Reviewer's report

Title: Anterior cruciate ligament reconstruction using quadriceps tendon autograft for adolescents with open physes

Version: 1 Date: 29 October 2010

Reviewer number: 1

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Manuscript Number:
Title: Anterior cruciate ligament reconstruction using quadriceps tendon autograft for adolescents with open physes- a technical note

Authors attempted to introduce their technique of a transphyseal ACL reconstruction using quadriceps tendon-bone autograft in children and adolescents with open growth plates, and to report our early results in terms of postoperative growth disturbances. They concluded that this technique did not lead to significant growth disturbances with one exception. Most of the manuscript was well documented and the methodological flow was well conducted. However, some explanations are needed in detail. Author’s purpose might be the introduction of their technique and its good result, but only insufficient data was stated in the manuscript. Therefore, I believe that the study needs a minor revision before it can be accepted for publication.

Specific comments;
Authors should add continuous line numbering and page numbers in the manuscript.
We could not find the quotations for Figure 1-4.
Authors should make the manuscript the same font.

Abstract
It should be structured to include the following headings: Background, Purpose, Methods, Results, and Conclusions.
The volume of the paragraph is appropriate

Page 2, Line 14-15
Screw removal is no relation to the results. Delete this sentence.

Page 2, Line 18-20
This sentence is not appropriate in conclusion paragraph.
The conclusion in the abstract and in the end of the text need to be the same.

Introduction
The methodological flow of this paragraph was almost good. Paragraph was not structured. Authors should arrange the paragraph. The title of this paragraph must change to ‘Background’

Material and methods
Surgical technique was well documented.
How was the clinical result of ACL reconstruction, such as the IKDC scores, the Lysholm scores or the side-to-side differences of the KT-1000 measurements? We could not accept your good clinical results without any clinical scores. Furthermore, how define the good alignment? Authors should state the knee alignment results such as FTA or Mikulic平 line at the final follow up.
Was the study approved by the local ethics committee?
Was there informed consent of the patients?

Authors stated the femoral bone tunnel position. How did you define the anatomical tunnel position? Authors also mentioned the tunnel position as ‘slightly different position than in adults’ in Page 5 Line 23. How did you confirm the tunnel position intra or after operation?

Page 6, Line 11-12.
I could not understand ‘the surgeon’s index finger of the 2nd hand on the lateral cortex of the femur’. Please describe more in detail.

Page 6, Line 15-19.
How did authors define the tibial bone tunnel position? Please mention this.

Page 6, Line 21-22.
How was the applied force to the graft when the post screw fixation for tibia?

Page 7, Line 9-16.
How was the concomitant ligament, meniscus, or articular cartilage injury? Authors should mention this.

Results
The purpose of this study was to describe the technique and its early results. Authors should explain more about the clinical results or X-ray measurements. I could not agree with your good results without any patient data.

Page 7 “Follow-up” paragraph
Are there any combined surgery, such as meniscal tear, other ligament injury, or cartilage injury.

Page 7 “Results” paragraph
How good were the primary reconstructions? Authors should show the clinical
results of final follow-up period (Lachman test, Pivot shift, Knee measurement, etc.).

Page 7 “Results” paragraph
Five cases revision: 10% revision rate is pretty higher than the previous report of adult ACL reconstruction. The concern is the recurrent instability of open epiphyseal ACL reconstruction. If authors mentioned revision ACL reconstructions were needed due to new trauma, they should describe the final results of primary reconstruction before another trauma, activity level of those patients, duration between primary reconstruction and revision surgery and any combined injury at the revision surgery.

Page 7 “Results” paragraph
A case of growth disturbance in a girl that was aged 10.5 years: “The recovery was uneventful and the patient was pain free at last follow-up 12 months after revision surgery.” Was patient return to sports? How was she reconstructed ACL?

Page 7, Line 18.
Authors should explain ‘a sufficient clinical and radiological follow-up’ in detail. I could not accept the good results without any clinical scores or radiological measurements.

Page 8, Line 2-3.
If you emphasize this case, please explain more in detail. Authors should show the X-ray at the final follow-up.

Page 8, Line 5.
Authors should state the period of ACL graft failure in consideration. Five cases of re-injury were explained in next sentence.

Page 8 Line 7-8.
Screw removal is no relation to the results. Delete this sentence.

Discussion
Authors should state the limitation with this study.
A statement regarding the clinical scores or X-ray measurement is needed.

Page 9, Line 15-23.
This paragraph explained about why authors chose the QT. It was not appropriate in the discussion, because authors did not investigate the graft selection in this study. Authors should mention this in introduction.

Conclusion
The conclusion in the abstract and in the end of the text is needed to be the same.
This paragraph does not reflect the hypothesis. Rewrite this paragraph based on your results.

Page 10, Line 12
Please state the details of ‘surgical key factors’ briefly.

Page 10, Line 13
What was the ‘significant’? This manuscript did not mention the significant data.

Page 10, Line 13-15
This sentence is not appropriate in conclusion paragraph. Authors should explain in discussion.

References
References are appropriate.

Figures and Figure legends
Too less explanation was stated in figure legends. Please explain more in detail.
Authors should add the photograph of the QT graft.
Authors should add the photograph of the tunnel creation, graft harvest or graft fixation, if you introduce new technique.

Figure 1 and Figure 2
These figures are not needed. Authors should state the source of these technique.

Figure 3
Authors should explain more in detail, especially in bone tunnel position, or the relation with physis.

Figure 4
Figure 4-A was too large magnification. Please change to the whole intraarticular view in order to check the femoral bone tunnel position.
Figure 4-C is not needed
Authors should add the intra-articular view which can confirm the femoral and tibial bone tunnel position.

Figure 5
Authors should state the X-ray measurement data with valgus deformity.
Please add the X-ray after osteotomy, if you emphasize this case.

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.