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The Journal of the Korean Society of Fractures
Vol.11, No.4, October, 1998

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= Abstract =

**The Operative Treatment of the Intertrochanteric Fracture of the
Femur in Elderly Patients over 70 years old**
- Comparison between Survivor group and Non-survivor group -

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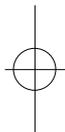
The intertrochanteric fractures of the femur are common in elderly. Recently better implants and surgical techniques have improved the clinical results. But intertrochanteric fractures are still a major source of morbidity and mortality in elderly because of poor general condition and high incidence of osteoporosis. The primary goal of the treatment have been union of the fracture, but it is important to reduce the mortality rate and to return the patients to a prefracture ambulatory status.

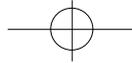
The authors analyzed the 63 intertrochanteric fractures of the femur in the elderly patients over 70 years old who had been treated at Korea University Hospital from January 1990 to December 1995 in order to determine the mortality rate and the prognostic factors associated with mortality. Also we analyzed the 44 patients in survivor group about their prefracture ambulatory ability and post-operative ambulatory ability.

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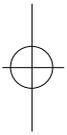




The results were as follows ;

1. There were 44 cases(69.8 %) in survivor group and 19 cases(30.2 %) in non survivor group. The mortality rate was 20.6 % at 1 year after operation.
2. Mortality was associated with the number of medical problems and interval between injury and operation.
3. The recovery of ambulatory ability was associated with the age at injury, associated medical problems, and preinjury ambulatory ability.

Key Words : Fracture, femur intertrochanteric, comparison between survivor and non survivor group.

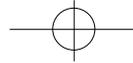


가 70 86
1 가가 63

2.
(survivor group) (non survivor group)
9,14)
가 가
가 가
chi-square test
square test
P value가 0.05
가
가 4,7)
1)
70 93 78.2
79.1 75.8 , 47
(74.6 %) 16 (25.4 %),
2)
49 (77.8 %) 가 , 9
(14.3 %), 가 3 (4.8 %),
가 2 (3.2 %)
3)
Boyd-Griffin 5)
Boyd-Griffin 1 14 (22.2 %), 2
35 (55.6 %), 3 9 (14.3 %), 4 5 (7.9 %)

1.
1990 1 1995 12





4) Singh¹⁵⁾ 1, 2, 1
 4 (6.3%), 2 15 (23.8%), 3 24 (38.1%), 4 16 (25.4%), 5 3 (4.8%), 6 1 (1.6%) .

5) 63 28 (44.4%), 21 (33.3%), 9 (14.3%), 11 (17.5%)
 63 44 (69.8%), 19 (30.2%) .

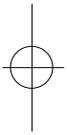
6) 2, 6, 1, 7 (36.8%), 6 (31.6%), 6 (Table 1).
 15 8.6, 106.1, 85, 143, 63, 2, 9.5%, 1, 20.6%, 30.2%, 1, 68.2%, 1, 31.8% .

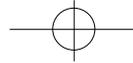
7) 85, 143, 63, 2, 9.5%, 1, 20.6%, 30.2%, 1, 68.2%, 1, 31.8% .

8) Koval¹¹⁾ 가 1. 76.3, 82.6, 44, 10 (15.9%), 34 (77.3%), 19, 6 (31.6%), 13 (68.4%) . (P>0.05)(Table 2).

가 (non functional ambulator) 2. Boyd-Griffin 1 9 (20.5%), 2 26 (59.1%), 3 7 (15.9%), 4 2 (4.5%), 1 5 (26.3%), 2 9 (47.4%), 3 2 (10.5%), 4 3 (15.8%) . Boyd-Griffin 2 가 (P>0.05) (Table 3).

가 (independent community ambulator), 2 (community ambulator with cane), 3 (community ambulator with crutch), 4 (independent household ambulator), 5 (household ambulator with cane), 6 (household ambulator with crutch), 7 (non functional ambulator) Singh 1 가 4 (9.1%), 2





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Table 1. Number of death through Follow up

Duration(month)	No. of non-survivor case(%)
within 2 months	3(15.8 %)
2 - 6 months	3(15.8 %)
6 - 12 months	7(36.8 %)
over 12 months	6(31.6 %)
Total	19(100 %)

Table 2. Age and sex distribution

Age	Survivor group		Non survivor group		Total
	Male	Female	Male	Female	
70-79	4	13	3	4	24
80-89	6	21	3	7	37
>90				2	2
Total	10	34	6	13	63

Table 3. Fracture type according to Boyd-Griffin classification

Type/Group	Survivor(%)	Non survivor(%)
	9(20.5)	5(26.3)
	26(59.1)	9(47.7)
	7(15.9)	2(10.5)
	2(4.5)	3(15.8)
Total	44	19

Table 4. Singh index

Index/Group	Survivor(%)	non survivor(%)
	4(9.1)	0
	9(20.5)	6(31.6)
	16(36.4)	8(42.1)
	11(25)	5(26.3)
	3(4.8)	0
	1(2.3)	0
Total	44	19

9 (20.5 %), 3 16 (36.4 %), 4 11 (25 %),
5 3 (4.8 %), 6 1 (2.3 %)

Table 5. Number of associated diseases per patient

No. of diseases	0	1	2	3	4<	Total
Survivor	14	16	11	2	1	44
Non survivor	2	7	7	2	1	19
Total	16	23	18	4	2	63

Table 6. Recovery of ambulatory function in survivor group

Categories of pre-fracture ambulation	Categories of ambulation at final follow up								Total
	1	2	3	4	5	6	7		
1	*11	9	3	3	1	1			28
2		*4	3	1		1			9
3			*2			1			3
4							1		1
5						1	1		2
6							1		1
7									
Total									44

* Patients who remained their prefracture level of ambulation

2 6 (31.6 %), 3 8 (42.1 %), 4 5 (26.3 %)

(P>0.05)(Table 4).

