

# (PFN)

가

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< >

: (PFN)

: 2000 6 2001 5  
26

가

가

: 가 72 , 0.54unit 26 24 4  
2 가 6

4.4mm

가

3 10mm

72.2

2 hip pin

가

가

cut-out

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:

4 (705-718),

가

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\*

2001

(Proximal Femoral Nail,  
PFN)(Synthes, Paoli, Switzerland)

가  
Singh's

index 3.7

가

small PFN 5cm 가

가

가  
.4

Simmermacher<sup>15)</sup>  
PFN

PFN 가

2000 6 1 60 hand reamer flexible

PFN

2001 5 1  
29 2 1  
가 2 26  
가9 가17 hip pin  
60 92 hip pin  
73 20  
가 4

2 AO-Muller<sup>10)</sup> A1  
16 A2 7 A3 3 modified  
Evans(by Jensen)<sup>7)</sup> I 3 ,II 11 ,III 가 3  
4 ,IV 8 ,V 0  
14 12  
26 19 (73%) 가 가 20 1  
7 가 가 2 3 4 1

가 가 PFN , cut-out, ,

6 ,3 , 24 72 (45-150 )  
 0.54 ± 1.07unit . 15  
 11  
 . 24 92%

24 4 2 가 6  
 2

가 가 1 1  
 가 가  
 , 4 가  
 , 6 , 4.4mm(0-17mm) . 3  
 10mm

3.14 ± 3.21mm,  
 5.91 ± 5.49mm  
 (p=0.203).  
 가 72.2  
 84.2

14) 가 Shin 가 39.4 (p=0.219)  
 Skovoron<sup>16)</sup> 가 (p=0.000), (p=0.818), 1.4  
 가

2 4 가  
 가 1.0  
 9 가 2.6 (p=0.006).  
 가 (p=0.744), (p=0.067)

Wallis test Mann-Whitney test, Kruskal-  
 p 0.05 1 hip pin

가 PFN hip pin . 1 가  
 75mm가 60mm 6.5mm  
 hip pin

13mm 가 PFN 가

가 가 ,

가 . 10mm 가

3 6 hip pin 2 small

가 PFN 가

cutting out PFN PFN

가 92% 4 2

가 6

가 3,8,11) PFN

가 가

가 3,9,14), 1980 . Park Kim<sup>11)</sup>, Bridle<sup>2)</sup>, Bess Jolly<sup>1)</sup>

가 Kwun<sup>8)</sup>, park<sup>12)</sup>

가 가 72 3,5,11)

가 가 13 83.5 ± 23 , 13 93.5 ± 33 (p=0.363).

가 3,8,9,14) 가

cut-out 1,2,8,11,13,14) PFN

0.54 ± 1.07uint 26 20

가 가 4 2

2unit  
 . Park Kim<sup>11)</sup>

0.8unit  
 Han Yu<sup>5)</sup>

0.7unit  
 가

PFN  
 가

가  
 가

PFN  
 가

가  
 가

10mm  
 4.4mm  
 가 3

10mm 가  
 4,17) cutting out

Park Kim<sup>11)</sup>  
 1,2,8,11,13,14)

3,6)  
 PFN

3 12mm, 13mm, 17mm  
 PFN

(buttress)  
 가

가 가  
 가 (barrell)  
 가

2 PFN

6  
 hip pin

2  
 hip pin

6.5mm

11mm

PFN hip pin

(safty stop)가

26

PFN

PFN

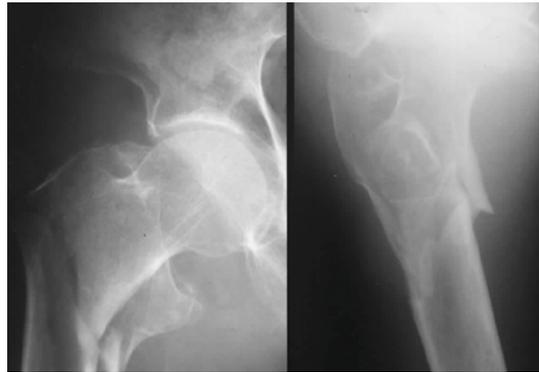
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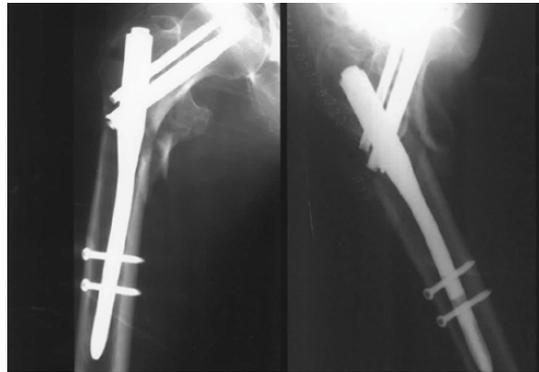
**Fig 1-A :** A 74-year-old woman with AO-Muller type A2.1 and Evans-Jensen type IV intertrochanteric fracture. Initial AP and cross-table lateral radiograph shows typical varus displaced fracture pattern and lesser trochanteric fragment.



**Fig 2-A :** A 80-year-old woman with AO-Muller type A2.1 and Evans-Jensen type IV intertrochanteric fracture. Initial AP and cross table lateral film shows large comminuted lesser trochanteric fragments and long fracture line extended far below lesser trochanter.



**Fig 1-B :** On immediate postoperative film, fracture was stably reduced and properly fixed with a PFN. Clinically she could walk well with one crutch on postoperative 5 days.



**Fig 2-B :** Immediate postoperative AP film shows significant medial cortical defect on the fracture site and lateral film shows poor apposition of anterior cortex.



**Fig 1-C :** Postoperative 5 months film shows union of fracture without significant collapse of fracture site. Clinically she gained preoperative level of ambulation without any walking aid and good functional recovery score.



**Fig 2-C :** Postoperative 6 months film shows complete fracture union without significant collapse and clinically she could walk with cane and showed good functional recovery.

## Abstract

## Proximal Femoral Nail(PFN) for Femur Intertrochanteric Fracture

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**Purpose** : This prospective study was performed to evaluate the usefulness and the risk of the Proximal Femoral Nail(PFN) for internal fixation of the femur intertrochanteric fracture.

**Material and Method** : We operated 26 consecutive intertrochanteric fracture patients with PFN from June 2000 to May 2001 and analysed the operation time, bleeding loss, union rate, union time, failure of fixation and complications. We also evaluated the clinical result with the recovery of ambulatory function and functional recovery score.

**Result** : Mean operation time was 72 minutes and mean transfusion amount was 0.54 unit. 24 cases progressed to union until 4 months uneventfully and remaining 2 cases also progressed to union within 6months without further operation. There was no failure of fixation. Mean fracture site impaction was 4.4mm and among the 11 unstably reduced cases 3 showed overimpaction(> 10mm). Clinically mean loss of ambulation ability was 1.4 grade. Last follow Skovoron functional recovery score was 72.2. We removed laterally protruded hip pin and femur neck screws in two cases because of irritation on the lateral trochanteric area skin. But there was no significant complications such as intraoperative or postoperative fractures and femoral head cut out.

**Conclusion** : The findings from this study indicate that, compared with other methods, PFN is useful and reliable choice for the femur intertrochanteric fracture treatment in the terms of less complications and equal or better results.

**Key word** : femur, intertrochanteric fracture, Proximal Femoral Nail

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