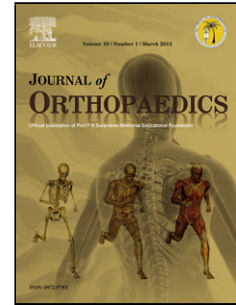


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## **Reconstruction of the distal tibia following resection of aggressive bone tumours using a custom-made megaprosthesis**

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### **Abstract**

**Objective:** Largest, single-centre study of clinical and functional outcomes of patients who underwent endoprosthetic replacement (EPR) for aggressive distal tibial bone tumours.

**Method:** Retrospective observational study of eight patients was undertaken.

**Results:** Median follow-up was 77 months (range 13-276). Cumulative five and ten year survival was 63% and 42% respectively. Three patients developed either disease recurrence or metastases post-surgery. One patient developed deep infection requiring washout and suppressive antibiotics. No patients required revision surgery. The median MSTS score at last follow up was 66%.

**Conclusions:** EPR of the distal tibia is a viable option and provides good function outcomes.

### **Key Words**

Distal tibia; Primary; Osteosarcoma; endoprosthetic replacement; endoprosthesis

### **Introduction**

Primary osteosarcomas of the tibia account for 20% of all osteosarcomas, with only 19% of these occurring in the distal tibia.<sup>1</sup> Due to the subcutaneous nature of the distal tibia, as well as its close proximity to vital neurovascular and musculotendinous structures, adequate tumour excision with wide surgical margins can be difficult to achieve.<sup>2</sup> Consequently, the traditional treatment offered to patients with malignant bone tumours of the distal tibia was amputation.<sup>3-5</sup> However, with the subsequent development of new surgical techniques, modern imaging methods, and new chemotherapy regimens, limb salvage has become a more practical option compared to amputation for these patients.<sup>3</sup> The various methods of limb salvage include free vascularised or non-vascularised fibula autograft with arthrodesis, osteo-articular allograft, and endoprosthetic replacement (EPR).<sup>6-9</sup> Although the long-term

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