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## **INTRAPELVIC AND LUMBOPELVIC RECONSTRUCTION OUTCOMES AFTER ACETABULUM-SPARING TUMOR RESECTIONS**

**Introduction:** Reconstruction after pelvic tumor resection is one of the most challenging aspects of orthopedic oncologic surgery. Preserving the acetabulum with safe resection margins is one of the main goals of pelvic tumor surgery. Restoring continuity between lumbosacral region and preserved acetabulum is essential for improved function and prevention of deformity and leg length discrepancy. In this paper, we aim to present our pelvic reconstruction outcomes after tumor resections involving the sacroiliac joint and seek to address any differences in outcome between biologically augmented reconstructions and non-biological reconstructions.

**Patients and method:** Retrospective review of our institution's orthopedic oncology registry yielded 19 patients (M/F:8/11) who underwent acetabulum-preserving pelvic tumor resection and subsequent reconstruction between 1995 and 2014. The mean age of the patients at the time of operation was 24 (7-64) years. The mean follow-up was 48 (3-128) months. The pathology was chondrosarcoma in 6 patients, Ewing's sarcoma in 6 patients, osteosarcoma in 2 patients, aneurysmal bone cyst in 2 patients, chordoma in 1 patient, giant cell tumor in 1 patient and fibrosarcoma in 1 patient. Lumbo-pelvic fixation was performed in 14 patients while intra-pelvic fixation was performed in 5 patients after tumor resection. The sciatic nerve was sacrificed in three patients and femoral nerve was sacrificed in one patient. Stability was provided by bilateral instrumentation in 9 patients whereas unilateral instrumentation was found to be adequate in 10 patients. Double iliac screw was used in 14 patients and single iliac screw in 5 patients. Fibular bone graft was used for bony contact in 8 patients.

**Results:** After recovery, 13 patients could mobilize independently without any assistive devices. Four patients could mobilize independently with a single cane and two patients required a walker for. Eleven patients were alive with no evidence of disease at the last follow-up while 8 patients died of disease. Local recurrence was observed in 5 patients and distant metastasis in 7 patients. Overall and event-free survival rates at 5 years were calculated as 53 % and 43% respectively. Wound problem was observed in 3, deep infection in 2, implant failure in 2, neuropathic pain in 2 and hip joint degeneration in 1 patient.

**Conclusions:** Reconstruction after resection around the sacroiliac joint is essentially a procedure of reconnecting the acetabulum to the spinal column. Spinal instrumentation devices can be successfully used for this purpose. However, combination of pedicle screw-rod systems with fibular autografts must be intended for stronger and durable constructs