

**FC-145****First report of X-pand tumor prosthesis experience in Ukraine****O. Vyrva**, R. Malik, V. Baev*Sytenko Institute of Spine and Joint Pathology, Kharkiv, Ukraine*

Goal: Over one third of malignant bone tumors in children will occur in skeletally immature patients. Physal resection is frequently necessary and the resultant limb length discrepancy potential can be quite significant. Efforts to address this problem have included modular oncology non-invasive prostheses. The purpose of this study is to report a first Ukrainian single institutions 5 year experience with a non-invasive MUTARS-expand prosthesis.

Material and Methods: Between 2009 and 2014, 9 expandable prostheses for distal femur and proximal tibia were implanted in 9 patients. All patients had previously failed tumor prosthesis replacements because septic loosening and limb length discrepancy. In this retrospective analysis, the clinical charts for all patients receiving this prosthesis were reviewed for surgical information, diagnosis, and number of expansions, length of expansion, adverse events, and final endpoints.

Results: The study population was comprised of 3 males and 6 females, receiving a total of 9 implants. The average age at surgery was 15.5 ± 1.8 years of age. There were 5 distal femurs and 4 proximal tibias. The primary diagnosis was Osteosarcoma and all patients had a good oncological outcome. Any prostheses were implanted as the primary treatment following tumor resection. All cases were a prosthesis revision. All 9 prosthesis are currently undergoing expansion with an average follow up of 36.8 ± 12.2 months. One patient was amputated due to progressive local recurrence and one prosthesis was removed due to infection. One revision was due to the failure of the expansion mechanism. There were no expansion related complications and all functioning devices expanded without fail. Overall, 9 prostheses underwent expansions. The average elongation achieved per patient was 5.0 ± 2.8 cm.

Conclusion: Our 5 year experience with non-invasive MUTARS-expand prosthesis has been promising. Of the original a total number of procedures, excluding those with infection or amputation, achieved the goal of reaching skeletal maturity with equal leg lengths or are undergoing active expansion. The more young patients seemed to have the better results and least failures. Based on our first single institutions experience in Ukraine, this technology holds benefit for young patients undergoing resection of malignant bone tumors about the knee.

Keywords: Limb salvage; Non-invasive expandable prosthesis; Bone tumors; Revision surgeries