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**QUALITY OF LIFE AFTER MALIGNANT BONE CANCER SURGERY: A LONG TERM FOLLOW-UP STUDY**

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**BACKGROUND:** During a previously conducted study, quality of life (QoL) of children and adolescents after malignant bone tumor surgery was longitudinally evaluated. Significant improvements were reported during this two years follow-up. However, QoL scores differ from scores of healthy peers and it remains unclear if further improvements could be expected after this period.

**PURPOSE:** Aim of the present study was therefore to assess progression of QoL scores of the remaining patients from the evaluation at 2 years until long-term follow-up at minimal 5 years postoperative.

**METHODS:** Malignant bone tumor survivors of the initial short-term study were included into this multicenter study. Long-term follow-up assessments were done at least 5 years after surgery. QoL was measured with the Short Form-36 (SF-36), the TNO-AZL Adult's Quality of Life Questionnaires (TAAQOL) and the Bone tumor (Bt)-DUX. Statistical analysis included Linear Mixed Model Analysis.

**RESULTS:** From the original cohort of 44 patients; 20 patients were included for the long term follow-up reassessment, 10 of them were boys and 10 girls, mean age at surgery 15.1 years and follow-up duration 7.2 years. Twenty-one patients of the initial cohort (47%) died on disease; one patient was excluded due to social-emotional problems and 2 refused to participate in the extension of the study. Fifteen patients (75%) underwent limb-salvage and 5 (25%) ablative surgery. At long-term follow-up, patients after bone cancer surgery reported significantly lower QoL scores in comparison with their healthy peers at the Physical Component Summary (PCS) scales of the SF-36 and TAAQOL ( $p < .05$ ). Significant advantages were reported for patients after limb salvage in comparison with ablative surgery at the PCS scale of the SF-36 (mean difference 13.7,  $p = .05$ ) and the cosmetic scale of the Bt-DUX (mean difference 17.7,  $p = .04$ ). QoL improved significantly during the follow-up at the PCS scale of the SF-36 and TAAQOL and at all subscales of the Bt-DUX ( $p < .01$ ). However, no significant differences were reported between the evaluations at 2 years and long-term follow-up ( $p; .41-.98$ ).

**CONCLUSIONS:** After 5 year of follow-up, no further QoL improvements were achieved in comparison with the 2 years follow-up.