

**PP-202****Brachytherapy and free vascularized myocutaneous flap transfer for soft tissue sarcomas of the extremities**

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Introduction: Successful treatment of soft tissue sarcomas (STS) is highly dependent on radical tumor resection coupled with adjuvant radiation therapy. The purpose of this study was to present the clinical outcome of patients who underwent tumor resection and reconstruction with free myocutaneous flap transfer followed by brachytherapy (BRT), with emphasis on the role of combined treatment.

Methods: We retrospectively reviewed the medical records of 9 patients (4 men-5 women; mean age 53,6 years; range, 20-75 years) with localized STSs treated with surgical resection and BRT over an 8-year period. Diagnosis involved extraskeletal OGS (n=1), MFH (n=3), myxoid liposarcoma (n=1), liposarcoma (n=1), synovial sarcoma (n=2) and high grade STS (n=1). 6 patients were staged as IIB according to MSTs, one patient as IA, one as IB and one as IIA. Reconstruction of the surgical defect and hardware protection was achieved with free vascularized myocutaneous flap of latissimus dorsi in 4 patients, of gracilis in 4 patients and free radio-volar flap was used in one patient. Computerized, after-loading of the implant with iridium-192, HDR was applied postoperatively in all patients. The BRT dose varied from 12 to 24 Gy. Perioperative external beam radiation was administered to a total dose (BRT and external beam radiation) of 60-76 Gy. The mean follow-up period was 38 months (range, 12-84 months).

Results: Wide surgical excision was achieved in 6 patients while marginal in 3. One patient diagnosed with extraskeletal OGS experienced local recurrence and died from distant metastases 12 months postoperatively. Another patient diagnosed with high grade STS developed distant metastases 12 months postoperatively. Complications related to the free vascularized myocutaneous flap transfer or radiation induced complications were not observed. One patient underwent prophylactic intramedullary nailing. All patients had good cosmetic and functional outcome.

Conclusion: Perioperative focalized radiation delivered as BRT via catheters after extremity STS resection results in acceptable local control rates. This combined treatment has low complication rates offering to the patients good cosmetic and functional outcomes.