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< >
:

가 : 1996 5 1999 5 AO C2, C3 2
19 20

: 7.2°, 4.3°, 3.1mm
($p < 0.05$), C2, C3

:

:

2가 85

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AO type C2

(ligamentotaxis)

가 19 20

2

가



1996 5 1999 5

(AO type C2) 19 , 20 , , (radial

26 71 9 , 10 , inclination) (radial length)

49.7 (volar tilt)

39.2 25 , SPSS T-test

50 7 , 9 , 3 0.05

AO C2 6 , C3 14

K- 가 5 , 1 , (radial

6 , 가 8 inclination), (volar tilt), (radial

length) 13.3 °; -12.1 ° (dorsal tilt), 3.4 mm

17.9 °; 8 ° (volar tilt), 10.3 mm,

가 1 , 6 , (segmental) 13.6 °; -0.8 ° (dorsal tilt), 7.2 mm

1 (volar

cortex) 가 2.5 °; 8.3 °; 1.8mm

6.5 °; 9.4 °; 4.6mm

(radial styloid process) 가 K- (p-value<0.05).

AO C2, C3

(p-value>0.05).(Table 1)

가

가 4 , 6

4-6 X- (C-arm) (intra-articular step-off)가 가

(ligamentotaxis)

(15-30 °) 가 2 , 1 , 5

가 (Fig.1).

5 hinge 1

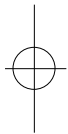
6 K- ,

3

**Table 1** Results according to radiographic assessment

| | | IF* | | BG [†] | | Fracture type(AO) | |
|-----------------------|----------|--------------------|-----------|-----------------|-----------|-------------------|-----------|
| | | | | | | C2 | C3 |
| Raidal inclination(°) | Postop. | 19.4 | 16.1 | 18.0 | 17.9 | 19.7 | 17.1 |
| | Last F/U | 16.9 | 9.6 | 15.2 | 12.9 | 15.7 | 12.7 |
| | Loss(%) | 2.5(12.9) | 6.5(40.4) | 2.8(15.6) | 5.0(27.9) | 4.0(20.3) | 4.4(25.7) |
| | p-value | 0.115 | | 0.470 | | 0.883 | |
| Volar tilting(°) | Postop. | 6.8 | 9.4 | 4.8 | 9.4 | 13.5 | 5.6 |
| | Last F/U | -1.5 | 0 | -2.8 | 0.1 | 3.3 | -2.7 |
| | Loss(%) | 8.3(122) | 9.4(100) | 7.6(158) | 9.3(98.9) | 10.2(75.6) | 8.3(148) |
| | p-value | 0.974 | | 0.832 | | 0.219 | |
| Radial length(mm) | Postop. | 10.3 | 10.3 | 11.7 | 9.7 | 10.5 | 10.2 |
| | Last F/U | 8.5 | 5.7 | 8.7 | 6.6 | 7.8 | 6.9 |
| | Loss(%) | 1.8(17.5) | 4.6(44.7) | 3.0(25.6) | 3.1(32) | 2.7(25.7) | 3.3(32.4) |
| | p-value | 0.038 [‡] | | 0.939 | | 0.759 | |

*IF; Internal Fixation [†]BG; Bone Graft ([‡]significant : p-value 0.05)



가 K-

가

. Pechlaner⁷⁾

Vidal⁹⁾

(ligamentotaxis)

lunate load

(Die punch fracture)

가

가

-

K-

1,10). DePalma³⁾

(cadaver)

Knirk Jupiter^{5,8)}

가
(ligamentotaxis)

4

가

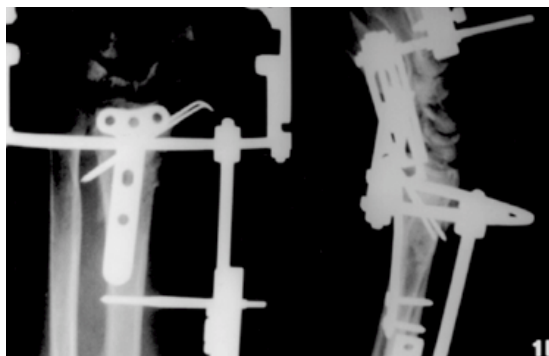
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Zagorski¹¹⁾

Horesh⁴⁾

**Fig. 1.**

A: A 60-year-old woman's wrist AP and lateral radiographs show unstable comminuted distal radius fracture which involves metaphysis.

B: Postoperative radiographs show the distal radius treated by volar plate, 2 K-wires and external fixator.

C: The last follow-up radiographs show volar tilt 2°, radial inclination 14° and radial length 10mm.

Lidstrom⁶⁾Frykman³⁾ 가

, , ,

, Knirk Jupiter⁵⁾

가

11%

91%

가

가

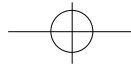
K-

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Abstract

External fixation of distal radius fracture

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Purpose : In the treatment of an unstable intraarticular distal radius fracture, we report the result of a retrospective study of reduction maintaining effect of external fixation.

Materials and Methods : During the period from May 1996 to May 1999, 19 patients 20 cases with AO type C2, C3 distal radius fracture were treated by external fixation and followed-up for 2 years or longer. Six had AO type C2 fracture, and fourteen type C3. We evaluated immediate postoperative & follow-up radiological evaluation by volar tilt, radial inclination, radial length difference.

As combined treatment, additional reduction maintaining effect of bone graft or internal fixation was evaluated also.

Results : Mean reduction loss of 2 years or longer follow-up after external fixation was volar tilt 7.2 °, radial inclination 4.3 °, radial length 3.1mm.

As additional reduction maintaining effect, internal fixation had statistically significant effect($p < 0.05$)-especially radial length maintenance, but bone graft not significant.

Conclusions : In unstable intraarticular distal radius fracture, after open reduction or bone graft etc. for intraarticular anatomic reduction, we consider external fixation or combined internal fixation for reduction maintenance.

Key words : Distal radius, Unstable intraarticular fracture, External fixation