



Research Week 2020

A Systematic Review of Tuberosity Healing and Outcomes following Reverse Shoulder Arthroplasty for Fracture According to Humeral Inclination of the Prosthesis

Joseph O'Sullivan, B.S., Patrick Denard, MD

osullivj@ohsu.edu
OHSU

Keywords

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Abstract

Background

Proximal humerus fractures are common in the elderly population and are often treated with reverse shoulder arthroplasty (RSA). The purpose of this systematic review was to compare tuberosity healing and functional outcomes in patients undergoing RSA with humeral inclinations of 135°, 145°, and 155°.

Methods

A systematic review was performed of RSA for proximal humerus fracture using Preferred Reporting Items for Systemic Reviews and Meta-Analyses (PRISMA) guidelines. Radiographic and functional outcome data was extracted to evaluate tuberosity healing according to humeral inclination. Analysis was also performed of healed vs non-healed tuberosities.

Results

A total of 873 patients in 21 studies were included in the analysis. The mean age was 77.5 (range of 58-97) years and the mean follow up was 26.2 months. Tuberosity healing was 83% in the 135° compared to 69% in the 145° and 66% in the 155° groups ($p=.030$). Postoperative abduction was highest in the 155° group ($p<.001$). No significant difference was found in forward flexion, external rotation, or postoperative Constant score between groups. Patients with tuberosity healing demonstrated 18° higher forward flexion ($p=.008$) and 16° greater external rotation ($p<.001$) compared to those with unhealed tuberosities.

Conclusion

RSA for fracture with 135° humeral inclination is associated with higher tuberosity healing rates compared to 145° or 155°. Postoperative abduction is highest with a 155° implant, but there is no difference in in postoperative forward flexion, external rotation, or Constant score according to humeral inclination. Patients with healed tuberosities have superior postoperative forward flexion and external rotation compared to those with unhealed tuberosities.

