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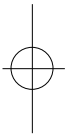
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= Abstract =

Operative Treatment of Patellar Fractures

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We studied 45 patients of patella fracture who were treated by surgical method from March 1990 to December 1997. The results were analysed to evaluate the functional results of the knee according to methods of fixation and severity of comminution.

The results were as follows.

1. Out of 45 cases, 11 cases were treated by tension band wiring, 19 cases by modified tension band wiring, 5 cases by tension band wiring by circumferential wiring, 8 cases by circumferential wiring, and 2 cases by screw fixation.
2. The mean fracture healing period was 6.9 weeks in cases of tension band wiring, 6.5 weeks in cases of modified tension band wiring, 6.2 weeks in cases of tension band wiring with circumferential wiring, and 7.3 weeks in cases of circumferential wiring.
3. The most favorable result was obtained in cases which were fixed with tension band wiring and circumferential wiring.
4. Modified tension band wiring seems to be a good method for displaced transverse fracture

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and comminuted fracture with large fragments and tension band wiring with circumferential wiring is for severely comminuted fracture with small fragments.

Key Words : Patellar fracture, modified tension band wiring, circumferential wiring

1 (2.2%), 2 (4.4%),
4 (8.9%), 1 (2.2%)
(Table 3).

1%

가
(2,3,6,11)

가

가

가

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1,23)

1990 3

1997 12

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가 가

45

. 45

39 (87%),

6 (13%)

가

20 가 14

(31%) 가

(Table 1).

가 32

(71.1%) 가

11

(24.5%),

가 2 (4.4%)

(Table 2).

Scott(1949)

24

(53.3%) 가

13 (28.8%)

Table 1. Age and sex distribution

Age/Sex	Male	Female	Total
0-10	0	0	0
11-20	1	0	1(2%)
21-30	14	0	14(31%)
31-40	10	0	10(22%)
41-50	9	1	10(22%)
51-60	4	2	6(14%)
61-70	1	3	4(9%)
Total	39(87%)	6(13%)	45(100%)

Table 2. Cause of injury

Cause	Male	Female	Total
Traffic accident	30	2	32(71.1%)
Fall down	4	0	4(8.8%)
Slip down	3	4	7(15.6%)
Sports activity	2	0	2(4.4%)
Total	39	6	45(100%)

Table 3. Classification

Type	No.(%)
Undisplace	0
Transverse	13(28.8%)
Upper pole	1(2.2%)
Lower pole	2(4.4%)
Comminuted displaced	4(8.9%)
Comminuted undisplaced	24(53.3%)
Vertical	1(2.2%)
Osteochondral	0
Total	45(100%)



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Table 4. Method of treatment

	undisplace	transverse	upper pole	lower pole	comm ' undisplace	comm ' displace	vertical	total
TB [*]		6	1	4	11			
MTB [†]		4	4	11	19			
TB&CW		5	5					
CW [‡]		3	1	4	8			
Screw		1	1	2				
Total		13	1	2	4	24	1	45

*Tension band wiring

† Modified tension band wiring

‡ Circumferential wiring

5 , 3 , 1 , 7 , 15 . , 11 . , 4.8 110 . 가4mm 가3mm 6.9 . 11 (tension 가1 19 . band wiring) , 19 (modified tension band wiring) , 5 4.6 6.5 (tension band wiring) 가 125 (circumferential wiring) , 8 . (circumferential wiring) , 2 (screw 5 fixation) (Table 4). 4.7 6.2 가 , 가 128 가 , 가 8 6.2 , 7.3 115 , 2 6 7.5 120 (Table 5). 4-8 , , K- , K- 11 (24.4%) 가

**Table 5.** Postoperative evaluation

Method of Treatment	No of case	IP *	BU [†]	ROM [‡]	Pain
T.B	11	4.8	6.9	110	1
M.T.B	19	4.6	6.5	125	
TB&CW	5	4.7	6.2	128	
CW	8	6.2	7.3	115	
Screw	2	6	7.5	120	1
Total	45	5.26	6.88	119.6	

*Immobilization period (week)

† Bone union (week)

‡ Range of motion of knee joint(degree)

Table 6. Complication

Complications	Cases
Postoperative arthritis	3(6.6%)
Bursitis due to wire	1(2.2%)
Joint stiffness	11(24.4%)
K-wire migration	4(8.9%)
Wire breakage	10(22.2%)
Quadriceps weakness	2(4.4%)
Total	31(68.9%)

Table 7. The result according to the method of fixation (by West)

Result	TB	MTB	TB&CW	CW	Screw
Excellent	2	7	4	1	1
Good	6	8	1	5	1
Fair	2	2	0	1	
Poor	1	2	0	1	
Total	11	19	5	8	2

1.

