



14, 3, 2001 7

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Ilizarov

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: Ilizarov

: 1997 5 1999 12 Ilizarov 1

가 21

: 19 (90.5%) , 2 (9.5%) 2

. 6 , 1 , 1 , 1

Ilizarov 가 Ilizarov 2 6

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5,10,17,22).

Bumper , Fender

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(Schatzker type , and)

16,17) 가

8,9,10,11,14,15,16,19,21,22) . Ilizarov

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가, C-
가, ligamentotaxis (12),
가, K- (1)
Ilizarov K- Gustilo-Anderson , 8
21 1
19 (90.5%)
1997 5 1999 12
Ilizarov , 10
1 가가 21 1 Ilizarov 가
37.3 (18 - 69), 가 90.4 % (19)
6
가 19 , 1 , 1 6.2 (5-7)
Schatzker .(Table 1)
type 1 , type 1 , type 9 , type 3 ,
type 7 type
11 (52.4%), 10 (47.6%)
Gustilo-Anderson 1 , 2 ,
8 . 8 , ,
가가 ,
18.5
(Fig. 1) 24 2 1

Table 1. Classification of the tibial condylar fractures by Schatzker

Fracture type	
	Pure cleavage fracture
	Cleavage combined with depression
	Pure central depression
	Fracture of medial condyle
	Bicondylar fracture
	Plateau fracture with dissociation of metaphysis and diaphysis

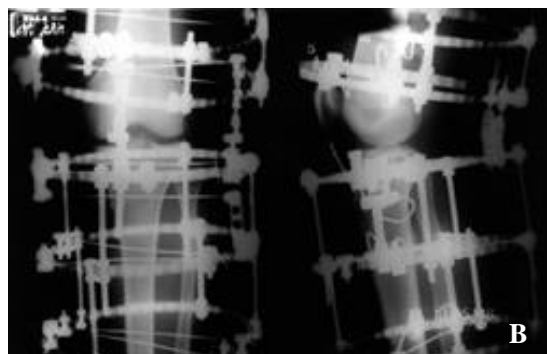
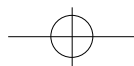


Fig 1-A. The preoperative radiograph of 25-year-old man shows tibial condylar fracture of Schatzker type .
1-B. Immediate postoperative radiograph shows reduction and external fixation with the Ilizarov external fixator.
1-C. Fourteen weeks after operation, the fracture was united and external fixator was removed.

Table 2. The scales used to assess the subjective results of fractures of the tibial plateau

Frequency of symptoms*	Importance of symptoms [‡]				
	1 None	2 Slight	3 Moderate	4 Very	5 Extremely
Never	1				
Monthly	2	4	6	8	10
Fortnightly	3	6	9	12	15
Weekly	4	8	12	16	20
Daily	5	10	15	20	15

* pain during various activities, swelling, stiffness, weakness, limping, giving way and crepitation

[‡] 1 to 5 excellent; 6 to 10 good; 12 to 15 fair; 16 to 25 poor

3
(Fig. 2), 1 mm , 2.5
1.2 mm 가 ,
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, 4 (Table 2), 가 가
5 , 13 , 2 , 1 (Table 3). .
5 , 120 (, 8
115) . 21 13 , 6 ,
, 4.2 mm 1.7 mm 2.5 1 , 1 .

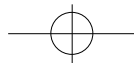


Fig 2-A. The preoperative radiograph of 58-year-old man shows severe comminuted Schatzker type tibial condylar fracture..

2-B. Angiograph shows no evidence of vascular injury.

2-C. Immediate postoperative radiographs show reduction with interfragmentary screws and Ilizarov external fixator.

2-D. F/U Radiograph at postop. 12 months shows bony union and screw and Ilizarov external fixator were removed.

10,12,14,15,16)

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Ilizarov

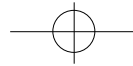
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,1,3,4,16,20)

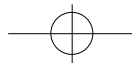
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**Table 3.** Details and results in 21 patients with fractures of the tibial condyle

Case	Age	Gender	Schatzker type	Multiple injury	Reduction	Fixation(wk)		Full weight bearing(wk)	Results	Range of Motion
						Femoral	Tibial			
1	18	M		Yes	C	7	16	17	Good	10-130
2	44	M		No	C	7	15	19	Good	5-120
3	30	M		Yes	O	6	15	18	Excellent	5-120
4	29	M		Yes	C	6	14	17	Good	0-115
5	39	M		No	O	7	21	23	Poor	25-90
6	55	M		Yes	C	6	15	18	Excellent	0-125
7	30	F		No	O	6	14	20	Good	5-115
8	20	M		Yes	O	0	14	15	Excellent	0-125
9	49	M		No	C	6	15	19	Good	5-120
10	63	M		No	C	7	17	19	Good	10-120
11	41	M		No	C	6	18	20	Good	5-115
12	33	M		Yes	C	6	18	21	Fair	20-100
13	54	M		No	O	6	16	16	Good	5-120
14	40	M		No	C	6	15	17	Good	15-120
15	24	M		Yes	O	0	14	16	Excellent	5-125
16	28	M		No	C	5	16	18	Good	0-105
17	36	M		No	O	7	17	19	Good	10-110
18	42	M		No	C	5	15	17	Good	0-110
19	25	M		Yes	O	6	17	18	Excellent	0-130
20	29	M		No	C	6	15	17	Good	0-115
21	55	F		No	O	7	19	21	Fair	10-105

* C = closed; O = open

2) 가 Ilizarov Ilizarov , , 1,4,6,14) , 1) 4) drill , 1 b , 16.5 , 10 , 18.5 , , 19.2 , Ilizarov 가 Ilizarov 6 , 5 , 120 (115) , 가



21 Ilizarov

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Ilizarov

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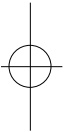
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Abstract

Treatment of Tibial Condylar Fractures Using the Ilizarov External Fixator.

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Purpose : The aim of this study is to report results of treatment of tibial condylar fracture using the Ilizarov external fixator.

Materials & Method : 21 Cases of tibial condylar fracture, which were operatively treated with Ilizarov external fixator were evaluated clinically & radiographically.

All patients were followed for at least 1 years.

Results : Primary bony union was achieved in 15 cases(71.4%) and bony union after secondary operative procedure was obtained in 6 cases(28.6%).

The fracture was united within 6 months except 2 cases.

As complications, pin irritation was observed in 6 cases and Joint stiffness in 1 case, delayed union in 1 cases, nonunion in 1case

Conclusion : We could obtain satisfactory clinical results with using of Ilizarov external fixator in treating of tibial condylar fractures. The good indications for the use of Ilizarov external fixator seems to be high energy tibial condylar fracture difficult to fixation with other method. In cases of bony defect or severe comminuted fractures, we shall obtain better outcome when bone graft is performed.

Key words : Tibial condylar fracture, Ilizarov external fixator

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