

< >

:
가
: 1999 12 17 20
1
:
148 17 20 11.5%
14 (9.5%), 3 (2.0%)
6, 8, 3, 3
Baumann 5 (3.4)
1 2
7.3 6.5 7.0 7.6
7.8 14 11, 1, 2
:
가
. 2 가

:
2240

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* 2002
* 2000

17 20

,가

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가

8,9,14,17,18)

24)

가

가

. 2

5

3

1999 12

2001 12

1

148

Table 1. Data of patient

Case	Age/sex	Dx	Type of Fx	Displacement of distal fragment	Treatment	Nerve injury	Cast period	Recovery time from nerve injury
1	8/M	supracondylar	Gartland III	posteromedial	ORIF	radial	4	Observe 7 weeks
2	5/M	supracondylar	Gartland III	posteromedial	ORIF	anterior interosseous	4	Observe 11 weeks
3	9/M	medial epicondylar			ORIF	ulnar	4	Observe 4 weeks
4	7/M	supracondylar	Gartland III	posteromedial	CRIF	radial	5	Observe 9 weeks
5	8/M	supracondylar	Gartland II	posteromedial	CRIF	radial	4	Observe 5 weeks
6	11/M	supracondylar	Gartland III	posteromedial	CRIF	ulnar / median	4	Observe 21/9 weeks
7	5/F	supracondylar	Gartland III	posteromedial	CRIF	anterior interosseous	4	Observe 3 weeks
8	6/M	supracondylar	Gartland III	posteromedial	CRIF	ulnar / median	5	Observe 5/5 weeks
9	8/M	supracondylar	Gartland III	posterior	CRIF	anterior interosseous	4	Observe 9 weeks
10	11/M	medial epicondylar			ORIF	ulnar	4	Observe 12 weeks
11	12/F	supracondylar	Gartland III	posterior	CRIF	ulnar / median	4	Observe 8/7 weeks
12	9/F	supracondylar	Gartland III	posterolateral	CRIF	ulnar	4	Observe 5 weeks
13	11/M	supracondylar	Gartland III	posteromedial	ORIF	radial	4	Observe 8 weeks
14	7/M	medial epicondylar			ORIF	ulnar	6	Observe 3 weeks
15	6/F	supracondylar	Gartland III	posteromedial	CRIF	radial	4	Observe 5 weeks
16	7/F	supracondylar	Gartland III	posteromedial	CRIF	radial	4	Observe 5 weeks
17	8/M	supracondylar	Gartland III	posteromedial	CRIF	ulnar	5	Observe 4 weeks

1 .
1 가
2 ,
(Table 1) 1 가가
(Table 2) 14 (82.3%),
3 (17.6%) . 14
6 , 3 , 5 , 20
3 . 3 1
3 7.3 (3-21) ,
7.8 (3-21) ,
7.0 (5-9)
6.5 (5-9) 가
7.6 (3-11)
가
가
8
Gartland¹¹⁾
Gartland 2 1 13
3 , 14 2
5 8
6
100%(6/6)
5 , 2 1
3 ,
3 ,
가 가2
2
8 9
2 ,
1
3
2
가
5 , 7 9
가 ,
86% , 1/2-2/3

Table 2. Displacement of the distal fragment and Nerve injuries

Nerve injuries	Displacement			Total
	Posterior	Posterolateral	Posteromedial	
Supracondylar fx				
One				
Radial			6	6
Median				
Ulnar		1	1	2
anterior interosseous	1		2	3
Combined				
ulnar & median	1		2	3
medial epicondylar fx				
Radial				
Median				
Ulnar				3
anterior interosseous				
Total	2	1	11	20

, T 1% 1.5).
 79 (53.3%) 가 , 100%(6/6)
 42 (28.3%), 7 , 66.6%(2/3),
 (4.7%), 9 (6.1%), 8 33.3 % (1/3),
 (5.4%), 1 , , 20%(1/5), 80%(4/5),
 . 1 33.3%(1/3)
 66.6%(2/3) . 가 2
 2). Brown³⁾ McGraw²⁰⁾ 12-16%, 14%(2/14) 1 7%(1/14)
 Lipscomb¹⁸⁾ 22% , , 11 79%(11/14)가
 ,
 Spinner²⁴⁾ ,
 Minkowitz²¹⁾, Cramer⁶⁾ 가
 6 .
 4,6,22) . D 'Ambrosia⁸⁾ 74 가 ,
 4.1%, 24)
 2.7% .
 11.5%(17/148) ,
 17.7%(14/79), 16).
 42.8%(3/7) . 17 20 4.7%(7/148), 42.8%(3/7)
 40.0%(8/20) 가 1
 , 30%(6/20), 가
 15%(3/20) . 15) 6
 3 , 12) 5
 1969 Spinner²⁴⁾ , McGraw²⁰⁾
 9 ,
 .
 가 . , Culp⁷⁾ 2.5
 3 2 . Jones Louis¹³⁾ 5
 가
 .
 7.3
 Culp⁷⁾ 50%,
 17% , 40%, 7.8
 60%, 74.1% , 7.0
 14.2% , 6.5 가
 McGraw²⁰⁾ , 7.6 .
 67% , 33%가 가
 ,
 . Fowles Kassab¹⁰⁾ 70% 8
 가

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Abstract

Neurologic Complications of Elbow Fractures in Children

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Purpose : We analyzed neurologic complications of the elbow fractures in children and evaluated clinical results of type of fractures, frequency of nerve injuries and displacement of fracture fragments and spontaneous recovery of each nerve injuries.

Materials and Methods : We analyzed 17 child-patients (20cases) with nerve injuries who were treated conservatively and followed up for at least 1 year since December 1999. and we analyzed type of fractures, differences between fracture type and nerve injuries, frequency of each nerve injuries and periods of spontaneous recovery of each nerves.

Results : There were all 148 elbow fractures in children. Children with neurologic complications were 17(20 nerves) and 14 in supracondylar and 3 in medial epicondylar fractures. There were 6 in radial nerve, 8 in ulnar nerve, 3 in median nerve and 3 in anterior interosseous nerve. Both ulnar and median nerve injuries were 3 patients. They were recovered spontaneously and mean periods of recovery was 7.3 weeks, 6.5 weeks in radial nerves, 7.0 in median nerves, 7.6 in anterior interosseous nerves, 7.8 in ulnar nerves and radial nerve recovery was most fast than any others. One patient with ulnar nerve injury who was diagnosed medial epicondylar fracture recovered 2 weeks after excision of nonunioned fragment. Among 14 supracondylar fractures, there was 11 posteromedial displacement, 1 posterolateral and 2 posterior. Most of them was displaced posteromedially.

Conclusion : All nerve injuries happened in supracondylar and medial condylar fractures and almost recovered. Nerve injuries in the supracondylar fractures was displaced fractures than nondisplaced simple fractures and displacement of fracture fragment and nerve injuries was not agreed with previous published books or papers. We recommend that observation is the appropriate way to manage these nerve injuries in most cases than immediate operation for excision.

Key words : Elbow fractures, Children, Neurologic complications

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