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Dynamic Condylar Screw(DCS)

= Abstract =

A Clinical Analysis of Distal Fracture of the Femur with DCS Fixation & Early Exercise

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Fracture of the distal femur is not as common as femoral shaft or hip fracture. A widening medullary canal, thin cortex, osteopenia make open reduction and internal fixation difficult, even for an experienced surgeon. The surgical treatment for supracondylar femoral fractures has a better outcome because of improved implants, fixation technique and preoperative planing during the past two decades. We reviewed 33 cases of fractures of the distal femur at Soon Chun Hyang Gumi Hospital from June, 1992 to March, 1996 with minimum 12 months follow up. Following results were obtained.

1. In age distribution, fourth decade was most frequent.
2. The most common cause of these fractures was traffic accident.
3. The most common fracture type was type C by Muller classification.
4. Complication were as follows : pain, knee joint stiffness, bursitis, skin infection etc.

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5. The satisfactory results could be obtained by the open reduction and rigid internal

fixation followed by early R.O.M. exercise of knee joint

Key Words : Distal femur. Fracture. Dynamic condylar screw

2.

가 16 가 , slip down 9 ,
8 (Table 2).

Table 2. Cause of Injury

Cause	Male	Female	Cases(%)
T. a.	13	7	20(61)
Fall down	7	2	9(27)
Slip down	1	3	4(12)
Total	21	12	33(100)

* T. a. : Traffic accident

3.

Muller Type A
15 , Type B 0 , Type C 18 (Table 3).

Table 3. Classification of Fracture (By Muller)

Type	Case
A	15
B	0
C	18

4.

가 ,
(Table 4).

Table 1. Age & Sex distribution

Age	Male	Female
20 - 29	5	
30 - 39	10	6
40 - 49	5	2
50 - 59	1	1
60 - 69		
70 - 79		2
80 - 89		1
Total	21	12

가
1996 5 1 1992 6
가가 33
DCS

1.
27 86
45 . 21 , 12
(Table 1).



516 •

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Table 4. Associated injury with Fracture of the Distal Femur

Site	Ipsilateral	Contralateral	Total
Radius Fx.	5	3	8
Tibia Fx.	3		3
Patella Fx.	8		8
Fibular Fx.	5		5
Acetabular Fx.		2	2
Vastus muscle rupture	3		3
Pubic bone Fx.	3		3
Hemoperitoneum		1	1
Skull Fx.		3	3
Mandible Fx.	3		3

* Fx. : Fracture

2..

13 , 5 , 3 ,
4 (Table 6).

Table 6. Complication

Complication	Cases
Pain	13
L.O.M	5
Bursitis	4
Skin infection	3

* L.O.M : Limitation of Motion

3.

28 (85%) 90 °
(Table 7).

Table 7. The Range of Motion of Knee

Grade	Cases(%)
Full	18(62)
90 °~110 °	10(23)
50 °~90 °	3(15)
< 50 °	2

가

Mize

1

가 10

, 4 가 13 , 1
가 3 , 2 가 7

1.

33 Schatzker

가 가 18 , 가 10 , 3 ,
2 (Table 5).

Table 5. Result of Treatment(by Schatzker)

Excellent	18
Good	10
Fair	3
Failure	2

1.

36

, Gustillo-Anderson Type I
Muller Type C-3
Mize DCS
(Fig 1-B), 4

(Fig 1-A).

