Reviewer's report

Title: Biomechanical comparison between single-bundle and double-bundle anterior cruciate ligament reconstruction with hamstring tendon under cyclic loading condition

Version: 1 Date: 3 August 2011

Reviewer number: 3

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Re: Biomechanical comparison between single-bundle and double-bundle anterior cruciate ligament reconstruction with hamstring tendon under cyclic loading condition

Thank you for inviting me to review the aforementioned manuscript. This study aimed to compare single- and double-bundle ACL reconstruction with regards to ATT. They also looked at graft rupture and deformation. The study is interesting, however revision is needed before the manuscript can be accepted for publication. Please find my specific comments below.

Major compulsory revisions:

1. GENERAL COMMENTS

The purpose of the paper is always of interest as the competition between single- and double-bundle reconstruction persists. However, the question is not new and many studies have looked at ATT differences in cadaveric reconstruction. The other purpose (although not stated as a purpose) is to look at graft rupture and deformation. This is a newer research questions that perhaps should be made the primary purpose of the paper (or at least be stated as a purpose) as this question is newer and therefore probably more appealing to the readers.

The length of the manuscript is good. The English language is in reasonably good order.

2. INTRODUCTION

The introduction is of sufficient length. It adequately explains the background. There could be more focus on why cycling the graft would matter and why it’s important to test this in your study. The purpose is clear. In the abstract the authors talk about graft failure and deformation, but this is not listed as a purpose here. Please add this as a purpose of your study. For the hypothesis, please see my comment below.

P1, Line 4: explain “biological substitute”.

P1, Line 23-25: this sentence is too long and grammatically confusion, please rephrase.

P2, Line 2-4: your hypothesis is an indirect hypothesis. You have not proven that
loss of graft fixation is the cause for increased ATT, therefore you cannot state this. Rather, state that double-bundle reconstruction would decrease ATT (more direct).

3. METHODS (Material, patients and methods)

The description of the methods is very clear. The surgical technique is detailed and reproducible. The laxity measurement is a nice addition to the paper, but again will need to be introduced as a purpose so the readers are prepared for it, as well as the graft deformation.

Statistical analysis is appropriate.

P4, line 4-6: how can informed consent be obtained from cadaveric specimens? Do you mean CORRID approval? Please clarify.

Line 20-22: you state there are 4 degrees of freedom, however you describe 8 directions. Please clarify.

4. DISCUSSION

The discussion is very well written. It encompasses all the relevant discussion point and literature. All relevant limitations are described. The length is good.

Please start the discussion with a short sentence that summarizes the most important findings of your study.

5. CONCLUSION.

The conclusion is short and concise.

P 11, line 24-25: please remove the last sentence as it is more discussion than conclusion and is not an objective finding, but your interpretation of the results.

6. ABSTRACT

The abstract is of good length. However, the conclusion does not match the purpose. If the purpose is to measure ATT, the conclusion should comment on this. However, the conclusion focuses on deformation and deviation of the graft. Please adjust either one or the other so the conclusion matches the purpose.

7. REFERENCES

The references that are used are good, but they need to be supplemented with more up to date references of the last two years. Most references are more than 2 years old.

Minor essential revisions:

None

Discretionary revisions:

1. RESULTS
The results section is well written and of adequate length. I think a table would be helpful to represent the results in values and with p values for easy comparison. This should be added to the paper.

2. TABLES.

Please see my comment about adding a table which displays the results.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

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