Re: Editorial Commentary: Thank you, Thank you, Thank You…for Demonstrating Histologic Evidence of Shoulder Bicipital Tunnel Disease in the Absence of Magnetic Resonance Imaging Findings.

Professor Adnan Saithna

Medical Technologies and Advanced Materials, Clifton Campus,

Nottingham Trent University, Nottingham, NG11 8NS

Consultant Orthopaedic surgeon, Renacres Hospital, Halsall, Lancashire, L39

RW Jordan

Specialist Registrar, University Hospitals Coventry & Warwickshire

Corresponding author:

RW Jordan

University Hospitals Coventry & Warwickshire

Clifford Bridge Road,

Coventry

CV2 2DX

Robert.jordan@doctors.org.uk

*2. Blinded Manuscript including Abstract, Text, References, Figure Legends & Tables
Click here to view linked References

Dear Editor,

We read the editorial comment by Dr Taylor with great interest [1] and we agree that the recent publication from Nuelle et al. [2] entitled 'Radiologic and Histologic Evaluation of the Proximal Bicep Pathology in Patients With Chronic Biceps Tendinopathy Undergoing Open Subpectoral Biceps Tenodesis' furthers the notion that the decision to perform surgery for long head of the biceps tendon (LHBT) pathology should not rely exclusively on imaging, or indeed on the macroscopic appearance of the tendon intra-operatively.

Our clinical experience mirrors the observations made by Nuelle et al, that in patients with chronic LHB tendinopathy, who undergo open subpectoral tenodesis, pre-operative MRI and intraoperative assessment often do not show significant abnormalities. However, we do not agree with the statement by Dr Taylor that "direct visualisation of the bicipital tunnel is not possible". Previously Bhatia et al. [3] reported the ability to perform biceps tenoscopy to visualise the intra-articular and intertubercular regions of the tendon. We have also demonstrated that biceps tenoscopy can be successful in allowing full visualisation of the extra-articular LHB [4]. However, because of our experience, confirmed by Nuelle et al, that macroscopic appearances of the LHBT don't correlate with symptoms, we do not advocate biceps tenoscopy routinely. Instead, we agree that the decision on LHB management should be made pre-operatively.

However, pre-operative assessment of LHB pathology has its challenges. In 2015 we reported that the sensitivity and specificity data reported for many imaging studies and physical examination tests was invalid because of the reliance on arthroscopy as the gold standard [5]. We have previously advocated that arthroscopy should no longer be considered the gold

standard because several authors, including ourselves, have demonstrated that standard arthroscopic techniques fail to adequately visualise the LHBT. In our systematic review we reported that the visualisation of the overall tendon length in these studies varied between only 34% to 48%. Therefore a "normal" arthroscopy does not exclude pathology. This is further evidenced by Gilmer et al. and Murthi et al. who have reported that arthroscopic assessment missed LHBT pathology in between 33% and 51% of cases when compared to open assessment [6, 7]. Although the "3-Pack" examination advocated by Dr Taylor [8] has the advantage of sensitivity and specificity data derived from visualisation from the subdeltoid arthroscopic portal, which provides greater visualisation of the overall tendon length compared to standard posterior portal viewing, it still remains a limitation that the macroscopic appearances of the tendon do not necessarily correlate with patient symptoms.

In closing we would like to state that we agree with Dr Taylor [1] with respect to the message that the decision to perform tenotomy or tenodesis should be made pre-operatively. In our opinion this should be based on the patients' symptoms and by holding an appropriate index of suspicion for pathology based on the presence of concomitant pathologies. We do not discredit physical examination tests and imaging modalities because important roles have been defined for each but we do feel that the limitations of each must be highlighted and clearly understood in order to avoid the high rate of missed diagnoses of LHBT pathology. We also feel that it is particularly important to emphasise that a "normal" arthroscopy, even with advanced arthroscopic techniques such as biceps tenoscopy, does not exclude important symptomatic pathology because macroscopic changes are not always present.

References

1) Taylor SA. Editorial Commentary: Thank you, Thank you, Thank You…for Demonstrating Histologic Evidence of Shoulder Bicipital Tunnel Disease in the Absence of Magnetic Resonance Imaging Findings. Arthroscopy 2018; 34(6):1797-1798.
2) Nuelle CW, Stokes DC, Kuroki K, Crim JR, Sherman SL. Radiologic and histologic evaluation of the proximal bicep pathology in patients with chronic biceps tendinopathy undergoing open subpectoral biceps tenodesis. Arthroscopy 2018; 34:1790-1796.
3) Bhatia DN, van Rooyen KS, de Beer JF. Direct arthroscopy of the bicipital groove: a new approach to evaluation and treatment of bicipital groove and biceps tendon pathology. Arthroscopy 2008; 24(3):1-6.
4) Saithna A, Longo A, Leiter J, MacDonald P, Old J. Biceps tenoscopy: arthroscopic evaluation of the extra-articular portion of the long head of biceps tendon. Arthrosc Tech 2016; 5(6):1461-1465.
5) Jordan RW, Saithna A. Physical examination tests and imaging studies based on arthroscopic assessment of the long head of biceps tendon are invalid. Knee Surgery, Sports Traumatology, Arthroscopy 2017; 25(10):3229–3236.
6) Murthi AM, Vosburgh Cl, Neviaser TJ. The incidence of pathologic changes of the long head of the biceps tendon. J Shoulder Elbow Surg 2000; 9:382-385.
7) Gilmer BB, DeMers AM, Guerrero D, Reidll JB, Luboqitz JH, Guttmann D. Arthroscopic Versus Open Comparison of Long Head of Biceps Tendon Visualization and Pathology in Patients Requiring Tenodesis. Arthroscopy 2015; 31(1):9-34.
8) Taylor SA, Newman AM, Dawson C, Gallagher KA, Bowers A, Nguyen J, Fabricant PD, O'Brien SJ. The "3-Pack" Examination Is Critical for Comprehensive Evaluation

of the Biceps-Labrum Complex and the Bicipital Tunnel: A Prospective Study. Arthroscopy 2017; 33(1):28-38.

Acknowledgements and Conflict of Interest Statement

The authors received no funding during the preparation of this manuscript. Professor Saithna is a consultant for Arthrex but there are no other conflicts to disclose.