

**Fig 1A-B.** Anteroposterior radiographs of both hip. (A) Preop. (B) Postop. treated with bipolar hemiarthroplasty and autogenous femoral head graft.

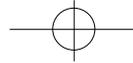


**Fig 2A-B.** Anteroposterior radiographs of both hip. (A) Preop. (B) Postop. treated with bipolar hemiarthroplasty with calcar replacement type stem.



		가			
		(collar)가			
	가	가		가	
(Figure 1),			1.4	1.8	1.7
	(Figure 2)				1.2
		가	1.5	1.3	1
Harris Hip Scoring System					2
Student t-test	Mann-Whitney U test				

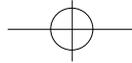


**Table 1.** Complications

Complication	Autograft	Calcar replacement
Postoperative psychosis	1	1
Voiding difficulty	3	0
Gastropathy	0	1
Wound infection		
Superficial	2	0
Deep	1	0
Postoperative dislocation	0	1
Pain	3	2
Total	10	5

8.4 가 3  
 16 가 2 가 가 .  
 가  
 15 2,7)  
 8 가 . Kyle <sup>11)</sup>  
 2 6.8% , 4  
 3 1 4-6 가  
 가 Laros <sup>13)</sup>  
 2 29%가  
 1 . Rao <sup>17)</sup>  
 , 4 3 가 가  
 1 29.2  
 3 . 84% . Chapman <sup>3)</sup>  
 가 Harris Hip Score 가 가 8%,  
 80 88 26% 6%  
 84.1  
 81 85 가 82.2 가  
 가 3  
 . Kenneth <sup>9)</sup>  
 Stem <sup>20,21)</sup>  
 88%  
 가 7.6% 72  
 10





.Zukerman 22)

83.5% ,

Russel<sup>17)</sup>

5,14)

70.4%

10)

1) 70

, 2)

, 3)

1

, 4)

가

, 5)

가

가

가

가

가

가

가

15)

가

가

가

가

가

.Jeffrey 8)

### REFERENCES

가

1) **Allan DG, Lavoie GJ, McDonald S, Oakeshott R and Gross AE** : Proximal femoral allografts in revision hip arthroplasty. *J Bone Joint Surg*, 73B:235-240, 1991.

.Allan

가

2) **Bong SC, Lau HK, Leong JCY and Fang D** : The treatment of unstable intertrochanteric fractures of the hip. A prospective trial of 150 cases. *Injury*, 13:139-143, 1981.

가

3) **Chapman MW, Bowman WE, Csongradi JJ, Day LJ, Trafton PG and Bovill EG Jr** : The use of Enders pins in extracapsular fractures of the hip. *J Bone Joint Surg*, 63A:14-28, 1981.

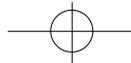
. Harris 6)

4) **Giliberty RP** : A new concep of a bipolar

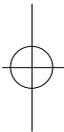
1)

