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= Abstract =

## Distal Femoral Physeal Injury in Adolescence

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The purpose of this study was to evaluate the results of distal femoral physeal injury in adolescence after various treatment 5 which had been performed for the last 4 years. This study consisted of 9 distal femoral physeal fractures from August 1993 to May 1996. Average length of follow up was 21 months. We evaluated the functional status such as range of motion, instability, pain and sports activity. They showed no abnormalities. We also assessed the lateral distal femoral angle, mechanical axis deviation, femorotibial angle and leg length discrepancy using orthoradiogram. 4 Cases showed the lateral distal femoral angle differences(more than  $5^\circ$ ), 7 cases showed the mechanical axis differences(average : 11.8mm), 6 cases showed the femorotibial angle differences(average :  $5.8^\circ$ ) and 6 cases showed the leg length

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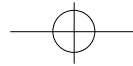
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discrepancy(average : 4.6mm). So we carefully concluded that the adequacy of the reduction is the most important prognostic factor and there are some problems in radiological angle difference despite the anatomical reduction.

**Key Words** : Femur, Distal Physeal Injury, Adolescence.

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가 가  
70%,  
37%,  
9mm  
3,7), 14-16 , 16-18  
가 가 13 , 3,7),  
가 15 가  
1.  
1993 8 1996 5  
11 -15  
Riseborough 11  
12 1 가가

**Table 1.** Pertinent data of 9 cases.

Case No.	Sex	Age (yrs)	S-H type	Side	Treatment	Follow Up (months)	LDFAD (degree)	MAD (mm)	FTAD (degree)	LLD (mm)
1*.	M	14	II	Rt.	CR+cast	24	7	19	7	10
2.	M	14	II	Rt.	CRIF	16	1	30	15	9
3.	M	13	II	Rt.	CRIF	18	0	0	0	5
4.	M	14	II	Lt.	CRIF	18	2	16	12	5
5.	F	13	II	Lt.	ORIF	18	3	5	4	5
6*.	F	14	II	Lt.	ORIF	18	10	26	5	0
7.	M	15	I+III <sup>‡</sup>	Rt.	ORIF	48	4	0	0	0
8.	M	15	IV	Rt.	ORIF	33	5	9	7	5
9.	M	15	II	Lt.	ORIF	20	5	2	2	2

S-H : Salter-Harris

LDFAD : Lateral Distal Femoral Angle Difference

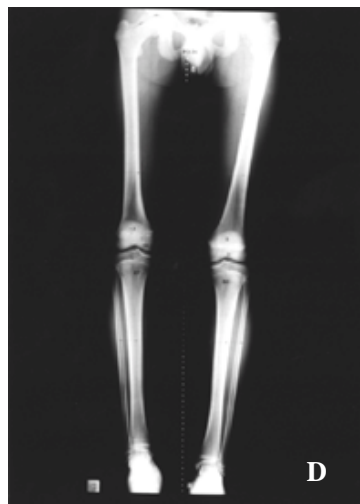
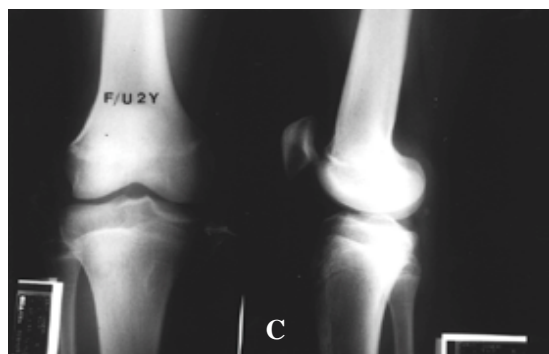
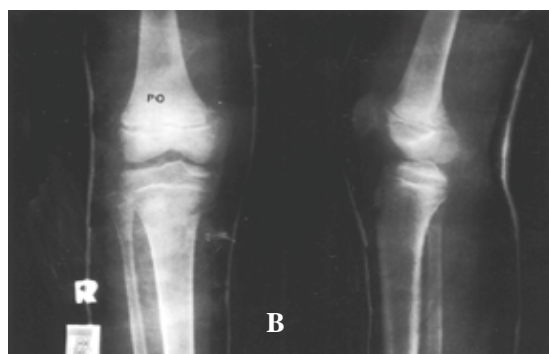
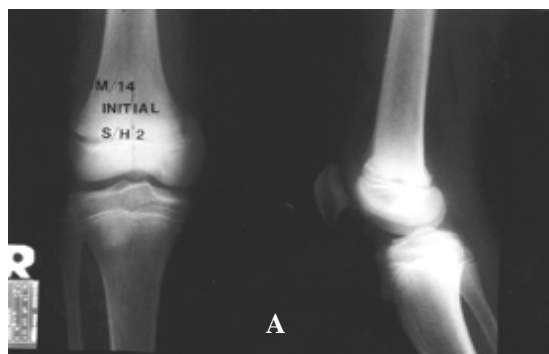
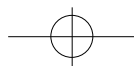
MAD : Mechanical Axis Deviation

