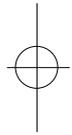


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<	>
:	:
1994 1	1998 12
	25
	Maudsley
14.1	13.6
	(p>0.05).
1	6 (24%)
1 Maudsley	1 3
	25 17 (68%)
	7 (78%),
	10 (63%)
	(44%)
(p<0.05).	
:	:
	가,
	가



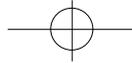
가 가 가

가 16)

2 29-1

TEL : (02) 2210-3474
FAX : (02) 2217-1897





4 (16%), 18
 (72%), 3 (12%), 15
 (Table 1). 1mm 가
 (scapholunate angle) 60
 (lunocapitate angle) 15
 12
 25
 (48%) 13 (52%) (Table
 1). Sotto-Hall
 Haldeman¹⁵⁾ 16
 (64%), 7 (28%), 2
 1994 1 1998 12 (8%) (Table 2).
 가 가 33 12
 가 가 25 4.
 , , Maudsley⁸⁾ 9 (36%)
 가
 t-test ANOVA 가 5 (20%) 가 ,
 2 (8%), 1 (4%),
 1 (4%) (Table 3).
 1.
 25 가 23 (92%) , 5.
 18 47 , 20 30 25 13 ,
 가 18 (72%) 가 9 , 4
 3 , 1
 2. , 4
 가 11 (44%) 가 가 Herbert
 , 가 8 (32%), 가 5 (20%) (Table 4). 12 ,
 , 가 1 . 7
 (Herbert 3 , K-wire 4)
 3. 4
 Russe¹⁴⁾ 가 (Herbert

Table 1. Classification of fractures by Russe¹⁴⁾

Classification	No of cases		Total(%)
	Undisplaced	Displaced	
Proximal third	3	1	4(16%)
Waist			
Horizontal oblique	1	2	3(12%)
Transverse	7	8	15(60%)
Vertical oblique	0	0	0
Distal third	2	1	3(12%)
Total(%)	13(52%)	12(48%)	25(100%)



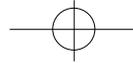


Table 2. Classification of fractures by Sotto-Hall¹⁵⁾

Duration		No of case(%)
Acute	(up to 2weeks)	16(64%)
Subacute	(2weeks - 2months)	7(28%)
Old	(more than 2months)	2(8%)
Total		25(100%)

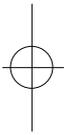
Table 3. Associated injury in the same limb

Associated injury	No of cases(%)
Trans-scaphoid perilunar dislocation	5(20%)
Distal radius fracture	2(8%)
Ulnar styloid process fracture	1(4%)
Triquetrum fracture	1(4%)
Total	9(36%)

Table 4. Treatment method

Method	Undisplaced	Displaced
Conservative		
Long arm cast	3	
Short arm cast	6	
Operative		
OR&IF with Herbert screw		
with bone graft	4	4
without bone graft		3
OR&IF with K-wire		
with bone graft		1
without bone graft		4
Total	13	12

3 , K-wire 1) ,
 1
 가 Herbert 1.
 (Table 4). 25 2 23
 9 13.6 ,
 6 9 1 8
 , 12.7 2
 , 4 가 14.5 , 5 12.5 , 1
 2-4 가 , 10.0 (Table 5). 16
 . 16 1 15
 6 14.1 , 2 16.0
 , 11 14.2 , 2
 11.5 (Table 5).



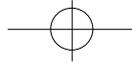
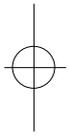


Table 5. Mean union time

Method of treatment	Fracture site(No of case)	Mean union time(weeks)
Conservative treatment	Proximal third(2)	14.5
	Waist(5)	12.5
	Distal third(1)	10.0
Operative treatment	Proximal third(2)	16.0
	Waist(11)	14.2
	Distal third(2)	11.5
Total		13.6

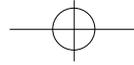
Table 6. Result according to treatment method

Result	Conservative	Operative	Total(%)
Excellent	5	6	11(44%)
Good	2	4	6(24%)
Fair	1	4	5(20%)
Poor	1	2	3(12%)
Total	9	16	25(100%)



