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The Journal of the Korean Society of Fractures
Vol.11, No.4, October, 1998

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95°Angled Blade Plate

= Abstract =

Intertrochanteric Fractures of the Femur Treated with 95°Angled Blade Plate in over 60 Years Old Patients

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Surgical stabilization is the treatment of choice for both stable and unstable intertrochanteric fractures. Unfortunately, the elderly patient has poor quality of bone. Because of osteoporotic bone, management of unstable comminuted fracture is very difficult in reduction and fixation of fracture. Now the sliding compression hip screw is the device used for hip fracture stabilization most commonly, and also intramedullary hip screws have been used widely. These device have many advantages in the treatment of intertrochanteric fracture. But fixation failure occur not uncommonly in osteoporotic comminuted unstable fracture. For the purpose of stable fixation in osteoporotic femur neck and head, we used the 95° angled blade plate(=condylar plate). We experienced that the blade portion of condylar plate offer a good fixation stability. Clinical results were good in 31 cases of intertrochanteric fracture treated with condylar plate. There was no cutting out of head, excessive shortening and excessive varus deformity. Most of all cases ,except one, were united within average 4months.

We consider that using the condylar plate for osteoporotic unstable intertrochanteric fracture

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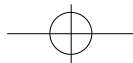
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would be another good modality if surgeons have a surgical skill.

Key Words : Femur, Intertrochanteric fracture, 95 °angled blade plate

31 ,
1
가 가 6 36
18.4 . 60
가 91 71.4 가 12 ,
가 19 (1:1.6) 가 .
가 15
가
D 'Aubigne
가
가 1.
가 3
가
Boyd-Griffin Tronzo , Boyd-
Griffin II Tronzo III
Tronzo III 22
70%
2.
95 °angled blade
plate(condylar plate) Singh²⁷⁾
Grade I. II. III (low grade), Grade IV, V, VI
(high grade) , Grade III
23 74% 가
3.
가
1995 1 1997 12 Ganz 130 °angled blade plate가

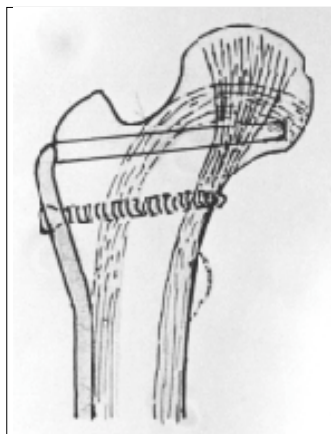
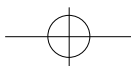


Fig 1. Ideal position of the condylar plate in the proximal femur.

Table 1. Blood loss and transfusion

Loss of blood	No(%)	Transfusion	No(%)
100 500ml	14(45.1)	None	10(32.2)
500 1000ml	11(35.5)	1 pint	8(25.8)
1000ml	6(19.4)	2 pint	6(19.4)
		3 pint	7(22.6)

7hole plate가 21

4.

가

60

185

115

200-1400ml

550ml

packed RBC

1pint가 8

, 2pints가 6

, 3pints

가 4 , 4pints 3

(Table 1).

가

95° angled blade plate

U- blade

가

5.

가

C-

arm fluoroscope

(Fig 1). blade 60mm가 13 , 70mm가 12 ,

80mm가 6 . plate

4

2-3cm

. blade

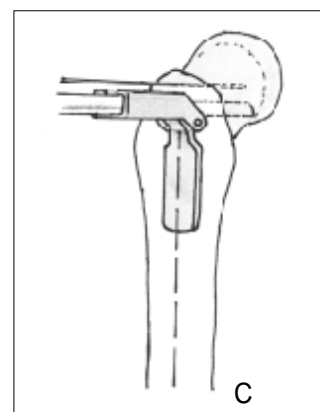
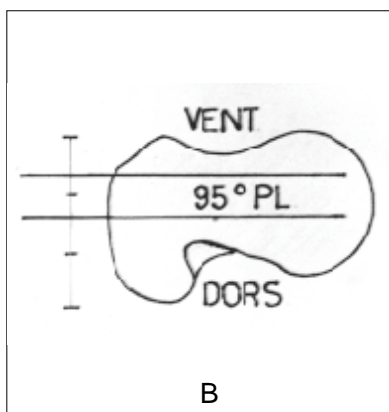
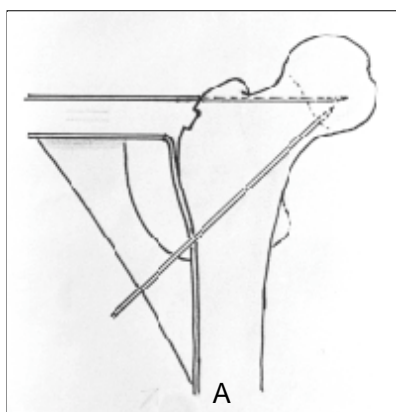
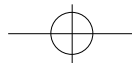


Fig 2. How to determine the position of the proximal femur.