7

, 2

, 5

, 20

, 26

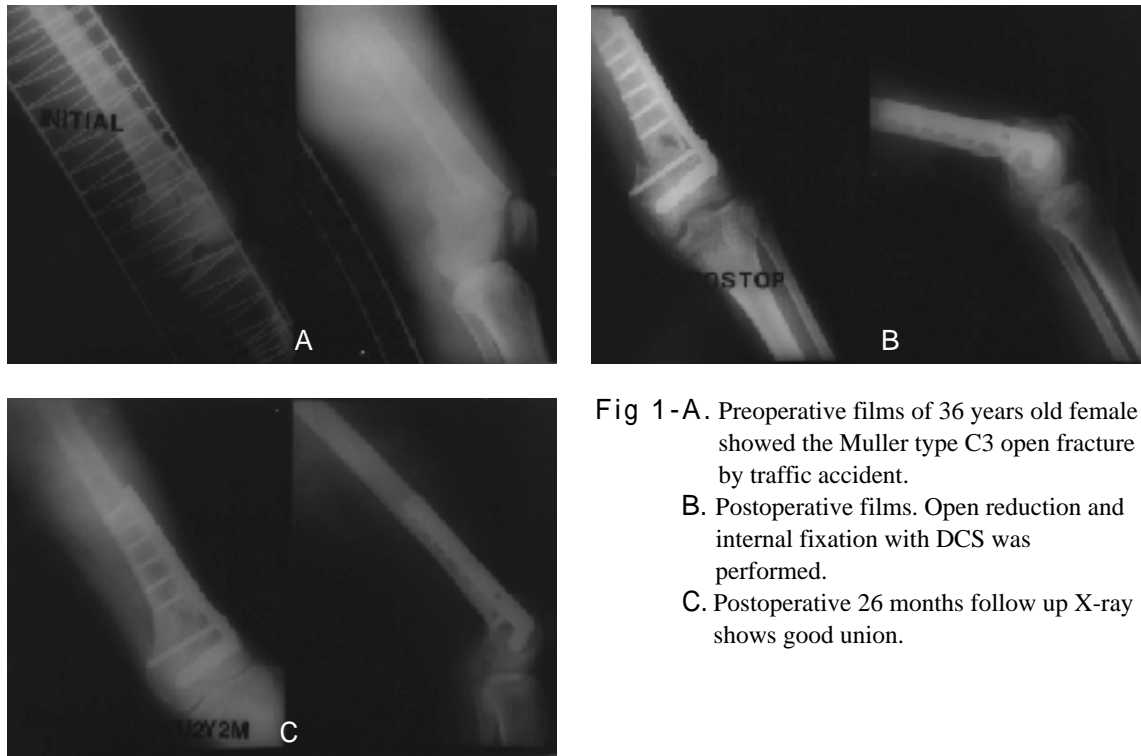


Fig 1-A. Preoperative films of 36 years old female showed the Muller type C3 open fracture by traffic accident.
B. Postoperative films. Open reduction and internal fixation with DCS was performed.
C. Postoperative 26 months follow up X-ray shows good union.

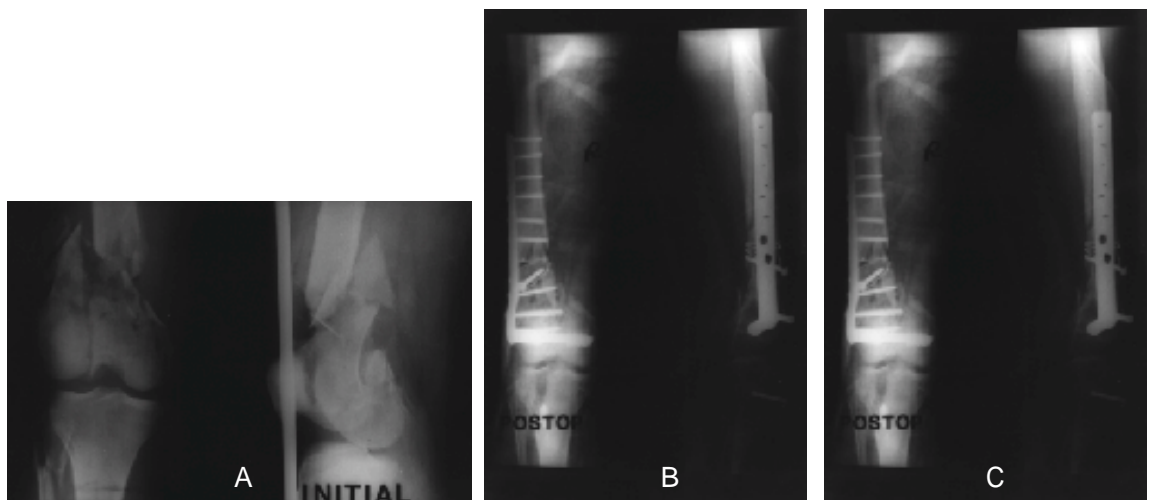


Fig 2-A. Preoperative films of 31 years old female showed the Muller type C3 open fracture by traffic accident.
B. Postoperative film. Open reduction and internal fixation with DCS was performed.
C. Postoperative 27 months follow up X-ray shows good union.

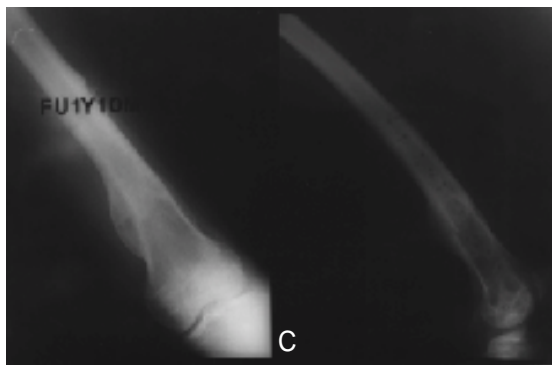
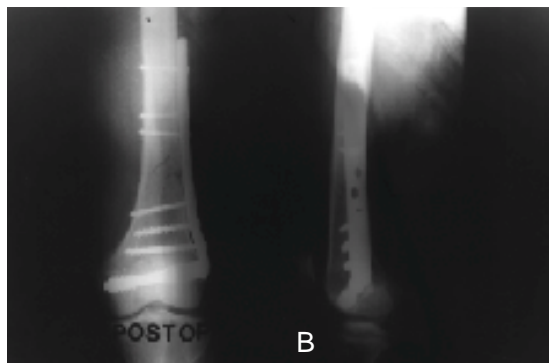
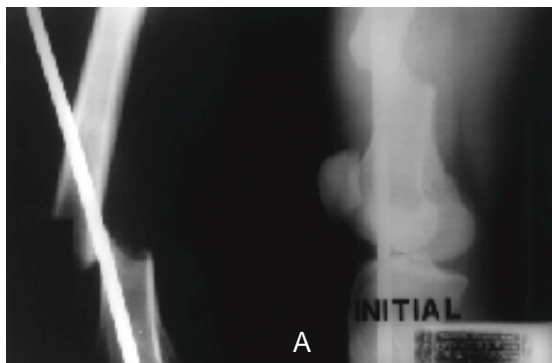
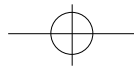


