

1

2

3

가

:

:

8

6

2

22

5

3

가

,

.

:

(n=8, 100%),

(n=8, 100%)

(n=3, 38%)

(n=5, 63%)

(n=2, 25%)

(n=1, 13%)

3

(38%)

7 (88%)

3

(lipohe-

marthrosis)

(medial patellar retinaculum)

(n=8, 100%),

(n=1, 13%)

(n=2, 25%)

7 (88%)

:

,

2 - 3%

가

(1,

5, 6).

가

(patellofemoral anatomy)

가

,

가

가 가

(1 -

가

4),

(5).

,

,

(6).

가

(spontaneous reduction)

,

1997

11

1999

11

25 - 50%

,

-

-

(valgus - flexion - external rotation)

8

6 ,

2 ,

14 -

34 (

22.4)

(Table 1).

가,

가,

1
2
3

2001 5 31

2001 8 6

echo T2* (500 - 650/10 - 20, 20 - 25 ° flip angle)
 T1 parameter 가 3 - 4 mm, matrix number가 137 × 256 151 × 256 , 가 14 - 15 cm 가
 skyline view
 Merchant view
 7
 8 5
 1 - 150 (36.4)
 1.5 - T Signa (GE Medical Systems, Milwaukee, WI, U.S.A.) Magnetom Vision (Siemens, Erlangen, Germany)
 T1 (TR=500 - 650 msec/TE=10 - 20 msec) T2 (3000 - 4000/90 - 110) (3000 - 4000/10 - 20) 7 gradient
 (bone contusion) 8 (100%)
 (lateral femoral condyle)
 (medial facet of patella) (Fig. 1),
 3 (lateral tibial plateau)

Table 1. Clinical Information of the Patients With Traumatic Transient Lateral Dislocation of the Patella

Patient No.	Age/Sex	Trauma history	Past history on knee	Treatment
1	21/M	fall down	-	conservative
2	22/M	basketball	-	arthroscopic
3	30/M	ski	-	conservative
4	14/M	ski	-	conservative
5	28/M	ski	fracture & dislocation	conservative
6	15/M	basketball	-	arthroscopic
7	15/F	fall down	-	conservative
8	34/F	fall down	knee effusion	arthroscopic

