

Combined Lower Trapezius Transfer, Arthroscopic Capsule Release, and Pectoralis Major Fractional Lengthening to Restore Active External Rotation to the Paralytic Shoulder

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Proposal

This video demonstrates a technique for restoration of external rotation in the paralytic shoulder via transfer of the lower trapezius tendon to the infraspinatus.

Case Overview

The patient is a 4-year-old girl with an upper trunk brachial plexus birth palsy. She had no history of prior surgery. The preoperative physical examination revealed very limited external rotation. A physical examination under anesthesia revealed passive external rotation to approximately 20° with the arm adducted and to 60° with the arm abducted.

Method/Technique

First, an arthroscopic subscapularis-sparing rotator interval release and an anterior capsule release were performed. To improve external rotation in abduction, fractional lengthening of the pectoralis major tendon was performed. This resulted in considerable intraoperative improvement of passive external rotation. For the lower trapezius transfer, a longitudinal incision was made just medial to the medial border of the scapula, and the lower trapezius tendon was mobilized and released from its insertion site. A separate incision was made from the posterolateral corner of the acromion, and dissection was taken down in line with the deltoid fibers to the infraspinatus tendon. The lower trapezius was then tunneled under the deltoid and incorporated into the infraspinatus footprint.

Results

At 8 months postoperatively, the patient was able to reach away from her body and place her hand behind her head. Active external rotation was greater than 50° with the arm in adduction.

Summary

Restoration of external rotation to the paralytic shoulder greatly enhances patients' ability to use the extremity. A lower trapezius transfer provides an improved line of pull compared with other tendon transfers, such as the latissimus or the teres major. The combined procedures described in this technique offer powerful restoration of external rotation to the paralytic shoulder.