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Abstract

Antegrade Intramedullary Nailing in Traumatic Humeral Shaft Fractures

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Background: We evaluated the clinical and the radiological results of treatment for humeral shaft fractures by using an antegrade intramedullary nail.

Methods: Thirty-nine (39) cases of humeral shaft fractures treated with antegrade intramedullary nail were evaluated. Bone union was evaluated with simple radiographic findings, and a functional evaluation was done using the American Shoulder and Elbow Surgeons (ASES) score.

Results: The average duration until union was 14.1 weeks. On the functional evaluation using the ASES score, 15 cases were excellent, 19 cases good, 3 cases fair, and 2 cases poor.

Conclusion: We conclude that antegrade intramedullary nailing has a good clinical and radiological result for treatment of humeral shaft fractures.

Key Words: Humerus, Fracture, Antegrade intramedullary nail

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— 18 1 —

15 59.7 (19~79)

Table 1

가 가

(1- (Table 1).

3). , , , 30 7

(1~7), 5

(2~4). 4

가 AO . 20 type A,

(1,2,4-11). 17 type B, 2 type C(Fig. 1) . 12

3 1, 22 3 1, 5

3 1 (Table 2).

2 가

가 3

(12,13).

reaming 가 가 . 2 , 4 , 2 , 4 , 6 , 1

가 가 , 2 , 4

(4,6,10-12,14-21), bridging callus가

가

(Fig. 2). 4

, 6

(12). American Shoulder and

Elbow Surgeons(ASES) score 가

2000 2004 39

AO Unreamed

humeral nail (AO MATHYS, Switzerland)

Polarus plus(Acumed, USA)

2 3 cm

4 33

1.5 cm 84.6% , 3 (7.7%), 3

C-arm (7.7%) . 14.1 (11~33

) , 3

92.3%

15 (38.5%)가 , 19

C-arm (48.7%)가 , 3 , 2

(Ethibond #2)

8 mm 9 mm , 20 cm 가 , 3

24 cm , 3 2

6 가 39 (6~48 , , 1

25.7) 가 24 ,

— —

AO 3 1
가

A3, B1, B2

Table 1. Gender distribution and cause of humeral shaft fractures

Sex \ Cause of Fracture (number)	Traffic accident	Fall down	Sport injury, etc	Total
male	9	4	11	24
female	5	2	8	15
Total	14	6	19	39

Table 2. AO classification of the humeral shaft fractures

	Proximal third	Middle third	Distal third	Total
A1	1	5		
A2	3	7	3	20
A3	1			
B1	6	6	1	
B2	1	2		17
B3		1		
C1	1	1		2
C2				
C3				
Total	12	22	5	39



Fig. 1. Segmental humeral shaft fracture used antegrade intramedullary nailing. (A) preoperative finding, (B) postoperative finding.

, 1
가

가

. 3

8 , 6
가

(1,5,7).

2

, 1

(6,14,20,21).

1

가

(6,8,15,23).

가

(8,21,24).

가

가

가

가

가 (1,2,4-8,

(6,9,10,14,16-19,25,26,33),

10,11,21,22).

(27),

(28-30).

(31)

(32)

22).

(10,13,

(1).

가

(1,13).

plus
offset
가

AO UHN Polarus

crates Whittle(17), ikpeme(18)

100% 가



Fig. 2. Radiologic union of humeral shaft fracture after antegrade intramedullary nailing.

(17,19).

(17,19)

Bernard (34)

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