



13, 4, 2000 10

The Journal of the Korean Society of Fractures
Vol.13, No.4, October, 2000

-3 -

.

< >

0.3% 2.5%

3

1

PCL retaining type

: , , , ,

2,3,5,7,9,10)

2,3,5,9,12)

가

. .

267

3 (1 , 2)

: Jun-Dong Chang

Department of Orthopaedic Surgery, Hangang Sacred Heart Hospital,

College of Medicine, Hallym University

#94-200, Youngdungpo-Dong, Youngdungpo-Ku, Seoul, Korea (150-020)

Tel : (02) 2639-5301

Fax : (02) 2631-9337

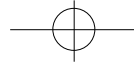
E-mail : jdchang@www.hallym.or.kr

*

2000

26





2
2
75
1
2 5
4
가 (Fig. 2-
120
A,B).
7
3
5 3
3
40
6
(Fig. 70
(Brisement)
(Cannulated
1
(CPM, continuous screw)
2
1
passive motion)
5 120
1

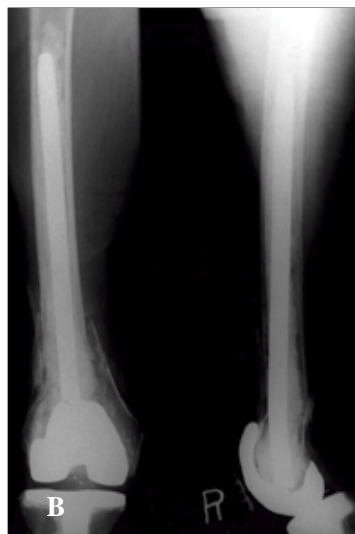


Fig 1A. Anteroposterior and lateral radiographs of a 81-year-old female with a supracondylar femur fracture following TKA.

Fig 1A. Postoperative anteroposterior and lateral radiographs showing the fracture fixed with retrograde supracondylar intramedullary nail and cement.



Fig 2A. Anteroposterior and lateral radiographs of a 75-year-old female with a supracondylar femur fracture following TKA.

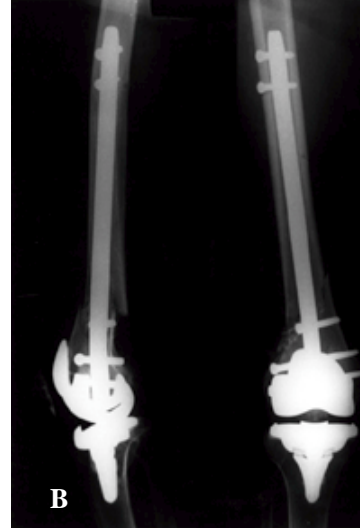


Fig 2B. Postoperative anteroposterior and lateral radiographs showing the fracture fixed with retrograde supracondylar intramedullary nail.

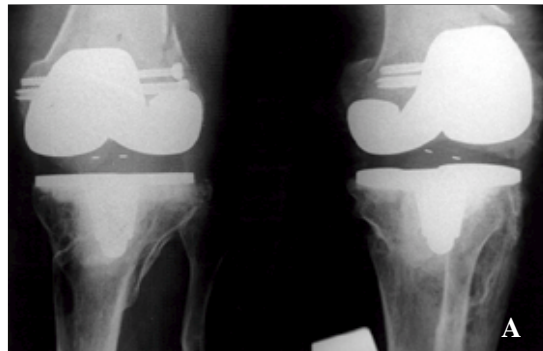


Fig 3A. Postoperative both oblique radiographs of a 40-year-old male with a supracondylar femur fracture following TKA, showing the fracture fixed with cannulated screws and unreduced and displaced.



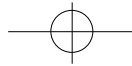
3B. Postoperative anteroposterior and lateral radiographs showing the fracture fixed with retrograde supracondylar intramedullary nail and cannulated screws.

가

2 0 90
(Fig. 3-A,B).

‘ ‘ ‘
.





894 • / 13 4

0.3% 2.5% 1.2% 가
4 ,
2,3,5,9,12) , 2,4,7,13),
267 3 1.12% ,
Modified Neer ⁶⁾ 3 ¹⁰⁾ Merkel and Johnson 2
(Intercondylar distance)
2,3,4,5,8)
(PCL substituting type)
(Stemmed femoral
1994 Alex ⁵⁾ 6 component) 2,4,8)
가가
(Notching of the anterior femoral cortex), 14.5mm 24.0mm
11, 12, 13mm
15, 20, 25mm
5,12), 1 , 4가 1,2). 가 (Table
가
(PCL substituting type) 1996 Maniar ⁴⁾
가

Table 1. Intercondylar distance

Prosthesis	Distance(mm)
Advantim(Wright)	18.0-24.0
AGC(Biomet)	18.4-22.8
AMK(Depuy)	18.0-23.0
Allopro(Sulzer)	18.0-24.0
Duracon(Howmedica)	18.4-20.4
Interax(Howmedica)	18.2-20.2
LCS(Depuy)	15.5-21.0
Maxim(Biomet)	18.3-22.6
Nexgen(Zimmer)	14.5-15.5
PFC(Johnson & Johnson)	17.8-17.8
Search(Aesculap)	20.8-21.7
Scorpio(Stryker)	16.7-18.9

