



13, 3, 2000 7

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< >

: , .

: 11 41 (15-76)

13.6 (12-17) . 1 10 3 1 9

5 Herbert , 4 K- , 1 , 1

Herbert 가 6.7 (3-30)

: 17 (5°-45°), 135 (100°-150°),

83 (20°-90°), 87 (80°-90°) 가 Broberg Morrey

(excellent)가 7 , (good)가 2 , (fair) 2 (poor)

2 K- , 1 , 1 , 1

:

:

가 .

1% ,

3) 3가 ,

1,11,13) .

가 7,10),

:

146-92,

(135-720)

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가가

3

5.1

6.7
(continuous passive
motion)(continuous passive
motion)

가 5 ,

가 3 ,

가 3 .

Herbert

5 (Fig.

1A-B), K- (Kirschner wire)

4 ,

(cancellous screw)

1 , Herbert

(miniscrew)

1 ,

(Fig. 2A-B).

가 Broberg Morrey

2)

, , ,

(excellent), (good), (fair),

(Table 1).

(poor)

1995 1 1998 1

, 가가 11
13.6 (12-17) .11 가 5 , 가 6 ,
41 (15-76) .1 , 가 1 , (dominant)
가 6

가 5 . 10 가 1

1 가 3 ,

2 ,

가 9

5 ,

3 , 2 ,

1 , ,

가 1 .

11

13.6

17 (5 ~45 %),

135 (100 ~150 %),

83 (20 ~90 %),

87 (80 ~90 %)

6

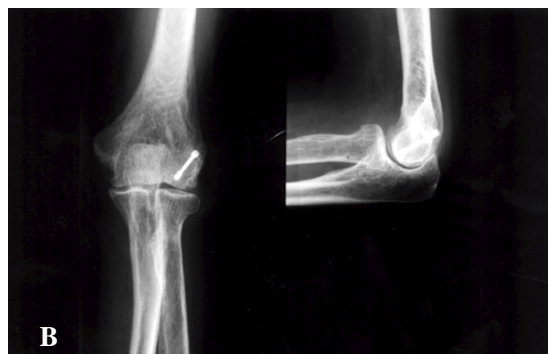


Fig 1A-B. Anteroposterior and lateral radiographs of the right elbow. (A) The initial radiograph. The type I fracture of the capitellum is noticed. (B) The postoperative radiograph. The fragment of the fracture is fixed with one Herbert screw.

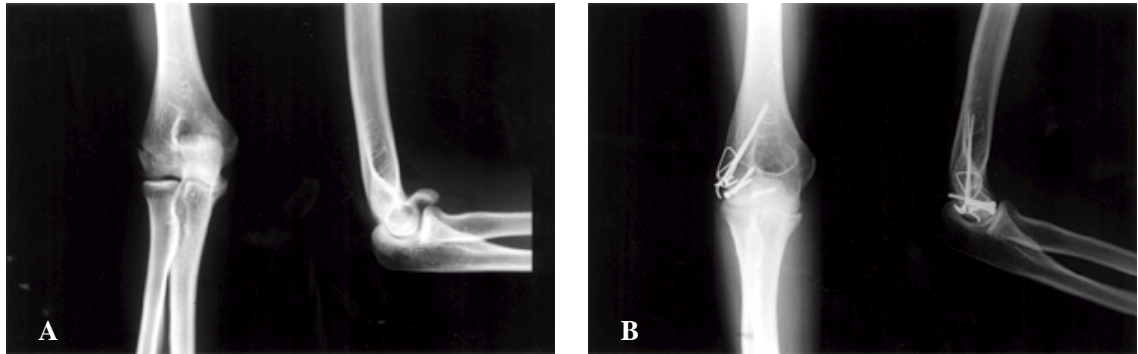


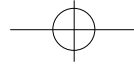
Fig 2A-B. Anteroposterior and lateral radiographs of the left elbow. (A) The initial radiograph. The type I fracture of the capitellum is combined with lateral condylar fracture of the humerus. (B) The postoperative radiograph. The fragment of the capitellar fracture is fixed with one Herbert screw and two miniscrews. The lateral condylar fracture of the humerus is fixed with tension band wiring and one Kirschner wire.

