

## **Postoperative Function and Walking Ability of Hip Transposition Arthroplasty following Resection of Pelvic Sarcoma**

Toshiyuki Kunisada<sup>1</sup>, Eiji Nakata, Tomohiro Fujiwara, Toshifumi Ozaki<sup>2</sup>

<sup>1</sup>Orthopaedic Surgery, Okayama University, <sup>2</sup>Okayama Univ Hosp/Dept of Ortho Surg

### **INTRODUCTION:**

The choice of reconstructive procedure to restore limb function is challenging after internal hemipelvectomy. Hip transposition is known as resection arthroplasty or no reconstruction, with the remaining femoral head moved proximally to the lateral surface side of the sacrum or the underside of the resected ilium after internal hemipelvectomy. It may provide reasonable functional results and have some advantages. Hip transposition is generally managed with prolonged bed rest or immobilization postoperatively to stabilize the soft tissue surrounding the remaining femur. Because enabling patients to be mobile while the soft tissues heal might be advantageous, we reviewed our experience with external fixation for this procedure.

### **METHODS:**

We treated 11 patients (six men and five women; median age, 37 years; age range, 18-56 years) with acetabular resection for malignant primary bone tumors between 2008 and 2019; all were managed using a hip transposition, initially stabilized using external fixation. Mean follow up was 87 (18-158) months. The pins for external fixation were inserted into the affected side of the femur and healthy contralateral ilium. External fixation was removed 6 weeks postoperatively and weight-bearing was started at that time. The postoperative rehabilitation course and functional results were assessed by chart review, and functional results were determined using MSTS score.

### **RESULTS:**

With temporary external fixation, standing next to a bed was achieved in mean 7 (5-8) days postoperatively, transferring to a wheel chair in mean 7 (5-28) days, and gait training using parallel bars in mean 21 (7-48) days. Six patients could walk without a crutch or cane, and four could walk with a cane or crutch. Mean limb leg discrepancy is 4.8 (1-9) cm. Eight patients are continuously disease-free, one is no evidence of disease, and two died of the disease. The mean MSTS score was 74 (63-100)%. All patients had pin-track infections that resolved with nonsurgical approaches and no deep infection was identified. Three patients had an abdominal herniation that gradually developed, and which was reconstructed using polypropylene mesh.

### **DISCUSSION AND CONCLUSION:**

Hip transposition with temporary external fixation can stabilize the bone and soft tissue after pelvic resection. Although we do not have a comparison group of patients, we believe that external fixation facilitates early postoperative physiotherapy and rehabilitation and provides good functional results without major surgical complications.