



13, 4, 2000 10

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< >

:

(threaded Steinman)

: 1989 1 1998 12

52

1

. 25 (48.1%)

(I)
)

27 (51.9%)

threaded Steinman

(II

Anderson

가

:

I 12.3 , II

13.2

Anderson

I

21

(84%), II 22 (81.5%)

1 ,

1

II

4 ,

2

:

Steinman

:

2,22)

가

2,9,10,18,19,23,24)

:

6-2 (T 134-791)

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45 , II 27 72
47.5
13)
가가 52 (56%) 가 I 가 14
3 (12%), 2 (8%) , II
가 16 (59.2%) 가
가 6 (22.2%), 5 (18.5%)
1/3, 1/3, 1/3
I 1/3 24
(48%) 가 II
1/3 27 (50%) 가
(Table 1).
1989 1 1998 12
1 가가 52 I 13 ,
8 , 4 12
(25) , 8 , 5 . II
Steinman (27) 12 ,
I , II 11 , 4 13 ,
42 (80.8%), 10 (19.2%) 9 , 5 (Table 2).
47 (25 24 (46.2%) 가
73) 37 25 (48.1%) 가
(71.2%) 가 I 25 69 . 8 (15.4%) , Anderson

Table 1. Level of fractures

	Proximal 1/3		Middle 1/3		Distal 1/3	
	Radius	Ulna	Radius	Ulna	Radius	Ulna
Group I*	6	5	13	11	6	9
Group II†	7	8	15	12	5	7
Total	13	13	28	23	11	16

* Group I : Plate & screw fixation in radius and ulna.

† Group II : Plate & screw fixation in radius & threaded steinman pin fixation in ulna.

Table 2. Types of fracture

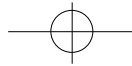
	Transverse		Communitied		Oblique or Spiral	
	Radius	Ulna	Radius	Ulna	Radius	Ulna
Group I*	8	12	4	5	13	8
Group II†	12	13	4	5	11	9
Total	20	25	8	10	24	17

* Group I : Plate & screw fixation in radius and ulna.

† Group II : Plate & screw fixation in radius & threaded steinman pin fixation in ulna.

Table 3. Evaluation of the functional results(by Anderson)

Excellent	union less than 10 degree loss of flexion-extension less than 25 % loss of pronation-supination
Satisfactory	union less than 20 degree loss of flexion-extension less than 50 % loss of pronation-supination
Unsatisfactory	union more than 30 degree loss of flexion-extension greater than 50 % loss of pronation-supination
Failure	non-union with or without loss of motion



가

I 12.3 , II

13.2

가 (p<0.05), 13,23)

I 96.5 , II Anderson¹⁾

68.7 II 가 ,

(p<0.05). 가 Anderson²⁾

(Excellent) (Satisfactory) , 가

(Unsatisfactory) (Failure) 가

I 25 21 (84%) Kight Purvis¹⁷⁾, Hughston¹³⁾

II 27 22 (81.5%) Rockwood²²⁾

(p>0.05) (Table 4).

I 2 , 1

1 II Hughston¹³⁾

4 , 2 . II 4 가

6 , 1,2,7,11,15)

가 3 52

1 Evans⁹⁾ bicipital

tuberosity view technique

가 Burwell Chamley⁶⁾

가

8,14)

(ordinary plate)

Table 4. Functional result

Method	Excellent	Satisfactory	Unsatisfactory	Failure
Group I*	13	8	2	2
Group II†	10	12	3	2
Total	23	20	5	4

* Group I : Plate & screw fixation in radius and ulna.

† Group II : Plate & screw fixation in radius & threaded steinman pin fixation in ulna.

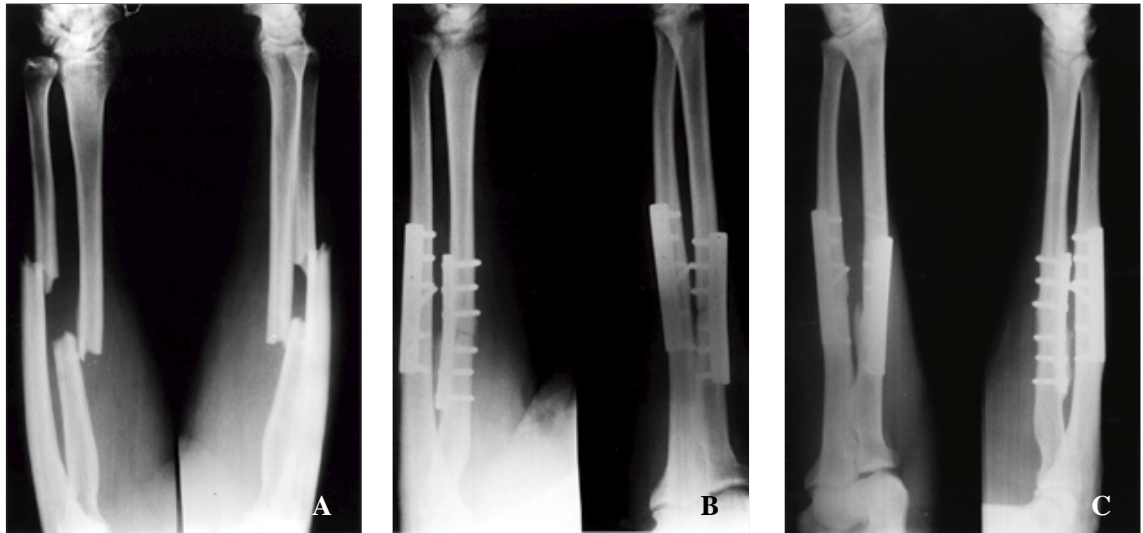
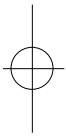


Fig 1A. A 36 years old male patient had transverse fracture of middle 1/3 of radius and oblique fracture of middle 1/3 of ulna by traffic accident.