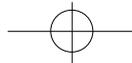
50%





- endoprosthesis. *Orthop Review*, 3:40-45, 1974.
- 5) **Gingras MB, Clark J and Evarts CM** : Prosthetic replacement femoral fractures. *Clin Orthop*, 152:147-159, 1980.
  - 6) **Harris WH and Allen JR** : The calcar replacement femoral component for total hip arthroplasty: design, uses and surgical technique. *Clin Orthop*, 157:215-224, 1981.
  - 7) **Hughston JC** : Intertrochanteric fracture of the femur(hip). *Orthop Clin N Am*, 5(3):585-587, 1974.
  - 8) **Jeffrey RM and Harris WH** : Revision of the femoral component of a total hip arthroplasty with the calcar-replacement femoral component. *J Bone Joint Surg*, 78A:331-339, 1996.
  - 9) **Kenneth JK, Gina BA, Andrew SR, Thomas L and Joseph DZ** : Patients with femoral neck and intertrochanteric fractures. Are they the same?. *Clin Orthop*, 330:166-172, 1996.
  - 10) **Kim DH, Shin KC, Chang BC and Kang DS** : The Clinical results of bipolar hemiarthroplasty in old age -femoral neck fracture vs. intertrochanteric fracture-. *The Journal of the Korean Society of Fractures*, 12(3):509-515, 1999.
  - 11) **Kyle RF, Gustilo RB and Premer RF** : Analysis of 622 intertrochanteric hip fractures. *J Bone Joint Surg*, 61A:216-221, 1979.
  - 12) **Langer P** : The Giliberty bipolar prosthesis. A clinical and radiological review. *Clin Orthop*, 141:169-175, 1979.
  - 13) **Laros GS and Moore JF** : Complications of fixation in intertrochanteric fractures. *Clin Orthop*, 101:110-110, 1974.
  - 14) **Moore AT** : Metal hip joint a new self locking vitallium prosthesis. *Southern Medical J*, 45:1015-1027, 1956.
  - 15) **Park MS, Park JH** : Bipolar hemiarthroplasty for treatment of unstable intertrochanteric fractures in the elderly patients. *J of Korean Orthop Assoc*, 31(5):982-987, 1996.
  - 16) **Pho RW, Nather A, Tong G and Korku CT** : Endoprosthetic replacement of unstable, comminuted intertrochanteric fractures of the femur in the elderly osteoporotic patient. *J Trauma*, 21:792-798, 1981.
  - 17) **Rao JP, Banzon MT, Weiss AB and Rayhack V** : Treatment of unstable intertrochanteric fractures with anatomic reduction and compression hip screw fixation. *Clin Orthop*, 175:65-71, 1983.
  - 18) **Russel TA** : Campbell 's Operative Orthopaedics, 9th ed. Vol2 St Louise Missouri, *Mosby-Year Book*:2217-2218, 1998.
  - 19) **Soreide O, Lillestol J, Alho A and Hvidsten K** : Acetabular protrusion following endoprosthetic hip surgery. A multifactorial study. *Acta Orthop Scand*, 51:943-948, 1980.
  - 20) **Stern MB and Angerman A** : Comminuted intertrochanteric fractures treated with a Leinbach prosthesis. *Clin Orthop*, 218:75-80, 1987.
  - 21) **Stern MB and Goldstein TB** : The use of the Leinbach prosthesis in intertrochanteric fractures of the hip. *Clin Orthop*, 128:325-331, 1977.
  - 22) **Zukerman JD, Sakales SR, Fabian DR and Frankel VH** : Hip fracture in geriatric patient. *Clin Orthop*, 274:213-225, 1992.





## Abstract

## Treatment of intertrochanteric fractures with bipolar hemiarthroplasty in the elderly

Kyou-hyeun Kim, M.D., Duk-hwan Kho, M.D.,  
Joon-ho Yang, M.D., Dong-heon Kim, M.D.

*Department of Orthopedic Surgery, College of Medicine,  
Konkuk University, Chung-Ju, Korea*

**Purpose** : To compare the timing of ambulation, complications and functional results between the autogenous femoral head graft and the calcar replacement type stem in the severe comminuted fracture of the elderly patients with instability.

**Materials and Methods** : 25 intertrochanteric femoral fracture patients who had bipolar hemiarthroplasty were followed for more than 1 year. 17 patients had autogenous femoral head graft and 8 patients had calcar replacement type stem.

**Result** : The mean operating time for autogenous femoral head graft was 1.7 hours, and calcar replacement type stem was 1.3 hours. Postoperative Harris functional score was 84.1 for the autogenous femoral head graft group and 82.2 for the calcar replacement type stem group.

**Discussion** : Both autogenous femoral head graft augmentation and fixation using the calcar replacement type stem result in rigid fixation, which enables the patients to ambulate early and to have low complication rate. Both techniques seem to be effective for the treatment of intertrochanteric fractures.

**Key Words** : femur, intertrochanteric fracture, bipolar hemiarthroplasty, autogenous femoral head graft, calcar replacement type stem

**Address reprint requests to** \_\_\_\_\_

Kyou-hyeun Kim, M.D.  
Chung-Ju Hosp., Konkuk Univ. Medical center, 620-5,  
Kyo-hyeon 2 dong, Chung-Ju, Chung-Buk, (380-062)  
Tel : (043) 840-8250  
Fax : (043) 854-2444  
E-mail: KHK3985@kornet.net