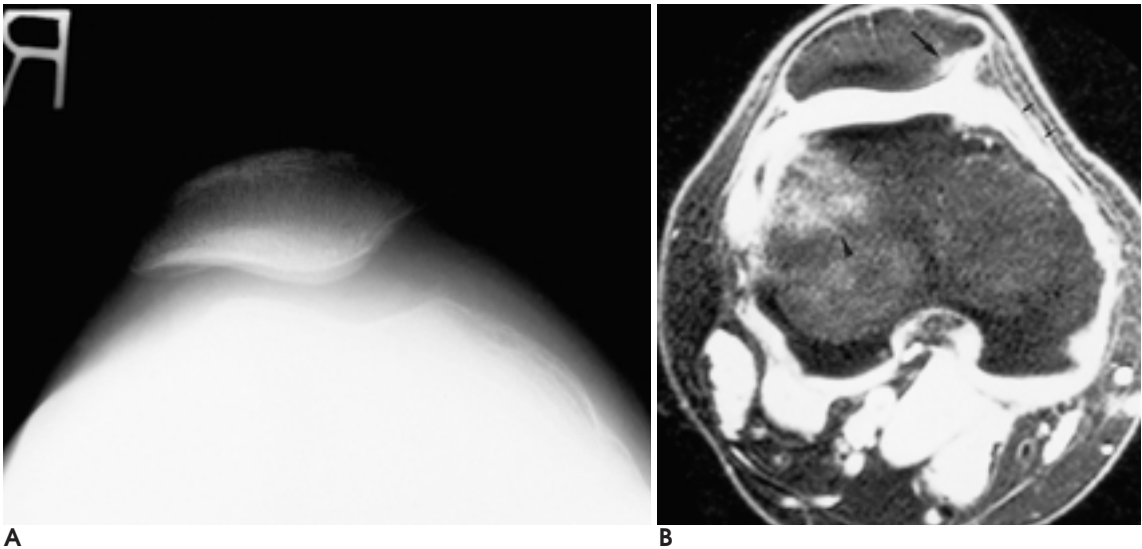


Fig. 1. A 15-year-old boy with trauma on right knee during basketball game.
A. Merchant view shows lateral subluxation of the patella without fracture.
B. In T2*-weighted axial image, there are mottled high signal intensities on medial facet of patella with chondral defect (arrow) and on lateral femoral condyle (arrowheads), suggestive of bone contusions. Normal feature of medial patellar retinaculum is obliterated (two small arrows), suggestive of injury.

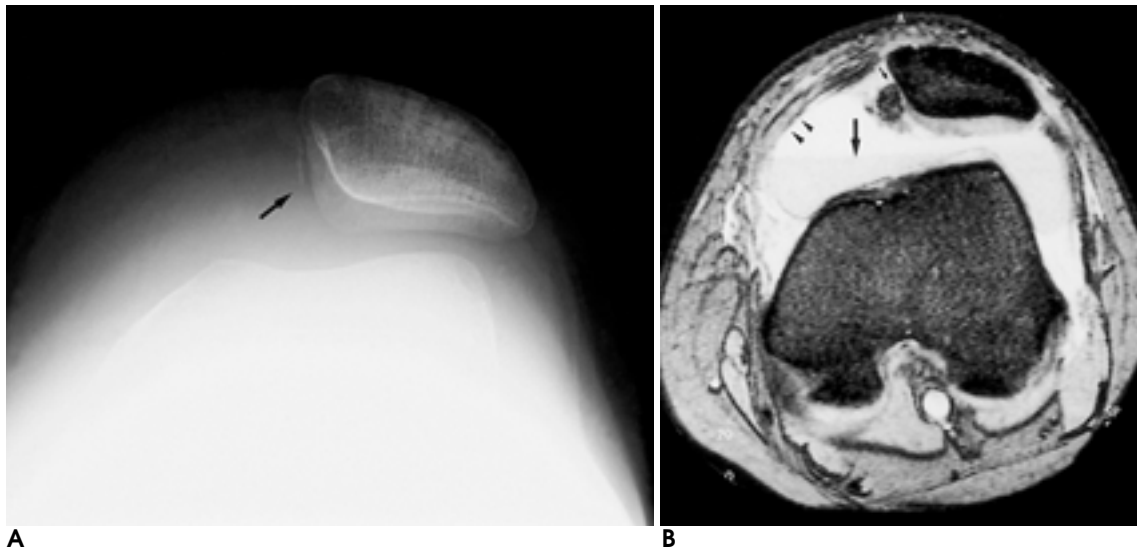


Fig. 2. A 15-year-old girl with trauma on left knee by fall down.

A. Merchant view reveals lateral subluxation of the patella and a thin bone fragment (arrow) from medial facet of patella by fracture.

B. T2*-weighted axial image shows a bone fragment (small arrow) and hemarthrosis with fluid-fluid level (large arrow). Normal feature of medial patellar retinaculum is obliterated (arrowheads), suggestive of injury. Bone contusion is noted in medial facet of patella and lateral femoral condyle in other images (not shown here).

가 가

5 (63%)
(Fig.

1). 3 (38%) 2 (7 - 10).

1
(Fig. 2).

3 (38%) (suprapatellar bursa), (inter - (quadriceps femoris) (vastus medi -
condylar notch), 7 (88%) 3 alis) (genu valgum), (lateral femoral
(Fig. 2). 8 (100%) 8 condyle), (external tibial tor -
(medial patellar retinaculum) sion), (patellar tendon) 가 (6).
(Figs. 1, 2), gradient echo T2* 가 .
2 , 1 .
7 (88%) (Figs. 1, 2). (valgus - flexion - external rotation) ,
(twisting motion), (valgus stress), 가 가 ,
(1, 2, 5, 11).
2 - 3% 가 가 가
(1 - 4, 7 - 9). (1, 2, 5),
8 ,

가 (1, 2, 5) 8 가

가 가

가 (1, 2).

