

LIMB SALVAGE SURGERY

BY

CUSTOM MEGA PROSTHESIS IN BONE TUMOURS

(1500 CASES IN 21 YEARS - 1988 to 2009)

(CHALLENGES AND ACHIEVEMENTS IN INDIA)

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Introduction

The management of patients with musculo-skeletal neoplasms has always been a challenging area in Oncology. In this new millennium, Orthopaedic Oncology is a well established subspeciality in Orthopaedic surgery. The hallmark of Orthopaedic Oncology is Limb Salvage Surgery. Limb Salvage Surgery in Malignant Bone Tumour by Custom Mega Prosthesis has now been well established. This study presents my experience with Custom Mega Prosthesis in Bone Tumours from Chennai, India in a period of 21 years.

Clinical Material

The Madras Bone Tumour Service includes the following hospitals – Regional Cancer Institute, Government General Hospital, Apollo Speciality Hospital and M. N. Orthopaedic Hospital. The period of study is between 1988-2009 and includes 1500 patients. There were 960 male patients and 540 females. The average age was 27.8 years (range 7 to 76 years). Histopathologically, there were 624 cases of Osteosarcoma, 375 cases of Giant Cell Tumours, 102 cases of Chondrosarcoma, 156 cases of Metastases. The tumours were commonly in Stage II - A. Anatomically the tumours were in the Distal Femur in 606 cases, Proximal Tibia 395 cases, Proximal Femur in 172 cases, Proximal Humerus in 102 cases, Shaft of Femur in 46, Pelvis in 52 and Distal Radius in 32 cases.

Prosthesis

The prosthesis were indigenously designed in Chennai and have been Patented for originality. The author has 9 prosthetic patents and 15 design patents till date. The Custom Prostheses were manufactured in Chennai by Eagle Osteon Technologies. The choice of materials used for the prostheses was either Stainless Steel (316L) or Titanium (Ti6Al4V). The Total Knee Prosthesis is a rotating hinge type based on the Stanmore pattern and the Proximal Humeral prosthesis is the Campanacci shoulder type of prosthesis. The period of follow-up ranges from 6 to 214 months with a mean FU of 7.2 years.

Results

The functional results (ISOLS) were Excellent in 60%, Good in 23%, Fair in 11% and Poor in 6%. At the time of the most recent follow up 1065 (71%) patients were continuously disease free, 23% patients had died due to the disease and 5% were alive with the disease. The complications were Mechanical, Oncological or Biological (18 -22 %). The common complications were infection, aseptic loosening, prosthesis breakage and recurrence.

Conclusion

In the current Indian scenario, only 50 % of patients with malignant bone tumour undergo Limb Salvage Surgery. Of these only 50 % have access to Custom Mega Prosthesis. The situation is changing with improving patient awareness and affordability of the prosthesis. With improvements in surgical techniques and medical management, functional and oncological cure rates comparable with the international standards have been achieved with the indigenously developed Prosthesis. This paper is an analysis of my personal experience in 1500 cases from Chennai over a period of 21 years from 1988-2009.