24

3

4

(Fig. 1-A, B).

16)

3

2.

(Patellar plexus)

30

12

13,19)

5

Bostrom¹²⁾

40

(Fig. 2-A, B).

2:1

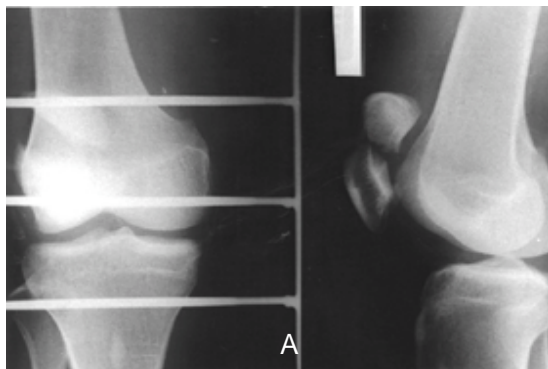
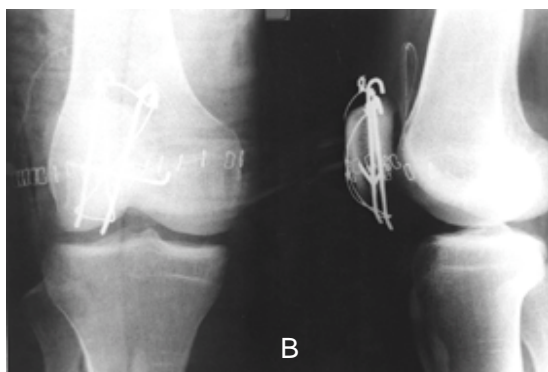


Fig 1-A. Preoperative anteroposterior and lateral radiographs show simple transverse fracture.



1-B. Postoperative anteroposterior and lateral radiographs show good reduction.

1-C. Postoperative anteroposterior and lateral radiographs show good union.

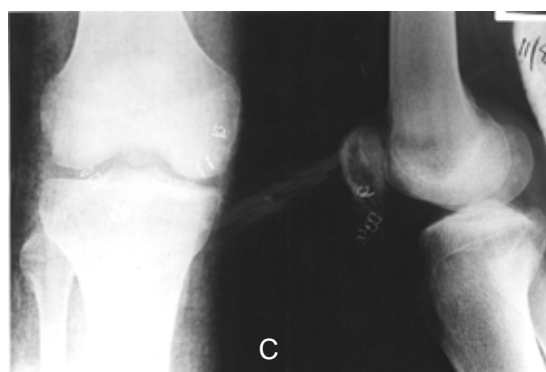
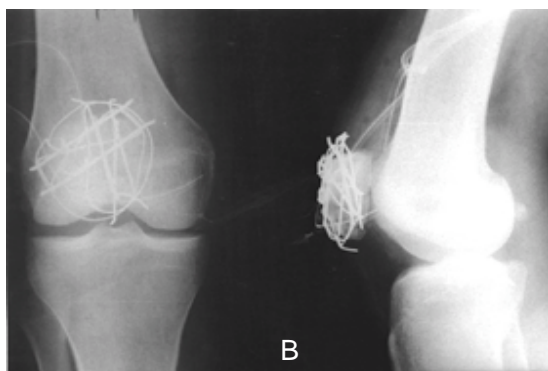
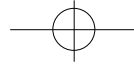


Fig 2-A. Preoperative anteroposterior and lateral radiographs show comminuted displaced fracture of patella.



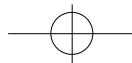
2-B. Postoperative anteroposterior and lateral radiographs show good reduction of the comminuted fracture fragment.

2-C. Postoperative anteroposterior and lateral radiographs show good union and relatively well preserved joint congruity.



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20 40 가 75% , 4.8 ,
6.5:1 . 4.6 ,
가 4.7 ,
6.2 ,
6
McMaster¹⁷⁾, Griwold¹⁴⁾ 가 가 128.
가
24 (53.3%) 가
13 (28.8%)
10)
46 41
23) ,
가
4mm , 3mm 12)
가 ,
7,23) 9) 49 4
2 K- 8 4
Weber²⁰⁾ 11 (24.4%) 가 3
가 10 ,
Magnuson
. Lotke Ecker¹⁶⁾
AO
longitudinal anterior bands with cerclage wiring(LAB/C) 1990 3
1997 12
45
가
1. 6.5 20
가 가 가 40 가 75%
2. 가 71.1% 가



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3. , , 16:262-270, 1993.
- 가 9) , , , : 8:578-254, 1995.
- 가 10) , , : , 25:692-700, 1990.
128. 가
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