Author’s response to reviews

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

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Author’s response to reviews:

Dear Dr. Bonanno,

Associate Editor of Journal of Foot and Ankle Research

We thank the Reviewers for careful reading of our manuscript and for providing useful comments and suggestions. We have revised the manuscript JFAR-D-17-00060 on the basis of the Reviewer’s reports. We look forward to publish our manuscript in Journal of Foot and Ankle Research.

Please address all correspondence to:

Takeo Nagura, MD, PhD,
We look forward to hearing from you at your earliest convenience.

Yours sincerely,

Takeo Nagura

Our responses to Reviewers’ reports are as follows:

Response for Reviewer #1:

Thank you very much for your thorough review of our manuscript. In accordance with your comments and suggestions, we revised the manuscript as follows.

Minor comments:

1) We added information about the source of participants as follows (L86-87): Participants were outpatients attending the orthopedic clinic in Tachikawa Hospital (Tokyo, Japan).

3) We replaced the reliability assessments before the main findings in the results section (L132-137).

Response for Reviewer #3:

Thank you very much for your thorough review of our manuscript. In accordance with your comments and suggestions, we revised the manuscript as follows.

Lines 66.

We are sorry for the confusion about the description. We rephrased the description as follows (L66-69): A more rounded lateral edge of the 1MT is possibly observed in HV because the
lateral surface of the 1MT head can be viewed on a dorsoplantar radiograph if the entire 1MT is axially rotated in the everting direction.

Lines 91.

CT scan was performed for metatarsal phalangeal joint bursitis, in order to check bony factors, such as osteophyte and contacts between the 1MT head and soft tissue.

Lines 113-115.

“fraction” was replaced by “proportion”.

Lines 187-191.

Our point of argument here is whether the change in the morphology of the 1MT occurred congenitally or developmentally. We referred to the literature of Kilmartin et al., then we suspected as follows and rephrased the description as follows (L197-199): This finding, combined with the present finding, suggests that the change in the morphology of the 1MT might have occurred developmentally due to the altered biomechanics of the foot with aging.

Lines 203-204.

“will” was replaced by “may” (L207).

Figure 2.

In the present study, the rotation of transverse plane was not observed. We replaced curved arrow to straight arrow in Figure 2, in order to reduce any confusion.

The original comments of the Referees are as follows.

Reviewer #1: The authors have responded partially to my comments.

Two outstanding minor comments remain:
Thank you to the authors for clarifying in response to major comment (1) in my review of the original submission that hallux valgus was diagnosed by an experienced orthopaedic foot and ankle surgeon based on radiographic findings. However, the source of participants is still not identified. Please specify in the methods section where participants were recruited from e.g. orthopaedic clinics, fracture clinic etc etc.

Thank you to the authors for adding detail about the reliability assessments (major comment (3)). However, these data are presented at the end of the results section after the main findings. They would be better placed before the main findings.

Reviewer #3: 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.

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.

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

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.

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.
Lines 203-204.

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.