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Spine, sacral & pelvis resections: Reconstruction of bony defect after resection of malignant periacetabular tumor involving the sacroiliac joint

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Objective: Reviewed the patients with malignant periacetabular tumors involving the sacroiliac joint treated surgically in our hospital to assessment of the results of local control and the function of the limb after reconstruction.

Materials and methods: We retrospectively reviewed 21 patients with malignant periacetabular tumor involving the sacrum from July 2002 to July 2010 treated at Peking University People's Hospital. There were 12 female and 9 male patients, with a mean age of 37 years old. The histopathologic diagnosis was chondrosarcoma in 7 patients, Ewing sarcoma in 1 patients, osteosarcoma in 8 patients, malignant giant cell tumor in 1 patient, melanoma in 1 patient and metastatic tumor in 3 patients.

Results: Oncology result: Adequate margins (wide or marginal) were achieved in 12 of 21 (57.1%) patients. Nine patients (9/21, 42.9%) had local relapse, including of 3 of 8 osteosarcoma, 2 of 7 chondrosarcoma, 1 malignant GCT, 1 melanoma and 2 of 3 metastatic tumor. The recurrence rate for tumor-free margins was 25% (3 of 12) and for intralesional margin was 66.7% (6/9). Eight of 9 patients with local recurrence had recurrent lesion at sacral side and 6 of them had intralesional margin at sacral side. All patients were followed up 13 to 59 months, with mean follow-up time 35 months. The lung metastases were found in 5 patients. Seven patients died of diseases, including 4 osteosarcoma, 1 chondrosarcoma, 1 melanoma and 1 metastatic tumor patients. Four patients were alive with disease. Overall survival was 66.7% (14 of 21), and disease free survival was 47.6% (10 of 21).

Functional result: Seventeen of twenty-one patients with bone graft and modular hemipelvic prosthetic reconstruction after resection of the tumor could walk with a crutch 3 months after surgery. The pelvic prosthesis was taken out 6 months after surgery in 1 patient because of deep infection. Average ISOLS function evaluation score was 17, including good in 5, fair in 12 and poor in 4 patients.

Conclusion: Bone graft with resected femoral head and neck on left sacrum and modular hemipelvic prosthetic reconstruction of the bony defect after resection of the periacetabular tumor involving of the sacrum is a good method, by which a reasonable function can be restored in most of the patients.

Key words: Pelvic Tumor, Surgical Resection, Reconstruction

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