



14, 2, 2001 4

The Journal of the Korean Society of Fractures
Vol.14, No.2, April, 2001

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: 37

: 1992 4 1997 5

16 (8 , 8)

21 (5 , 16)

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3

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가

:

117±35.9 , 712ml

97±23.3 , 592ml

(p 0.05),

16.1 ,

15.3

(p 0.05),

가

(p=0.781).

1

, 20°

1 ,

2 ,

1 ,

2

(p 0.05).

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Dept. of Orthopaedic Surgery, Kwangju Veterans Hospital

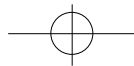
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1992 4 1997 5

1 가 가

5,12,14,16), 37 , 16 (14 , 2), 21

(11 , 10)

가 가 66.8 (22-79),

72 (44-88) .

가 34,10,11) 10 , 4

(collapse) , 2 12 , 6

, 3 . Evans

8 , 8 ,

5 , 16 .

Fitts⁶⁾ .

(bending 1

(lever 8 , 4 2

moment) , 가

arm)가 4,10) 7 , 17 3

가 가 1 .

가 .

8.5 (30%)

14,15,23,24) 1 ,

(set 3 3

screw) 2-3 , 1

11) 가 3 . 2-4

1 .

가 , , ,

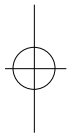
가 가 .

가 , ,

21 16 가

37 , Parker and Palmer²²⁾

Mobility score .



**Table 1.** Operative and postoperative details

	CHS	Gamma	p-value
Operative time 35/M	117 ± 35.9	97 ± 21.3	0.003
Level of Hgb(g/L)			
preoperative	125 ± 21.0	115 ± 12.5	
48hrs after operation	109 ± 26.3	98 ± 17.5	
Blood loss(ml)	712	592	0.009
No. of PRC transfusion(packs)	2.1 ± 2.08	1.4 ± 1.36	

Table 2. Union time

	CHS	Gamma	p-value
Mean union time(week)	16.1	15.3	0.725
Stable	15.55	15.28	0.823
Unstable	16.42	14.31	0.627

(p=0.781).

가

1

가

1 ,

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20 °

3 ,

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4-point scale

1 ,

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t-

2

Chi-square

(p 0.05)(Table 3,4).

117 ± 35.9 , Bridle ²⁾

97 ± 23.3

20

(p

가

0.05).

hemovac

, Leung ¹⁷⁾

712ml,

592ml

8,13,15,18,24)

(p 0.05)(Table 1).

16.1 ,

(p 0.05).

15.3

(p 0.05)(Table 2).

가

1995

7.6 ± 1.41

7.1 ± 2.31

11

75

0.5

,

6.6 ± 1.88

가

(p 0.01).

6.3 ± 1.88

0.3

Rosenblum ²⁴⁾

**Table 3.** The change of neck-shaft angle

	CHS	Gamma	p-value
Postoperative(°)	144.6 ± 11.05	134.5 ± 10.19	
Last follow up(°)	143.3 ± 14.15	128.7 ± 14.10	
Change(°)	1.3 ± 5.84	5.8 ± 12.34	0.781

Table 4. Complications

	CHS	Gamma
Cut-out	1	2
Distal shaft fracture	0	1
Progressive varus displacement(20 °)	1	2

가

(p 0.05)

Leung¹⁷⁾Lindsey¹⁸⁾

가

가

(set screw)

가

25)

AP nail

가

9,23)

1,7,19)

Birdle²⁾

8%

Leung¹⁷⁾

14 (69%)

12 (75%),

가

가 0.05)

(p

(Fig. 1).

AP(Asian Pacific)

AP nail

2mm

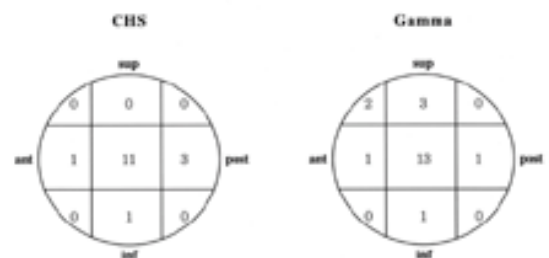
1

Larsson¹⁵⁾

가

가

21)

**Fig 1.** Location of the tip of the lag screw.

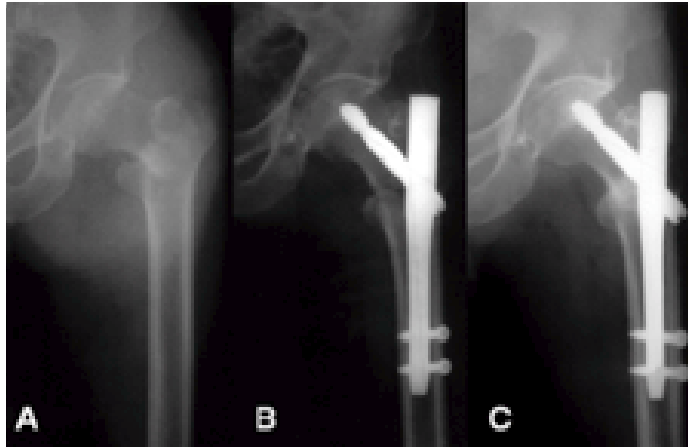
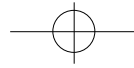


Fig 2-A. A 65-year-old man with the unstable intertrochanteric fracture of femur.