Table 1. Summary of cases

No	Sex /Age	Fx Type	Associated Fx	Fixation	ROM(°) Ext-Flex /Pron,Sup	Other Complications	Result
1	M/26	I	Radial head Olecranon	1C-screw	45-100/90,20	Severe LOM	Fair
2	F/55	I	Trochlea Intercondyle	3H-screw	20-120/60,90		Fair
3	M/16	I	Supracondyle	1K-wire	5-150/90,90		Excellent
4	M/15	I	Trochlea	3K-wire	30-135/90,90		Good
5	F/37	I	Trochlea	1K-wire	30-105/90,80	Loose body	Good
6	F/24	I	Lat. condyle	1H-screw 2miniscrew	10-150/90,90		Excellent
7	M/32	I	Lat. condyle	3H-screw	5-150/90,90		Excellent
8	M/61	I	Trochlea Intercondyle	1H-screw	5-150/90,90	Nonunion H.O.	Excellent
9	F/48	I	Trochlea Lat. condyle	2K-wire	15-150/90,90	Pin loosening	Excellent
10	F/61	III	-	1H-screw	5-120/90,90	Pin loosening	Excellent
11	F/76	I	-	1H-screw	15-150/90,90		Excellent

ROM, Range of motion; Flex-Ext/Pron,Sup, Flexion contracture - further flexion/ pronation, supination; LOM, Limitation of motion; C-screw, Cancellous screw; H-screw, Herbert screw; K-wire, Kirschner wire; H.O., Heterotopic ossification.

11 (6-14) , 4 , 4 , 2 , 2 , 34° , 16° , 103° 130° , 2 K- , 1 11



5,7,10,11)

(heterotopic ossification)가

1
6 (osteochondral loose body)

12,14)

1,6)

4,7,10)

가

가

Herbert , K-
(biodegradable pin)^{8,9,11,13,15,16)}

Herbert

3가 1,11,13)
(Hahn-Steinthal)

1

가

, K- 1

, 2 (Kocher-Lorenz)

. 2

, 1

3

1 3

, 1 가 . 11 2 가 11 가 , 3
9 1 가

Mckee ¹³⁾

15 °141 °

Alvarez ¹⁾

15 °140 °

Lansinger ¹⁰⁾

24 °131 °

5

3

13.6 17 °135 °

3

Broberg

Morrey

가 9

, 2

1

, 1

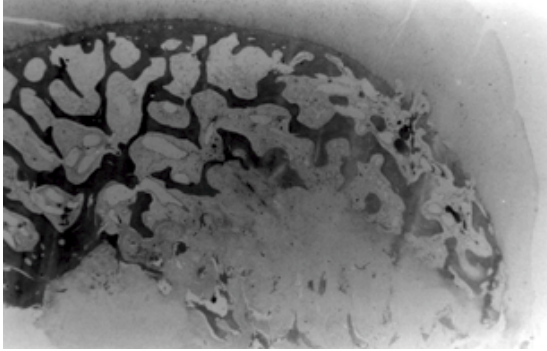


Fig 3. The microscopic finding of the nonunion fragment of the capitellum. The intact cartilage is noted and partial necrosis of subchondral bone is noticed in the deep portion. These findings are consistent with the nonunion.

3 가 7),
가 K- K-
가 1 . 1

11 6
4
16 ° , 34 °
130 ° 103 °

가
Lansinger 10)
1 , Grantham 7)

1
11), 3),
(pin tract infection)¹⁵⁾
1), 5
가 30 ° 90 °
1 11

가

(Fig. 3).

5 ° 150 °

가

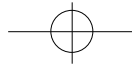
. 1
가
, 2 K- 가

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Abstract

Operative Treatment of the Capitellar Fracture of the Humerus

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Purpose : The capitellar fractures of the humerus are rare. Furthermore, the treatment of the fracture has been controversial. This study presents the experience in the operative treatment of capitellar fractures of the humerus.

Materials and methods : Eleven patients with an average age of 41.0 years (range, 15-76 years) were included in this study. The average length of follow-up was 13.6 months (range, 12-17 months). Type I fracture was noticed in ten patients and type III in one patient. Herbert screws, Kirschner wires, cancellous screw and miniscrew were used for internal fixation. The postoperative immobilization period averaged 6.7 days (range, 3-10 days).

Results : Flexion of the elbow averaged 135 degrees (range, 100-150 degrees), with an average flexion contracture of 17 degrees (range, 5-45 degrees). Supination averaged 83 degrees (range, 20-90 degrees) and pronation averaged 87 degrees (range, 80-90 degrees). Seven patients had an excellent functional results, two good and two fair according to Broberg and Morrey elbow-rating scale. The complications included loosening of Kirschner 's wires in two patients, osteochondral loose body in one, nonunion and heterotopic ossification in one and severe limitation of motion in one.

Conclusion : The early motion of the elbow joint after anatomical reduction and internal fixation for the displaced capitellar fracture is an effective treatment in restoring normal elbow function.

Key Words : Humerus, Capitellar fracture, Operation

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