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[ ]

: Rockwood 3 - Phemister  
 modified Phemister  
 : 1992 2 2001 8 3 -  
 1 가 45 , 45 . 28.1  
 , 가 42 , 가 3 .  
 , 7.8 . -  
 15 Phemister (I ), 가 30  
 modified Phemister (II ). 16.2 ,  
 UCLA shoulder  
 scoring system acromio - clavicular separation scoring system .  
 : II 2 , K- 가 1 .  
 , II 2  
 가 . UCLA shoulder scoring system I, II 93.3%, 6.7% ,  
 acromio - clavicular shoulder scoring system II 90%, 10% .  
 : 3 - Phemister  
 .  
 : - , Phemister , Modified Phemster , Rockwood  
 3

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\* 2002 46 .

Rockwood <sup>20)</sup> 3 - , 4,25,26) .  
 3  
 5,6,12,15-17,20,24,28) ,  
 45 Kirs-  
 chner ( K- )  
 Phemister <sup>17)</sup> (I ) Phemi-  
 ster -  
 fied Phemister <sup>6,24)</sup> (II )  
 가  
 .  
 1.  
 1992 2 2001 8  
 Rockwood <sup>20)</sup> 3 -  
 1 가  
 45 , 45 .  
 , 가 42 , 가 3 .  
 22 (49.0%), 18 (40.0%),  
 5 (11.0%) ,  
 15 (33.3%), 30 (66.7%) .  
 45 -  
 가  
 15 K- -  
 , Phemister <sup>17)</sup>  
 (I ) , 30 - 가  
 modified Phemister  
<sup>6,24)</sup> (II ) (Fig. 2).

**Table 1.** F/U X-ray finding<sup>21)</sup>

		Group I	Group II
Grade of reduction	Exact reduction	15	28
	Subluxation	0	2
	Dislocation	0	0
Deformity of lateral end of clavicle	None	11	24
	Slight	4	6
	Marked	0	0
Osteoarthritis	None	15	30
	Slight	0	0
	Marked	0	0

4 Velpeau , 8  
 K- , 4 K-  
 (sling)  
 , K-  
 . I II 27.9 (17~45)  
 ) 28.1 (20~45 ) ,  
 8.1 (2 ~26 ) , 5.2  
 (1 ~11 ) (p=0.115, Mann-Whitney ) ,  
 16.6 (12 ~43 ) , 15.7  
 (12 ~25 )  
 (p=0.820, Mann-Whitney ) .  
 2.  
 , UC-  
 LA shoulder scoring system<sup>9)</sup> acromio-clavicular separation scoring system<sup>19)</sup>  
 가 -  
 Rosenorm Pedersen <sup>21)</sup>  
 가 (Table 1).  
 , , -  
 (coracoclavicular interval ratio) 가 <sup>22)</sup> .  
 UCLA shoulder scoring system<sup>9)</sup> (1~  
 10 ) , (1~10 ) , (0~5 ) ,  
 (0~5 ) (0~5 ) 35  
 34 (excellent), 29 33  
 (good), 29 (poor)



**Fig. 1A.** Roentgenogram of 17 year-old male with type III acromioclavicular separation.  
**1B.** Acromioclavicular separation was treated by Phemister technique.  
**1C.** Roentgenogram after removal of K-wires at post-operative 1 year 3 months.

