

1/3 가

1996 1 2001 1

가

12

가

가

가

group I,

Table 1. Case analysis of both tibia fracture

No	Age/sex	Cause	Type	Asso. Injury	Time to Op. (day)	Tx	Union (mo)	Cx
1	65/M	pedestrian injury	both closed	Fx. U/Ex.	9	IM Nail, Plate	4.7	Valgus deformity
2	63/F	Farm machinery injury	both closed	Fx. Femur, spine	28	IM nail, Can. screw	7.0	
3	57/F	Passenger injury	both closed	Fx. spine	8	IM nail, IM nail	4.0	
4	16/F	pedestrian injury	both closed	Fx. Pelvis	15	Ender nail, Ender nail	3.4	
5	20/M	pedestrian injury	II, closed	Brain	17	IM nail, IM nail	9.0	Contracture
6	43/M	Passenger injury	IIIA, closed	Fx. Femur, foot. Abdomen	33	Plate, Ilizarov	8.4	
7	22/M	pedestrian injury	IIIB, IIIA		1	OREF (AO)	11.0	Nonunion
8	59/M	Passenger injury	II, II		3	CREF (AO)	7.0	
9	59/F	Passenger injury	IIIB, IIIB	Fx. Femur, Crushing, L/Ex.	2	CREF (AO)	21.0	Infectious nonunion
10	49/M	pedestrian injury	IIIA, IIIA	Fx. U/Ex. Chest	34	IM nail, Ilizarov	16.0	Nonunion
11	41/M	Passenger injury	IIIB, II	Chest	1	IM nail, CREF (AO)	9.0	
12	27/M	Passenger injury	IIIC, I	Fx. Femur, Crushing, L/Ex.	1	CREF (AO) CREF (AO)	23.0	Infectious nonunion

group II,
group III , , ,
(Table 1).

1.
12 8 , 4
2:1 , 43.4
20 40 가 3 75%
50 가 2 50% .

2.
가 , 10 가
5 .
가 1 , 가 1 .

3.
(Group I) 6 Gustilo
type III 가 3 , type III ,
type III 가 2 ,
type III 가 1 . 가 가
(Group II) 1 type IIIA, 1 II .
(Group III) 가 4
12 24 가 3 가
, 가 2 19 가 .

4.
Group I , 4
1 2
. 2 (. Group
, ,) . Group
II 1 ,
, 1 .
Group III 1 가 , 1
, 1 , 1
(Table 2).

5.
가 ,
, . Group II

Table 2. Associated injury in both tibia fracture

Ass. Injury	Group I	Group II	Group III
Fracture			
Spine			1
Pelvis	1		1
Femur	4	1	1
Foot		1	
Upper Ext.	1		1
Head (brain)		1	
Chest	2		
Abdomen		1	

Group I 1 Intramedullary (IM) nail Ilizarov
, 1 (AO monofixator) IM nail
, 4 (AO monofixator)
, 1 Ilizarov IM nail
. Group II 1 (open type II)
IM nail , 1 (open type IIIA) Ilizarov
. Group III 2 IM nail, 1
IM nail , 1 IM nail cannulated
screw .

6.
Group I 4 2
4
, 2 1 가
. Group II

Table 3. Summary of results in both tibia fracture

	Group I	Group II	Group III
No. of cases	6	2	4
Associated injury	4	2	3
Time to op. (day)	12.5	25	15
Hosp.duration (mo)	3.2	3.75	1.92
Treatment			
IM nail	2	2	6
Plate		1	2
EF (AO)	9		
Ilizarov	1	1	
Union (mo)	14.5	8.7	4.8
Complications	4	1	1

25 , 3.75 , 8.7 . Group III 15 , 1.92 , 4.8 1 . 2.5 Group III (p=0.001) .

가 가 high energy violence 4.7) , 43.4 , 가 66.7% , 40 가 , 가 가 .

7. , , X-ray 가 Wolff 17) Merianos 9) , 5 , Hansen 5) , 13.8 , 2 , 10 , . Group I 12.5 , 가 가 가 4 , 3.2 , 14.5 , 2 . Group II

, Hansen⁵⁾ 가 가

가 , (extremity) 가

가 2 가 가 ,

, , , 5)

Ilizarov 가

(primary) 가

가

, , .

12) 가

, cross-pin fixation, pin and plaster

, Car- , 가 ,

penter Couk¹⁾ 가

. Sch- ,

neider¹⁴⁾ 가

, Krettek⁸⁾

Rittmann¹¹⁾ 202 94%

, Hansen⁵⁾ , Gershini Halma³⁾ 83%

가 가

. 3 9

2 Ilizarov ,

가 7 AO monofixator ,

, 3 .

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Abstract

Management of Both Tibia Fracture

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Purpose: The purpose of this study was to analyze the associated injury, difficulties in management and complications with surgery, and to suggest the guideline according to the severity and type of injury in the management of both tibia fractures.

Material and Method: We analyzed 12 patients, 8 men and 4 women and their age was 43.4 years old in average. The cause of injury was traffic accident in 10, autobike in 1 and farm machine injury in 1 case. There were both open tibia fracture in 6, one side open fracture in 2 and both closed fracture in 4 cases. We analyzed the average interval from injury to operation, duration of hospitalization, duration of both side bone union and complications.

Results: In both open tibia fracture, the average interval from injury to operation was 12.5 days, average duration of hospitalization was 3.2 months, and average duration of bone union was 14.5 months. In one side open fracture, the average interval to operation was 25 days, average duration of hospitalization was 3.75 months, and average duration of bone union was 8.7 months. In both closed fracture, the average interval to operation was 15 days, average duration of hospitalization was 1.92 months, and average duration of bone union was 4.8 months.

Conclusion: Both tibia fractures were caused by high energy and also associated with multiple injury, and fracture stability and soft tissue damage should be evaluated thoroughly before surgery. Anatomical reduction and rigid fixation should be necessary to reduce the post-surgical complications.

Key Words: Tibia, Fracture, Bone union, Complication

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