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## Early rehabilitation using temporal external fixation following resection of pelvic sarcoma

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### INTRODUCTION:

Pelvic resection for sarcoma sometimes requires prolonged bed rest or immobilization postoperatively to stabilize the bone and/or soft tissue reconstruction. Massive implantation to stabilize the pelvic reconstruction may result in high risk of deep infection. We applied temporal external fixation (EF) for patients who underwent pelvic resection including P1 and/or P2 region to get early postoperative function.

### PATIENTS:

8 cases with pelvic sarcoma were temporally applied with EF following tumor resection and reconstructive surgery, since 2008. There were 5 patients with P123 resection, 1 with P12 resection, 1 with P23 resection, and 1 with P1 resection. The pins were inserted into affected femur and healthy contralateral ilium. Pathologic diagnosis consisted of 3 chondrosarcoma, 2 osteosarcoma, 2 Ewing sarcoma, and 1 undifferentiated sarcoma. 7 patients underwent resection arthroplasty (hip transposition), and 1, fibula graft for P1 resection. EF was removed and weight-bearing started 6-8 weeks postoperatively. We assessed postoperative achievement of activities of daily living and MSTS score.

### RESULTS:

Average limb length discrepancy was 5.5cm. Average postoperative follow-up was 23 months. Sitting on bed was possible averagely on Day 7, standing along bed on Day 8, transfer to wheel chair on Day 12, Walking exercise using parallel bars on Day 22, and walking using crutches on Day 53. At removal of EF, image intensifier assessment showed that all reconstructive procedures were stable enough to start weight-bearing. At final follow-up, 4 patients can walk without any supports, 3 with one crutch, and 1 with two crutches. There was no major complication related to EF. Average MSTS score was 69%.

### DISCUSSION:

Hip transposition originally required about 4 week immobilization in bed with cast or brace to stabilize the reconstruction. Fibular graft for P1 resection also reportedly needed prolonged immobilization if there was less stable implantation. Temporal EF could stabilize bone and soft tissue reconstruction after pelvic resection, resulting in less pain for patients. Pelvic reconstruction with temporal EF can lead to early physiotherapy, and may result in better rehabilitation without major complication.

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