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Complications Following the Use of Megaprosthesis in Limb Salvage Surgery in Osteosarcoma; The Experience Of CCHE

Ahmed El Ghoneimy¹, Magdy EL Sherbiny¹, Ahmed Salah¹, Manal Zamzam¹, Ahmed Kamel¹, Iman Gouda¹, Iman Zaki¹, Ranin Soliman¹

¹ Children's Cancer Hospital Egypt, Egypt

Methods: Starting in 2007 and till 2012, 178 cases of pediatric Osteosarcomas were treated at the CCHE. Among these, 57 (32%) patients were locally treated by limb salvage and reconstruction by megaprosthesis.

Results: The average age at presentation was 15 years (8-18) and the average follow-up period was 24 months (6 months-56 months). 34 tumors were located in the distal femur, 15 in the proximal tibia, 5 in the proximal femur and 3 in the humerus. 7 prostheses were of the expandable type. A total number of 18 (31.5%) complications were recorded at the latest follow-up. Complications included limited flexion and/or extension in 7 cases, 4 stem loosening, 3 cases of periprosthetic fractures, 2 cases of infection, 1 case of bushing failure and a final case of stem breakage. Five (27.7%) complications were treated conservatively and these included 2 periprosthetic fractures and 3 cases with limited range of motion. The remaining 13 complications required revision surgeries. No amputation was needed to manage complications. Both cases of infection were treated successfully with an average of 2 years of follow-up since last evidence of infection. Two patients who had loosening of their prosthesis returned to their daily activity with no further evidence of loosening or pain. The third patient died before treating her loosening. All cases of fracture healed completely and resumed full weight bearing and normal daily activity. Four patients with limited range of motion required admission to operative room. Two were treated by manipulation under anesthesia, one patient was treated by shortening of his prosthesis, and another, required revision of her entire prosthesis. Only this last patient remained stiff after surgery. The one case with bushing failure was treated by replacement with a new bushing and a case with stem breakage was treated by revision with a new prosthesis. At the latest follow-up, the average MSTS functional score was good (73.3%) with a minimum of fair and a maximum of excellent score.

Conclusion: Although the incidence of complications was high following megaprosthesis implantation and most complications required surgical intervention, management of such complications was usually successful and amputation was not needed.

E-mail (main author): aghoneimy@me.com