



15, 2, 2002 4

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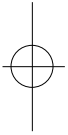
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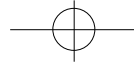
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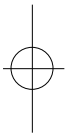
(chi-square test, $p < 0.05$).

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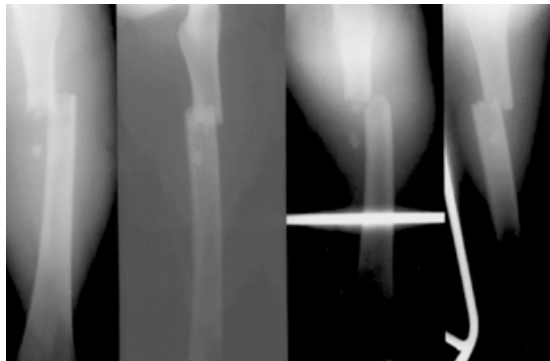


Fig. 1 Initial radiograph shows a proximal femoral shaft fracture of a 11 year-old boy with liver contusion. Skeletal traction was applied for 4 weeks.



Fig. 1 At 10 weeks, the union was gained in hip spica cast. At 48 months of follow-up a significant residual malalignment with 15 ° varus tilt and 5 ° anterior angulation was seen. This patient also showed significant leg length discrepancy (15mm shortening) with limping gait.

Table 1. The outcomes of conservative and operative groups according to the Flynn's criteria

	Excellent result	Satisfactory result	Poor result	Remarks
Leg length inequality (Conservative/Operative)	<1.0 cm (15/21)	<2.0 cm (4/0)	>2.0 cm (0/0)	p<0.05 (Fisher exact test)
Malalignment (Conservative/Operative)	<5 degrees (12/22)	<10 degrees (8/5)	> 10 degrees (4/0)	p<0.05 (Chi-square test)
Pain (Conservative/Operative)	none (24/27)	none (0/0)	present (0/0)	* pin site infection
Complication (Conservative/Operative)	None (22/23)	Minor & resolved (2/3 [†])	Major lasting (0/1 [‡])	[†] pin irritation [‡] broken nail
Patient results (n=24/27)	9/19 (37.5%/70.3%)	11/7 (45.8%/25.9%)	4/1 (16.7%/3.8%)	p<0.05 (Chi-square test)

Children exceeding the criteria in any category were assigned the worse result.

In viewpoint of leg length discrepancy, 3 cases with bilateral fractures in each group and 1 case with broken nail in operative group were excluded.

(Fisher exact test, p<0.05). 5mm

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2

(chi-square test, p>0.05).

Flynn

가

37.5 %, 70.3%,

45.8%, 25.9%,

16.7%

, 3.8%

(Table

1).

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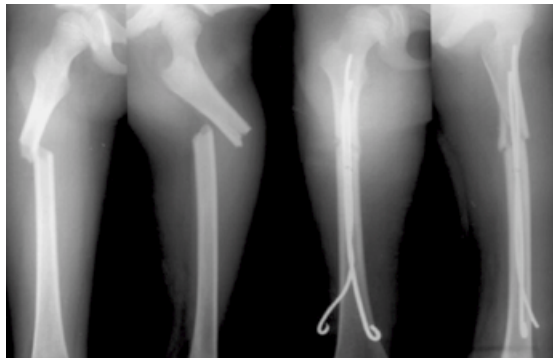
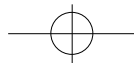


Fig. 2- A 7 year-old girl had a proximal femoral shaft fracture with skull fracture. Retrograde flexible intramedullary nailing was done with a good alignment.

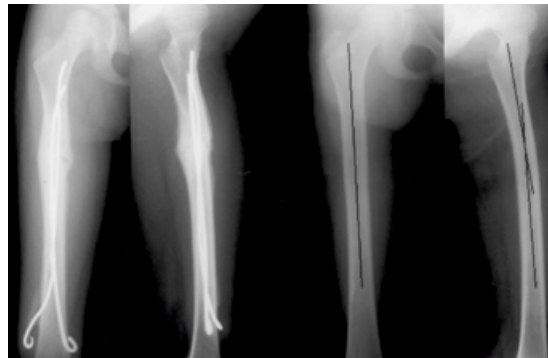


Fig. 2- The union was gained at 8 weeks after operation. At 32 months of follow-up, the patient had neither leg length discrepancy nor malalignment.

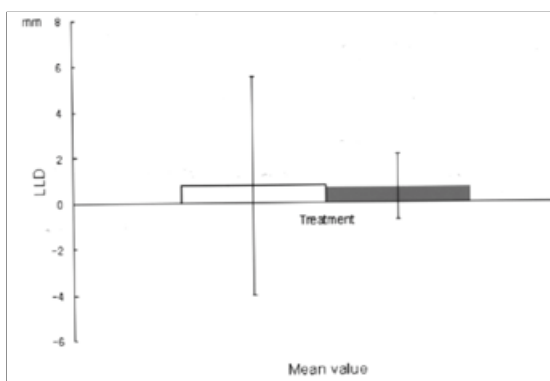
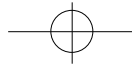


Fig. 3. Mean value of leg length discrepancy at the last follow-up. White box indicates the group with conservative treatment and dark box indicates the group with operation. Mean value and standard deviation of leg length discrepancy of conservative group is larger than that of operation group.

26.8 , 7.5 (load-sharing) 가 가 가
10.8 , 4 2 가 4.9)
10mm 가
가 (overgrowth) 가 가
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8.14), 6.20,23), .Corry Nicol⁷⁾ 4
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296 • / 15 2

3

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(Figure 3), 10mm

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3,13,19,21)

5,12,15,17)

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9), 10mm

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Greene⁽¹⁰⁾ 10

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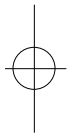
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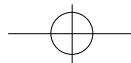
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Abstract

Treatment of femoral diaphyseal fractures in children : Comparison between conservative treatment and retrograde flexible intramedullary nailing

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Purpose : To compare clinical outcomes and complications between pediatric patients with femoral shaft fracture who had undergone conservative treatment and retrograde flexible intramedullary nailing.

Materials and Methods : 51 cases of 46 pediatric patients who had femoral shaft fracture were retrospectively studied. Hip spica cast was applied 3 ~ 6 weeks after traction in 24 cases of conservative treatment group and closed reduction and internal fixation with flexible nails were performed in 27 cases.

Results : Neither pain, limitation of joint motion, nor nonunion was reported in both groups. In radiologic evaluation, 4 cases of angulation more than 10 degrees were observed in conservative treatment group and none of surgical treatment group. In leg length discrepancy(LLD) over 10 mm, there was none in surgical treatment group, but 4 cases were seen in the conservative group. Two cases of limping were observed only in the conservative group. Mean time to weight bearing was earlier in surgical treatment group(7.5 weeks) than that in the conservative group(10.8 weeks).

Conclusion : As treatment of pediatric femoral shaft fracture, retrograde flexible intramedullary nailing had less complications such as LLD and angulation and enabled earlier rehabilitation than conservative treatment.

Key Words : children, femur shaft fracture, conservative treatment, retrograde flexible intramedullary nailing, leg length discrepancy

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