Table 2. Supracondylar nail size

IMSC Nail (Standard Multihole) (mm X mm)	IMSC Five Nail (mm X mm)
12 X 15	11 X 15
12 X 20	11 X 20
12 X 25	11 X 25
13 X 20	12 X 15
13 X 25	12 X 20
	12 X 25
	13 X 20
	13 X 25

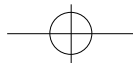


(Diamond tip metal cutting burr)

가 , ,
가 ,
가
2,3,5,8,12)
3
가
(stemmed femoral component)
가

REFERENCES

- 1) **Hanks GA, Mathews HH, Routson GW and Loughran TP** : Supracondylar Fracture of the Femur Following Total Knee Arthroplasty. *The Journal of Arthroplasty*, 10(2): 289-292, 1995.
- 2) **Henry SL** : Management of Supracondylar Fractures Proximal to Total Knee Arthroplasty with the GSH Supracondylar Nail. *Contemporary Orthopaedics*, 31(4): 231-238, 1995.
- 3) **Jabczenski FF and Crawford M** : Retrograde Intramedullary Nailing of Supracondylar Femur Fractures Above Total Knee Arthroplasty. *The Journal of Arthroplasty*, 10(1): 95-101, 1995.
- 4) **Maniar RN, Umlas ME, Rodriguez JA and Ranawat CS** : Supracondylar Femoral Fracture Above a PFC Posterior Cruciate-substituting Total Knee Arthroplasty Treated With Supracondylar Nailing. *The Journal of Arthroplasty*, 11(5): 637-639, 1996.
- 5) **McLaren AC, Dupont JA and Schroeder DC** : Open Reduction Internal Fixation of Supracondylar Fractures Above Total Knee Arthroplasties Using the Intramedullary Supracondylar Rod. *Clin Orthop*, 302: 194-198, 1994.
- 6) **Merkel KD and Johnson EW** : Supracondylar Fracture of the Femur After Total Knee Arthroplasty. *J Bone Joint Surg*, 68(A): 29-43, 1986.
- 7) **Min BH, Cho SK, Lee WI, Yu CS and Kang SY** : Treatment of Distal Femoral Fractures with a Retrograde Supracondylar Intramedullary Nail assisted with Arthroscopy. *J. of Korean Orthop. Assoc.*, 33(7): 1838-1845, 1998.
- 8) **Murrell GAC and Nunley JA** : Interlocked Supracondylar Intramedullary Nails for Supracondylar Fractures After Total Knee Arthroplasty. *The Journal of Arthroplasty*, 10(1): 37-42, 1995.
- 9) **Ritter MA, Keating EM, Faris PM and Meding JB** : Rush Rod Fixation of Supracondylar Fractures Above Total Knee Arthroplasties. *The Journal of Arthroplasty*, 10(2): 213-216, 1995.
- 10) **Rockwood Jr. CA, Green DP, Bucholz RW and Heckman JD** : Fractures in Adults. 4th ed, Vol 1, Lippincott-Raven publishers, Philadelphia, New York: 586-594, 1996.
- 11) **Sekel R and Newman AS** : Supracondylar Fractures Above a Total Knee Arthroplasty. *The Journal of Arthroplasty*, 9(4) 445-447, 1994.
- 12) **Smith WJ, Martin SL and Mabrey JD** : Use of a supracondylar Nail for Treatment of a Supracondylar Fracture of the Femur Following Total Knee Arthroplasty. *The Journal of Arthroplasty*, 11(2) 210-213, 1996.
- 13) **Sung YB, Kwon CS, Ahn JK, Kim JH, Kim DS and Kim SS** : Retrograde Intramedullary nailing of the Fractures of the Femoral Shaft in Adult. *J. of Korean Orthop Assoc.*, 32(7): 1733-1741, 1997.



Abstract

Supracondylar Intramedullary Nail for Femoral Supracondylar Fracture following TKA -3 Cases Report-

Jun-Dong Chang, M.D., Hyun-Min Han, M.D., Suck-Woo Kim, M.D.,
Won-Ik Lee, M.D., Soo-Joong Choi, M.D. and Chang-Ju Lee, M.D.

Department of Orthopaedic Surgery, College of Medicine, Hallym University, Seoul, Korea

A periprosthetic supracondylar femoral fracture is one of the complications of the total knee arthroplasty(TKA). The periprosthetic supracondylar femoral fracture after TKA occurs approximately 0.3% to 2.5% and various methods have been introduced to treat this fracture. We report three cases of supracondylar femoral fractures following TKA, with brief review of pertinent literatures, in which retrograde supracondylar intramedullary nail provided satisfactory results. In severe osteoporotic patient, firm fixation of the nail was obtained by using cement and early motion of the knee joint was possible. In addition, we found that the supracondylar intramedullary nail could be used without insertion difficulty in all PCL retaining TKA systems which were available in use in our country.

Key Words : Femur, Supracondylar fracture, TKA, Supracondylar intramedullary nail