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: 27

(11, 14, 2)

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7

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Kaplan

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2002 가



Fig. 1. 24/M.

- 1A.** After hyperextension injury, posteromedial dislocation of the metacarpophalangeal joint of the index finger was seen.
- 1B.** Reduction of torn volar plate and incision of transverse metacarpal ligament were sufficient to reduce the joint with gentle longitudinal traction during the operation.



Fig. 2. 17/M.

- 2A, 2B.** A simple type of dorsal dislocation of the metacarpophalangeal joint of the thumb with 60° of extension and the interphalangeal joint flexion was noted.
- 2C.** Interposed sesamoids and ruptured volar plate were reduced with volar incision and the metacarpophalangeal joint was fixed it with K-wire.

가 Miller¹⁰⁾ ,
(0~45°, 0~90°),
20°
가 ,
1 (10
, 14 , 2)
,
1
24 가 가
30° ,
(Fig. 1A). 2
3 80° 가

, 4
(Fig. 1B).



Fig. 3. 29/M.

- 3A.** In this complex dislocation, the thumb was not hyperextended but more nearly parallel to the metacarpal bone.
- 3B.** The anterior joint capsule and palmar ligament are interposed, and they prevented reduction by manipulation, so open reduction was needed.

2
17 가

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가
(Fig. 2A, 2B).
McLaughlin

3 20° 2



Fig. 4. 17/M.

- 4A, 4B.** The metacarpophalangeal joint of the 5th finger was dislocated posteriorly (4A), and narrowing of the joint space suggesting collateral ligament rupture was seen (4B).
- 4C.** Ruptured anterior capsule and radial collateral ligament were repaired through volar approach.

, 5~6
가 ,
14 가 가
10)
3
29 가
30°
(Fig. 3A). 2
가 가 (Fig. 3B). 7
lever arm (fulcrum)
(Kaplan's theory)⁸⁾
4
17 가 5 가 1 가
가 (Fig. 4A),
5 가
(Fig. 1B).
10)
6
3 (simple dislocation)
, 7 (complex dislocation)
(Fig. 4C).
가 ,
90°
9)
(skin dimpling),
5)
10°~100° (79°), 0°~90°
(20°), 0°~20° (
10°)
(buttonhole slit)

가 가

39) ,

가

20~30°

3~4

3,4,7) 27 16

9

McLaughlin

2

2

가 (10°~15°)

가 가

9), Green Tilly⁴⁾,

10) Dutton Meals³⁾ 2

5 1

가 4 24

가 , 1 9

3 ,

가

30°

, Onuba Essiet¹¹⁾

가 2

가

(proximal palmar ligament) (accessory col-
lateral ligament)

10)

(locked

6,13) , Pollaillon¹³⁾ 10

subluxation)가

가

Kaplan⁸⁾

9) , Becton¹⁾ Dutton³⁾ Murphy Stark¹¹⁾

Meals Becton¹⁾ 13

가

Kaplan⁸⁾ ,
(natatory ligament),

Hunts Baldwin
7).

Becton¹⁾ 4 cm 가
 ,
(transverse liga-
ment), extensor hood, Vaginal ligament
(Assemblage Nucleus)
 ,
가
(puckering) Green
가 pathognomic sign^{4,5)} .
 , 2, 3
가
1~2 ,
가

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Abstract

Treatment of Post-traumatic Dislocation of Metacarpophalangeal Joints of the Hand

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Purpose: To analyse the obstacles to prevent the reduction for dislocation of the metacarpophalangeal (MP) joints of the hand and evaluate the relationship between the sex and dislocation type in closed reduction case.

Materials and Methods: Total 27 cases of MP joint dislocation of the hand (11 cases of thumb, and 14 index and 2 little finger) were reviewed retrospectively. The anatomical structures to prevent the reduction were confirmed at operation and the cases which were reduced immediately were also analysed for their ages and differences of damaged structures, and finally their complications or outcome were reviewed for average 7 months after reduction.

Results: In 11 cases of thumb MP joint dislocations, the complex dorsal dislocations in which the protruded metacarpal neck was caught by buttonhole of torn anterior joint capsule, volar plate and FPD were reduced by open method in 8 cases, and closed reduction was done in 2 cases but one old case required arthrodesis. In other finger MP joint dislocations, the Kaplan's concept to prevent the reduction was confirmed. But reduction of torn volar plate and incision of transverse metacarpal ligament were sufficient to reduce the dislocation with gentle longitudinal traction during the operation. In two cases of little finger MP joint dislocation, the ruptured radial collateral ligaments were noted after open reduction and it must be repaired to prevent the finger instability later. Their overall end results were good without any significant restriction of MP joints motions and finger instabilities.

Conclusion: One or two times of closed reduction with proper local anesthesia could be tried, but simple reducible dislocation can be converted to complex irreducible ones by the inappropriate traction method, and so proper reduction technique by closed or even in open way is important with the knowledge of anatomical obstacles to prevent the reduction of the metacarpophalangeal joints.

Key Words: Hand, Metacarpophalangeal joint, Dislocation, Volar plate

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