Author’s response to reviews

Title: The Posterior-Anterior-flexed View is essential for the Evaluation of Valgus Osteoarthritis. A prospective study on 134 valgus knees

Authors:

Kilian Rueckl (kilian.rueckl@gmail.com)

Armin Runer (armin.runer@rolmail.net)

Ulrich Bechler (ulrich.bechler@gmx.de)

Martin Faschingbauer (mf6482@hotmail.com)

Sebastian Boelch (s-boelch.klh@uni-wuerzburg.de)

Peter Sculco (sculcop@HSS.edu)

Friedrich Boettner (boettnerf@HSS.edu)

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Author’s response to reviews:

Dr. James Mockridge
Editor – in – Chief
Dr. Daichi Hayashi
Section Editor Clinical diagnostics and imaging
BMC Musculoskeletal Disorders

Manuscript

The Posterior-Anterior-flexed view is essential for the evaluation of valgus osteoarthritis. A prospective study on 134 valgus knees

Dear Dr. Mockridge, dear Dr. Hayashi,

we thank you and the reviewers for the careful review of our manuscript "The Posterior-Anterior-flexed view is essential for the evaluation of valgus osteoarthritis. A prospective study on 134 valgus knees". Please find enclosed our corrections to the manuscript.

We confirm that this manuscript has not been published elsewhere and is not under consideration by another journal.
I attested that all authors have participated in the research, read the manuscript, attest to the validity and legitimacy of the data and its interpretation, and agree to its submission. An IRB approval has been received for the submitted research project.

Sincerely,

Dr. Kilian Rueckl
11/24/2019

Response to the reviewers:

Editor Comments:
"It mentioned that “The current study investigates the following research questions: Is the PA-flexed view more accurate for the Kellgren and Lawrence grading of valgus osteoarthritis?” It is not clear whether this study included only knees with valgus osteoarthritis. If it is not the case, how many knees had valgus osteoarthritis? It might be more informative to perform analyses stratified by knee alignment (varus, neutral, valgus), and by medial and lateral femorotibial compartment.

The present study studies knees with valgus osteoarthritis exclusively. In a prior study, we investigated the value of PA-flexed view radiographs in the assessment of osteoarthritis of the knee for different alignment (varus, neutral and valgus knees). We concluded that PA-flexed view is most beneficial in valgus osteoarthritis (Rueckl, Boettner et al. 2017). This study “The Posterior-Anterior-Flexed View is essential for the Evaluation of Valgus Osteoarthritis. A prospective study on 134 valgus knees” takes up these results by investigating whether this benefit is affected by the extend of valgus alignment of the knee.

“In 53 (62.4%) of 85 knees with mild to moderate OA on AP radiographs (K/123 L-score ≤3), the minJSW on the PA-flexed view decreased compared to the AP view and resulted in an increased K/L-score of 4 (Fig. 1).” It is not clear whether the minJSW is for medial or lateral femorotibial compartment. Data need to be presented.

We thank the reviewer for this important comment. The difference in K/L-grading was based on differences in the lateral minJSW. We added the according data and corrected the sentence.

Lines 124ff: In 53 (62.4%) of 85 knees with mild to moderate OA on AP radiographs (K/L-score ≤3), the lateral femorotibial minimal joint space width (minJSW) on the PA-flexed view (2.0mm, SD 1.1) decreased highly significant (p<0.001) compared to the AP view (0.1mm) and resulted in an increased K/L-score of 4 (Fig. 1).

It is not clear why 5.0 deg., 5.0-9.9 deg., 10.0 - 14.9 deg., and ≥15.0 deg. were used as the cut-offs of mechanical valgus deformity."
Valgus deformity of the knee has been classified by Ranawat as Grade I to III (Ranawat, Ranawat et al. 2005), but alternative classifications have been proposed, i.e. by Rodriguez-Merchan (Rodriguez-Merchan 2019). However, excessive valgus deformity, that correlates with a greater risk of failure, seems not congruent with the aforementioned classifications (Ritter, Davis et al. 2013). In conclusion, there is no ultimate consensus on how to most appropriately classify valgus deformity.

Thus, for the present study, we adopted our classification, which has been published just recently in a comparative analysis between valgus and varus knees on the outcome after TKA (Kahlenberg, Trivellas et al. 2018).

We updated the methods section.

Lines 94ff: Knees were grouped by the extent of mechanical valgus deformity ($<5.0\, \text{deg.}$, $5.0 - 9.9\, \text{deg.}$, $10.0 - 14.9\, \text{deg.}$, $\geq15.0\, \text{deg.}$) as previously described [12].

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Reviewer reports:

Kent Carlson (Reviewer 1): The authors have made all of the minor corrections that I requested during my initial review. I believe the paper is now suitable for publication. Interesting work!

We thank the reviewer for this positive feedback to the revised manuscript.

References:


