

12, 1, 1999 1

The Journal of the Korean Society of Fractures  
Vol.12, No.1, January, 1999

= Abstract =

## Ipsilateral Fractures of Femoral neck and Shaft

Byeong-Hwan Kim, M.D., Sung-Keun Sohn, M.D. and Soo-Jin Park, M.D.

Department of Orthopaedic surgery,  
College of Medicine, Dong A University, Pusan, Korea

Ipsilateral fractures of the femoral neck and shaft are uncommon injuries with the difficulties in diagnosis and treatment. The femoral neck fracture of this injury is commonly missed on initial evaluation. The overlooked femoral neck fracture may lead to higher risk of complications such as avascular necrosis of the femoral head, nonunion and coxa vara.

The authors reviewed nine cases of ipsilateral femoral neck and shaft fracture treated in our clinic from June 1990 to March 1997, and average follow-up period was 39 months(range, 16 to 97 months).

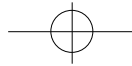
The results obtained were as follows ;

1. The cause of injury was traffic accident and one femoral neck fracture was missed initially.
2. The most common site of femoral neck fracture was basicervical in 7 cases and that of shaft fractures was middle 1/3 shaft in 6 cases.
3. Two cases were treated with femoral reconstruction nail, seven with multiple neck pinning and dynamic compression plate for shaft fracture.
4. There were complication such as 2 cases of delayed union of femoral shaft, 1 case of nonunion of femoral shaft.
5. It should be treated with anatomical and rigid internal fixation in femoral neck fracture

:

371 (602-103)

Tel : (051) 240 - 5918. Fax : (051) 254 - 6757



14 • / 12 1

having first priority.

**Key Words** : Femur, Neck and shaft, Ipsilateral, Fracture

2.

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

3.

가 , , 8,14,22) , 2 , Garden 가 5 , 4 가 2 , 1 3 가 1 . 1/3 가 6 , 1/3 (Table 1).

4.

가 . 1990 6 8 6 24 , 2 1997 3 9 4 .

5.

7 (6 , 1 Knowless ) , 2 1 9 가 6 , 가 3 , 2 14 53 16 97 6 5 , 39 . (Table 1).

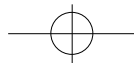
1.

가 3 , Buck 's , 1 가 5 , 1 .

**Table 1.** Case analysis

Case	Sex/Age	Femur Neck Fx. Fx. site	Garden's	Femur Shaft Fx. site	Missed Dx. of Femur Neck Fx.	Associated injuries	Method of Treatment	Complication
1	M/53	B.C	II	prox. 1/3	-	Fx. tibia condyle Open Fx. contralateral femur	MP/DCP	All Fx. healed
2	M/14	T.C	IV	prox. 1/3	-	Fx. pelvic bone	MP/DCP	All Fx. healed
3	F/44	B.C	III	middle 1/3	-	Fx. femur supracondyle	MP/DCP	Delayed union of shaft
4	M/42	B.C	II	middle 1/3	-	Fx. pelvic bone Degloving injury of scrotum & thigh	MP/DCP	Nonunion of shaft Ankylosis of knee
5	M/46	B.C	II	middle 1/3	-	Open Fx. ankle Hemoperitoneum & pneumothorax	R IM nail	Delayed union of shaft
6	F/44	B.C	II	middle 1/3	+	Fx. femur supracondyle & tibia condyle Fx. clavicle	MP/DCP	All Fx. healed
7	M/42	T.C	IV	middle 1/3	-	Fx. tibia condyle & fibula Open Monteggia Fx.	MP/DCP	Partial ankylosis of knee
8	M/39	B.C	II	middle 1/3	-	Fx. tibia condyle	R IM nail	Partial ankylosis of knee
9	F/20	B.C	I	distal 1/3	-	Head injury	MP/DCP	All Fx. healed

