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[ ]

:

: 1998 2001

1 14 47 . 14 AO  
A2 6 , A3 1 , C1 3 , C2 4 3 .

: 14 Schatzker 가 5 , 6 , 3  
. 1 , 1

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: , ,

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\* 2002

blade plate, dynamic condylar screw, condylar buttress plate,  
double plate

11  
5~7  
C1, C2  
1~2  
가  
40~50  
5 cm  
14,15)  
1 cm  
(Fig. 1A~C).  
가  
가  
가  
1  
가  
14  
3~5 mm  
end cap  
1.  
1998 10 2001 6  
가  
1  
14 가 10 , 가 4 가  
35 72 47 2  
가 8 , 가 2 ,  
4 AO A2  
6 , A3 1 , C1 3 , C2  
4 , 3 (Gustillo II 4  
2 , IIIA 1 ) (CPM)  
3 , 2 ,  
3 , 2 , 가  
2 , 2 . 6 2). 12  
24 14 가  
2. 가 가  
가  
14 3 가 가  
가  
24 , ,



**Fig. 1A.** Initial roentgenogram of 45 year old male patient shows AO type C1 femur fracture.  
**1B.** The postoperative roentgenogram after intramedullary supracondylar nailing.  
**1C.** Roentgenogram at 9 months after the operation shows a complete union has been achieved.

**Table 1.** Schatzker classification

	Excellent	Good	Fair	Failure
Criteria	flexion loss less than 10°	loss of length not more than 1.2 cm	any 2 of the criteria in Good category	flexion to 90° or less
	no varus, valgus or rotary deformity	less than 10° varus or valgus		varus or valgus deformity, exceeding 15°
	no pain	flexion loss not more than 20°		joint incongruency
	perfect joint congruency	minimal pain		disabling pain no matter how perfect the X-ray
		(not more than one of the above)		(any of the above)

Schatzker<sup>12)</sup> 가

(Table 1)

가 .

Schatzker<sup>12)</sup> 가 가

11 5 , 6 , 3 .

AO A

7 (A2 6 , A3 1 ) 가 3 , 가 3 (Fig. 2A~C), 1 AO C 7 (C1 3 , C2 4 ) 2 , 3 , 2 .



**Fig. 2A.** Initial roentgenogram of 25 year old male patient shows AO type A2 femur fracture.  
**2B.** The postoperative roentgenogram after intramedullary retrograde nailing.  
**2C.** Roentgenogram at 6 months after the operation shows union has been achieved.



**Fig. 3A.** Initial roentgenogram of 45 year old male patient shows AO type C2 femur fracture.  
**3B.** Roentgenogram at 3 months after the operation shows distal locking screw loosening.  
**3C.** Roentgenogram at 8 months after the operation shows a complete union with 10 degree valgus.

1 , 1  
 , 1  
 . 1 2 가

**Table 2.** Results of supracondylar fractures

Case	Age (Y)	Sex	Fx* Type (AO)	Union Time (Mo)	Complication	ROM† (°)	Result (Schatzker)
1	72	F	A2	3		10~110	Fair
2	35	M	A3	3.5		0~120	Excellent
3	49	M	C2	4.5		5~95	Fair
4	47	M	A2	3.5		5~110	Good
5	44	F	C2	18	Delayed union	0~115	Good
6	36	M	A2	3		0~125	Excellent
7	56	F	A2	4		0~120	Excellent
8	45	M	C1	3.5		5~120	Excellent
9	62	M	C2	5	Prox. screw site Fx	10~110	Good
10	71	F	C1	3		0~115	Good
11	25	M	A2	4		5~115	Good
12	45	M	C2	6	Distal locking screw loosening	10~100	Fair
13	40	M	C1	4		5~120	Excellent
14	38	M	A2	4		0~115	Good

\* Fx = Fracture, † ROM = Range of motion

4 8 240 ml

(Fig. 3A~C), 1 C2

15  
18

13)

4 가

2 가 11,14)

가

4 (Table 2).

13,15)

8 , 6 가

95 Zickel , Huckstep , Derby

- Green-Seligson-Henry (GSH)<sup>4)</sup> 1987 AO
- C
- Henry<sup>5)</sup> 118 GSH Firoozbakhsh<sup>8)</sup>
- 3 ,
- 가 1.2 가 1.6
- , 가 가
- Danziger<sup>3)</sup>, Iannacone<sup>7)</sup>, Lucas<sup>9)</sup>
- 가
- 가
- Lucas<sup>9)</sup> 9 cm
- , Cavallo Strauss<sup>1)</sup>
- AO blade plate Richard supra-condylar screw Winter Dab-  
zie<sup>15)</sup> 25%,<sup>6,14)</sup> 0~5.8%,
- 20%
- Iannacone<sup>7)</sup> 41
- , Scheerlinck<sup>13)</sup> 16
- Lucas<sup>9)</sup> 34 1
- 3
- 14 1
- 6) 12
- 10
- , 가
- 308 Lucas<sup>9)</sup>
- 8 95
- 1 500
- ml<sup>11)</sup>, 1184 ml<sup>9)</sup>
- 240 ml
- Morgan<sup>10)</sup> -
- 4
- A2 1
- C2 2 ( 2 cm)
- 가

가 가

가

Scheerlinck

<sup>13)</sup>, Iannacone <sup>7)</sup>

4

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**Abstract**

## **Retrograde Nailing in Femur Supracondylar Fracture**

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**Purpose:** We retrospectively analysed the result of retrograde supracondylar nail fixation in femur supracondylar fractures and evaluate the clinical effectiveness of this method.

**Materials and Methods:** Since October 1998 we have treated 14 supracondylar fractures (AO type: A2-6, A3-1, C1-3 and C2-4) by retrograde intramedullary nailing technique through trans-patellar tendon approach from October 1998 to June 2001 and followed more than 1 year.

**Results:** Among 14 cases, 5 cases were excellent, 6 good, 3 fair according to Schatzker functional result. The complications were 1 distal locking screw loosening, 1 delayed union and 1 fracture around proximal locking site.

**Conclusion:** Even though the retrograde nailing may damage the knee joint because it is inserted by opening up the joint, it provided the necessary stable fixation with short operation time, low blood loss, minimal soft tissue injury. Thus we believe that retrograde nailing is useful operative technique for the management of supracondylar fracture in osteoporotic, comminuted fractures, or open fractures.

**Key Words:** Femur, Supracondylar fracture, Retrograde nailing

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