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Preliminary results of reverse total shoulder arthroplasty for tumors of proximal humerus

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Background: Proximal humerus is the third most common site for bone tumors. The rotator cuff needs often to be sacrificed, so it is a challenge to restore good shoulder function. The reverse total shoulder arthroplasty improved active shoulder range of motion after resection of rotator cuff.

Methods: We retrospectively reviewed 11 patients who had reverse shoulder arthroplasty (RSA) for proximal humerus tumors between 2005 and 2012: 7 females and 4 males with mean age 49.6 years (32 to 69 ys). Four patients had GCT, 5 chondrosarcoma, 2 metastases. Six patients received primary RSA while the others underwent revisions after failed primary reconstruction (allograft or prosthesis).

Results: All patients were alive and disease free at mean follow up of 31.7 months. One patient developed soft tissue recurrence at five years and was treated with electrochemotherapy. Nobody developed distant metastases. The mean functional MSTS score was 23.9. The mean active abduction was 60° (ranging 20° to 100°). Two patients had major complications requiring revision: 1 prosthetic dislocation and 1 plastic wear.

Conclusion: In our experience the use of reverse total shoulder arthroplasty for tumors of the proximal humerus is a reasonable reconstructive option at short-term follow-up. Our indication to inverse prosthesis is for resections including the rotator cuff but sparing deltoid muscle axillary nerve. If bone resection is proximal to the deltoid insertion, we use a modular inverse prosthesis; if the resection level is distal, we use a composite allograft with inverse prosthesis.

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