

1. 2. 2. 1

1
2

< >

:

1 : 1990 3 2000 11 60
가 가 34 ,

가 Hawkins 가 , 가
: 34 25 (74%) , 가

가 Hawkins 가 8
6

: 가 ,

: , ,

:

23-20

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24 (71%)
 가 11 (32%) 가
 0.14% 0.32%
 12)
 5
 6
 10 , 18
 60~70%가 가 28 Canale Kelly Hawkins
 4.5) 1 2 , 2 16 , 3 8 ,
 1,9,13) 4 2 .
 가 1 2 2 3 4
 가
 가 3mm 5mm 5°
 17,19,20) 2 13 3 4
 가 34 26 3 , 8
 6 ~2
 1990 3 2000 11
 60 가
 1 가 34
 1 5 (1 ~4 4
) 가 29 , 가 5 , 19
 59 34.7
 20 30 가 23 (68%) 가
 17 , 11 6~10
 10

Table 1. End result evaluated by Hawkins ' criteria

	Body Fx* (isolated fx*)	classification (Neck Fx*.)				total
		1	3	4	5	
Excellent()	3	1	3	1		8
Good()	2	1	9	4	1	17
Fair()	1		2	2	1	6
Poor()			2	1		3
Total	6	2	16	8	2	34

* Fx.: Fracture

가
 Hawkins 가 11)
 Hawkins 가 8 ,
 17 , 6 , 3 (Table 1),
 34 25 (74%)
 . 2 3 4 3
 1 , 4 1 9
 가3 ,
 가3 ,
 2 ,
 가 1
 가

2 가 , 6 , 3 ,
 Hawkins 가 가 6
 (Table 2), 4



Fig. 1-A. The initial roentgenogram shows talar body & Hawkins 'type neck fracture.
1-B. The post-operative roentgenogram shows the fracture sites fixed by screws and K-wires.



Fig. 1-C.The 36 months follow-up roentgenogram shows bony union without any degenerative changes.

Table 2. Occurrence rate of AVN* and negative Hawkins ' sign

Type	Negative Hawkins sign /pt 's No	AVN/pt 's No	AVN /negative Hawkins sign
	0/2 (0%)	0/2 (0%)	0/0
	5/16 (31%)	3/16 (19%)	3/5 (60%)
	1/8 (12%)	1/8 (12%)	1/1 (100%)
	2/2 (100%)	2/2 (100%)	2/2 (100%)
Total	8/28 (29%)	6/28 (21%)	6/8 (75%)

* AVN; Avascular necrosis

Hawkins 2 (Fig. 1A), 6
 4 K- (Fig. 1B). 3
 10°; 35° Hawkins 가 (Fig. 1C).
 2.
 30 3m Hawkins 3 (Fig. 2A), K- Acutrack (Fig. 2B). 3 2
 가 10°; 40° Hawkins 가 (Fig. 2C).
 50% 11,12,16).
 가 12,13).
 60%가 19,13).
 Kleiger¹⁴⁾, Halibuton¹⁰⁾, Mulfinger Trueta¹⁸⁾
 가
 가
 가 11 (32%) , 8
 가 가



Fig. 2-A. The initial roentgenogram shows talar body & Hawkins 'type neck fracture.
2-B. The post-operative roentgenogram shows the fracture sites fixed by screw, K-wire and acutrack.



Fig. 2-C. The 38 months follow-up roentgenogram shows bony union with degenerative change of subtalar joint.

가 . 2 3 (21%), 3 1
(14%), 4 2 (100%)가
11,12,17), Peterson
3,15,20,22). , 가 가
17 (50%),
11 (32%) , Hawkins
가 6~12
가 가 4,5,20)
Hawkins
가 Hawkins
8 6 가
1,2,3,6,23), Adelaar²⁾ Hawkins 1 (Table 2). Hawkins
, 2 3-5mm Hawkins 가
,5.
3 가 , 가
가 가
가 , 가
1 2 가 2 3 24,25). 가 가
2 ,3 4 가 가
3,21,24). ,
5,6), 2
4
가
가
가 가 가
4,8)
, ,
, ,
2 , 1 0-14%, 가 ,
16-20%, 3 33-100%
가 4,6,11,19). 1

Hawkins

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Magnetic resonance imaging to detect avascular necrosis after open reduction and internal fixation of

Abstract

Surgical Treatment for Fractures of the Talus

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Purpose : To evaluate the clinical results and develop guidelines for surgical treatment of talus fracture.

Materials and Methods : Among the 60 cases that were treated during March 1990 to November 2000, 34 cases were treated operatively and followed up for more than one year (range: 1 ~ 4.4 years). They were analyzed retrospectively with questionnaire directly or by telephone interview, radiograms and medical records. Clinical results were evaluated by Hawkins' scoring system.

Results : 25 out of 34 cases showed satisfactory results. Unsatisfactory results were seen in cases that we couldn't achieve anatomical reduction due to severe comminution, and also in case of delayed treatment due to associated trauma and soft tissue injury. Six out of 8 cases that showed no Hawkins' sign developed avascular necrosis. However, satisfactory results were achieved through conservative treatment.

Conclusion : Satisfactory results could be achieved through early anatomical reduction and rigid internal fixation followed by aggressive rehabilitation. There was no differences in clinical results either by the surgical approach or method of internal fixation. Avascular necrosis was not essentially related to the clinical results.

Key Words : Talus, Fracture, Surgical treatment