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The Journal of the Korean Society of Fractures
Vol.13, No.1, January, 2000

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가,

: 1993 1 1997 12 , 65

23

19 가 Merle d'Aubigne hip rating scale 3 , 6 , 12

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74%, 72%, 67%

가 , 19

3 , 6 , 12

57%, 52%, 43%

가 .

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: Seung-Chan Ko M.D.

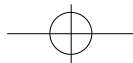
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4. 가 , Kyle-Gustilo-premer9) 3 29 (69%), 4 13 (31%) 3 .

5. , , (), - 3 , 3 , 2 , 2 , 4 .

6. 가 16 (38%), 14 (33%), 4 , 3 , 4 , 5,6) 5 .

7. (BMD: -3.5), 가 ,

. (Fig 1, A-C)

1. 1993 1 1997 12 5 65 가 . (Fig 2, A-C)

23 19 , 42 8. , 1 , 5 , 7 , 10 (tilting table) (parallel bar walking) , 10 , 2 3 , 2 , 3

2. 가 18 (43%), 가 24 (57%) , 25 (60%) 17 (40%) , 60 가 10 (24%), 70 가 24 (57%), 80 8 (19%) 70 가가 .

3. 가 9 (21%), 12 (29%), 21 (50%) 가가 .

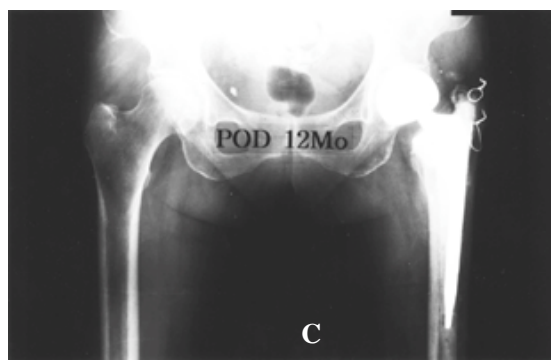
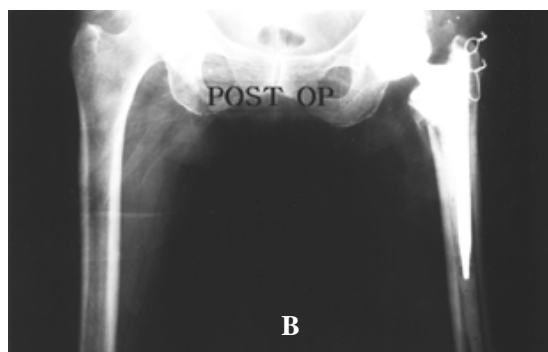
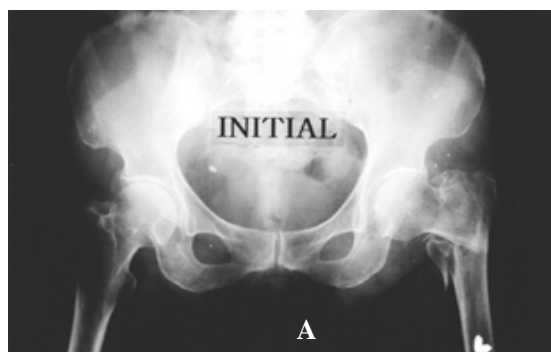


Fig 1. Serial radiographs of 72 year-old woman treated with a cemented bipolar endoprosthesis.
A. Kyle-Gustilo type , unstable intertrochanteric fracture. Preoperative roentgenogram.
B. Immediate postoperative roentgenogram. Wiring on greater trochanteric fragments was done.
C. 12 months after operation. We obtained satisfactory results.

, 10 5 .

가 (Table 2).

9. 가

Merle d'Aubigne hip rating scale¹¹⁾(Table 1)

, 3
 , 6
 18 (excellent), 17 (very good),
 15-16 (good), 13-14 (fair), 9-12 (poor), 9 (bad)
 3, 6, 12 .

1 , 7 가 ,
 2 ,
 1 , 2
 , 1 , 1 .
 ,
 2 , 2 ,
 2 , ,
 2 , 2 ,
 , 3 ,
 2 , 4 , 2 ,
 1 (Table 3).

가

, 19 , (p<0.05),
 3 , 6 , 12 , 74%,
 72%, 67% 가
 가 , 1 , 3 가 가 .
 1 , 2 ,
 57%, 52%, 43% .

