

Cement-Within-Cement Technique in Revision Reverse Shoulder Arthroplasty

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Background

Revision shoulder arthroplasty is a complex procedure that has become more frequent with the increase in reverse shoulder arthroplasty. Revision of a well-fixed cemented humeral component is challenging, with a paucity of standardized techniques described. In addition, in the revision setting, preservation of bone stock and good fixation are keys to achieving satisfactory results. Therefore, this video demonstrates a cement-within-cement technique for revision shoulder arthroplasty.

Indications

This procedure is indicated in patients with a well-fixed cemented humeral component who are undergoing revision reverse shoulder arthroplasty.

Technique Description

A deltopectoral approach is performed, and adhesions from previous surgical procedures are dissected. A wide inferior and posterior capsule release is performed, protecting the axillary nerve. The shoulder is dislocated, and the humeral head from the previous implant is disimpacted. A tapered router bit is then used to remove cement and free the humeral stem circumferentially from above. The humeral component is then extracted, leaving the distal humeral shaft cement in place. A broach is then placed in the humerus to protect it while glenoid revision is performed, taking care to preserve the bone stock. An augmented baseplate is then impacted and fixed. The glenosphere is impacted, providing just enough distalization to avoid scapular neck notching without over-tensioning the final construct. After glenoid revision is complete, the new humeral component is trialed. After the appropriate size is selected, the remaining cement is abraded to promote interdigitation. The stem is then cemented up to the noncoated proximal aspect of the stem via a cement-within-cement technique. The humeral metaphysis is left uncemented to allow for proximal bone ingrowth. The subscapularis is repaired to enhance stability and contain the greater tuberosity, which may be fragmented after stem revision. Closure is performed in a standard fashion, and the patient's arm is placed in a sling.

Results

Implant revision-free survival at 2 and 5 years postoperatively was 95% and 91%, respectively. In addition, at a mean follow-up of 3.7 years (range, 2 to 7 years) 8% of patients had radiographic lucencies.

Discussion/Conclusion

The use of the cement-within cement technique for the revision of cemented humeral components during revision shoulder arthroplasty is an effective and safe procedure. Survival rates higher than 90% are expected at 5 years postoperatively, with radiographic lucencies occurring in a small number of patients over time.

Patient Consent Disclosure Statement

The authors of this video attest that consent has been obtained from any patient appearing in this video.