

· · · ·

가

[]

:

·
: 2000 3 2002 7 23
Schatzker I 3, II
7, III 4, IV 1 V VI 8 가 . 가
· 가
· 6
2 가 .
: 23 13 (56%) 5 (22%)
11 (48%) 3 3 11 8 (73%) 가
· 3
5 8 6 2
5 5, 1 .
:
·
:
·

:
480-130, 65-1
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*

2003

Table 1. Meniscal injuries with Schatzker classification

		Medial meniscus	Lateral meniscus
I (Pure Cleavage)	3	1	0
II (Cleavage and Depression)	7	1	4
III (Pure Central Depression)	4	1	2
IV (Medial Condyle)	1	0	1
V (Bicondylar)	0	0	0
VI (Meta / diaphyseal)	8	2	4
	23	5	11

MRI

2000 3 2002 7
1 가 가 23
가 14 , 가 9 가
48 (27 ~78)
17.9 (12 ~39)
가 11 가 5 ,
3 , 2
가 1 Schatzker
14) I (pure cleavage) 3 , II
(cleavage and depression) 7 , III (pure central de-
pression) 4 , IV (medial condyle) 1
V (bicondylar) VI (meta-diaphyseal)
8 가
MRI

all-inside
inside-out
outside-in

Schatzker I II 가
III 가
가

23 13 (56%)
11 (48%), 5 (22%)

가 3
가 3
가 1

Schatzker
I 3 1 , II 7 5 , III 4
3 IV 1 1 , VI 8 6

가
(Table 1). 11 , 8

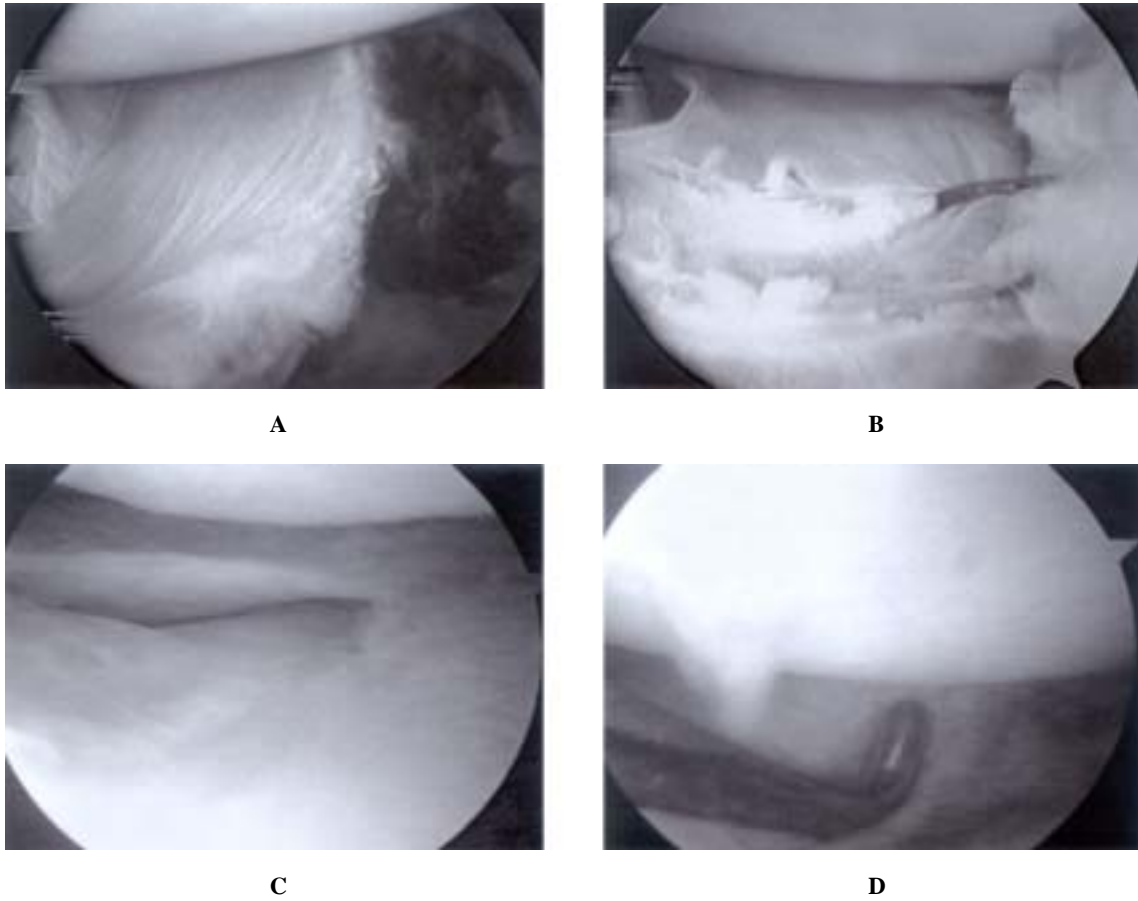


Fig. 1A. Displaced peripheral tear of lateral meniscus extending from anterior to posterior horn with Shatzker type VI tibial plateau fracture.

1B. Meniscal repair was performed using inside-out technique for posterior horn tear and outside-in technique for anterior horn tear.

1C. Second look arthroscopy was done 6 months after the repair.

1D. Healing was evaluated with probing the torn portion, menisco-capsular junction.

(73%)

가

2

가 2 . 2

Henning

¹³⁾

가

5

(Fig. 1) 1

가 3 ,

가 5

. 11

3

5

8

6

2

.

