Reviewer's report

Title: Are two readers more reliable than one? A study of upper neck ligament scoring on magnetic resonance images

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Reviewer: Ulrich Weber

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Very few data inform about the optimal number of readers for imaging studies. Interpretation of MR images in particular often show a large interreader variability, mainly due to a lack of data on "background noise" in healthy controls or other appropriate control groups for the condition under observation. To my knowledge this is the first study to systematically assess the reliability of 2 MRI readers compared to each reader alone. A strength of the study is the robust methodology both for the imaging protocol and the stats analysis. I like in particular that the readers were blinded regarding study design and the elaborate discussion about the stats methodology applied.

I have just one suggestion for the section "discretionary revisions". This study as a first step towards a "2 readers approach for MRI studies" has no clinical "anchor" or gold standard (page 9 2nd para: no difference between groups; no predictive utility) and resolves discrepancies by consensus. Major unresolved clinical questions for imaging study designs are whether a "2 readers approach" has better agreement with a clinical gold standard than a readout with one single reader, whether a multiple reader approach (>2 readers) with an analysis by the majority of readers may outperform a "2 readers approach" regarding a clinical anchor and whether an assessment of discrepant reads per se may provide clinically more meaningful information than consensus reads in case of discrepancies.

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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.

Declaration of competing interests:

I declare that I have no personal or financial competing interests