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Long-term follow-up study of functional outcome after surgery in patients with bone sarcoma around the knee

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Background

In a prospective multi-center follow-up study young patients with bone sarcoma located around the knee were evaluated two years postoperatively after limb-salvage (LS) or ablative surgery (AS). The functionality improved significantly in the first year after surgery but decreases in the second year. In this follow-up study of at least 5 years after surgery we re-investigated functional outcome.

Purpose

Comparison of functional outcome between:

- Two and more than five years postoperatively
- Surgery types.

Patients and methods

The original study consisted of 44 patients (27 LS). Twenty-one patients died of disease during follow-up, leaving 20 patients (15 LS) in the current study. One patient was excluded because of social and emotional problems and two refused to participate). The LS group consist of 9 endoprostheses and 6 allograft reconstruction patients, the AS group consist of 5 amputation patients. Mean follow-up duration was 7.2 years (5.1-8.8), mean age 22.3 years (18.2-31.6).

No patient has had a local recurrence and all patients had no evidence of disease (NED) 5 years after surgery. Functional outcome was assessed with the TESS, MSTS, Baecke questionnaire and 3 functional performance tests: time up and down stairs (TUDS), various walking activities (VWA) and 6-minutes walking test (6MWT). Linear Mixed Model has been employed for the repeated measurements and to assess the differences between surgery types.

Results

No significant difference was found between 2 and more than 5 years postoperatively and no significant difference between surgery type (endoprostheses, allograft and amputation). MSTS score: 86% for LS and 75% for AS patients. Surgical related complications in LS patients was 67% and in AS patients 20%.

	Mean difference (CI 95%)
	2 years- more than 5 years
TESS	-5.2 (-10.9- 0.5)
6MWT	-18.9 (-68- 30.2)
TUDS	0.4 (-5.2- 6.0)
VWA	0.2 (-3.6- 4.0)
BAECKE	0,0 (-0.6- 0.6)

Conclusions

After two years postoperatively no functional outcome improvement in bone sarcoma patients treated with either limb salvage or ablative surgery is to be expected.