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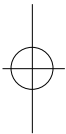
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= Abstract =

## Pitfalls in Treatment of Lateral Malleolar Fracture with Plate and Screws

Jong-Min Sohn, M.D., Ju-hae Jahng, M.D., Nan-Kyung Ha, M.D., Dae-Hyun Baek, M.D.  
Hyoung-Gwan Kim, M.D., Bong-Heon Hyun, M.D.

*Department of Orthopaedic surgery, The Catholic University of Korea, College of Medicine,  
Our Lady of Mercy Hospital, Incheon, Korea*



The goal in treatment of ankle fracture is the restoration of normal ankle function. Although controversy still exists over the best method of treatment, recent articles emphasize importance of the anatomic reduction of fibula and the benefits of early mobilization when adequate fixation is accomplished. When we fix fracture of lateral malleolus with plate and screws, the distal screws should engage the medial cortex of the fibula but not protrude into the talofibular joint. Because the penetration of screws into ankle joint may be the cause of postoperative pain and post-traumatic arthritis.

This article has reviewed a series of 36 ankle fractures, treated from March 1993 to January 1997, using plate and screws. In order to analyse the influence of the penetration of screws into the ankle joint, all fractures were classified according to the penetrating length of screw from medial cortex of lateral malleolus. Those with the end of the screw protruded more than 2mm into joint were classified group I, those with less than 2mm group II, those with no engagement group III.

The results obtained from this study were as follows:

1. According to clinical and radiographic assessment of the results of the treatment, open

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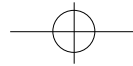
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Tel : (032) 510 - 5512 Fax : (032) 505 - 7795

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reduction and internal fixation using plate and screws in treatment of lateral malleolus was a satisfactory method.

The excellent or good results were achieved in 28 patients among the 36 patients (77.8 %).

2. Average time of bony union was not different significantly among the three groups.
3. The gain of full range of motion was delayed in group I.
4. Patients of group I complained persistent pain and discomfort more frequently than the other groups.
5. In the treatment of lateral malleolar fracture, the distal screws should engage the medial cortex of fibula to gain firm fixation, but should not protrude more than 2mm into the ankle joint.

**Key Words :** Ankle, Lateral malleolar fracture , Plate and screws

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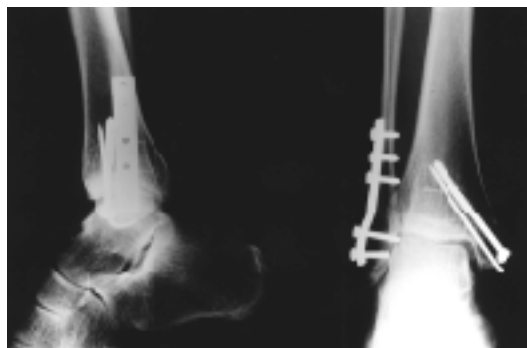


Fig 1. Fracture of lateral malleolus was fixed with plate and screws. X-ray shows the distal screw penetrated into the ankle joint more than 2mm(Group I). After operation, this patient complained persistent pain.

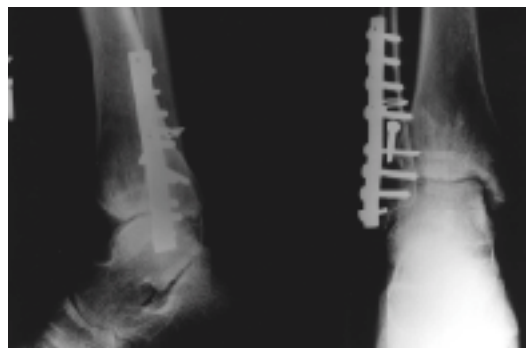


Fig 2. The distal screw engaged medial cortex of lateral malleolus, and the end of screw was within 2mm from it(Group II).

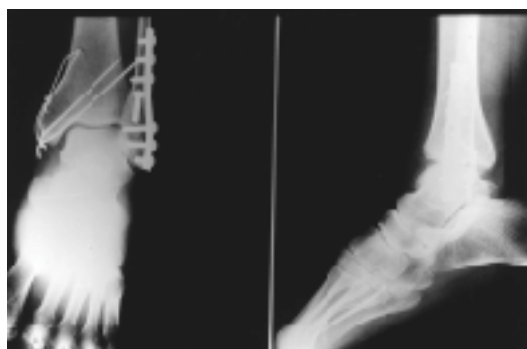


Fig 3. The three distal screws did not engaged medial cortex(Group III).

2mm , Fig 2) 18 ,  
가 III ( 2mm , Fig 3) 12 .  
Meyer 11)

8.0 , 8.2 , 8.6  
가 8.5  
II 8.9  
III 11.3  
가  
I 6 3 (50%)  
(Table 1), 5 (83.3%)  
(30 9 ) 가  
I 5 3  
mortise  
20  
.36  
가 가 ( 2mm (Fig 1) 6  
가 I 가 II (



Table 1. Clinical result

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Result	Group I	Group II	Group III
Excellent	1	7	5
Good	2	8	5
Fair	2	4	2
Poor	1	1	
Total	6	18	12

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. Burwell Chamley

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Table 2. Radiological result

5).

Result	Group I	Group II	Group III
Excellent	3	8	6
Good	1	6	4
Fair	0	1	1
Poor	2	3	1
Total	6	18	12

(low)

, Jergeson

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Kumber

(10-40 ) 가

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I

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18

14

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III

12 10

(Table 2).

II

1

, III

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I

2

, II

3

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1

48

2

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9).

6

48

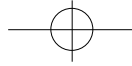
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Yablon Heller<sup>14)</sup>

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8

contouring , Chanley 가 10% , Burwell  
49%, 52%  
5).  
2mm  
I 6 I 2 (33.3%)  
가 가  
(T- , P<0.05).

가  
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5 3  
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I 가

III

12 1 2mm

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. Cox<sup>6)</sup>, Wilson<sup>13)</sup>Burgess<sup>4)</sup>, Brodie<sup>3)</sup>

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