Distal Radius Allograft for Glenoid Reconstruction in Anterior Shoulder Instability with Significant Glenoid Bone Loss

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Critical glenoid bone loss in the setting of glenohumeral instability presents a challenging problem for shoulder surgeons. In these cases, bone augmentation procedures are necessary to reconstruct the native glenoid and to maintain stability and function. While the Latarjet procedure has good clinical outcomes, in situations of significant glenoid bone loss, the coracoid many not be large enough to fully reconstruct the glenoid. Alternative structural graft techniques have been developed over the years; these include distal tibia allograft, iliac crest autograft, and distal clavicle autograft. Although the distal tibia allograft has demonstrated positive results in the literature, it does not fully match the native glenoid radius of curvature in the anterior to posterior plane. Conversely, the iliac crest autograft has also shown positive outcomes but is associated with higher morbidity rates attributed to its graft harvesting process. Due to the financial and supply constraints associated with current graft options, introducing novel options that mitigate these limitations is highly beneficial. A recent cadaveric study and CT analysis, including six shoulder specimens, evaluated distal radius allograft as a potential match for glenoid reconstruction in comparison to distal tibia allograft. Distal radius allograft was found to have a greater superior-inferior mean graft length and more acute radius of curvature in the AP plane compared to distal tibia allograft, and was more similar to the native glenoid. In this video, we discuss our technique utilizing distal radius allograft for glenoid reconstruction in anterior shoulder instability with significant glenoid bone loss, as well as its potential advantages, pearls, and pitfalls.