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CORR Insights®: What is the Best Clinical Test for Assessment of the Teres Minor in Massive Rotator Cuff Tears?

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Where Are We Now?

As the authors of the current study eloquently state, “The teres minor seems to be a forgotten muscle in the evaluation and management of rotator cuff disorders.” This statement is especially true in the setting of massive rotator cuff tears.

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However, recent research has allowed us to gain an understanding of the importance of the teres minor as it relates to clinical and functional outcomes in massive cuff tears. Simovitch et al. [5] demonstrated that a functional teres minor with less fatty infiltration (Grade 0, 1, or 2) resulted in an improved Constant score and better external rotation after reverse shoulder arthroplasty. Further, a recent study [4] found that the teres minor will hypertrophy when there is an infraspinatus tear, suggesting an overlap of function and the potential to gain function for external rotation even in patients with large posterosuperior rotator cuff tears. The current study focuses on our ability as clinicians to detect the function of the teres minor in massive rotator cuff tears, and determine the role the teres minor has in clinical outcomes. With the data presented, it appears that external rotation lag sign is an excellent test for teres minor

dysfunction and can be used to predict teres minor dysfunction and clinical outcomes after reverse shoulder arthroplasty. This is important in educating the patient in the expected post-operative function after reverse shoulder arthroplasty.

Where Do We Need To Go?

Our understanding of the rotator cuff as a functional shoulder unit has progressed from the supraspinatus and extended anteriorly to the subscapularis and posteriorly to the infraspinatus and teres minor. Anatomic studies have highlighted the importance of the infraspinatus as an external rotator, and recent studies have demonstrated the importance of the teres minor in reverse shoulder arthroplasty and latissimus transfers [2, 6]. The current paper demonstrates an excellent step forward in improving our knowledge of the external rotators of the shoulder by determining the key physical exam maneuvers to detect a functional teres minor. It also points out an important clinical limitation at this point; the

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study found a lower-than-expected correlation between involvement of the teres minor and loss of active external rotation. As shoulder surgeons and clinicians, we need to better understand the relationship between the teres minor, the posterior deltoid, and scapular kinematics to improve function of patients with massive cuff tears and reverse shoulder replacements.

How Do We Get There?

As reverse shoulder arthroplasty becomes more common and patients have this procedure at younger ages, it will be important to achieve the best possible function in patients who will place higher demands on their implants and shoulders. In order to achieve this, it appears vital to determine the functional status of the teres minor as highlighted by this paper. It is also important to utilize imaging modalities carefully to assess for teres minor size and fatty infiltration, as well as the size and function of the deltoid. Wiater et al. [6] suggest that

posterior deltoid size and muscle quality as assessed by fatty infiltration are important factors associated with patient-reported outcomes and range of motion after reverse shoulder arthroplasty. Studies such as these that quantify the amount of fatty infiltration, rather than qualitatively score the amount of fat, demonstrate the next step forward in preoperative imaging to help us guide our patients' expectations after surgery. Further, biomechanical studies show that the posterior deltoid can be recruited as an effective external rotator of the shoulder [1], and therapy specific for these muscles [3, 7] will need to be utilized to improve the long-term function of reverse shoulder arthroplasty.

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