2. , 25 17 (68%)
 25 6 (24%) , 9 7 (78%),
 9 1 16 10 (63%)
 , (Table 6).
 1 , 4 1 (25%), 18
 3 1 13 (72%), 3 3 (100%)
 , (Table 7).
 1 13 (81%),
 , K- 12 4 (44%)
 (Table 8)(p<0.05)
 가
 , 1
 (Fig. 1-A) 5
 (Fig. 1-B), (Fig. 1-C)
 14 가
 Herbert (Fig. 1-D)
 (Fig 1-E). 45
 3 2
 가 6%
 가 가 2,13 60-70%
 3.
 Maudsley⁸⁾ 가 가



**Table 7.** Result According to fracture site

Result	Proximal third	Waist	Distal third
Excellent	0	9	2
Good	1	4	1
Fair	2	3	0
Poor	1	2	0
Total	4	18	3

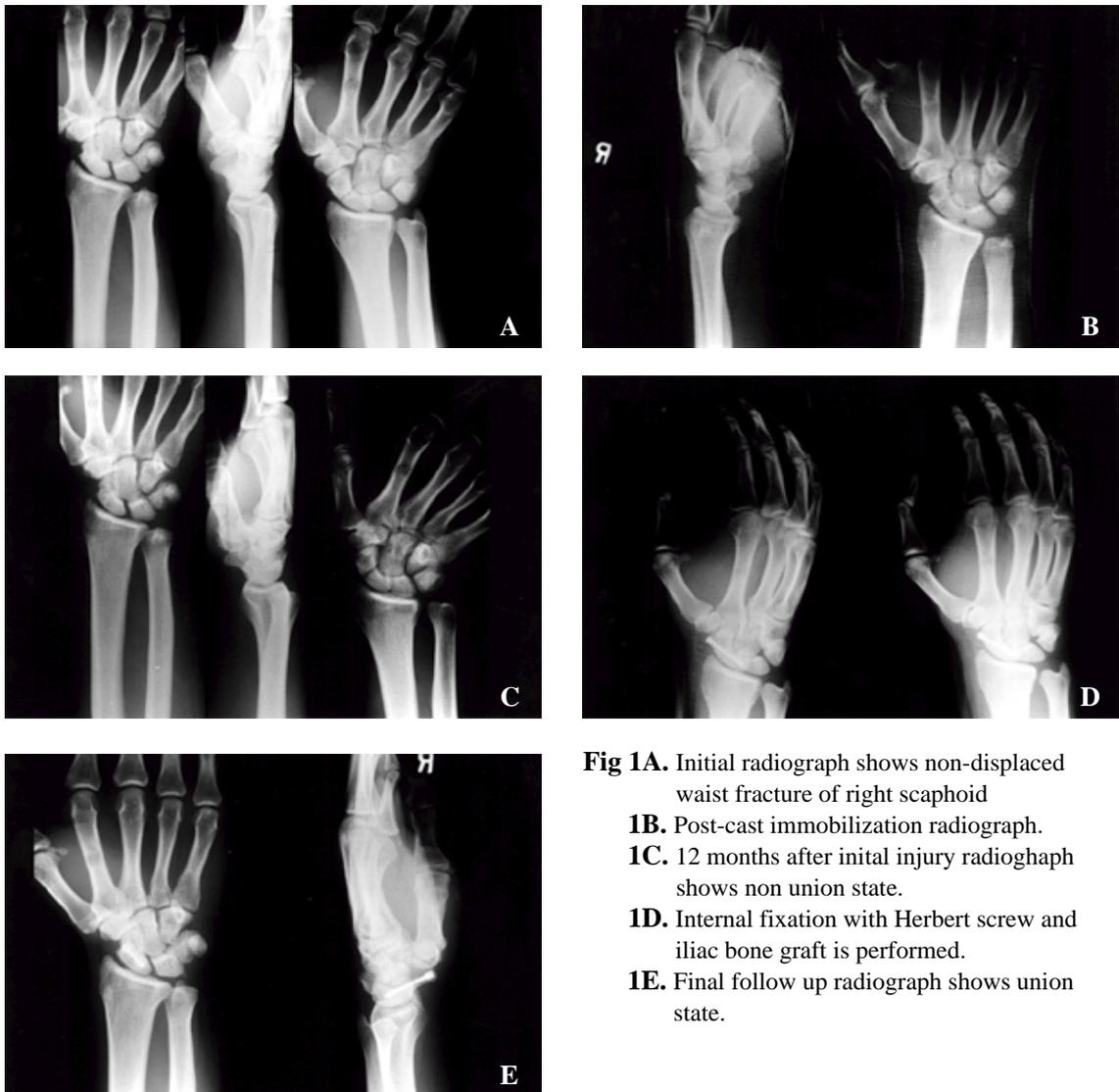


Fig 1A. Initial radiograph shows non-displaced waist fracture of right scaphoid
1B. Post-cast immobilization radiograph.
1C. 12 months after initial injury radiograph shows non union state.
1D. Internal fixation with Herbert screw and iliac bone graft is performed.
1E. Final follow up radiograph shows union state.



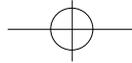


Table 8. Result according to duration after injury by Sotto-Hall classification

Result	Acute fracture	Subacute fracture	Old fracture
Excellent	9	2	0
Good	4	2	0
Fair	2	2	1
Poor	1	1	1
Total	16	7	2

7)

5,10)

20-30

¹²⁾ 72.2%,

18 (72%)가

⁴⁾ 72.5%

가

6 12

8-12

12-16 가

2

14.5

5

12.5

1

10

2

16

11

14.2

2

Russe¹⁴⁾

11.5

18 (72%) 가

15 (83%)

Cooney¹⁾

McLaughlin

Parkes⁹⁾

Maudsley

Chen⁸⁾

1mm

15

45

K-, cancellous

1mm

가

screw, Herbert screw

2

K-

Herbert screw

Soto-Hall

Holdeman¹⁵⁾

2

16 (64%)

6

2 (8%)

가

6 (24%)

2

가

Weber Chao¹⁷⁾, Palmer

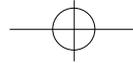
¹¹⁾

3

가

1 가

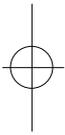
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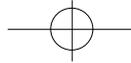


Maudsley⁸⁾ 가 , 25
 17 (68%) 6) 85%, 3)
 50%
 ,
 9 7 (78%), 16
 10 (63%)
 (p>0.05), 16 13 (81%),
 9 4 (44%)
