

**PP-027****The first experience of knee joint endoprosthetic reconstruction in children and adolescents with sarcoma in FCCH PHOI n.a. D.Rogachev****N. Bolshakov**, M. Shchupak, N. Grachev*FCCH PHOI n.a. D.Rogachev, Moscow, Russia*

Introduction: Endoprosthetic reconstruction is the most common method of limb-sparing surgery in oncology, including practical pediatrics. Primary bone tumors localized in metaphyseal areas require joint arthroplasty. Bone tumors in patients with skeletal immaturity occur in the metaphyseal region, close to the growth plate, so that sacrifice of a major plate often is necessary when tumor is excised. These patients need expandable prostheses.

Methods: Since June 2012 in our surgery department 20 endoprosthetic reconstructions of knee joints have been performed. Among them 14 endoprosthetic reconstructions of the distal femur, including 4 cases with the use of "growing" non-invasive endoprosthesis; 6 endoprosthetic reconstructions of proximal tibia, including 4 cases using "growing" non-invasive endoprosthesis. The youngest patient was 7 years old, the oldest - 17 years old. The MSTS scale was used for evaluation of functional results in 3 months after operation.

Results: During endoprosthetic reconstruction in the case of distal femur sarcomas in 14 patients range of volume replacement ranged from 160 to 315 mm. proximal. Range of proximal tibia replacement was 140-160 mm. In all cases, the results of histological examination of the resection margins showed no tumor cells, but 3 patients were diagnosed with progressive disease. 1 patient after 12 months was diagnosed with local relapse and required rotation plasty.

All patients have started rehabilitation from the first days after surgery. The worst functional outcome scale MSTS after 3 months was - 50%, the best - 93%. Average - 76%. At present time, just 3 patients with "growing" endoprosthesis have require extension, which was performed without any problems.

Conclusion: Limb-sparing surgery in children with oncological diseases of the musculoskeletal system is the preferred method of treatment. Endoprosthesis secures good oncological and functional results, as well as favors the most adequate social adaptation of a child. The use of modern systems for arthroplasty in pediatric and adolescent surgical practice may achieve good oncological and functional results.