

Abstract No. 11333

The functional outcomes of total humerus replacement for oncology patients.

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Background:

Total humerus replacement is one of the most extensive surgery performed for upper limb. Due to results of research made by Laboratory of Experimental Oncology, Orthopedic Department Rizzoli – Bologna, Italy (1900-2009 years) it should be know that almost 12 % of all metastases has as a first localization humerus. Also primary bone tumors like osteosarcoma starts from humerus in about 10% of cases. In same ontological cases either with significant bone stock (more than 50% of cortical bone) or with multisegmental articular bone loss total humerus replacement has been performed.

Questions / Purposes:

1. What are the functional outcomes of the shoulder after hemiarthroplasty in comparison with functional outcomes of the shoulder after total humerus replacement ?
2. What are the functional outcomes of the elbow after humero-ulnar joint arthroplasty in comparison with functional outcomes of the elbow after total humerus replacement ?

Patients and Methods:

The study group: 7 patients (5 females; 3 cases: breast cancer metastases; 1 case: thyroid cancer metastases, 1 case: renal clarcocellulare cancer) (2 males: 1 case- osteosarcoma G1 of humerus, 1 case- thyroid cancer metastases). All of the patients has had total cemented humerus replacement: hemiarthroplasty of shoulder, modular stem, cemented arthroplasty of the humero-ulnar joint. Surgeries were perform between 2011-2014, The mean follow-up: 16 months. None of our patients was previously operated in the involved upper limb. For the clinical evaluation of functional outcomes we used for shoulder: Constant Shoulder Score, UCLA Shoulder Rating Scale, Oxford Shoulder Score, ASE Shoulder Score; for elbow: MAYO Elbow Score; Oxford Elbow Score. We compared the results for the shoulder and elbow with the results of our patients with single joint replacement (either shoulder or elbow) and with the literature result.

Results:

All of 7 patients were satisfy from the performer surgery. There were no major complications in would healing, aseptic loosening, malposition of implants or any neuro-vascular complications. We have reported **similar** elbow functions outcomes after total humerus replacement and **singnificant wores** shoulder functional outcomes after total humerus replacement than after single shoulder hemiarthroplasty.

Conclusions:

Total humerus replacement is rare surgical technique that can be used in same bone tumors. If oncology status of the patients is safe: good general condition; solitary or just humeral, articular lesions; good life-time prognosis we can perform this extensive surgery. All of our patients were satisfy after surgery. Even poor functional results of the shoulder was not a reason of patients complain.

Level of evidence: IV.

