

Reverse Shoulder Arthroplasty With Humeral Head Autograft Glenoid Reconstruction Utilizing a Three-Dimensional Scapular Model and Patient-Specific Guide

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Glenohumeral degenerative disease can result in substantial glenoid deformity and loss of glenoid bone stock, compromising the ability to achieve baseplate fixation during reverse shoulder arthroplasty. One solution to address loss of glenoid bone stock is to use structural bone graft to reconstruct the glenoid to achieve stable baseplate fixation. Despite promising results, with reported graft incorporation rates up to 100%, the literature on this treatment option is mostly limited to level IV studies, and no consensus exists on the optimal technique. In this surgical technique, humeral head autograft, a three-dimensional scapular model, and a patient-specific guide are used to aid in accurate and reproducible reconstruction of the glenoid and placement of glenoid components. This video highlights the key steps in reverse shoulder arthroplasty, including surgical indications and preoperative planning. The surgical technique involving the scapular model to shape the graft and correct deformity, a patient-specific guide to accurately place components, and a central screw baseplate to compress the graft in a lag-by-technique fashion are shown. In addition, the postoperative protocol and outcomes of humeral head autograft glenoid reconstruction in reverse shoulder arthroplasty are reviewed.