

The use of reverse total shoulder arthroplasty in primary and revision implants after resection of tumors of the proximal humerus: a report of 20 cases

Teresa Calabrò, Andrea Angelini, Giulia Trovarelli, Elisa Pala, Pietro Ruggieri

II Department of Orthopedics, University of Bologna, Istituto Rizzoli, Italy

Background: The rotator cuff is often sacrificed after resection of the proximal humerus tumors and it is a challenge to restore better shoulder function after limb salvage.

Purposes: Given the recent interest in new methods of shoulder reconstruction, the reverse shoulder arthroplasty improved active shoulder range of motion with abduction and forward flexion. The aims of this study are to share the experience of treating a series of patients with proximal humerus tumors treated by wide resection and reconstruction with reverse total shoulder arthroplasty, and to present the preliminary results of the mid-term outcome and complications encountered.

Patients and Methods: We retrospectively reviewed 20 patients, with the mean age of 47.5 years, who had undergone reverse total shoulder prosthesis (RTSA) for proximal humerus tumors between 2005 and 2014. Diagnosis was: 6 giant cell tumors, 7 chondrosarcomas, 4 metastases and 3 plasmocytomas. Fifteen patients received primary surgery with RTSA while the others had revisions after a failed primary reconstruction.

Results: All the patients were alive at a mean follow up of 45.4 months. One patient developed a local recurrence and was treated with electrochemotherapy. None developed distant metastases. The mean functional MSTTS score was 25.5 with mean active abduction of 60°. Two patients required revision: one for dislocation of the prosthesis and the other for plastic wear and resorption of the allograft.

Conclusions: The use of RTSA for proximal humerus tumor reconstruction is a reasonable option, when the deltoid muscle and axillary nerve can be spared.