B. Postoperative radiograph after fixation with the Gamma nail.

C. Follow-up radiograph shows union at 3 months after fixation.

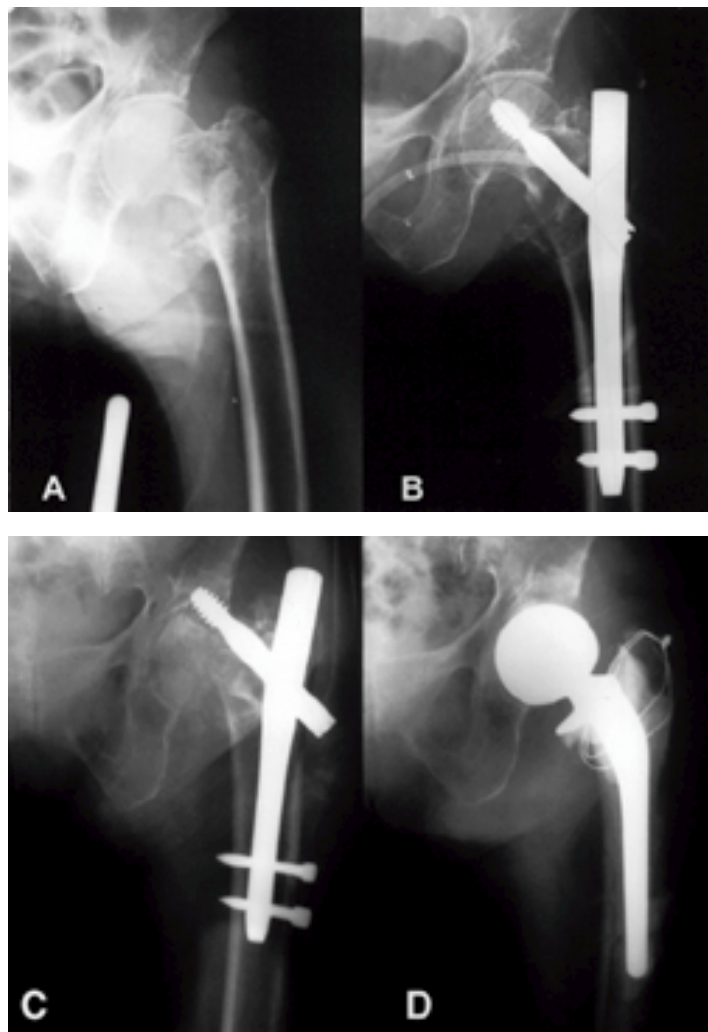
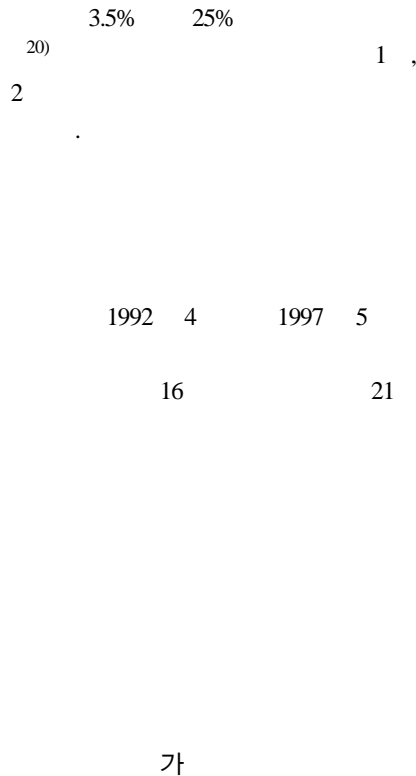


Fig 3-A. A 78-year-old woman with the unstable intertrochanteric fracture of femur.

B. Postoperative radiograph after fixation with the Gamma nail.

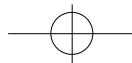
C. At 2 months after operation, radiograph shows cutting out of the lag screw.

D. Hemiarthroplasty with bipolar prosthesis was done.



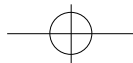
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Abstract

Operative Treatment of the Femur Intertrochanteric Fracture Using the Gamma nail and the Compression Hip Screw

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Purpose : To compare and analyze the operative results of compression hip screw with those of gamma nail in the treatment of intertrochanteric fracture of femur.

Materials and Methods : We performed retrospective analysis of intertrochanteric fracture of femur using the compression hip screws on 16 cases(stable 8 cases, unstable 8 cases) and compared the results with those of 21 cases(stable 5 cases, unstable 16 cases) of Gamma nail fixation. All the 37 cases were operated between April 1992 and May 1997 and followed for minimal 12 months. We permitted earlier weight bearing for the Gamma nail inserted group(1 week vs 3 weeks). We evaluated the operation time, bleeding amount, intraoperative and postoperative complications, bone union time, neck-shaft angle, and functional assessment by follow up radiographs and clinical results.

Results : The average operation time was shorter in the Gamma nail group than in the compression hip screw group (97 ± 23.3 compared with 117 ± 35.9 minutes; $p = 0.05$). The average amount of bleeding was lesser in the Gamma nail group than in the compression hip screw group (592 compared with 712 ml; $p = 0.05$). The fracture union time and clinical function of two groups showed no statistically significant difference($p = 0.05$). During Gamma nail insertion, crack was developed in one femoral shaft which was united after bed rest and delayed weight bearing. Postoperative complications were coxa vara in 3 cases(1 case on Gamma nail, 2 cases on CHS) and cutting out of lag screw in 3 cases(1 case on Gamma nail, 2 cases on CHS), but showed no statistically significant difference between two groups($p = 0.781$).

Conclusion : Early weight bearing can be encouraged for the Gamma nail group and this seemed to be beneficial for the old patients. The Gamma nail fixation is considered as a useful method for the patients with intertrochanteric fracture if it is managed with proper technique.

Key Words : Femur, Intertrochanteric fracture, Compression hip screw, Gamma nail.

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