

## Operative Treatment of Thumb Ulnar Collateral Ligament Injury

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**Purpose:** We reviewed 12 operative cases with ulnar collateral ligament injury of the thumb, and evaluated about gender, age, etiology, injury mechanism, surgical method, prognosis.

**Materials and Methods:** We had operated when there was avulsion fracture over 2mm and when abduction arc was over 30 degrees in the stress view. In the 12 cases, there were 5 men and 7 women. Average age was 26.5 years (from 10 to 57 years). There were 9 cases with avulsion fracture as injury pattern. In the avulsion fracture cases, epiphyseal injury were 3 cases.

**Results:** Surgical methods were needle fixation 7 cases, pull out wire technique 1 case, Statak anchor 3 cases, loose body excision and primary closure 1 case. Average follow up period was 14 months. The clinical results were excellent in 8 cases, and good in 4 cases. In the good prognosis group, there was no joint instability, but there were pain, tightness, and slightly limitation of motion.

**Conclusion:** If complete rupture of the ulnar collateral ligament of the metacarpophalangeal joint of the thumb is left uncorrected, this lesion prevents proper healing

and leads to chronic instability and subsequent arthrosis. We achieved satisfactory results after operative treatment in avulsed fractures and over 30 degrees instability in the stress view.

**Key Words:** Thumb, Ulnar collateral ligament, Operative treatment

Gamekeeper's Thumb<sup>1-3)</sup>, Ski-pole Thumb<sup>5)</sup>

(thumb spica cast)  
 10 ~ 20 4 ~ 6

1-11). 12

1998 12 2001 7

12 . 2 mm

30.

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3 18 14  
 가 5 , 가 7 12 Gerber <sup>5)</sup>  
 10 57 , 12 8 (67%) , 가  
 가 30 , 4 , 8 , 12  
 8 3 , 4 , , 8  
 1 , 1 , , 4  
 가 9 Statak (Statak suture anchor)  
 3 2 (needle fixation) 2  
 , (Salter-Harris type III) 3 , ,  
 3 3 2 , 1 , 1  
 3  
 (stress film)  
 3  
 1 Stener  
 3 2 ,  
 9 가 3  
 . 1  
 2 1 2  
 12 7 39 가  
 (needle fixation) 7 , (pull out  
 wire technique) 1 , 1  
 , 22G (Fig 1-A)  
 1 가 1 , 2  
 가 4 , 가 6 , 가 3 , 40°  
 (Fig. 1-B). 7 ,  
 (Fig.1-C) (thumb spica  
 splint) 14  
 Statak (Statak suture anchor)  
 2  
 (thumb spica splint)  
 (thumb spica cast) 15  
 10~20 3~4  
 , Salter Harris  
 type ,  
 A) 10% (Fig. 2-  
 8 ,  
 2 (24 gauge needle)  
 ,(Fig. 2-B)  
 9 3 , 14  
 12



**Fig. 1.** A. She was 39 year-old woman and she had ski injury. In the initial view, there was small bony fragment on the ulnar side of the thumb, metacarpophalngeal joint. B. In the stress view, there was valgus instability(45 degrees). C. In the postoperative view, torn ligament with small bony fragment was fixed using full out technique.



**Fig. 2. A.** He was 15 year-old boy and he had base ball injury. In the initial view, there was avulsion fracture with epiphyseal plate injury(Salter-Harris type III). **B.** In the postoperative view, torn ligament with large bony fragment was fixed using two 22gauge needle at the same side.

3  
44  
가  
,  
,  
가  
2 (24G)  
,  
14  
,  
4  
57  
Stress view  
30°

50°  
11  
Statak  
(Fig. 3-A)  
13  
,  
1/4  
4  
,  
(volar plate),  
,  
가  
1,5)  
가  
(Tendinous insertion)  
(Dorsal



Fig. 3. She was 57 year-old woman and she had bicycle injury. In the postoperative view, torn ligament was fixed using Statak anchor.

Aponeurosis) 가 가 (Additional fiber) 가 (Active stabilizer) (Adductor aponeurosis)

(Interposition) Stener<sup>1,5,10)</sup> Stener<sup>10)</sup> 64% 15% ~ 52% 5 (42%) 80% 3 Bowers<sup>1)</sup>

1-3, 5), 12 8 (67%)가 30 9 가 ( Frank Dobyns<sup>4)</sup> 가 1 1 (Abduction Arc) 40° Bowers<sup>1)</sup> 가 , 30. Gerber<sup>5)</sup> , Bowers<sup>1)</sup> 가 , 20. ~ 30. 가 가 20. ~ 30. 가 가 20. ~ 30. Frank Dobyns<sup>4)</sup> 0° ~ 25° 15.5° ± 5° 10° 가 가 Bowers<sup>1)</sup> 30° Bowers<sup>1)</sup> Craig<sup>2)</sup> (Arthrogram) , Hergan<sup>6)</sup> (High resolution ultrasonography) Osterman<sup>9)</sup> Ski-pole thumb 2 Gerber<sup>5)</sup> 47 , 43 가 , Weiland<sup>11)</sup> 37 (Interosseous suture anchor) , Kato<sup>7)</sup> Mitek

**Table 1.** Clinical characteristics of patients

Case	Sex/Age	D./ND.	Perop. duration	Cause of trauma	Types of injury	Treatments	Results	Complications
1	F/39	D.	7days	ski	avulsion fx	pull out wire technique	excellent	-
2	M/15	ND.	8days	baseball	avulsion fx epiphyseal injury (Salter-Harris III)	2 needle fixation	excellent	-
3	M/28	ND.	12days	baseball	avulsion fx	1 needle fixation	excellent	-
4	F/29	ND.	1month	ski	avulsion fx	2 needle fixation	good	pain
5	M/15	ND.	16days	traffic accident	avulsion fx	2 needle fixation (opposite site)	excellent	-
6	F/13	ND.	2months	baseball	avulsion fx	loose body excision and primary closure	excellent	-
7	F/57	ND.	11days	bicycle	-	Statak anchor	good	tightness
8	F/10	ND.	5days	baseball	avulsion fx epiphyseal injury	2 needle fixation (opposite site)	excellent	-
9	F/44	D.	4days	slip down	avulsion fx	2 needle fixation (opposite site)	good	slight LOM
10	F/31	D.	5days	ski	-	Statak anchor	excellent	-
11	M/23	ND.	8days	direct	-	Statak anchor	good	tightness
12	M/14	D.	6days	direct	avulsion fx	2 needle fixation	excellent	-

D., dominant handed; ND., non-dominant handed; fx, fracture

Statak

3

2

2 mm

30.

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