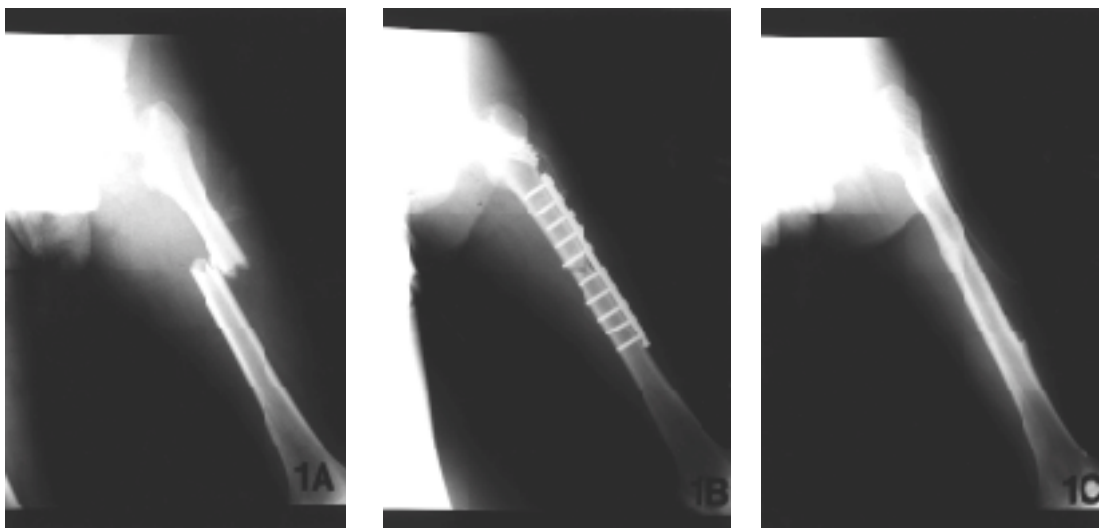
B.C : Basicervical, T.C : Transcervical, MP : Multiple pinning, DCP : Dynamic compression plate, R IM nail : Reconstruction intramedullary nail



16 • / 12 1

2 ( 4  
 1 , 1 ) , 1 cannu-lated screw  
 2  
 1 11  
 . 1  
 degloving 1  
 injury 1 ,  
 , (Fig 1-A, B, C).  
 , 2  
 (Table 1).

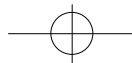
1  
 14 가 , 가  
 . 가  
 , , 가  
 1/3 . 1953 Delaney Street<sup>16)</sup> 4 2



**Fig 1-A.** Initial roentgenogram of a 14 year old male showed the femoral neck fracture (transcervical, Garden stage IV) and ipsilateral femoral shaft fracture(prox 1/3).

**B.** Multiple pinning for the femoral neck fracture and DCP for the femoral shaft fracture were performed.

**C.** Postoperative 12 months radiologic pictures after removal of cannulated screws and DCP showing complete radiologic union.



가

9 1

10,12,13,17-19)

20%-30%

3), 7)

가

(antegrade)

가

Delaney Street<sup>16)</sup>, Schatzker  
Barrington<sup>22)</sup>, Ashby Anderson<sup>10)</sup>

(retrograde)

12,13,15,16,19)

Delaney Street<sup>16)</sup> 4

Knowless  
, Bernstein<sup>12)</sup>

3

15

Zettas Zettas<sup>26)</sup> Wolinsky

. Casey Chapman<sup>13)</sup> antegrade

Johnson<sup>25)</sup> ender nailing sliding hip screw  
, Swiontkowski<sup>23,24)</sup>

(tomogram),

가

, Schatzker Barrington<sup>22)</sup>

Alho<sup>9)</sup> Ritchey<sup>21)</sup> 가

1

(sliding and impaction effect)

가

가

가

20-40%

8,11,18,25)

9

9 2

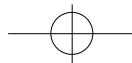
3

, Schazker Barrington<sup>22)</sup>



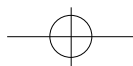
18 • / 12 1

Mackenzie<sup>19)</sup> Swiontkowski<sup>23,24)</sup> (capsulo-  
 plasty), (accurate reduction), , 2 1 , 2 1  
 (rigid fixation with compression)  
 가 . Harper<sup>20)</sup> degloving injury  
 1  
 , 2  
 (stress-shielding) , Casey Chapman<sup>13)</sup>  
 가 , 가  
 Wolinsky Johnson<sup>25)</sup> 1 11  
 , 12  
 가 가  
 가  
 , 2  
 , 1  
 (Garden II ) 2 1990  
 3 6 1997 3  
 , 5 (Garden II/IV 2 , I 9  
 1 )  
 , 1 (Garden III ) 1.  
 , 9 1  
 2.  
 Chapman<sup>14)</sup> 4.5%, (7 ) , 1/3  
 Swiontkowski<sup>23,24)</sup> 4.5-15% 6 가  
 , 15-40% 3.  
 가 2 ,  
 가 7  
 4. 2 ,  
 Garden 9 3 1 ,  
 ,