 (p<0.05), 가
 , 4
 1 (25%)
 .
 1994 1 1998 12
 12 가가
 25
 , 가,
 ,
 가 .

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Abstract

A Treatment of Carpal Scaphoid Fracture

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Purpose : To analyze the clinical result of treatment of scaphoid fractures

Materials and methods : From January 1994 to December 1998, we reviewed 25 carpal scaphoid fractures. Conservative treatment was performed in non-displaced, acute fractures and operative treatment was performed in others.

Result : Bony union takes average 13.6weeks of all cases and no statistical difference was seen between conservative treatment group(average : 12.7weeks) and operative treatment group(average : 14.1weeks). The complications were seen in 6 cases(24%), which were non-union in one case among the conservative treatment group, and non-union in one case, osteoarthritis in 3 cases and reflex sympathetic dystrophy in one case among the operative treatment group. Satisfactory results were 17(68%) of 25 cases by Maudsley 's method. No statistical difference was seen between conservative treatment group(satisfactory results:78%) and operative treatment group(satisfactory results:63%)($p>0.05$), but statistical difference was seen between acute fracture group(satisfactory result:81%) and others(satisfactory results:44%)($p<0.05$).

Conclusion : More satisfactory result was seen in acute fracture group than in subacute and old fracture group, therefore we think early diagnosis has important role in result of treatment of scaphoid fracture. Also we think conservative treatment is preferable to non-displaced, acute fracture and operative treatment is preferable to others.

Key word : Carpal scaphoid, Fracture, Treatment