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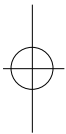
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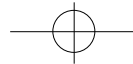
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2001 11



104kg 68.3kg ,
61-70kg가 31 (41.3%), 71-80kg가 18 (24.0%)
.
Lauge-Hansen²¹⁾ Danis-
Weber³³⁾ 가 35 (46.7%) , 가 23
(30.7%), 9 (12.0%) .
가 . ,
가 , Joy¹⁷⁾ - 2.
, Pettrone²⁸⁾ 40 2 가
, , Mont²⁵⁾ 40 , 1 1-21) , 4-7 가 32 (42.7%) 가
, 3 가 17 (22.7%), 8-10 15
(20.0%) .
,
(repair)
, K- ,
K- , (tension band wiring)
, (transfixation screw)
.
1 2 , K-
K- 가 (tension band
wiring) .
1994 5 2000 8 16
, 225 1 가가 ,
75 . 1 (syndes-
가 68 , 53 mosis)
27 , 2 .
1 1 7 3
, 3 3 . 6
가 52 (69.3%), 가 23
(30.7%) 가 . 16 65
, 40.5 30 가 18 가
(24.0%) 가 , 50 가 14 (18.7%), 40 가
13 (17.3%), 20 가 11 (14.7%) .
42 (56.0%), 33 (44.0%) .
50kg, , 3.2 (: 6-





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1)

1 가 (toe-touch)

3-4

10-12

3. 가

AOFAS(American Orthopaedic Foot and Ankle Society)

- 가¹⁸⁾

100 90-100 (Excellent), 80-89 (Good), 70-79 (Fair), 69 (Poor)

Joy¹⁷⁾, Sarkisian Cody²⁹⁾가

1

SPSS

T- (Independent samples T-test)

Table 2. Classification of ankle fracture by Lauge-Hansen

Type	Stage	Number	AOFAS score	Total(%)
S/ER*		0		
		0		
		5		
		37	80.6	42(56.0)
S/Add [†]		0		
		11	77.3	11(14.7)
P/ER [‡]		0		
		0		
		5		
		8	83.2	13(17.3)
P/Abd [§]		0		
		1		
		5	87.3	6(8.0)
P/DF		0		
		0		
		1		
		0	78.0	1(1.3)
Unclassified ¶			75.5	2(2.7)
Total				75(100)

* Supination-external rotation type; † Supination-adduction type;

‡ Pronation-external rotation type; § Pronation-abduction type;

Pronation-dorsiflexion type; ¶ Unclassified type

Table 1. AOFAS Ankle-Hindfoot Scale scores according to the evaluation categories

Evaluation categories	Max. score*	AOFAS [†] score	%
Pain	40	29.8	74.5
Activity limitation & support requirement	10	7.2	72.0
Maximum walking distance	5	4.1	82.0
Walking surfaces	5	3.4	68.0
Gait abnormality	8	6.4	80.0
Sagittal motion(flexion plus extension)	8	6.6	82.5
Hindfoot motion(inversion plus eversion)	6	5.7	95.0
Ankle-hindfoot stability (anteroposterior, varus-valgus)	8	7.8	97.5
Alignment	10	9.8	98.0
Total	100		

*Maximum score; † American Orthopaedic Foot and Ankle Society



SPSS
Analysis of variance - ANOVA)

(Multivariate

Table 3. Results of demographic data

Specific Demographic Factors	Number	AOFAS Score	Significance
Sex			
Male	52	83.1	NS *
Female	23	76.2	NS
Age			
40	39	89.2	(P<0.001)
41	36	72.0	(P<0.001)
Side of injury			
Left	42	83.4	NS
Right	33	77.9	NS
Operation time			
89 minutes	33	89.1	(P<0.001)
90 minutes	42	74.8	(P<0.001)
Cause of injury			
Slip down	35	79.5	NS
T.A	23	80.1	NS
Sports injury	9	90.9	NS
Fall down	3	70.3	NS
Other injury	5	83.5	NS

* Not significant

1. AOFAS 가 81.0 (: 100-49) 가 23 (30.7%), 가 17 (22.7%), 18 (24.0%), 17 (22.7%) . AOFAS 가 가 80% , (pain), (activity limitations), (walking surface) (Table 3). Lauge-Hansen - 42 (56.0%) 가 , - 13 (17.3%), - 11 (14.7%) (Table 2). Danis-Weber type B가 44 (58.7%) 가 , type C가 20 (26.7%), type A가 11 (14.7%) . 93.6 (: 200-25) 90 -119 가 33 (44.0%) 가 , 45 -89 가 30 (40.0%), 120 9 (12.0%) . 가 2mm 71 (94.7%)가, 67 (89.3%)가 4.5mm(: 18 - 1mm) , 2.4mm(: 5 - 1mm) 4mm 7 (9.3%) 4mm 가 6 , 5mm 가 1 . 3.2 (: 8 - 0) 5.가 12 (16%) . - 12.8 (: 19 - 4) 8 - 15. 24 (32%) , 8 4 , 15. 가 20 . - 9.3mm(: 15 - 6mm) 10mm , , ,

가 44 (58.7%) 가 6mm 2 7mm - 3.5mm(: 7 - 1mm) 5mm가 가 3 (4%) .. 1 16.5 (: 25-5) , 39.7 (: 50-10) , 3.7 (: 13-1) . 6 가 , 1 , 1 , 4 가 . 2. 1) AOFAS , , ,

