

POSTER 52

Mid-Term Outcomes of Total Hip Arthroplasty after Hemipelvectomy and Iliofemoral Arthrodesis

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Background: Prior to the implementation of total hip arthroplasty, hip arthrodesis was often used to treat many pathologies of the hip joint. Recent studies have reported acceptable functional outcomes after arthrodesis takedown and conversion to total hip arthroplasty, however there are no reports on the outcomes in the setting of oncologic resection. Given the complex nature of oncologic resections about the hip and pelvis, particularly the large soft tissue defects and altered anatomy resulting after these operations, it is important to acknowledge that these patients' outcomes likely significantly differ from non-oncologic conversion total hip arthroplasty. To the authors' knowledge, there have been no prior studies examining the outcomes in this cohort.

Purpose: To examine the surgical and functional outcomes of a series of patients who underwent prior internal hemipelvectomy for sarcoma resection and were later underwent conversion total hip arthroplasty.

Patients/Methods: All patients who had prior iliofemoral arthrodesis after oncologic tumor resection that were later converted to total hip arthroplasty at a single institution were examined (n=3). Retrospective chart reviews were performed to collect demographic information, operative information, functional outcomes, and complications/reoperations. All three patients in this study were male patients who underwent internal hemipelvectomy for chondrosarcoma of the left hemipelvis. Hemipelvectomy and arthrodesis occurred at a mean age of 24 years. None of the patients had evidence of metastatic disease at time of surgery, and none received chemotherapy or radiotherapy. All patients were converted to total hip arthroplasty at a mean time of 26 years after initial arthrodesis (Figure 1).

Results: Mean follow-up after conversion to total hip arthroplasty was 7.4 years. Two patients had anti-protrusio cages implanted during total hip arthroplasty and one of these surgeries implemented a dual-mobility bearing. During this follow-up period, two of the three patients required revision surgery (Table 1). The mean Mayo Hip Score in these patients was 67 at last follow-up, which is categorized as "good." All patients reported at least a slight limp and use of a shoe lift, varying from <1cm to up to 4cm. At final follow-up all patients were ambulatory without significant pain. No patients had evidence of recurrent disease.

Conclusions: Previous studies have suggested that non-oncologic conversion arthrodesis to total hip arthroplasty closely mimics standard primary total hip arthroplasty with regards to outcomes. This study suggests that patients who undergo conversion THA surgery after prior sarcoma resection are more likely to have similar outcomes and complication profiles as those who undergo revision total hip arthroplasty. Patients who undergo iliofemoral arthrodesis after oncologic hemipelvectomy and are later converted to total hip arthroplasty can expect to have a reasonable functional outcome and good pain relief, despite a high rate of complications and revision surgery.



Figure 1. A) Patient 1 after iliofemoral arthrodesis. B) Patient 1 at 9-year follow-up after conversion to total hip arthroplasty.

Table 1. Surgical Outcomes						
Patient	Time to last follow-up (years)	Reoperation	Time to revision (mos)	Reason for revision	Revision surgery	Other complications
1	9.4	Yes	8	Infection	I&D with component retention	Single dislocation event 5 weeks after THA requiring closed reduction
2	7.4	Yes	17	Metallosis, impingement	Femoral revision with dual mobility construct	
3	5.4	No	N/A			