

12 , 2 , 1999 4

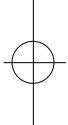
The Journal of the Korean Society of Fractures  
Vol.12, No.2, April, 1999

= Abstract =

## Treatment of fracture-dislocation of talar neck or body

**Byoung-Ho Lee, M.D., Sang-Ho Ha, M.D. and Min-Hyuk Choi, M.D.**

*Department of Orthopaedic Surgery, Medical School, Chosun University, Kwang-ju, Korea*



From January 1992 to December 1996, authors analyzed 26 cases of fracture-dislocation of talar neck or body, treated at Chosun University Hospital retrospectively.

There were 20 males and 6 females and the average age was 34 years old. The follow up period was at least 14 months.

There were 19 neck fracture-dislocations, 6 body fractures and total dislocation of talus. Three type talar neck fractures were treated conservatively. In six cases, in which either three cases of severe open type talar neck fracture or three cases of severely comminuted talar body fracture, primary fusion was performed. Other seventeen cases of fracture-dislocation were treated by open reduction and internal fixation.

Excellent results were observed in 6 cases, good in 7 cases, fair in 11 cases and poor in 2 cases.

The result of primary arthrodesis for severe injury of talus was relatively good.

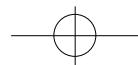
Complications were avascular necrosis in 7 cases, posttraumatic arthritis in 5 cases, skin necrosis in 3 cases, wound infection in 2 cases and malunion in 2 cases.

**Key Words :** Talus, neck and body, fracture-dislocation

---

: Byoung Ho Lee  
501-140, 588 Seosukdong, Donggu, Kwang Ju, Republic of Korea  
Department of Orthopaedic Surgery, College of Medicine, Chosun University  
Tel : 82-62-220-3140 Fax : 82-62-226-3379





308 •

/ 12 2

**Table 1.** Classification of Injury

Fx. site(type)	No. of cases(open Fx.)
Neck	19
Hawkins type	4
	6
	9(6)
Body	6
Total D/L of talus	1
Total	26

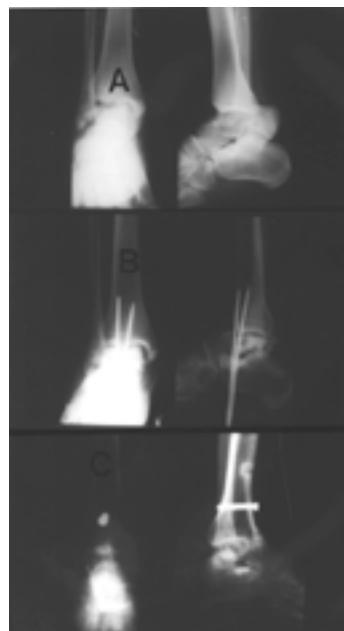
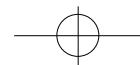
60% 가

**Table 2.** Treatment According to Classification.

Fx. type	Treatment	No. of cases
Neck		
type	Cast	3
	O/R & I/F	1
type	O/R & I/F	6
type	O/R & I/F	6
	Primary A/D	3
Body	O/R & I/F	3
	Primary A/D	3
Total D/L of talus	O/R & I/F	1
Total		26

2-6,12,13)

1992 1	1996 12	2 ,	1 ,	7 (Table 1).
		가 1		
- 26	,	가 20 ,		17 (65.4%)
가 6 ,		34 (18		10
-55 ) .	14	48		(38.5%)
29	.	.		3
	가 19 가	, 2 ,		7 (27%)
5 ,	2	.		
19 ,	6	.		3 ,
가 1		Hawkins	1	1
4 , 2 6 , 3 9 ,			4 3 6-8	
- 3	6	1	가	, 3



(Fig. 1-A,B,C).

가 10 . K- 7 ,  
10 , 6 titanium  
cannulated screw

가 Hawkins 가  
(0-6 ), (0-3 ),  
(0-3 )  
가 6 , 7 , 11 , 2  
가 (Table 3).