가

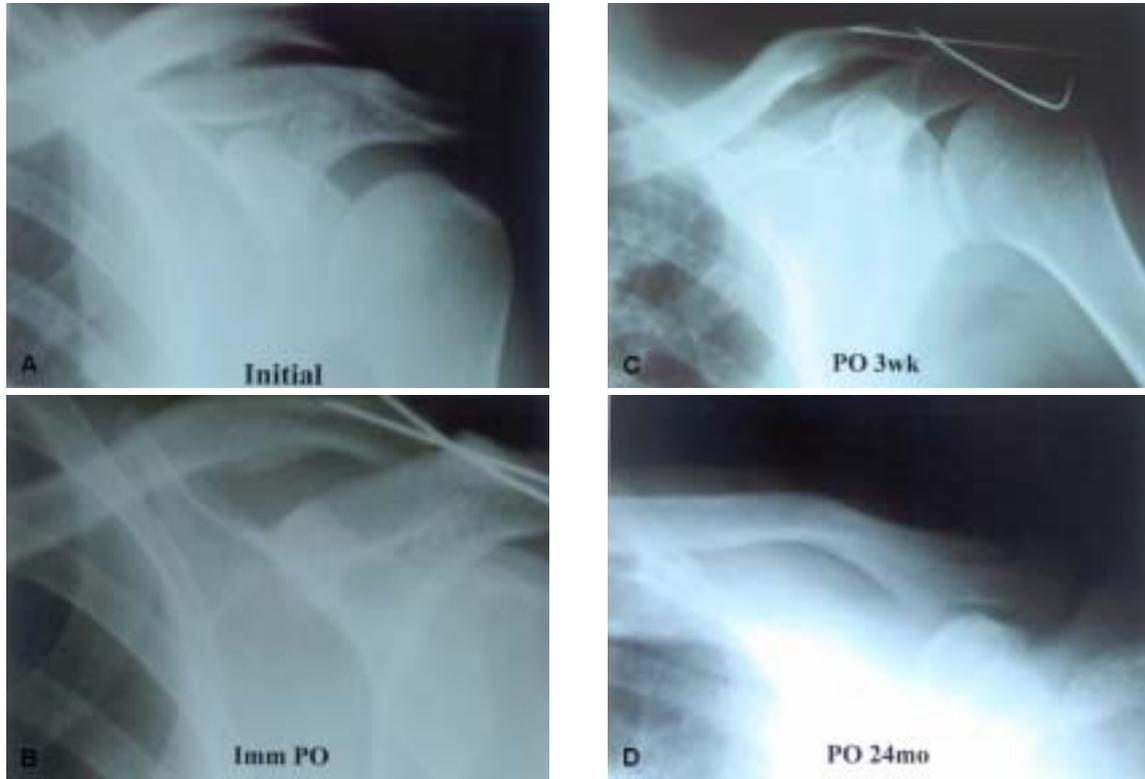
Acromio-clavicular separation scoring system<sup>15)</sup>



**Fig. 2A.** Roentgenogram of 26 year-old male with type III acromioclavicular separation.  
**2B.** Acromioclavicular separation was treated by modified Phemister technique.  
**2C.** Roentgenogram after removal of K-wires at post-operative 2 years.

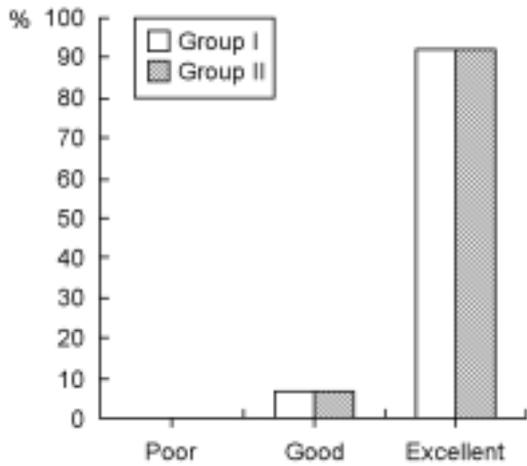
(athletic fitness)

가

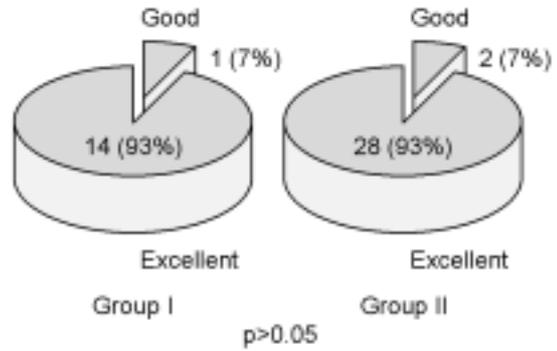


**Fig. 3A.** Roentgenogram of 35 year-old male with type III acromioclavicular separation.  
**3B.** Acromioclavicular separation was treated by modified Phemister technique.  
**3C.** After postoperative 3 weeks roentgenogram showed K-wire migration.  
**3D.** Roentgenogram after removal of K-wires at postoperative 2 years.

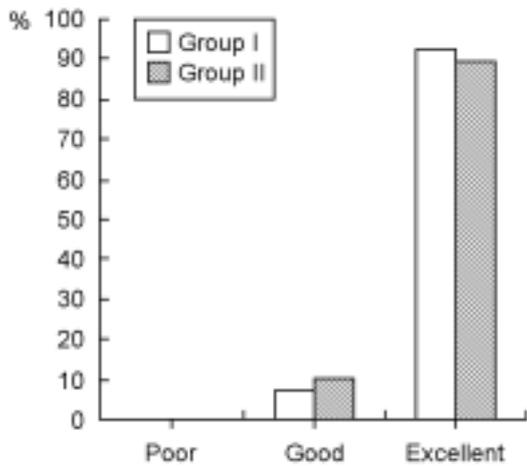
	Pedersen <sup>21)</sup>	Rosenorm
I	2	I
, II	2	(demineralization)
, 1	I 4, II 6	가
3 K- 2 1 가	(osteoarthritis)	I II
(Fig. 3).	(Table 1).	(coracoclavicu-
II 2	lar interval ratio)	I 2.45
8 K-	1.27	, II 2.47
가	1.25	II
(sling) 4	(p=0.008, Mann-Whitney )	UCLA shoulder scoring system <sup>9)</sup>
,	가 I 14 (93.3%), I (6.7%)	
(compli-		
ance)가		
velpeau		



