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## PP-207

Modular intramedullary diaphyseal endoprostheses for segmental defect reconstruction

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**Introduction:** Limb salvage surgery followed by endoprosthetic replacement or biological reconstruction techniques is the recomended treatment after diaphyseal bone tumor resection. Each technique has method-specific advantages and disadvantages. The purpose of this study was to present midterm results of the outcome of modular intramedulary diaphyseal endoprostheses, aiming to provide useful insights into the effectiveness of this means of reconstruction.

**Methods:** We retrospectively studied 6 patients (4 men, 2 women; mean age, 62 years; range 40-77 years) who underwent limb salvage surgery as a means of treatment of primary or metastatic tumors of the diaphysis and reconstruction with modular diaphyseal endoprostheses. Reconstruction sites involved femur (n=1), tibia (n=2) and humerus (n=3). Mean length of bone resection was 10cm (range, 4-15cm). Histological diagnosis of primary tumors included adamantinoma, myeloma, dedifferentiated synovial sarcoma and metastatic lesions included renal cell, thyroid and stomach carcinoma. The Enneking's System was used to evaluate the midterm functional outcome of these patients. Mean follow-up period was 17 months (range 11-28 months).

**Results:** Mean operation time was recorded to be 132min (range, 90-240 min). All patients progressively loaded the limb 4-6 weeks postoperatively. Postoperatively, mean Enneking's Score was 88% (range, 87-92%) and it was weakly correlated with the reconstruction length. Aseptic loosening was recorded in one patient. Another patient experienced delayed wound healing while a third patient presented prolonged serous wound drainage. Furthermore, in one patient leg length discrepancy was recorded, while another patient experienced ankle stiffness. At last follow up 5 patients had no evidence of local or distant recurrence, while one patient died from distant metastases.

**Conclusion:** Limb salvage surgery after diaphyseal defects can be achieved successfully by endoprostetic reconstruction. Intramedullary diaphyseal endoprosteses for segmental defect reconstruction after bone tumor resection consist a viable option with acceptable oncological and functional outcomes. This means of reconstruction provides quick immobilization but sometimes may present complications. Larger osseous defects are associated with lower functional outcomes and higher complication rates.