

POSTER 33

A Combined Technique for the Treatment of Intraarticular Periacetabular Metastatic Lesions: The Use of Pelvic Osseous Fixation Pathways for Percutaneous Acetabular Reinforcement of a Cemented Total Hip Arthroplasty in a Single Stage

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Background: Periacetabular lesions associated with metastatic disease is a challenging problem. Surgical techniques, ranging from the original Harrington procedure to complex reconstruction cages, have had some success, but are associated with significant cost, complications, mechanical failure, and significant postoperative limitations. More recently, techniques have taken advantage of osseous fixation pathways (OFP) of the pelvis to augment the periacetabular bone.

Purpose: The purpose of our study was to describe a novel technique utilizing screws placed in periacetabular OFPs to reinforce a cemented acetabular cup in a single stage (Figure 1).

Patients and Methods: A retrospective evaluation of all patients at single institution with periacetabular metastases who underwent the procedure outlined above was performed. Clinical outcomes including hospital length of stay and disposition, ambulatory status, complications, and follow up radiographs were assessed via electronic medical record review.

Results: Thirty-five patients who underwent 37 procedures (two bilateral) were included at a mean follow up time among surviving patients of 237 days (range: 69 – 560) from the date of surgery (Table 1). Thirty-two of the 35 cases were classified as having Harrington class 3 pathology. The mean operative time was 168 minutes (range: 87 – 270 minutes) with a mean estimated blood loss of 514 mL (range: 150 mL – 3,550 mL). All patients required between one and three percutaneous screws for acetabular stabilization. On average, visual analog scale scoring (1 – 10) for assessment of pain improved by 0.6 points (Range: -8.3 – 6) between preoperative and prior to discharge measures. The mean postoperative hospital length of stay was eight days (range: 1 – 63 days). Thirty-four of 37 patients were allowed to weight bear as tolerated immediately after surgery. Twenty-three patients (24 cases) were discharged to home and 12 patients (13 cases) were discharged to an inpatient rehabilitation or skilled nursing facility. Fourteen patients died during the study period. There have been no mechanical failures to date. There was a single re-operation for wound dehiscence.

Conclusion: Simultaneous percutaneous acetabular augmentation and cemented acetabular cup reconstruction is a safe and effective strategy to provide pain relief and immediate, stable, weight bearing mobilization for patients with metastatic periacetabular disease.



Figure 1. Radiograph demonstrating a single-stage reconstruction of intraarticular periacetabular metastases utilizing a cemented acetabular liner reinforced with percutaneous screws oriented along various osseous fixation pathways.

Table 1. Patient Demographics

Case ID	Age (years)	Gender	ASA	Primary Cancer	Harrington Classification	Follow Up Duration (days)
1	36	F	4	Breast	3	560
2	36	F	4	Breast	3	558
3	64	M	3	Prostate	3	161
4	75	M	3	Lung	3	146
5	70	F	3	Lung	3	75
6	84	M	3	Multiple Myeloma	1	498
7	71	M	3	Multiple Myeloma	3	257**
8	66	F	3	Multiple Myeloma	3	365
9	66	F	2	Pancreatic	3	366
10	57	F	3	Esophageal	2	61**
11	51	F	3	Breast	3	250
12	51	F	3	Breast	2	248
13	75	M	4	Hepatocellular	3	21**
14	81	F	3	Breast	3	368
15	77	M	4	Multiple Myeloma	3	116
16	51	F	3	Melanoma	3	122**
17	45	M	3	Thyroid	3	69
18	62	M	3	Lung	3	73**
19	78	F	3	Breast	3	127
20	80	F	3	Breast	3	105
21	61	F	3	Cholangiocarcinoma	3	189
22	62	M	3	Skin	2	32**
23	71	F	2	Brain	3	229
24	37	F	3	Leiomyosarcoma	3	136
25	74	M	3	Unknown	3	132
26	75	M	3	Prostate	3	44**
27	75	M	3	Prostate	2	49**
28	71	F	3	Lung	3	81
29	65	M	3	Skin	3	227**
30	58	F	4	Breast	3	286
31	56	F	3	Lung	3	91**
32	52	M	3	Prostate	3	135**
33	57	F	3	Multiple Myeloma	3	284
34	74	M	3	Unknown	3	17**
35	68	F	3	Breast	3	33**
36	57	F	4	Breast	3	195**
37	65	F	3	Breast	3	102

** Deceased