## REFERENCES

- 1) , , : (2 ) . , 10-2:180-184, 1975.
- 2) , , , : , 31-5:1149-1158, 1996.
- 3) , , : , 12-2:155-160, 1977.
- 4) , , : , 3-1:88-95, 1990.
- 5) , : , 13-3:713-721, 1988.
- 6) , : , 28-2:705- 1993.
- 7) , , , : , 25-6:1674-1680, 1990.
- 8) , , , , : , 29-4:1238-1244, 1994.
- 9) **Alho A** : Injuries in the femoral axis. *Int Orthop*, 3:271-276, 1980.
- 10) **Ashby ME and Anderson JC** : Treatment of fracture of the hip and ipsilateral femur with the Zikle device : A report of the three cases. *Clin Orthop*, 127:156-160, 1977.
- 11) **Bennett FS and Zinano D** : Ipsilateral Hip and Femoral shaft Fractures. *Clin Orthop*, 296:168-177, 1993.
- 12) **Bernstein SM** : Fractures of the femoral shaft and associated ipsilateral fractures of the hip. *Orthop Clin N Am*, 5:799-818, 1974.
- 13) **Casey MJ and Chapman MW** : Ipsilateral concomitant fractures of the hip and femoral shaft. *J Bone Joint Surg*, 61A:503-509, 1979.
- 14) **Chapman MW** : Concomitant ipsilateral fractures of the hip and femur. In Myers M.(ed) : The multiply injured patient with complex fractures. *Philadelphia, Lea and Febiger* : 210-217, 1984.
- 15) **Conrad JJ** : Fractures of the hip with simultaneous fracture of the shaft of femur on same side. *J Bone Joint Surg*, 55A:1320-1327, 1973.
- 16) **Delaney MW and Street DM** : Fracture of femoral shaft with fracture of neck of same femur :Treatment with medullary nail for shaft and knowles pins for neck. *J Int Coll Surg*, 19:303-312, 1953.
- 17) **Denker H** : Femoral shaft fracture and fracture of the neck of the same femur. *Acta Chir Scand*, 129:579-605, 1965.
- 18) **Kimbrough EE** : Concomitant unilateral hip and femoral shaft fractures : A too frequently unrecognized syndrome. Report of five cases. *J Bone Joint Surg*, 43A:443-449, 1961.
- 19) **Mackenzie DB** : Simultaneous ipsilateral fractures of the femoral neck and shaft. Report of 8 cases. *S Afr Med J*, 45:459-467, 1971.
- 20) **Harper MC** : Fractures of the femoral neck associated with technical errors in closed intramedullary nailing of the femur. *J Bone Joint Surg*, 68A:624-626, 1986.
- 21) **Ritchey SJ, Schonholtz GJ and Thompson MS** : The dashboard femoral fracture. Pathomechanics, Treatment, and Prevention. *J Bone Joint Surg*, 40A:1347-1352, 1958.
- 22) **Schatzker J and Barrington T** : Fractures of the femoral neck associated with fractures of the same



femoral shaft. *Can J Surg*, 11:297-305, 1968.

23) **Swiontkowski M, Winkquist RA and Hansen ST** : Fractures of the femoral neck in patients between the age of twelve and forty-nine years. *J Bone Joint Surg*, 66A:837-845, 1984.

24) **Swiontkowski M, Hansen S and Kellam J** : Ipsilateral fractures of the femoral neck and shaft : A treatment protocol. *J Bone Joint Surg*, 66A:260-268,

1984.

25) **Wolinsky PR and Johnson KD** : Ipsilateral femoral neck and shaft fractures. *Clin Orthop*, 318: 81-90, 1995.

26) **Zettas JP and Zettas P** : Ipsilateral fractures of the femoral neck and shaft. *Clin Orthop*, 160:63-73, 1981.

