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Clavicular Osteochondral Graft as a Treatment of a Glenoid Bone Deficiency, a Comparison of Glenoid Resurfacing Capability Versus Coracoid Latarjet Transfer

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Summary:
The clavicular osteochondral graft was able to augment 44% of glenoid radial bone loss, compared to 33% achieved from the Latarjet graft.

Abstract:
Purpose: The aim of this study is to evaluate a distal clavicle osteochondral autograft as a possible option for treating glenoid bone loss in patients with instability. We compared clavicular augmentation with the Latarjet technique as a gold standard in glenoid deficiency treatment. Further, we calculated differences in articular cartilage thickness between clavicular grafts and native glenoids.

Methods: Twenty-seven fresh frozen cadaver shoulders were dissected and distal clavicle excision was performed, In addition, we performed coracoid harvesting and graft preparation according to the Latarjet technique. Articular cartilage was measured on the glenoid side by making a saw cut perpendicular to the articular surface along the long axis, and measuring the thinkness with a digital micrometer. The distal clavicular graft was similarly evaluated for cartilage thickness.

Results: The distal clavicular osteochondral autograft resulted in significantly greater glenoid radius restoration compared to a Latarjet graft, $p<0.0001$. The clavicular osteochondral graft was able to augment 44% of glenoid radial bone loss, compared to 33% achieved from the Latarjet graft. In all specimens articular cartilage was present at the clavicular grafts, but was 1,44 mm thinner than the native glenoids, $p<0.0001$.

Conclusion: Distal clavicular osteochondral graft may resurface a greater amount of glenoid radius when compared to a Latarjet coracoid graft. It's cartilage is of similar thickness to that of the native glenoid, and may provide a reasonable option for treatment of glenoid bone loss in the setting of anterior instability.