**Fig 1-A.** Hawkins type talar neck open  
comminuted fracture with infected state  
due to delayed referral.

**B.** Infected talar body removed and antibiotics  
mixed cement bead inserted.

**C.** After 6 weeks, Blair type ankle arthrodesis  
was performed. The roentgenogram at 2  
year 4 months following injury.

가 3 6  
6 , -

가 5  
- ,

1 -

8-12 Hawkins

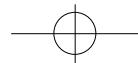
(Table 2).

10 , 5 10  
10 , 6-10  
7 , 10  
가

가  
3  
cement bead

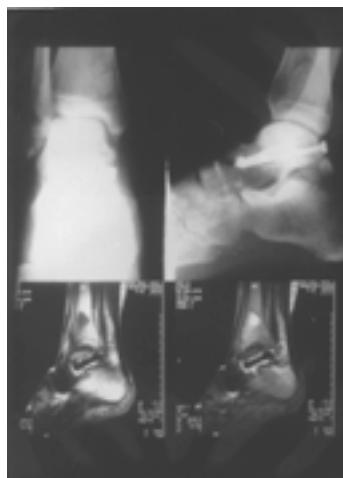
**Table 3.** Clinical Result(by Hawkins Criteria).

	Fx. site	Excellent	Good	Fair	Poor	Total
Neck						
type	3	1	1	1	4	
type	3	2	5	1	6	
type	3	5	5		9	
Body		1				6
Total talar D/L						1
Total	6	7	11	2	26	



**Fig 2-A.** The initial roentgenogram shows Hawkins type I talar neck fracture accompanied with medial malleolar fracture.

**B.** The roentgenogram at 17 months after open reduction and internal fixation shows avascular necrosis of talar body but there was neither collapse nor arthritis.



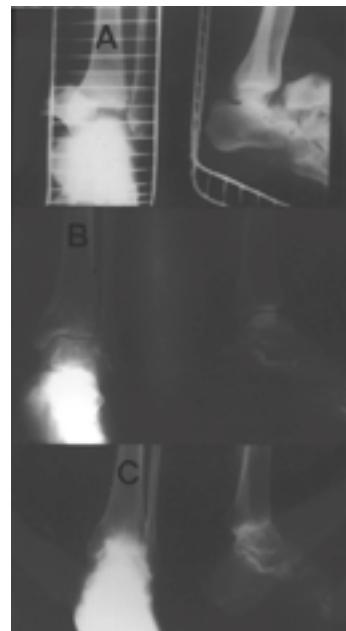
**Fig 3.** Type II neck fracture. In MRI film at 4 weeks after operation, there is no visible abnormal signal intensity in talar dome indicating avascular necrosis.(no low signal rim in T1WI and no double rim sign in T2WI)

**Table 4.** Occurrence Rate of Hawkins Sign and VN.

Fx. type	No. of cases	Positive Hawkins sign(%)	AVN(%)
<b>Neck</b>			
type	4	4(100)	0(0)
type	6	5(83)	1(16.7)
type	6*	1(16.7)	5(83)
Body	2**	0(0)	1(50)

\* Except 3 primary arthrodesis

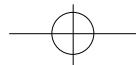
\*\* Except 3 primary arthrodesis



**Fig 4-A.** The initial roentgenogram shows total dislocation of talus with open wound.

**B.** At 8 months following open reduction and internal fixation, there were arthrosis and subluxation of ankle joint.

**C.** Ankle arthrodesis was performed. The roentgenogram at 2 year 2 months following arthrodesis.



가 (Table 4). titanium 3 , 7  
6 3 3-5 (27%) , ,

가 ,  
(Fig. 3). 3  
Penny Davis<sup>12)</sup>  
, 4 (collapse) Lemaire Bystin<sup>8)</sup>  
2 .

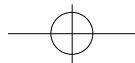
가 5 4 , 1  
(Fig. 4-A,B,C). 2  
2 .

2 K- 3 .  
14) Szyzkowitz 15)  
가 .

가 가 titanium  
K- .  
Herbert cannulated  
1 .

