

Surgical Management of Multiple Injuries in a Bodybuilder's Shoulder: Latissimus and Subscapularis Tendon Repairs with Biologic Tuberoplasty

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Background:

Bodybuilders are uniquely at risk of shoulder injuries given training intensity, frequency, and heavy overhead loads through a full arc of motion. Latissimus tears are rare, follow hyperabduction/adduction injuries, consist of humeral avulsions most commonly, and treated with endosteal button fixation. One in ten bodybuilders also has chronic rotator cuff pathology, and biologic tuberoplasty (interpositional dermal allograft between the greater tuberosity and acromion) is a new joint-preserving arthroscopic technique that ameliorates pain after irreparable tears.

Indications:

Endosteal button repair is indicated for mobile latissimus tears up to two years post-injury. Retracted tears or repairs under significant tension are often salvageable given the latissimus tendon's ability to stretch, and concurrent teres major injury may be addressed in similar fashion. Biologic tuberoplasty treats irreparable posterosuperior cuff tears with reparable subscapularis, and without significant cuff tear arthropathy, anterosuperior escape, or pseudoparalysis.

Technique Description:

Latissimus repair entails posterior axillary dissection of the tendinous stump, identification and protection of the radial nerve intersecting the common brachial artery, tagging the tendon with polyethylene suture tape, and reduction to the footprint with endosteal buttons. Biologic tuberoplasty consists of diagnostic shoulder arthroscopy, evaluation/repair of the subscapularis tendon, tuberoplasty with arthroscopic shaver, preparation of an acellular human dermal allograft, and engraftment onto the greater tuberosity with double-row knotless anchors.

Results:

Latissimus repair permits return to play, preoperative strength, and level of competition according to recent case series in both overhead athletes and at least one professional bodybuilder. Biologic tuberoplasty shows improved pain and patient-reported outcomes, although the technique is relatively new, and long-term follow-up is pending.

Discussion/Conclusion:

Bodybuilders have complex shoulder injuries that require one-of-a-kind surgery tailored to their high demand training. Here we present cutting-edge techniques to address three separate shoulder injuries which may uniquely co-occur in this population.