4.

44 30 (68 %)

17†

19 17 (89.5 %) 17†

(P<0.05)

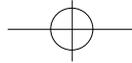
(Table 5).

5.

8.6

7.4 ,

12.3 .



(P<0.05).

6.

107.3 , 106.1 103.4

6,7,16)

Jewett nail, Holt nail
fixed nail plate, compression hip screw sliding
nail plate, Ender nail Harris nail intramedullary
device 37가
16)

(P>0.05).

7.

가
1
44 17 (38.6 %)
27 (61.4 %)
Koval¹¹⁾
11 (25 %),
13 (29.5 %),
8 (18.2 %),
4 (9 %),
1 (2.2 %),
4 (9 %),
1 (2.2 %)
27
가 1
2 , 5 3 , 3 4
44 31 (70.5 %)
76.4 , 6 , 17
2
(29.5 %)
7 , 14
Chi-square test
1 2

가

70

Dahl¹⁰⁾ 675

2

가
primary mortality

Miller¹³⁾

17%, 10%

8

1

, 1
3)

3

27%

15 %

74 %

1)¹⁾ 1

2

22.7 %

가 3

Dahl¹⁰⁾

primary mortality 4.8 %

63 13 (20.6 %)

가 1

63 6 (9.6 %)

가

, 1

1)

1)

(P<0.05)(Table 6).

, Cheng⁸⁾

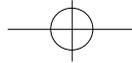
, Dahl¹⁰⁾

가

가

Miller¹³⁾

60

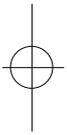


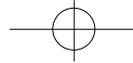
가 가
 , ,
 .
 Miller¹³⁾ walker
 51 % 가
 22 % 가 가
 2)
 quality of life 가
 30 7 (23.3 %)
 가 16 (63.6 %)
 , 7 (23.3 %)
 .
 44
 17 (38.6 %)가
 , 27 (61.4 %)
 . Koval ¹¹⁾
 25%,
 47.7%, 20.2%,
 6.8% 72.7%
 Koval ¹¹⁾
 가,
 가
 가
 가
 가

1990 1 1995 12
 가 가
 , , 70
 1 가가 63
 ,
 .
 1. 63 44 (69.8 %),
 19 (30.2 %) , 1 20.6%
 .
 2. , ,
 , ,
 .
 3. 가 ,
 .

REFERENCES

- 1) , , , , :
70 31:119-123, 1996.
- 2) , :
Quality of life 가.
9:869-875, 1996.
- 3) , :
18:762-
775, 1983.
- 4) , , : Endoprosthesis
26:756-
761, 1991.
- 5) **Boyd HB and Griffin LL** : Classification and





- treatment of trochanteric and subtrochanteric fractures. *Arch Surg*, 58:853-866, 1949.
- 6) **Ceder L, Ekelund L, Inerut S, Cobey JC, and Conant L** : Rehabilitation after hip fracture in elderly. *Acta Orthop Scand*, 50:60-68, 1979.
 - 7) **Ceder L, Lindberg L and Odberg E** : Differentiated care of hip fracture in elderly. *Acta Orthop Scand*, 51:157-162, 1991.
 - 8) **Cheng CC, Lui S, Hui PW, and Rubin SM** : Prognostic factors and progress for ambulation in elderly patients after hip fractures. *Am J Phys Med Rehab*, 68:230-233, 1989.
 - 9) **Clayer MT and Bauze RJ** : Morbidity and mortality following fractures of the femoral neck and trochanteric region: Analysis of risk factors. *J Trauma*, 29:1673-1678, 1989.
 - 10) **Dahl E** : Mortality and life expectancy after hip fractures. *Acta Orthop Scand*, 51:163-170, 1980.
 - 11) **Koval KJ, Skovron ML, Aharonoff GB, Meadows SE, and Zuckerman JD** : Ambulatory ability after hip fracture. *Clin Orthop*, 310:150-159, 1995.
 - 12) **Massie WK** : Extracapsular fractures of the hip treated by impaction using a sliding nail plate fixation. *Clin Orthop*, 22:180-202, 1962.
 - 13) **Miller CW** : Survival and ambulation following hip fracture. *J Bone Joint Surg*, 60-A:930-933, 1978.
 - 14) **Morris HD** : Trochanteric fractures. *South Med J*, 34:571-578, 1941.
 - 15) **Singh M, Nagrahp AR and Maini PS** : Changes in trabecular pattern of the upper end of the femur as a index of osteoporosis. *J Bone Joint Surg*, 52-A:457-467, 1970.
 - 16) **Wolfgang GL, Bryant MH, and O 'Neil JP** : Treatment of intertrochanteric fracture of the femur using sliding screw plate fixation. *Clin Orthop*, 163:148-158, 1982.