가  
Lorentzen<sup>9)</sup> 123 .  
10% 26 17 (65.4%)  
Weber<sup>16)</sup> 3 4  
, 10 (38.5%) , McKEEVER<sup>10)</sup>, Kleiger





312 •

/ 12 2

2

Anmed<sup>7)</sup>

가

3	3	3	5 (15.4%)
3	6		
			1
			, 4

Hawkins 1 0-14%, 2  
16-20%, 3 33-100% 가  
3-6,11-13) 1  
16.7%, 3 83%  
가  
가 가

가

가

Hawkins

6-12

가

5,7)

Hawkins

가

Hawkins

가

, Hawkins

가

3

가

15)

가

titanium

cannulated

3

가

가

가 titanium

titanium

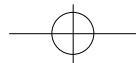
6 3

3-5

1992 1 1996 12

4),





26		.	.	.
가 20 ,	가 6 ,			
34 ,	14 ,			
	19 ,	6 ,		
가 1 . Hawkins 1		4		
3 ,		3 ,		
		3 ,	6	
3				.
17		.	.	.
Hawkins 가		6 ,	7 ,	
11 ,	2 ,			
		7 ,	5	
,	3 ,	2 ,	2	
				.

## REFERENCES

- 1) **Adelaar RS** : The treatment of complex fractures of the talus. *Orthop Clin North Am*, 20:691-707, 1989.
- 2) **Adelaar RS** : *Surgical treatment of fractures of the talus*. In Gould JS(ed): Operative foot surgery, pp. 377-398, Philadelphia, WB Saunders, 1994.
- 3) **Canale ST** : Fractures of the neck of the talus. *Orthopaedics*, 13:1105-1115, 1990.
- 4) **Comfort TH, Behrens F, Gaither DW, Denis F and Sigmund M** : Long-term results of displaced talar neck fractures. *Clin Orthop*, 199:81-87, 1985.
- 5) **Daniels TR and Smith JW** : Talar neck fractures(Review). *Foot Ankle*, 14:225-234, 1993.
- 6) **Hawkins LG** : Fractures of the neck of the talus. *J Bone Joint Surg*, 52A:991-1002, 1970.
- 7) **Kleger B and Ahmed M** : Injuries of the talus and its joints. *Clin Orthop*, 121:23, 1976.
- 8) **Lemaire RG and Bustin W** : Screw fixation of fracture of the neck of the talus using a posterior approach. *J Trauma*, 20:669, 1980.
- 9) **Lorentzen JE, Christensen SB, Krogsoe O and Sneppen O** : Fractures of the neck of the talus. *Acta Orthop Scand*, 48:115-120, 1977.
- 10) **McKeever FM** : Treatment of complications of fractures and dislocations of the talus. *Clin Orthop*, 30:45, 1963.
- 11) **Mindell ER, Cisek EE, Kartalian G and Dziob JM** : Late results of injuries to the talus. *J Bone Joint Surg*, 45A:221, 1963.
- 12) **Penny JN and Davis LA** : Fractures and fracture-dislocations of the neck of the talus. *J Trauma*, 20:1029-1037, 1980.
- 13) **Peterson L, Goldie IF and Iristam L** : Fracture of the neck of the talus: A clinical study. *Acta Orthop Scand*, 48:696-706, 1977.
- 14) **Schenk RK, Müller J and Willenegger H** : Experimentellhistologischer Beitrag entstehung und behandlung von pseudarthrosen. *Hefte umfallheilkd*, 94:15, 1968.
- 15) **Szyszkowitz R, Seggl W and Wildburger R** : *Late results of fractures and fracture-dislocation after ORIF.*(Tscherne H, Schatzker H(eds): Major fractures of the pilon the talus and the calcaneus: Current concepts of treatment, pp 103-112, New York, Springer-Verlag, 1993.)
- 16) **Weber BG** : Brche von Kchel und talus. Brwrttes und neues in diagnostik undtherapie. *Langenbecks Ach Chir*, 355:421, 1981.