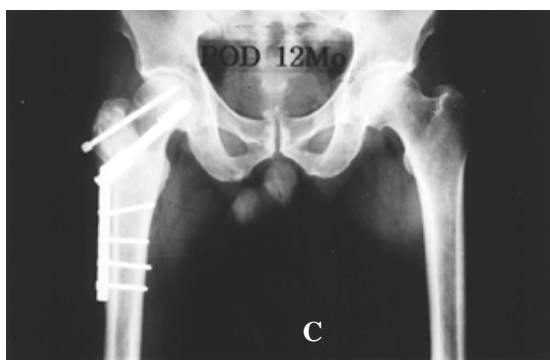
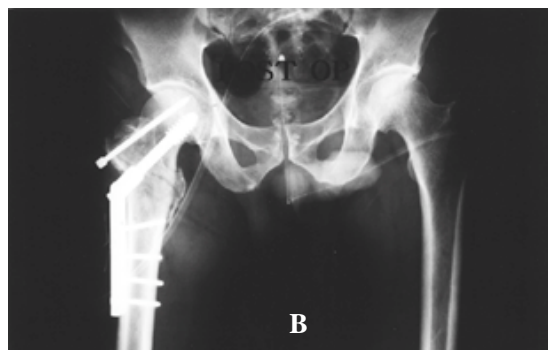
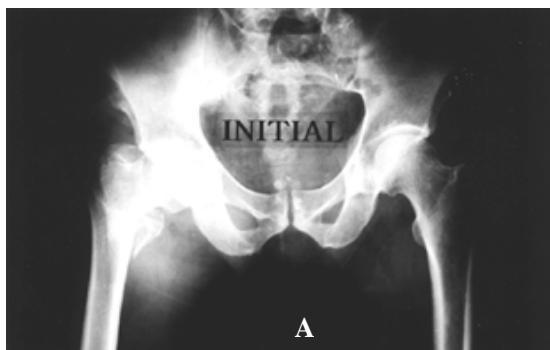


Fig 2. Serial radiographs of 70 year-old man treated with a compression hip screw.

- A.** Kyle-Gustilo type , unstable intertrochanteric fracture. Preoperative roentgenogram.
B. Immediate postoperative roentgenogram. Additional knowles pin was inserted.
C. 12 months after operation. The roentgenogram showed union of the fracture site.

Table 1. Hip-rating scale of Merle d 'Aubigne

No. of Points	Pain	Mobility			Walking ability/ Stability
		Without Deformity	Without Deformity		
		Range of Flexion (Deggess)	Flex./Ext. Rotation	Abduct/Adduct/ Int. Rotation	
6	None	90	None	None	Normal or unlimited Cane and slight limp only after long distances; no instability
5	Rare	70-80	None	None	
4	After walking 30-60 mins.	50-70	Subtract 1 point	Subtract 2 point	Cane only outdoors, major limp, slight instability
3	10-20 mins.	30-50	Subtract 1 point	Subtract 2 point	Cane, limp, and instability always
2	Before 10 mins.	<30	Subtract 1 point	Subtract 2 point	Two canes
1	Immediately		Subtract 1 point	Subtract 2 point	Two crutches
0	Always. even when sitting or lying		Subtract 1 point	Subtract 2 point	Unable to walk



60 • / 13 1

Table 2. Functional results of 2 groups by criteria of Merle d'Aubigne

Results	Bipolar			C.H.S*		
	3mon	6mon	12mon	3mon	6mon	12mon
Excellent	6	5	5	2	3	2
Very good	4	4	3	5	4	3
Good	4	4	4	5	4	4
Fair/poor/bad	5	5	6	11	10	12
Total	19	18	18	23	21	21
Ratio of good result(%)	14/19	13/18	12/18	12/23	11/21	9/21
	74	72	67	57	52	43

* C.H.S : Compression hip screw group.

Evans³⁾, Boyd Griffin¹⁾

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Kyle-Gustilo⁹⁾Evans^{3,4)}

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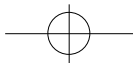
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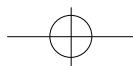
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Table 3. Postoperative complications

Complication \ method	Bipolar	C.H.S
Coxa vara, Limb shortening	0	2
Reduction loss	0	2
Loosening of bolts	0	2
Posterior dislocation	1	0
Limitation of motion	2	2
Delayed union, Nonunion	0	2
Chronic thigh pain	0	2
Peroneal nerve palsy	0	2
Infection of wound	1	1
Pneumonia	1	3
Gastrointestinal problem	2	4
Bed sore	0	2
Urinary tract infection	1	2
Total	8	26



(BMD) - 42
3.0 , 가 35 (83%) ,
가 가 , 가
($p<0.05$). Jensen ⁷⁾ 42
21 (50%) 가
가 ($p>0.05$),
3 ,
가 7 ,
가
Lee ¹⁰⁾ Kang ⁸⁾
가
Moore¹²⁾
가 가
($p<0.05$). 1
3
Stern Goldstein¹⁴⁾
Green ⁵⁾
stem Green ⁵⁾ 5.5
가 가 , Crenshaw²⁾
2
Haentigens ⁶⁾
6 8
, Merle d'Aubigne¹¹⁾ 가
75% 10 가
, 2 3
70
BMD -3.5
19
($p<0.05$).
70
Rowe ¹³⁾ 27 20 가 가