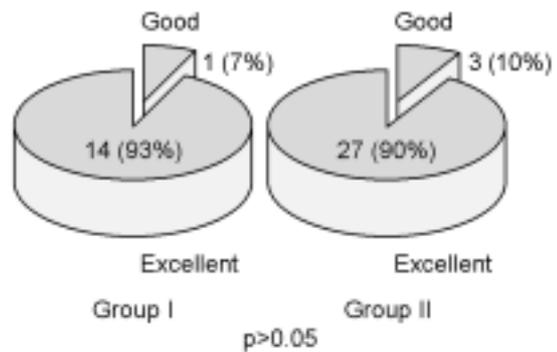
**Fig. 4.** 14 cases, 1 case, and 0 case for group I and 28 cases, 2 cases, and 0 case for group II were excellent, good and poor respectively in UCLA shoulder scoring system.



**Fig. 6.** Results of UCLA shoulder scoring system.



**Fig. 5.** 14 cases, 1 case, and 0 case for group I and 27 cases, 3 cases, and 0 case for group II were excellent, good and poor respectively in A-C separation scoring system.



**Fig. 7.** Results of acromio-clavicular separation scoring system.

(p=1.000, Fisher

) (Fig. 5).

Rockwood

Allman

1)

3

20)

3

25%

100%

, II 28 (93.3%), 2 (6.7%)  
 (p=1.000, Fisher  
 ) (Fig. 4). Acromio-clavicular separation scoring  
 system<sup>15)</sup> 가 , 가 I 14  
 (93.3%), 1 (6.7%) , II 27  
 (90%), 3 (10%) ,  
 ,

4.25.26)

Phemister<sup>17)</sup> 가 -  
 modified Phemister<sup>6,24)</sup> .  
 24) 6) Kirschner modified  
 Phemister<sup>6,24)</sup> .

가 Insall<sup>11)</sup>

Phillips<sup>18)</sup> , Bosworth<sup>5)</sup>  
 1172  
 (deformity) 3% 37% ,  
 (range of motion) 95% 86% ,  
 (strength) 92% 87% 가  
 McFarland<sup>14)</sup> 3  
 42  
 89% , 92%가 8.1 5.2 I II  
 가 가  
 80% 2 K-  
 , 90% - . Phemister 가  
 , 92%  
 가 80% , 75% 가 가  
 가  
 가 가 가  
 5가  
 1,6,15,17,24) , C  
 29) , 2,8) , K-  
 , 23,27,28) 가

3 -  
 1 45  
 Phemister - 가  
 modified Phemister 가  
 , 가  
 , 가  
 93% .  
 3  
 Phemister  
 가 .

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**Abstract****The Results of Surgical Treatment of Acute Acromio-clavicular Separation, Type III**

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**Purpose:** The purpose of this study is to compare the Phemister technique with the modified Phemister technique for the patients with Rockwood type 3, acromio-clavicular separation.

**Materials and Methods:** The 45 cases of 45 patients received surgical treatment for Rockwood type 3, acute acromio-clavicular separation in our hospital from Feb. 1992 to Aug. 2001 later with the follow-up study were selected as subjects. The average ages were 28.1 years old, male and female were 42, 3 persons, respectively. Physical examination and plain radiography were used for their diagnosis and the intervals between injury and surgical treatment were 7.8 days. In intraoperative finding, we performed Phemister technique in 15 cases according not to be able to repair coraco-clavicular ligament (group I), modified Phemister technique in 30 cases according to be able to repair that (group II). The average follow up period was 16.2 months, and the UCLA shoulder scoring system and the acromio-clavicular separation scoring system were used to obtain clinical results.

**Results:** Only in Group II, the complication after surgery were associated with superficial infection in two cases and K-wire migration in one case. At last follow up, there were no pain and limitation of range of motion in all cases, and two cases in Group II were found to be subluxation in radiography. Clinical results revealed excellent was 93.3%, good was 6.7% in UCLA shoulder scoring system in both groups, and excellent was 90%, good was 10% for group II in acromio-clavicular separation scoring system.

**Conclusion:** The results are considered to be good with only Phemister technique in type 3, acute injury occurred in working ages.

**Key Words:** Acute acromio-clavicular separation, Phemister technique, Modified Phemister technique, Rockwood type 3

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