O3:103

Reverse shoulder prosthesis after resection of the proximal humerus for bone tumours

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Background:
The purpose of the present study was to investigate/evaluate the functional outcome in patients who had a reverse shoulder prosthesis implanted after removal of a proximal humeral bone tumour. All patients operated on between 1998 and 2011 at the department of orthopaedic surgery, Aarhus University Hospital, were included.

Methods:
Registrations: age, gender, type of tumour (primary or metastatic) and classification, concomitant diseases, associated fracture, amount of humeral bone resection, surgical margins, extent of additional soft tissue resection, adjuvant treatment and surgical complications.
Examinations: Range of movement, MSTS (Musculo Skeletal Tumour Society) score and TESS (Toronto Extremity Survival Score)

Results:
From 1998 to 2011 a total of 16 patients were operated. At follow-up five patients had died and one lost to follow-up, leaving 10 patients for examination. Mean age at follow-up was 42 years (19 to 79). The mean follow-up was 46 months (12 to 136 months). Eight patients had a primary and two patients a secondary bone tumour. Two patients had superficial infections. One patient had a deep infection and the prosthesis was removed. The prosthesis loosened in two patients. One prosthesis dislocated twice. All patients had some degree of atrophy or pseudoatrophy of the deltoid muscle.
The average range of movements (ROM) was: Abduction: 78° (range 30° to 150º). Flexion: 98° (range 45° to 180º). External rotation: 32° (range10° to 60º). Internal rotation: 51° (range 10° to 80º). The mean MSTS score was 77% (range 60 to 90%) and mean TESS score was 70 % (range 30 to 91%).

Conclusion:
Use of the reverse shoulder prosthesis in tumour patients yields acceptable results in terms of shoulder function. Patients report good active range of motion and shoulder function.

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