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Pilon

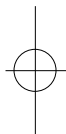
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= Abstract =

Minimal Surgical Treatment of the Tibial Pilon Fracture.

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The goals of the treatment of pilon fracture include to restore a normal anatomy and functional level of uninjured state. We analysed the clinical outcomes of the treatment of pilon fractures with calcaneal traction and percutaneous intramedullary nailing in the fibula (group A, 12 cases), or open reduction and internal fixation (group B, 11 cases) in 23 cases between April 1994 and March 1997.

All of the patients were followed for at least one year (average, 18 months; range, 12 to 24 months). Fifteen patients were male (group A, 8; group B, 7), and eight were female (group A, 4; group B, 4). Falling-down injury is the most common cause and automobile accident is the second. According to the Rüedi and Allgöwer classification, type II fractures were most common. In the group A, two of the 12 fractures were type I, six were type II, and four were type III, and in the group B, two of the 11 fractures were type I, six were type II, and four were type III. According to the criteria of Mast and Teipner, in the group A, six were good result and six were fair, and in the group B, four were good, five were fair, and two were poor. A nonunion with wound infection and a malunion developed in the group B.

The results in the group A were better than those in the group B in clinically, we propose the minimal surgical treatment is useful treatment option of pilon fracture.

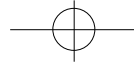
Key Words : Tibia, Pilon fracture, Minimal surgical treatment

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(21 - 48), 33.8 , 40.8 , B
 38.5 (21 - 51) 36.1 , 42.8
 , 15 , 8 A
 (plafond) , undersurface of floor 8 , 4 , B 7 , 4
 ceiling , 1911 Destot⁹⁾ . 가 12 (A 7 , B 5
) , 가 8 (A 4 , B 4) , 3
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 . pilon 17),
 1% 3.
 가
 가 가 2), 5 (A 3 , B
 1,4,10,11,14) 가 가 2 (A 1 , B 1),
 2 (A 2), B 1 .
 , , 12,17) ,
 4.
 , Rüedi Allgöwer¹⁷⁾ , A 12 B
 10,14) 11 , 가 1
 , 1994 A 2 , B 1 , 가
 4 1997 3 36 2 A 6 , B 6 , 가
 pilon 23 3 A 4 , B 4 (Table 1).
 A 8 , B 7 15
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5.

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1994 4 1997 3

pilon , 1

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C-Arm

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2.

pilon

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8-10

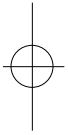




Fig 1. A 32 year-old male patient with left pilon fracture (Type III)

A. Initial roentgenogram, which shows pilon fracture with distal fibular fracture.

B. The post-operative X-ray shows percutaneous intramedullary nailing with Steinmann pin of fibular after calcaneal traction.

C. The follow-up X-ray after 7 months shows good union.

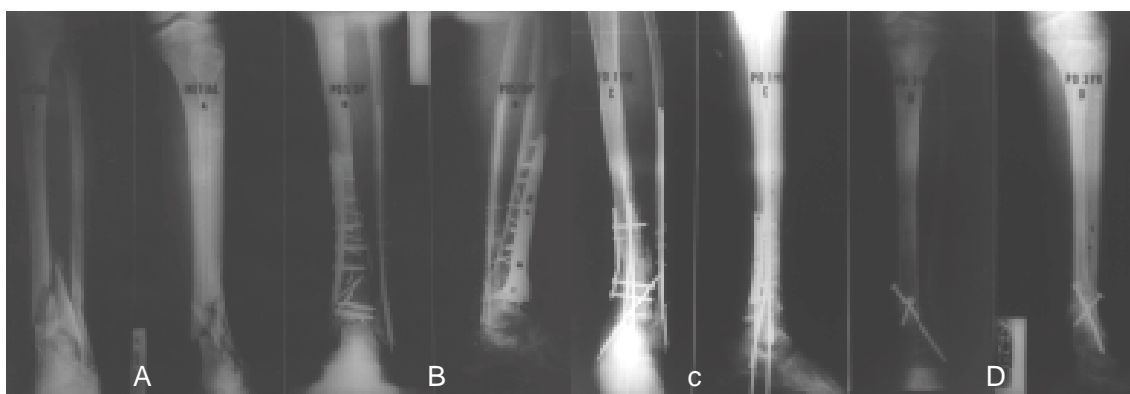


Fig 2. A 52 year-old male patient with left pilon fracture (Rüedi & Allgöwer Type III)

A. Intial roentgenogram, which shows pilon fracture with distal fibular fracture.

B. The post-operative X-ray shows OR/IF with Maybone anatomical plate and Steinmann pin.

C. The 1 years follow up X-ray shows ankle fusion by changed hardware due to non-union.

D. The 3 yeards follow up X-ray shows fused ankle state due to osteomyelitis and non-union.

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B

2

8

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Mast Teipner¹⁴⁾

(good), (fair),

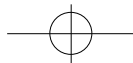


Table 1. Classification of the fracture (by Rüedi & Allgöwer)

Group	Fracture type	No. of patients	Total
A *	I	2	12
	II	6	
	III	4	
B †	I	1	11
	II	6	
	III	4	
Total			23

* Group A : calcaneal traction with percutaneous fibular intramedullary nailing

† Group B : open reduction and internal fixation

Table 2. Functional criteria (by Mast and Teipner)

Good	No pain No swelling No loss of motion compared to opposite side
Fair	Occasional mild pain not requiring medication Occasional swelling Combined loss of motion < 15 ° in extension and flexion
Poor	Pain requiring medication Swelling Loss of motion > 15 °

(poor)

(Table 2).

Table 3. Results between Group A and B (by criteria of Mast and Teipner)

Group	Type	Good	Fair	Poor	Total
A *	I	2			2
	II	3	3		6
	III	1	3		4
B †	I	1			1
	II	2	3	1	6
	III	1	2	1	4

* Group A : calcaneal traction with percutaneous fibular intramedullary nailing

† Group B : open reduction and internal fixation

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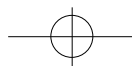
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1911

Destot⁹⁾ pilon
, Lauge-Hansen¹²⁾, Rüedi Allgöwer¹⁷⁾, Watson-Jones²¹⁾, Ovadia Beals¹⁵⁾
pilon 1%
17),

2 , 2 가3 , 가3 가 , 가 가 1,2,3,14)
3 가1 , 가3 , B pilon
1 가1 , 2
가2 , 가3 , 1 , 3 ,
가1 , 가2 , 1 A 가
B (Table 3). Bone⁶⁾
가 , Scheck¹⁹⁾
2 , 2 B
1 , 1 , 가



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pilon
가
가
A
pilon
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