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Functional outcome and quality of life after resection of the proximal humerus in musculoskeletal tumours

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BACKGROUND

There are several successful methods for reconstruction of the proximal humerus after tumor resections, but the function of the shoulder joint can only be restored partially. The functional outcome after proximal humeral resection depends on the type of reconstruction, but also on the resection of the rotator cuff and the deltoid muscle.

METHODS

We reviewed 84 patients who underwent proximal humerus resection in the Department of Orthopaedics at Semmelweis University (Budapest, Hungary) from 1981 to 2012. Medical records were reviewed. Functional evaluation was done according to the Musculoskeletal Tumour Society (MSTS) system, health status was assessed by the Short Form-36 questionnaire.

RESULTS

Hemiarthroplasty with tumour endoprosthesis was carried out in 43 cases, autologous fibular transposition was done in 25, reverse prostheses-allograft composite in 6 and osteoarticular allograft in 10 cases. These were done to treat primary tumours in 56 cases and metastases in 28 cases. The mean age was 32 years (range 10-73 years) in patients with a primary tumour and 65,4 years (range 30-76 years) in those with metastases. Mean follow-up was 96 months (range 6-254 months). The mean MSTS score was 84% for reverse prostheses-allograft composite, 67% for tumour endoprosthesis, 64% for osteoarticular allograft, and 70% for autologous fibular transposition. Major complications occurred in 40% of the osteoarticular allograft group, in 11% of the tumour endoprosthesis group and in 24% of the autologous fibula group. There were no complications in the group reconstructed with reverse prostheses-allograft composite.

CONCLUSION

According to both the literature data and our own results, it seems that after proximal humeral resections the best results can be achieved by reverse prostheses-allograft composite or fibular transposition, when the function of the rotator cuff was preserved and the fibula did not resolve. After humeral resection with the implantation of a tumour endoprosthesis or osteoarticular allograft the function of the shoulder remained moderate because the rotator cuff was damaged. The overall satisfaction was generally good after all types of proximal humeral reconstruction. Patients can compensate extremely well by using the preserved joints and the contralateral upper limb; therefore, patient satisfaction does not rely on shoulder function alone.

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