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## Proximal humerus reconstruction with MRS® Bioimpianti prostheses after resection of bone tumors: an analysis of 255 cases

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**Background.** Limb salvage using endoprosthesis is considered as a treatment of choice for bone sarcoma involving the extremities with relatively low incidence of major complications. Modular prosthetic reconstructions is the most frequently used type of reconstruction after resection of the humerus. Aim of this study was to review the experience of the Rizzoli with prosthetic reconstruction after resection of bone tumor in the humerus.

**Methods.** Between 1975 and 2010, 255 modular prostheses (alone or in association with allografts) type MRS® of the proximal humerus were implanted. Population included 154 males and 101 females with mean age 40 yrs (range 5 to 81). In two patients tumor involves humeral diaphysis, in all others the proximal part. Histology showed 91 osteosarcomas, 52 chondrosarcomas, 61 metastatic carcinomas, 10 GCT, 10 MFH, 9 Ewing's sarcoma, 22 other diagnoses.

**Results.** Major complications causing implant failure were infections (19 cases – 7.4%), aseptic loosening (4 cases – 1.5%) and breakages (3 cases – 1.2%). Local recurrence occurred in 8 patients (3%). Survival in patients with primary tumors was 35% at 10 and survival in patients with metastasis was 3% at 10 years. Implant survival to all major complications was more than 80% at 10 years and 20 years.

**Conclusions.** This prosthesis is actually a simple spacer, therefore it is indicated for resections of tumors where it is not possible to spare the abductor apparatus (deltoid, axillary nerve, rotator cuff). Otherwise we prefer different reconstructions. This simple modular prosthesis provides satisfactory results, but not abduction.

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