Reviewer’s report

Title: Etiological Factors in Hallux Valgus, a Three-dimensional Analysis of the First Metatarsal

Version: 1 Date: 11 Sep 2017

Reviewer: Trevor D Prior

Reviewer's report:

I would like to thank the authors for taking the time to address all of the points raised by the reviewers. The paper is much improved and I feel suitable for publication with some minor further points of clarification.

Lines 66.

The authors state that a more rounded lateral edge is observed because of larger axial rotation. This is more theoretical rather than fact and the sentence should be worded accordingly. Indeed, they acknowledge this on line 72. It may be helpful for the authors to describe why they feel the rotation makes the metatarsal head appear more rounded.

Line 91.

I was curious as to why a CT scan would be used for metatarsal phalangeal joint bursitis?

Lines 113-115.

I am not clear as to the point of the authors noting that a fraction of the joint surface was used to orientate the head of the metatarsal. Grammatically, this reads as though only a very small proportion is used whereas I suspect the authors are referring to the fact that only a proportion of the joint surface was used rather than the whole joint surface.

Lines 187-191.

Would I be correct in thinking that the authors are postulating that the change in the morphology occurs as the deformity develops? If this is the case, this should be clarified.
In this sentence the authors state that this ‘will bring us closer to the pathology of HV’. This presupposes the results and I would suggest would be more accurate as ‘may bring us closer to the pathology of HV’.

Figure 2.

I note the comments from reviewer 2 regarding the plane of rotation. Figure 2 could be interpreted as there being both frontal and transverse plane rotation as the lateral aspect of the axis of the metatarsal head appears more posterior. This may just be due to the diagram. Was there any transverse plane rotation? If not, then perhaps a straight arrow rather than a curved arrow would reduce any potential confusion.

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