A. The neck axis and the angle between the blade and the shaft axis.

B. Point of entry in the greater trochanter is in the anterior half its lateral bulge.

C. The rotation of the blade about its long axis.



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, ,
 , , 95°
 K-
 K-
 (Fig 2-A). , 가
 (1/3 1/3 가)
 (Fig 2-B), , (chiesel)
 seating
 chiesel guide (Fig 2-C).
 가
 4 blade-plate
 blade-plate (calcar femorale)
 blade-plate
 (buttress) , 가
 가 1 , 2-4 가 2 , 4-6 가 9 , 6-8 가 18 ,
 43 (Table 2).
 1.
 7 ,
 3-6 ,
 8-10 ,
 가 , 10
 가 1 , 11-15 가 15 , 16-20 가 11
 , 20 4 15.2 (Table 3).
 2.
 X- - 가 1- 가 5 1
 1

Table 2. Hospital stay

Hospital stay	No(%)
2wks	1(3.3)
2 4wks	2(6.4)
4 6wks	9(29.0)
6 8wks	19(61.3)

Table 3. Results of fracture healing

Healing time	No(%)
10 wks	1(3.3)
10 15 wks	16(51)
16 20 wks	11(36.6)
20 wks	3(10)

2cm가 2 (6.6%), 2cm 1 (3.3%)
 1-2cm가 4 (13.3%), 2cm 1 (3.3%)
 , 1cm 가 22 (73.3%)
 10° 가 6 (20%), 20°
 가 1 (3.3%) , 10° 가 1 (3.3%)
 22 (73.3%)
 (Table 4).

3.

가 가
 18 (60%), 가 가 11
 (36.6%) , 가
 1 . 가 11
 (36.6%), 가 2 (6.6%) ,
 15
 (50%) , 12 (40%),
 2 (6.6%), 1 (3.3%)
 (Table 5).

4.

31 3 . 5
 1
 5 1
 1

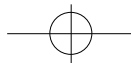


Table 4. Radiological status

	Lengthening(%)	Shortening(%)		Varus(%)	Valgus(%)
None	23(74)	None	23(74)		
1 2cm	2(6.6)	4(13.3)	10 °	6(20)	1(3.2)
2cm	1(3.2)	1(3.2)	20 °	1(3.2)	0

Table 5. Clinical results

Walking ability	No(%)	Hip mobility	No(%)	Pain	No(%)
No aid	19(61.2)	Without limitation	18(58)	Pain free	16(51)
Cane	11(35.4)	Slight limitation	11(35.4)	Slight pain	12(39)
Unable to walk	1(3.3)	Gross limitation	2(6.6)	Moderate pain	2(6.6)
				Severe pain	1(3.3)

condylar plate

12

1.

1

74

Tronzo

III, Boyd-Graffin

II

, Singh index

Grade III

(Fig 3-A).

4

95° angled blade plate

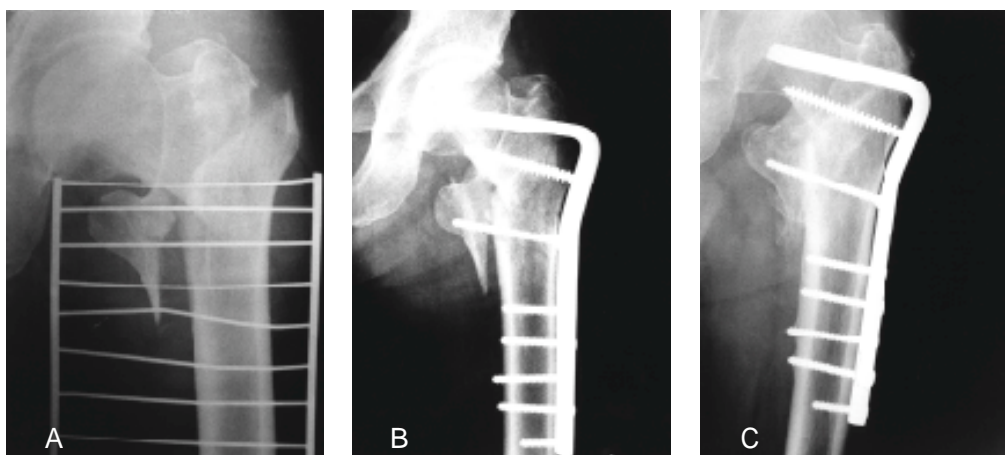


Fig 3-A. A 74 years old male with intertrochanteric fracture(Tronzo type III, Boyd-Graffin type II, and Singh index III) after slip down.

