Changes in Proximal Femoral Shape During Fetal Development

In Reply:

Four observers were asked to measure apparent neck/shaft angle (aNSA) and version using the pictures in the original article by Walker and Goldsmith.1 These represented proximal femur maturation from 12 weeks of gestational age to term, according to Walker and Goldsmith.1 We tested 2 continuous variables versus time—(1) aNSA versus time and (2) version versus time. We asked and answered 2 questions using Pearson’s interclass coefficients.

(1) Was there a change in aNSA over time? The answer is NO. None of the data sets showed a change over time. The correlation coefficients were nearly identical between data sets, both intra and interobserver.

(2) Was there a change in version over time? The answer is YES. All the data sets showed change over time. The correlation coefficients were nearly identical between data sets both intra and interobserver.

This is an appropriate use of Pearson’s interclass correlation.

The author of the Letters to the Editor may be concerned about the reliability of the absolute values generated for aNSA and version by the 4 observers. That there might have been discrepancies in these values that couldn’t be detected using Pearson’s r and that these discrepancies might have compromised our conclusion. On that basis, the author calls for ICCs which can assess the agreement between the values reported, in addition to their correlation. ICCs are unnecessary in this study. For our conclusion to be accurate, we needed to demonstrate that there were “no changes” in aNSA over time and that version “changed” over time. That is what we showed using Pearson’s r. It would make no difference if the observers consistently reported different numerical values for aNSA and version as long as the correlations were strong and linear.

Our study is unusual in that the reader can see all of our raw data, that is, the figures of Walker and Goldsmith.1 Consequently, if the reader doubts the reliability of our measurements, he/she can use a goniometer and measure them. Our target audience has this capability. Moreover, we have completed ICCs and they are essentially identical to the Pearson’s interclass coefficients. This came as no surprise to the senior author who has had considerable recent experience doing studies where proximal femoral morphology is measured.2-5 The theoretical problem of a shift in the location and/or scale of the regression line was not likely to be a problem because aNSA and version would not be measured consistently and discrepantly, by my talented coauthors, in such a controlled sample.

Our conclusion is both important and accurate, if both the actual and the apparent anatomy of the proximal femur are to be described precisely. The aNSA of any femur with anteversion >0 degrees, is higher than its true neck/shaft angle (tNSA). The extent of the difference between aNSA and tNSA is defined mathematically as a function of the amount of version (or inclination) present.2 The version of any femur with a NSA >90 degrees is greater than its inclination. The extent of the difference between version and inclination is mathematical determined by its aNSA (or tNSA).2 If this paragraph is unclear, the reader is referred to Liu et al.,2 for a robust explanation of these important relationships.

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Range of Motion Improvement Following Surgical Management of Knee Arthrofibrosis in Children and Adolescents

To the Editor:

We read with great interest the article “Range of motion (ROM) improvement following surgical management of knee arthrofibrosis in children and adolescents” by Fabricant et al.1 The authors’ efforts on providing an insight onto a rare pediatric problem are laudable. However, we have a few queries regarding the study.

(1) The outcome was broadly classified into full ROM, functional ROM, and failures. While the groups full ROM and failures are fairly straightforward, there is a lot of ambiguity in the functional ROM group. It is mentioned in the article that after a detailed discussion regarding the pros and cons of a revision surgery, those patients who did not opt for revision surgery were classified as functional ROM.

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