**Table 4.** Results of demographic data

Specific Radiographic Factors	Number	AOFAS Score	Significance
Anatomical Reduction			
Medial malleolar Reduction	71	82.2	(P<0.005)
Non-reduction	4	59.3	(P<0.005)
Lateral malleolar Reduction	67	82.4	(P<0.005)
Non-reduction	8	68.4	(P<0.005)
Preoperative medial clear space			
< 4mm	37	83.0	NS *
4mm	38	78.5	NS
Postoperative medial clear space			
< 3mm	43	88.2	NS
3mm	32	70.9	NS
Talar tilt			
5 °	63	81.3	NS
5 °	12	78.9	NS
Talo-crural angle			
8 - 15 °	51	81.2	NS
other angle	24	80.5	NS
Tibio-fibular clear space			
5mm	72	81.0	NS
> 5mm	3	79.9	NS
Tibio-fibular overlap space			
< 10mm	44	80.1	NS
10mm	31	82.0	NS

* Not significant

(Table ?). SPSS

76.1 ± 16.7 (9)

T-가 90 89.1

90.8 ± 7.8 (10), 21-40 ± 11.1, 90 74.8 ± 11.2

88.7 ± 10.9 (29), 41-60 73.2 ± 8.8 (27 (P<0.001).

), 61 68.4 ± 11.3 (9)가 90.9 ± 6.2

가 40 가 가 20.6 ,

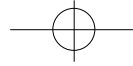
40 10.8 가

89.2 ± 10.1 , 41 72.0 ± 9.6 T-

(P<0.001). 45

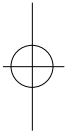
94.7 ± 5.5 (3), 45-89 88.5 ± 11.4 (30 26.3

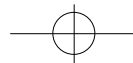
), 90-119 74.4 ± 9.5 (33), 120 42.4



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가 . , Pettrone ²⁸⁾ 가 .
 Beauchamp²⁾ , 50 Lindsjo²⁴⁾ 4mm AOFAS 가 ,
 가 3mm
 가 가
 Mont ²⁵⁾ 240 . , - , -
 가 90 가
 가 Mont ²⁵⁾ , Joy
 가 17), ¹⁰⁾ 가 0.5mm
 가 , Pettrone ²⁸⁾ -
 가 5mm , -
 10mm 가 .
 가 10mm
 , Dahners ¹²⁾ 24 가 9.3mm , AOFAS
 5 , Segal ³⁰⁾ 10mm 가
 6 , Stiehl ³²⁾ 12 . ²⁶⁾ , ¹⁹⁾ Bonnin³⁾
 3 Pettrone ²⁸⁾ 10mm 가
 4 가 . 가
 , 가 ,
²³⁾ , Mont ²⁵⁾ 1 가 가
 가 가
 가 ,4,11). 4
 ,
^{10,28,35)} , Yablon ³⁵⁾ , Wilson ³⁴⁾ Burwell Chamley⁷⁾ 100%
 Burwell ⁷⁾ ,
 가 1mm 20-40%
 , Burwell ⁷⁾ ,
¹⁰⁾ 가 50% , Joy
 가 1mm 가
 , Mont ²⁵⁾ ,





가 41

90

가

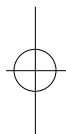
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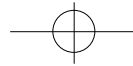
3mm

가

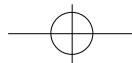
가

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Abstract

The Evaluation of Clinical and Radiographic Prognostic Factors for the Surgically Treated Unstable Ankle Fractures

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Purpose : The purpose of this study is to analyze the clinical and radiographic prognostic factors which may affect the postoperative clinical results of the unstable ankle fractures.

Materials and Methods : This study is based on 75 unstable ankle fractures treated by open reduction and internal fixation from May 1994 to August 2000, with a minimum follow-up period of 12 months(range : 13 months-7 years 3 months). The 75 patients were average 40.5 years old with male: female ratio of 52:23. Based on Lauge-Hansen classification, the supination-external rotation type was the most common with 42 (56.0%) cases. The clinical results was assessed by American Orthopaedic Foot and Ankle Society(AOFAS) functional scale. The sex, age, side of injury, body weight, trauma-operation interval, operation time, cause of injury as the possible postoperative clinical prognostic factors and fracture type, anatomical reduction of fracture, preoperative medial clear space, postoperative medial clear space, talo-crural angle, talar tilt, tibio-fibular clear space, tibio-fibular overlap space as the possible radiographic prognostic factor were statistically analyzed

Results : Postoperative AOFAS functional scale was average 81.0 points with 23(30.7%) cases excellent, 17(22.7%) good, 18(24.0%) fair and 17(22.7%) cases poor results. The age, the operation time($p<0.001$) and the anatomical reduction of fracture($p<0.005$) were found to be statistically significant factors affecting the prognosis. The other clinical and radiographic factors did not significantly affect the clinical results.

Conclusion : The surgically treated unstable ankle fractures in patients whose age was above 41 years old or operation time exceeding 90 minutes or unsatisfied anatomical reduction of fractures showed significantly poor clinical results.

Key Words : Unstable ankle fractures, Clinical prognostic factors, Radiographic prognostic factors, Age, Operation time, Anatomical reduction

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