Fig 3-A. Preoperative film of 44 years old male showed the Muller type A1 closed fracture by fall down.

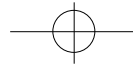
B. Postoperative film. Open reduction and internal fixation with DCS was performed.

C. Postoperative 22 months follow up X-ray shows good union.

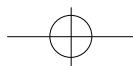
DCS . 28
0°; 130°
Schatzker 가 (Fig 1-C).
2.
31
, Gustillo-Anderson Type III-B
Muller Type C-3
(Fig 2-A). 10 Mize DCS
(Fig 2-B), 10
, 13
. 6
, 18
27
DCS . 2 6
0°; 110°
Schatzker 가
(Fig 2-C).

3.
44
4 Muller Type A-1 (Fig 3-A).
DCS
(Fig 3-B), 7
, 14
, 5
, 20
, 22
DCS . 2
0°; 130°
Schatzker 가 (Fig 3-C).

10 - 15%



연구자	연도	연구 방법	결과
Neer ²²⁾ , Schatzker ²⁵⁾ , Brooker ¹⁵⁾	1940	관상골절에 대한 수술적 치료	관상골절에 대한 수술적 치료의 중요성을 강조함
Lambert ²⁶⁾ , Seinsheimer ²⁷⁾ , Healy ²⁸⁾	1960	관상골절에 대한 수술적 치료	관상골절에 대한 수술적 치료의 중요성을 강조함
Muller ²¹⁾	1970	관상골절에 대한 수술적 치료	관상골절에 대한 수술적 치료의 중요성을 강조함
Stewart ³²⁾ , Neer ²²⁾	1970	관상골절에 대한 수술적 치료	관상골절에 대한 수술적 치료의 중요성을 강조함
Mooney ²⁰⁾	1970	관상골절에 대한 수술적 치료	관상골절에 대한 수술적 치료의 중요성을 강조함
Schatzker ^{25,26)} , Slatis ³⁰⁾ , Olerud ²³⁾ , Chiron ¹²⁾ , Shelton ^{14,19)}	1970	관상골절에 대한 수술적 치료	관상골절에 대한 수술적 치료의 중요성을 강조함
Jhonson ¹⁶⁾ , Hicken ¹⁶⁾	1970	관상골절에 대한 수술적 치료	관상골절에 대한 수술적 치료의 중요성을 강조함
Cast Brace	1970	관상골절에 대한 수술적 치료	관상골절에 대한 수술적 치료의 중요성을 강조함
Olerud ²³⁾	1970	관상골절에 대한 수술적 치료	관상골절에 대한 수술적 치료의 중요성을 강조함
Mize ¹⁸⁾	1970	관상골절에 대한 수술적 치료	관상골절에 대한 수술적 치료의 중요성을 강조함
J	1970	관상골절에 대한 수술적 치료	관상골절에 대한 수술적 치료의 중요성을 강조함
Olerud	1970	관상골절에 대한 수술적 치료	관상골절에 대한 수술적 치료의 중요성을 강조함
Neer	1970	관상골절에 대한 수술적 치료	관상골절에 대한 수술적 치료의 중요성을 강조함



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- 3 (7.6%)
- Stewart³²⁾, 3) , , : , 25 : 1341-1350, 1990.
- Neer²²⁾, Olerud²³⁾, Schatzker Lambert²⁶⁾ 가
- Shelbourne Brueckmann²⁸⁾ 가
- Schatzker Lambert
- Schatzker Lambert
- Schatzker
- 75%, Healy Brooker 93.6%
- 85%
- 1992 6 1996 5
- 1
- 가가 33
1. 30 가가 .
2. 가 61% 가
3. Muller Type C가 .
4. Schatzker 가 85% ,
5. , , ,
6. .
- 1997.
- 3) , , : , 25 : 1341-1350, 1990.
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