Effect of Three Remplissage Techniques on Tendon Coverage and Shoulder Kinematics: A Navigated Robotic Biomechanical Study

Article Type: Research article

Keywords: Shoulder, dislocation/instability, Hill-Sachs-defect, remplissage, tendon coverage, torque, kinematics

1. Overall Comments:

Well written article that describes three different remplissage procedures to prevent Hill-Sachs-defects to engage. A navigated robotic model was used to address biomechanical questions. The aims of the study comparing those three technics regarding to:

1. Prevention of engaging
2. Defect coverage by tendon
3. Influence on glenohumeral rotational torque

2. Detailed comments:

Structure:

The text is structured in Abstract, Introduction, Methods, Results, Discussion, Conclusion and References and therefore sufficient structured.
Title:
No comment.

Abstract:
The method paragraph mentioned a force-moment controlled robotic system but that is not the way it is described in the method and material section please check that.

Introduction:
For a better understanding please explain the check-rein effect (line 88)

Methods:
The author should refer to how the specimens were embedded concerning the scapular angle (line 121). The passive motion markers are fixed on the embedded portion and not directly to the bone which may influence the exact humeral motion and should be pointed out (line 123). The used pressure sensitive film is a limit of the study and should be pointed out as one of those. Since it is a onetime measuring device that records everything and will be influenced by the surgical procedure. Concerning the robotic protocol, the testing was done by a motion controlled setting I would guess and forces were measured instead of a force-moment controlled testing as described in the abstract. If it really was force-moment controlled I would like to know the target moment force and how you came up with the applied value.

Results:
No comment.

Discussion:
No comments.

References:
No comments.
Figures & Tables:
No comments.

Recommendation:
Accepted after minor revision.

1. Are any ethical issues suitably addressed within the manuscript?
   No.

2. If the manuscript includes any individual data or is a case report, is patient anonymity maintained and is consent for publication of the data stated in the manuscript?
   Manuscript does not include any individual data.

3. Is any supporting data deposited in a suitable public repository?
   Every reference could be found.

4. If any software or database is introduced in the manuscript, is it available for the reviewers to test?
   A software test was not necessary.

5. Does the manuscript adhere to any relevant reporting guidelines?
   The form, style and language of the manuscript respects guidelines.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an
additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

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