Anterior Cable Reconstruction Using Subpectoral Biceps Tenodesis with Biceps Transfer in Rotator Cuff Tears: A Surgical Technique

Nikita Golovachev, Kassem Ghayyad[1], Olamide Oshikoya, G Russell Huffman[2]
[1]Rothman Orthopedic Institute, [2]Rothman Institute

The anterior rotator cuff cable is essential in transmitting force to the proximal humerus and serves as the main load-bearing structure within the supraspinatus. Utilizing the long head of the biceps tendon (LHBT) for anterior cable reconstruction in the setting of rotator cuff tears, known as biceps augmentation, has the potential for improved biomechanical and healing properties. Importantly, the proximal LHBT remains attached to the superior glenoid labrum, serving as a viable collagen scaffold, a structural scaffold for the cable, and potentially as a conduit for living tenocytes to migrate into the hypovascular region of the rotator cuff, promoting repair healing. Similar methods utilize the transfer of the intact LHBT into the rotator cuff without a biceps tenodesis. While this accomplishes the aforementioned goals, it may create a source of biceps pain in these patients, and it changes the length-tension relationship of the LHBT distal to the transfer site.

In this technique video, we detail an anterior cable reconstruction employing an autologous LHBT to reinforce a repaired MRCT with concurrent subpectoral tenodesis of the LHBT to achieve goals of 1) rotator cuff augmentation and grafting and, importantly, 2) securing the LHBT in a subpectoral position to mitigate pain and maintain supination strength while maintaining the anatomic length-tension relationship of the biceps. We feel this approach is superior in ensuring sufficient tendon is retained for an effective transfer and allows for a subpectoral tenodesis to prevent biceps symptoms.

This surgical technique is indicated for patients who have a rotator cuff tear with a proximally intact biceps tendon and have not responded to conservative treatments such as injections or physiotherapy. It is also suitable for individuals over the age of 65 presenting with severe rotator cuff tendinopathy in combination with a full-thickness rotator cuff tear or in elderly individuals with tears involving the anterior cable.