



# Editorial review—*J Bone Joint Surg Am* “Humeral retroversion in children with shoulder internal rotation contractures secondary to upper-trunk neonatal brachial plexus palsy”

Scott H. Kozin<sup>1,2</sup>

<sup>1</sup>Department of Orthopaedic Surgery, Temple University, Philadelphia, PA, USA; <sup>2</sup>Shriners Hospitals for Children, Philadelphia, PA, USA

Correspondence to: Scott Kozin, MD. Chief of Staff, Hand and Upper Extremity Surgeon, Shriners Hospitals for Children, Philadelphia, PA, USA. Email: skozin@shrinenet.org.

Comment on: Pearl ML, Batech M, van de Bunt F. Humeral Retroversion in Children with Shoulder Internal Rotation Contractures Secondary to Upper-Trunk Neonatal Brachial Plexus Palsy. *J Bone Joint Surg Am* 2016;98:1988-95.

Received: 12 April 2017; Accepted: 30 April 2017; Published: 31 May 2017.

doi: 10.21037/aoj.2017.05.01

View this article at: <http://dx.doi.org/10.21037/aoj.2017.05.01>

The article entitled “*Humeral Retroversion in Children with Shoulder Internal Rotation Contractures Secondary to Upper-Trunk Neonatal Brachial Plexus Palsy*” was reviewed in detail. Children with brachial plexus palsy often develop internal rotation contractures about the shoulder. Standard treatment options have addressed the glenohumeral joint without attention to humeral version. In addition, there are conflicting reports regarding alterations about humeral version and the glenohumeral joint in children with brachial plexus palsy.

This article aimed to settle the controversy. Retroversion was measured using a variety of parameters. Landmarks included the transepicondylar line at the elbow, the longitudinal diameter of an axial cut of the proximal part of the humerus (the skew axis), and the line perpendicular to articular surface (humeral center line). Glenohumeral morphology type was taken into consideration. Geometric variables were assessed with regards to patient ages and severity of the internal rotation contracture.

Retroversion on the involved side was noted to be decreased using a variety of measurements. Patient age was inversely correlated with retroversion, but this was only significant for the skew axis. Internal rotation, glenoid version, or glenohumeral morphology type did not correlate with humeral retroversion.

The findings of decreased humeral retroversion on the effected side in children with internal rotation contractures following neonatal brachial plexus palsy present an

interesting dilemma. The authors attempt to correlate their findings with dedicated throwing athletes (pitchers). Throwers have excessive external rotation force that leads to increased retroversion. Hence, the authors postulate that diminished external rotation forces and increased internal rotation forces leads to a reduction in retroversion. In other words, the findings are reversed compared to the throwing athlete. This explanation is logical, although the passive forces are not considered in the discussion. Throwers also have increased passive external rotation compared to children with brachial plexus palsy that have decreased passive external rotation.

I commend the authors on their work in resolving the controversy of humeral retroversion. However, the findings of decreased retroversion have minimal clinical significance at this time. The authors indicate that the lessened humeral retroversion merits consideration and surgical planning. The exact role of humeral retroversion in the surgical algorithm of treatment is not delineated. The potential of concomitant humeral osteotomy at time of glenohumeral joint reduction is mentioned and remains intriguing. I concur with the authors that humeral retroversion may become an increasingly important part of the surgical planning, but its role at the current time remains unclear.

## Acknowledgments

Funding: None.

## Footnote

*Provenance and Peer Review:* This article was commissioned and reviewed by the Executive Editor-in-Chief, Dongquan Shi, MD, PhD (Department of Sports Medicine and Adult Reconstruction, Drum Tower Hospital, Medical School, Nanjing University, Nanjing, China).

*Conflicts of Interest:* The author has completed the ICMJE uniform disclosure form (available at <http://dx.doi.org/10.21037/aoj.2017.05.01>). The author has no conflicts of interest to declare.

*Ethical Statement:* The author is accountable for all

aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

*Open Access Statement:* This is an Open Access article distributed in accordance with the Creative Commons Attribution-NonCommercial-NoDerivs 4.0 International License (CC BY-NC-ND 4.0), which permits the non-commercial replication and distribution of the article with the strict proviso that no changes or edits are made and the original work is properly cited (including links to both the formal publication through the relevant DOI and the license). See: <https://creativecommons.org/licenses/by-nc-nd/4.0/>.

doi: 10.21037/aoj.2017.05.01

**Cite this article as:** Kozin SH. Editorial review—*J Bone Joint Surg Am* “Humeral retroversion in children with shoulder internal rotation contractures secondary to upper-trunk neonatal brachial plexus palsy”. *Ann Joint* 2017;2:25.