B. Immediate postoperative radiograph shows good fixation of condylar plate.

C. Follow-up X-ray shows good union at postoperative 10 months.

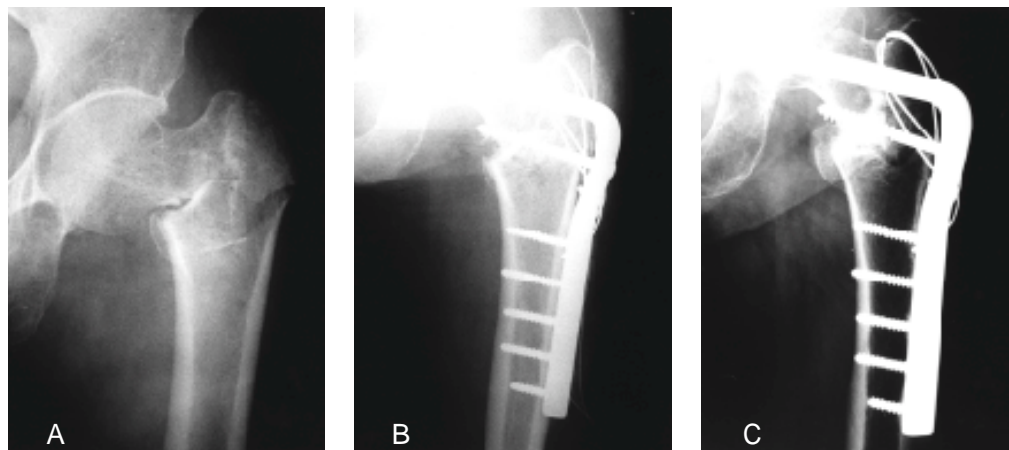
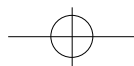


Fig 4-A. A 75 years old female with intertrochanteric fracture(Tronzo type II, Boyd-Graffin type II, and Singh index III) after slip down.

B. Immediate postoperative radiograph shows good fixation of condylar plate, and fixed the greater trochanter with wires.

C. Follow-up X-ray shows good union at postoperative 9 months.

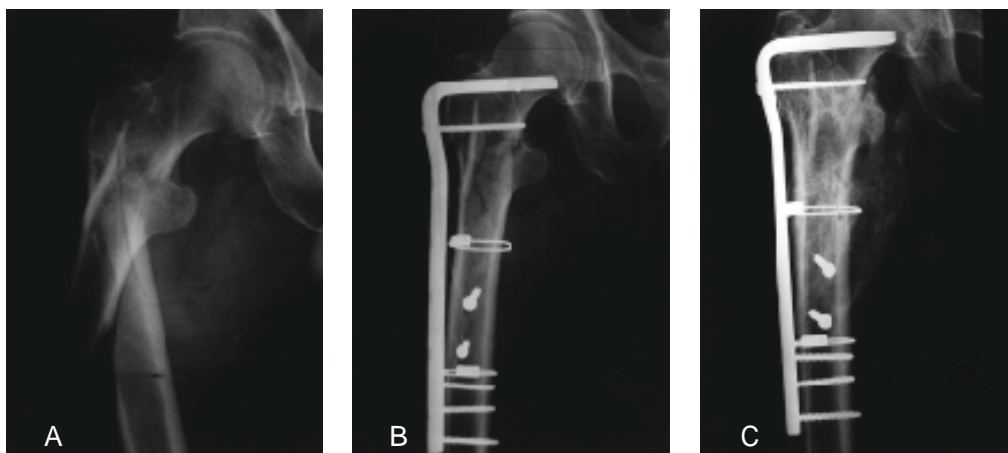
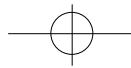


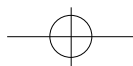
Fig 5-A. A 65 years old male with intertrochanteric fracture(Tronzo type V, Boyd-Graffin type IV, and Singh index IV) after traffic accident.

B. Immediate postoperative radiograph shows good fixation of condylar plate.

C. Follow-up X-ray shows good union at postoperative 13 weeks.

reduction , anatomical 2.
(Fig 3-B). 12 7† 75 Tronzo
10 II , Boyd-Graffin II
(Fig 3-C). , Singh index Grade III (Fig 4-A). 4

[illegible]



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가

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가

가

,

,

,

2)

23%

가

가

가

4)

Harrington¹²⁾

가

. Smith Peterson

triflanged nail 1937

Thornton

가

, Neufeld

blade

21). 1940

Austin Moore²¹⁾가

130° angled

95° angled blade plate

blade plate

blade-plate

condylar

blade

,

plate

plate

17,29),

1941 Jewett one-piece nail

reverse-obliquity

95° blade plate가

18).

ASIF

. Ender condylo-cephalic nail

, tension-band

Jacobs

13)

cadaver

,

95° blade plate

tension-band

24),

maximal strain

가

가

,

,

strain

Jewett nail-plate

compression hip screw

18). Pugh²³⁾, Schumpelick

,

(impaction)

Jantzen²⁶⁾

16), blade U-

가

가

. Ganz¹¹⁾

130° angled blade

(lag screw)

plate

95° angled

(cutting-out)

,

blade plate

가

. U

blade

9,14,19).

(compression

trabecula)

(tension trabecula)가

가

(gamma nail)

가

11,22).

95° angled blade plate

가

5,8),

(buttress)

가

1

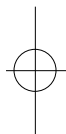
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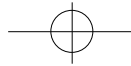
5).

가

가

가





- 95° angled blade plate
- 2558, 1993.
- 50 , :
- . blade calcar 1-2
22),
Gamma nail Hip screw
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- 6) , , : 60
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