가

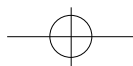
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REFERENCES

- 1) **Boyd HB and Griffin LL** : Classification and treatment of trochanteric fracture. *Arch Surg*, 58 : 853-866, 1949.
- 2) **Crenshaw AH** : Campbell 's operative orthopaedics, 8th ed. Vol. 1. Missouri, *Mosby* : 599-610, 1992.
- 3) **Evans EM** : The treatment of trochanteric fractures of the femur. *J. Bone Joint Surg*, 31-B : 190-203, 1949.
- 4) **Evans EM** : Trochanteric fractures. A review of 110 cases treated by nail-plate fixation. *J Bone Joint Surg*, 33-B : 192-204, 1951.
- 5) **Green S, Moore T and Proano F** : Bipolar prosthetic replacement for the management of unstable intertrochanteric hip fractures in the elderly. *Clin Orthop*, 224 : 169-177, 1987.
- 6) **Haentigens P, Casteleyn PP and DeBoeck H** : Treatment of unstable intertrochanteric and subtrochanteric fractures in elderly patients. *J Bone Joint Surg*, 71-A : 1214-1225, 1989.
- 7) **Jensen JS, Holm S and Tondelvold E** : Unstable trochanteric fracture. *Acta Orthop Scand*, 51 : 949-962, 1980
- 8) **Kang CN, Kim JO, Kim DW, Koh YD, Koh SH and Lee KW** : Comparison of hemiarthroplasty and compression hip screw on elderly unstable intertrochanteric fractures. *J Kor Society Fractures*, 10-4 : 738-745, 1997.
- 9) **Kyle RF, Gustilo RB and Premer RF** : Analysis of six hundred and twenty-two intertrochanteric hip fractures. *J Bone Joint Surg*, 61-A : 216-221. 1979.
- 10) **Lee JI, Son MH, Heo SG, Gwun YH and Park JH** : Primary bipolar hemiarthroplasty compared with compression hip screw on treatment of elderly unstable intertrochanteric fractures. *J Kor Society Fractures*, 9-2 : 401-408, 1996.
- 11) **Merle d 'Aubigne R** : Cotation, chiffree de la fonction. de la hanche. *Rev Chir Orthop*, 63 : 135-148, 1977.
- 12) **Moore MJ** : Treatment of trochanteric fractures with special reference to complications. *Am J surg*, 84 : 449-457, 1952.
- 13) **Rowe SM and Yoon YS** : The intertrochanteric fracture of the femur in the elderly. *J Korean Orthop Surgery*, 18-4 : 755-762, 1983.
- 14) **Stern NB and Goldstein TB** : The use of the Leinbach prosthesis in intertrochanteric fractures of the hip. *Clin Orthop*, 128 : 324-331, 1977.



Abstract

Comparison of Bipolar Hemiarthroplasty and Compression Hip screw on Treatment of Elderly Unstable Intertrochanteric Fractures

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Purpose : To evaluate and compare the clinical outcomes of bipolar hemiarthroplasty and compression hip screw on elderly with unstable intertrochanteric fractures

Material and Method : We evaluated the clinical results of 65-year or older elderly patients with unstable intertrochanteric fractures between Jan. 1993 to Dec. 1997. 23 patients underwent compression hip screw treatment and 19 patients were treated with bipolar hemiarthroplasty. Functional evaluation was conducted at 3, 6 and 12 month after the operation by hip rating scale of Merle d'Aubigne. Complications, time to weight bearing and hospitalization period were also investigated.

Results : For the bipolar hemiarthroplasty group, functional scale of good or above were seen in 74%, 72% and 67% of the group at 3 months, 6 months and 12 months. However in the compression hip screw group, the good or above results were shown in 57%, 52% and 43% of the group, thus showing a functional deterioration as time progresses. Comparing the overall clinical outcome, the bipolar hemiarthroplasty group showed better results, complication occurred in 26 cases of compression hip screw group and 8 cases of bipolar hemiarthroplasty group, showing better outcomes in the bipolar hemiarthroplasty group.

Conclusion : Comparing the length of hospital stay, time to weight bearing, complication and functional superiority of the treatment for elderly unstable intertrochanteric fractures, the bipolar hemiarthroplasty showed superior clinical outcomes than the compression hip screw. Moreover, patients with more unstable fractures and more severe osteoporosis showed better clinical results with bipolar hemiarthroplasty.

Key Words : Femur, Unstable intertrochanteric fracture, Bipolar hemiarthroplasty, Compression hip screw.