1B. Open reduction and internal fixation with compression plate in radius and ulna.

1C. Radiograph at post operative 12 month shows that the fracture is well united.



(compression plate)
Janes⁴⁾

, Bagby³⁾ Bagby
2,14)

1/3 가 3

, Sargent Treipner²⁵⁾

, 가 double plate

1/3

8

2

2

가

Muller¹⁹⁾ 가
, Sage²³⁾

dressing
Anderson²⁾

Rush
Bradford Adams⁵⁾

,
I (25)
, II (27)

가

가

Steiman

가

Anderson²⁾

13.2

(p<0.05)

I 12.3 , II

가



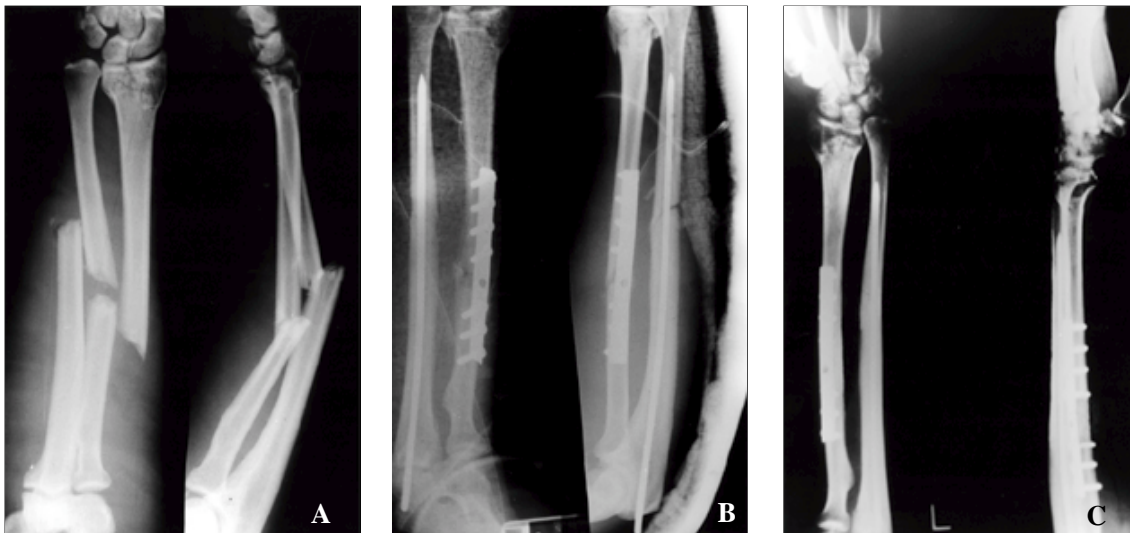
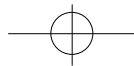


Fig 2A. A 53 years old male patient had transverse fracture of middle 1/3 of radius and oblique fracture of middle 1/3 of ulna by traffic accident.

2B. Open reduction and internal fixation with compression plate in radius and threaded Steinman pin in ulna.

2C. Radiograph at post operative 12 month shows that the fracture is well united.

가 Anderson²⁾ I 25 Kaufer Matthews¹⁶⁾ 10
21 (84%) , II 27 22 (81.5%)

, 20

($p > 0.05$).

, , 3

13

, , , , , 14 , 18

, 7,8,14,15,20,21). Peter²⁰⁾

9.3%

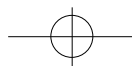
가

가
Knight¹⁷⁾

(8%) I 25 2
I 1 ,

1 4 , 2 . Richard²¹⁾

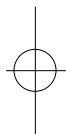
(10 12.5%) 가

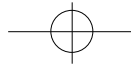


, (Steinman)

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Abstract

Treatment of Diaphyseal Fractures of the Forearm Both Bones

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Purpose : To analyze the clinical and radiological result of diaphyseal fractures of the forearm both bones treated by plate fixation and plate fixation with intramedullary nailing.

Materials and methods : We reviewed 52 cases of diaphyseal fractures of the forearm both bones in adults that were treated and the follow-up period was 1 year above. The first group(I), 25 cases(48.1%) were treated with plate fixation in radius and ulna, the second group(II), 27 cases(51.9%) were treated with plate fixation in radius and threaded Steinman pin fixation in ulna. we analyzed the results by average union time and functional result according to Anderson 's criteria.

Results : The mean duration of union was in the first group, 12.3 weeks in the second group, 13.2 weeks. By Anderson 's criteria, in the first group, 21 cases(84%) and in the second group, 22 cases(81.5%) had a good result. As complications in the first group, non-union 2 case, angulation deformity 1 case, rotational deformity 1 case and in the second group, non-union 4 cases, angulation deformity 2 cases.

Conclusion : We considered that satisfactory results can be obtained by rigid internal fixation with plates in radius & ulna and early mobilization in fractures of forearm both bones in adults and according to the type of fracture, Fixation with plate in radius and threaded Steinman pin in ulna was one of the proper methods.

Key words : Both forearm bones fractures, Plate fixation, Intramedullary nailing.