Author's response to reviews

Title: Empirical evaluation of the inter-relationship of articular elements in the pathogenesis of knee osteoarthritis using Magnetic Resonance Imaging

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The BMC Musculoskeletal Editorial Team

To Whom It May Concern:

Thank you for your recent review of our manuscript (4454333122625116) “Empirical evaluation of the inter-relationship of articular elements in the pathoanatomy of knee osteoarthritis using Magnetic Resonance Imaging.” The attached pages detail the final changes that my colleagues and I have made in response to the reviewers’ comments. We found the comments to be insightful and reasonable, and believe they have helped us to strengthen and clarify the manuscript. We appreciate your review and look forward to seeing the final publication.

Thank you.

Sincerely,

Dennis Meredith, MD
Reviewer 1

No significant comments

Reviewer 2

With regard to my comment that the use of absolute scales is potentially problematic, it seems that the authors may not have understood the point I was making. The point is that a fixed size lesion may be more significant in a smaller sized person as compared to a larger sized person. Therefore a 3mm lesion in a 5 foot tall person may be significant while it may not be significant in a 6 foot tall person. The argument that no specific comparisons are made “across gender or heights” does not address this issue.

We appreciate the reviewer’s point. However, we are not able to accommodate this modification to our analyses at this time since height data is not available for our patient cohort. Additionally, we have acknowledged this limitation stating in the discussion: “Another potential limitation of this study is the use of exact measurements to assess the size of specific articular elements such as cartilage defects, BMLs or osteophytes rather than proportional measurements normalized to patient size.”

This is a small point that may be semantics, but the authors consistently use the term "pathogenesis" throughout this manuscript -- because this is just a cross-sectional study, it is not possible to assert "causation" of a disease. "Pathophysiology" may be a more precise and accurate term.

Within the manuscript we have changed all reference to “pathogenesis” to “pathoanatomy” since we are investigating the appearance of anatomical structures on MRI. This avoids any reference to causation, thus, accommodating the reviewer’s comment.

One final comment is that as mentioned by reviewer #2, the reliability should be reported for all the features -- not just for cartilage measures.

Intra-reader kappa values have been added to the manuscript for cartilage, bone marrow lesions, osteophytes and synoviitis.