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(Trapeziometacarpal Joint Injuries)

=Abstract=

Trapeziometacarpal Joint Injuries

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The treatment of 21 trapeziometacarpal joint(TMC) injuries was studied to provide an understanding of the pathomechanics and treatment principles for a good functional outcome. TMC joint has wide range of motion, complex articular surface, and greater muscular pull than other joints in hand. Injury of TMC joint can easily cause limitation of motion, deformity, pain, weakness, and posttraumatic osteoarthritis. Especially, the instability of TMC joint causes prolonged subluxation and weakness of pinch and grip. Twelve Bennett's fractures, 2 Rolando's fractures, 5 epiphyseal injurues, 1 pure dislocation without fracture, and 1 trapezium fracture were treated. Four Bennett's fractures and 3 epiphyseal injuries were immobilized in plaster cast after closed reduction. Five Bennett's fractures and 1 pure dislocation were treated by closed reduction and percutaneous pinning. Three Bennett's fractures and 2 epiphyseal injuries were treated by open reduction and pinning. Two comminuted Rolando's fractures were treated by open reduction, pinning, and intermetacarpal external fixation. At follow up after median 13

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months, 6 Bennett's fractures, 2 Rolando's fractures, 2 epiphyseal injuries were satisfactory. The others showed pain, deformity, motion restriction, weakness, or subluxation. We concluded that restoration of articular surface, internal fixation against the muscular pull, and stabilization of the joint were mandatory for a satisfactory outcome.

Key Words : trapeziometacarpal joint, fracture

1, 7, 39
13 .

1 60
30-40 , , 1.
(opposition) 가 , 가
1, 17) . 가 18 , 가 3 ,
10 68 .
(dominant hand) 14 .
Bennett 12 , Rolando 2 ,
가 5 ,
Bennett 가 1 , 가 1
Rolando , , .
가 7 , 5 ,
가 9 .
4, 11, 12, 13) 1 1 , 5
1 가 .
2.
가 Bennett 4
2 ,
가 가 1
4 .
Fluoroscope
가 Bennett 5 K
1991 1 2 1
11 1996 8 2
1 가
Bennett 3 , 2 ,
가 21 1

K
Rolando 2
K
(radio-
palmar approach)
1

(dorsoradial approach)
4
K
4

30
3. 가
가
,
,
,
,
,
,
Finger flexor (Psytech,
U.S.A.)
가
(tomogram)

가

Bennett
4 2
. Bennett 5 1
, 1 , 1
, 1
K

Bennett 3
(Fig. 1).

Fig. 1-A. A typical displaced Bennett's fracture. The main portion of the thumb metacarpal subluxes dorsoradially by the pull of the thumb extensors, the adductor pollicis, and abductor pollicis longus.

Fig. 1-B. Open reduction using two Kirschner wires. An additional wire through the carpometacarpal joint adds stability.

(Fig. 2).
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(Fig. 3),

3 2

(Fig. 4).

Fig. 2-A. A comminuted Rolando's fracture.

Fig. 2-B. Open reduction using Kirschner wires and external fixator. The external fixator remained four weeks because the fracture was unstable.

Fig. 3. An epiphyseal injury of the thumb metacarpal(left). Open reduction with pinning(middle). Good bony union without deformity(right).

Fig. 4-A. An epiphyseal injury of the thumb metacarpal.

Fig. 4-B. Metacarpal shortening and flexion & adduction angulation.

Fig. 4-C. Grossly hyperextended metacarpophalangeal joint for the compensation of limited abduction of carpometacarpal joint.

(Fig. 5).

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(Fig. 6).

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Fig. 6-A. A fracture of the trapezial dorsoradial tuberosity and carpometacarpal dislocation. One month after initial trauma.

Fig. 5-A. A typical traumatic carpometacarpal joint dorso-radial dislocation.

Fig. 6-B. Open reduction with pinning. A remained radial subluxation due to delayed operation.

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Fig. 5-B. Closed reduction with pinning

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 (convex) (con-
 cave)
 (semiconstrained) 1 가
 가 . 가
 가 . 3
 48 , 38 , 80 가
 (resting) 가 7).
 20 , , 15 Bennett
 40 , 60 , 10 26
 가 . , , 가
 , 1 , 가
 가 가 9),
 (opposition) , , 10.7
 1. 17). Cantilever system
 1
 5), 가
 . 1 가 15).
 (ridge) 가
 가
 10). , , 가
 가 가 4 7).
 , , 1 3
 , 1. 6, 13). 가 T Y
 , 1 Rolando
 1, 13). 가
 가 , , 3).
 10). ,
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 1 , 가 ,

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 2,8)
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 가
 criteria score sys-
 tem 가 2, 7, 8, 15)
 가
 가
 20 15
 (Fig. 4).
 3)
 가 7, 8)
 15)
 7
 가
 14)
 13)
 K 1 가
 K 16) 1 가
 가
 (nutcracker phenomenon) 12)
 K
 4, 11)
 3) 1
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