

Outcome after reconstruction of the proximal tibia – complications and competing risk analysis

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Abstract:

Background and Objectives:

The proximal tibia (pT) is a common site for bone tumors. Improvements in imaging, chemotherapy and surgical technique made limb salvage surgery the treatment of choice. Yet, reconstructions of the pT have been associated with less favorable outcome compared to other

parts of the extremities. The aim of this study was to evaluate the outcome of patients with a modular endoprosthetic reconstruction of the pT.

Methods:

Eighty-one consecutive patients with an average age of 29 years underwent endoprosthetic reconstruction of the pT. Postoperative complications were categorized according to the ISOLS classification, and revision-free survival until first complication (any Type 1 – 5), soft tissue failure (Type 1), aseptic loosening (Type 2), structural failure (Type 3), infection (Type 4), and local tumor progression (Type 5) was estimated by using a Fine-Gray model for competing risk analyses for univariate and multivariable regression with Firth's bias correction.

Results:

A total of 45 patients (56%) had at least one complication. Cumulative incidence for complication Types 1 to 5 at 5 years with death and amputation as competing events revealed a risk of 41% for the first complication, 14% for Type 1, 16% for Type 2, 11% for Type 3, 17% for Type 4, and 1% for Type 5.