Reviewer's report

Title: How reliable is MRI for diagnosis of cartilage lesions in patients with lateral patella dislocation?

Version: 1 Date: 21 April 2010

Reviewer: Daichi Hayashi

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[Major Compulsory Revisions]

(1) Background

Page 4, Line 23:
Please amend the grammatical error (“31% of the cases of the at the trochlear groove”)

Page 5, Line 3-5:
Authors state “To our knowledge, the diagnostic value of MR imaging of the cartilage in comparison to arthroscopic findings has not been yet evaluated in LPD patients.” I am not sure this is an accurate statement. For example, a study by Virolainen et al. Radiology 1993;189:243-246 (which authors cited in this paper) did look at both MRI and arthroscopic findings of acute patellar dislocation including LPD. There are other studies which assessed the diagnostic performance of MRI against arthroscopy in acute knee trauma. Some of the studies did not specifically mention LPD but they were likely to have included some LPD cases. Thus, author’s statement should be amended to take these things into account. Perhaps it is true to say that this study is the first of its kind to exclusively look at acute LPD only (and no other types of knee/patellar trauma).

Page 5, Line 7-8
“intra-arthroscopic findings” should be changed to “arthroscopic findings”

(2) Methods

Page 5 <Subjects>
Authors state that this study was performed in accordance with the guidelines of their local ethic committee. However, they have not stated that they had obtained approval from the institutional review board or written informed consent from all participants. I think these are mandatory requirement before conducting a study and publishing its results. Authors need to clearly state this.

Page 7, <MR imaging>
Authors used Outerbridge grading for evaluation of MR images. It is true that this method was used by previous publications, but the papers authors cite are around 10 years old. Nowadays, it is a standard practice to use a
semiquantitative (e.g. WORMS, BLOKS, KOSS scoring systems) or quantitative approach to evaluate cartilage damage. Authors could have used one of the semiquantitative approaches. This should be mentioned as a limitation of this study. (Reference: Roemer FW, et al. MR Imaging-based semiquantitative assessment in osteoarthritis, Radiol Clin N Am 2009;47:633-654)

Page 7, <MR imaging>
When there were discrepancies between two readers, how was the final decision on the grading made? I presume two readers had a discussion and agreed on the final decision. Or, was there an adjudicator (i.e. independent third reader?) Please clarify this point.

Page 8, <Arthroscopy>
How was the arthroscopic grading performed? Was it done by one observer? Please state.

Page 8, <Statistics>
What software was used to do the statistical calculation? Please state.
Was it done by an expert statistician? It is not clearly stated in the author contribution section. Please clarify.

(3) Results
Page 8-9 <arthroscopic findings>
Authors describe arthroscopic findings in detail in the text. However, the results are concisely presented in table 1, so it is not necessary to repeat everything in the text. Please summarize this paragraph and make it about 1/2 - 2/3 the length.

Table 2
The cell for grade0/grade 0 seems too small and the number in this cell is not completely displayed. Please adjust the format of this table.

Table 4
This table is showing an extensive list of numbers and it is not easy for readers to spot what is important and what is not at a first glance. I think this table should be collapsed to show sensitivity etc. for grade <1 (disease-free), and grade >=2 (disease-positive) for those 2 readers.

(4) Discussion
Page 11, the penultimate line
Authors state “The MRI sequence best suited for the detection of cartilage lesions is still under debate,” which may be true, but they quote papers published more than 5 years ago. More appropriate citation should be made to support their statement. For example, see Link, TM “MR Imaging in Osteoarthritis: Hardware, Coils, and Sequences” Radiol Clin N Am 2009;47:617-632, and also other articles in the same issue of Radiol Clin N Am.
The authors used PD-weighted FSE in this study. However, recent studies have shown that intermediate-weighted and T2-weighted FSE sequences provide good visualization of cartilage defects. Authors again quote previous reports, but those studies are also old. Please refer to articles suggested above for up-to-date discussion of MRI sequences suitable for cartilage assessment.

This paragraph (“In a further evaluation ….. even slight cartilage lesion).” is too long and thus difficult to read. One paragraph should be no longer than half a page. Also, authors give extensive discussion on kappa values on each grade of MRI assessment in comparison with previous studies. However, that is not the main issue (or the hypothesis) of this study, according to earlier description of this study. Discussion should focus on the sensitivity/specificity/accuracy of MRI in comparison to arthroscopic finding, and not the interobserver agreement of MRI findings, since the authors are not evaluating a new MRI sequence for cartilage assessment. This paragraph should be completely revised and much shortened.

[Minor Essential Revisions]
There were a few grammatical errors. Please ensure to have these amended.

**Level of interest:** An article of limited interest

**Quality of written English:** Needs some language corrections before being published

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

**Declaration of competing interests:**

I declare that I have no competing interests.