6

2

가 4

가

1% Henning¹³⁾ 2

가 Kennedy^{5,7)} Bailey¹⁰⁾ 6 가 10%

가 , 50%

가 가 , 50%

MRI . ,

4,17) .

2

10% 86% 6 5 , 1

16) .

가

가

23

13 (56%) 3) .

11 (debris)

5 . , chemotatic factor

growth factor가

가

가 2) . 12) 30

15) .

Bennett Browner⁴⁾ 30

Shatzker II 가

IV 가

I 3 가

1

가 . 가

11 .

8 가

가 5

3 .

가

가

가

가

10) .

REFERENCES

- 1) **Asik M, Cetik O, Talu U and Sozen YV:** Arthroscopy-assisted operative management of tibial plateau fractures. *Knee Surg, Sports Traumatol, Arthrosc*, 10: 364-370, 2002.
- 2) **Barber FA and Clik SD:** Meniscal repair rehabilitation with concurrent anterior cruciate reconstruction. *Arthroscopy*, 13: 433-437, 1997.
- 3) **Bellabarba C, Bush-Joseph CA and Bach BR:** Patterns of meniscal injury in the anterior cruciate deficient knee: A review of the literature. *Am J Orthop*, 1: 18-23, 1997.
- 4) **Bennett WF and Browner B:** Tibial plateau fractures: A study of associated soft tissue injuries. *J Orthop Trauma*, 8: 183-188, 1994.
- 5) **Bucholz RW and Heckman JD:** Rockwood and Green's Fractures in adults. 5th ed, Philadelphia, Lippincott Williams and Wilkins Co: 1801-1841, 2001.
- 6) **Glabbeek FV, Riet RV, Jansen N, D'anvers J and Nuyts R:** Arthroscopically assisted reduction and internal fixation of tibial plateau fractures: Report of twenty cases. *Acta Orthopaedica Belgica*, 68: 258-264, 2002.
- 7) **Han SH, Yang BG, Kim CH, Ahn TW and Jeong ST:** Treatment of the tibial condyle fracture. *Journal of the Korean Society of Fractures*, 11: 214-225, 1998.
- 8) **Honkonen SE and Jarvinen MJ:** Classification of fractures of the tibial condyles. *J Bone Joint Surg*, 74-B: 840-847, 1992.
- 9) **Hung SS, Chao EK, Chan YS, et al:** Arthroscopically assisted osteosynthesis for tibial plateau fractures. *J Trauma*, 54: 356-363, 2003.
- 10) **Kennedy JC and Bailey WH:** Experimental tibial plateau fractures. *J Bone Joint Surg*, 50-A: 1522-1534, 1968.
- 11) **Kim HS, Hong KD, Ha SS, Kang DS and Lim JH:** A clinical study of the tibial plateau fracture. *Journal of the Korean Society of Fractures*, 7: 105-112, 1994.
- 12) **Kim RS, Kim MK, Cho KJ, Ko SM, Kim CS and Park HW:** Clinical characteristics of isolated meniscal tear. *J Korean Orthop Assoc*, 35: 219-224, 2000.
- 13) **McGinty JB:** Operative arthroscopy. 2nd ed, Philadelphia, Lippincott-Raven Co: 299-315, 1996.
- 14) **Schatzker J, McBroom R and Bruce D:** Tibial plateau fractures: the Toronto experience 1968~1975. *Clin Orthop*, 138: 94-104, 1979.
- 15) **Stewart JPR and Erskine CA:** An experimental analysis of injuries to the menisci of the knee joint. *Int Orthop*, 3: 9-12, 1979.
- 16) **Vangsness CT, Ghaderi B, Hohl M and Moore TM:** Arthroscopy of meniscal injuries with tibial plateau fractures. *J Bone Joint Surg*, 76-B: 488-490, 1994.
- 17) **Yacoubian SV, Nevins RT, Sallis JG, Potter HG and Lorich DG:** Impact of MRI on treatment plan and fracture classification of tibial plateau fractures. *J Ortho Trauma*, 16: 632-637, 2002.

Abstract**Meniscal Injuries with Tibial Plateau Fractures**

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Purpose: The purpose of this study is to evaluate by arthroscopy the incidence of meniscal injury and the result of its treatment in fractures of the tibial plateau.

Materials and Methods: From March 2000 to July 2002, twenty-three patients with tibial plateau fractures were examined and treated by arthroscopy before reduction of the fractures. Following the classification by Schatzker, there were 3 pure cleavage fractures (type I), 7 with cleavage and depression (type II), 4 with pure central depression (type III), one medial condyle fracture (type IV) and 8 with meta-diaphyseal fractures (type VI). Meniscal injuries were treated by meniscectomy or meniscal repair. Second look arthroscopy for patients treated with meniscal repair were performed at 6 months after operation or at time of the fixative removal.

Results: Thirteen knees (56%) were found to have meniscal injuries. There were 11 lateral meniscal tears, eight of which were peripheral and repaired. There were 3 complex lateral meniscal tears which required partial meniscectomy. The five medial meniscal tears were required all partial meniscectomy. Six of the eight patients who were repaired the meniscal tears evaluated by second look arthroscopy. Five patient showed complete healing and one showed incomplete healing.

Conclusion: Every effort should be made to repair the meniscal tears in tibial plateau fractures.

Key Words: Tibia, Plateau fracture, Meniscus injury, Repair

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