Limb reconstruction with knee mega-prosthesis in patients with distal femur primary tumours: gait analysis and alignment evaluation

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Proximal femur replacements about primary bone tumors by means of revision endoprostheses, 15 years experience

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The purpose of the study was to evaluate medium-term results of treatment of patients suffering from primary tumors of the proximal femur, by means of revision endoprostheses.

Between 1997 and 2012, 76 patients underwent primary limb preservation with use of revision implant systems in the primary total hip arthroplasty. The patients’ age ranged from 24 to 78 years. Distribution by nosology is the following: chondrosarcoma 23 (30.2%), GCT 25 (32.9%), osteosarcoma 4 (5.3%), fibrous dysplasia 10 (13.2%), other malignant tumors 14 (18.4%). The size of the defect of the proximal femur after removal of the tumor varied from 6 to 18 cm. Clinical and radiographic outcome of treatment was assessed by the ISOLS system.

Clinical evaluation was performed in 68 patients. We received the following functional outcomes: excellent 24 (35.3%), good 41 (60.2%), satisfactory 3 (4.5%). X-ray evaluation was performed in 62 patients. The results were as follows: excellent 17 (27.4%), good 32 (51.7%), satisfactory 10 (16.1%), unsatisfactory 3 (4.8%). We observed the following complications: dislocation of the endoprosthesis 6 (7.9%), recurrence of the tumor at 5 (6.6%), infectious 4 (5.3%) and there was 1 (1.2%) case of the fracture of the implant.

Overall complication rate was 21%. We applied the revision implant systems of hip in cases of tumors of the proximal femur, and the analysis of medium-term results showed mostly excellent and good results in 95.5%. Therefore we consider these implants give good functional outcome without compromising the oncological treatment component.