FTAD : Femoro-Tibial Angle Difference

LLD : Leg Length Discrepancy

\* : No anatomical reduction.

‡ : type I and type III at the same time.



**Fig 1-A.** Initial radiography showing a 14 years old male patient with distal femur fracture.

**1-B.** Postoperative reontgenogram with closed reduction and cast shows no anatomical reduction.

**1-C.** Postoperative 24 months reontgenogram shows bone union and varus deformity.

**1-D.** Postoperative 24 months orthoradiogram shows 10mm leg length discrepancy and 7 degree lateral distal femoral angle difference.

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1 4 4 2 11  
. 12 7 15 11  
14 5 . 9 가7  
, 가2 , 5 , 4  
(Table 1).

2.

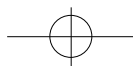
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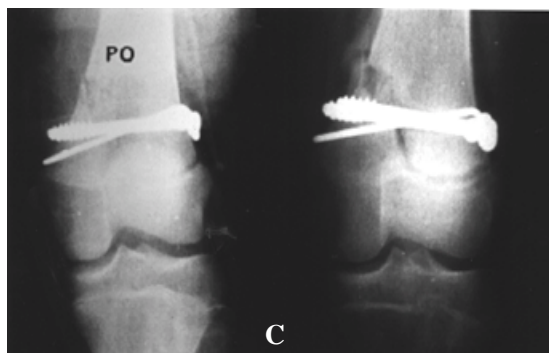
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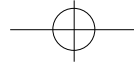
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**2-F.** Postoperative 18 months orthoradiogram shows no leg length discrepancy and deformity.



femoral angle)



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Salter-Harris 2

7 ,

가1 , 1 . 2

Salter-Harris 2 7 , 3 7 °

1 가1 4 10mm (Fig 1-

1 . 2 6 A,B,C,D).

, 3 (Ogden 7 ) 2

7 13

가 1 . 2

7 Salter-Harris 2

2 10 °

26mm, 5 °

, 2 1 3

1 6

5 ° 3 °

가 5 (55%), 5 ° 4 (45%) 5mm, 1 °

, 4.2 ° (Fig 1). (Fig 2-A,B,C,D,E,F).

2 가 7 ;10 °

. 1

- 6 (67%)

4 °15 °

5.8 ° (Fig 2).

가 1 2mm 6 1,2,3) 가

(67%) 5mm 30mm

11.8mm (Fig 3).

(Leg Length Discrepancy) 6 (67%) 5mm-10mm 5,6) Aitken Magil<sup>2)</sup> 9 4

4.6mm (Fig , Lombardo<sup>9)</sup> 34 8 Stephens<sup>15)</sup> 20 5

4).

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(Table 1).

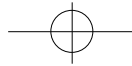
Salter-Harris 2

7 가 6

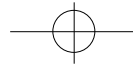
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