(trochlea groove)

가 (2).

가 5 3 7

가

(1, 2),

가

가

(12) 가

, Vallet (13) 6 - 12

가

가

(6).

3

가 가

가 가

1. Kirsch MD, Fitzgerald SW, Friedman H, Rogers LF. Transient lateral patellar dislocation: Diagnosis with MR imaging. *AJR Am J Roentgenol* 1993;161:109-113
2. Stoller DW, Cannon WD, Anderson LJ. *The knee*. In : Stoller DW, ed. *Magnetic resonance imaging in orthopaedics and sports medicine*. 2nd ed., Philadelphia: Lippincott-Raven, 1997;367-373
3. Sallay PI, Poggi J, Speer KP, Garrett WE. Acute dislocation of the patella. A correlative pathoanatomic study. *Am J Sports Med* 1996; 24:52-60
4. Casteleyn PP, Handelberg F. Arthroscopy in the diagnosis of occult dislocation of the patella. *Acta Orthop Belg* 1989;55:381-383
5. Virolainen H, Visuri T, Kuusela T. Acute dislocation of the patella: MR findings. *Radiology* 1993;189:243-246
6. Turek SL. *The knee*. In : Turek SL, ed. *Orthopaedics*. 4th ed., Philadelphia: J.B. Lippincott, 1984;1332-1339
7. Hughston JC. Patellar subluxation. A recent history. *Clin Sports Med* 1989;8:153-162
8. Cash JD, Hughston JC. Treatment of acute patellar dislocation. *Am J Sports Med* 1988;16:244-249
9. Keene JS. Diagnosis of undetected knee injuries. Interpreting subtle clinical and radiologic findings. *Postgrad Med* 1989;85:153-156, 161-163
10. Aglietti P, Buzzzi R, Insall JN. *Disorders of the Patellofemoral Joint*. In : Insall JN. *Surgery of the knee*. 2nd ed., NY: Churchill Livingstone, 1993:319-324
11. Resnick D, Goergen TG, Parthria MN. *Physical Injury*. In: Resnick D. *Bone and joint imaging*. 2nd ed., Philadelphia: Saunders, 1996: 781
12. Yao L, Lee JK. Occult intraosseous fracture: detection with MR imaging. *Radiology* 1988;167:749-751
13. Vallet AD, Marks PH, Fowler PJ, Munro TG. Occult posttraumatic osteochondral lesions of the knee: prevalence, classification, and short-term sequelae evaluated with MR imaging. *Radiology* 1991; 178:271-276

MR Findings of Traumatic Transient Lateral Dislocation of the Patellae¹

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Purpose: To determine the magnetic resonance (MR) imaging characteristics of traumatic transient lateral dislocation of the patellae.

Materials and Methods: In eight patients (6 males, 2 females, mean age: 22.4 years) in whom transient lateral dislocation of the patella was diagnosed, the distinctive MR imaging findings reflecting known injury mechanism were retrospectively analyzed with regard to bone contusion, chondral defect, fracture, loose body, joint effusion, and the associated soft tissue abnormalities.

Results: All of eight patients had bone contusions in the lateral femoral condyle and medial facet of the patella, while in five, chondral defects were present in this latter region. In three patients, fractures of the on lateral femoral condyle (n=2) and medial facet of the patella (n=3) were noted, and in three others, loose bodies were noted. Joint effusion [simple effusion (n=4), lipohemarthrosis (n=3)] was observed in seven patients, and associated soft tissue injuries [to the medial patellar retinaculum (n=8), patellar tendon (n=2), and anterior cruciate ligament (n=1)] in eight. Patellar subluxation was found in seven.

Conclusion: MR imaging is a useful technique for the diagnosis of traumatic lateral dislocation of the patella. The significant MR findings are bone contusion in the lateral femoral condyle and medial facet of the patella, chondral defect, fracture, joint effusion, injury to the medial patellar retinaculum, and patellar subluxation.

Index words : Knee, injuries
Knee, MR
Patella

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