

No. 6

MPFL Reconstruction for Patellar Dislocation – 20 Years Experience

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Introduction The management of patellar dislocation syndrome has traditionally been difficult. There are no golden standard methods for patellar dislocations probably due to the many etiologies. However, it is known that medial patellofemoral ligament (MPFL) is damaged when the patella is dislocated. In this presentation we would like to report on 1) the long-term clinical results after our MPFL reconstruction of transfer of the semitendinosus tendon and 2) the preoperative and postoperative role of 2 kg stress patellar skyline view.

Patients and methods Forty six knees (43 patients) of 68 knees (65 patients) that were operated on from 1986 to 1995 using our surgical procedure for MPFL reconstruction with the advancement of the vastus medialis or the MPFL reconstruction with Insall's procedure were followed up for at least 5 years. The patient age ranged from 6~43 years. Among them I will report on 6 patellar dislocation of the patients with open growth plate below the age of 10 years which are a good indication of our MPFL reconstruction. Our MPFL reconstruction is as below. The semitendinosus at its myotenodinous junction is detached using an tendon stripper, leaving it attached distally to the pes anserinus. The femoral attachment of the medial collateral ligament (MCL) is exposed and the semitendinosus tendon is then transferred to the patella via the pulley of the posterior one-third of the proximal MCL and fixed to the patella. Our reconstruction procedure has two important advantages. One advantage is that the posterior one-third of the proximal attachment point of the MCL is used as a pulley for the transfer of the semitendinosus tendon. This point is close to the femoral attachment site of the MPFL, and the length between this point and the medial patellar point are relatively isometric during the knee flexion. The second advantage is that the direction of force applied to stabilize the patella is

medially directed. This fact could make our procedure more useful than other semitendinosus tendon methods such as the Galeazzi method. Their post-operative Kujala's scores were significantly improved. On conventional X-ray and on 2 kg stress patellar X-ray evaluations, the mean values for congruence angle, tilting angle, lateral shift ratio, medial stress ratio, and lateral stress ratio at the final follow-up were demonstrated to be within the normal range.

2 kg stress patellar skyline view I started to employ 2 kg stress patellar skyline view since 1986 to know the balance of the medial and lateral retinaculum of the patellar dislocation and subluxation. Our study revealed that there were two main types of lateral dislocation. One where the lateral retinaculum is tighter than normal, the other where the medial retinaculum is looser than normal. The Medial stress shift value is very important in deciding whether it was necessary to perform a lateral release on the patella. In this current study, the MSS values of 4 patellae showed that they were too loose on the medial side. We decided that a lateral release was not indicated for the four patients who had a negative MSS value before surgery. We believe that patients who showed medial instability on their stress radiographs before surgery would have suffered medial dislocation of their patellae if we had applied the lateral release method. Thus the 2 kg stress patellar skyline plays an important role to examine the balance of the medial and lateral retinaculum of the patellar dislocation and subluxation preoperatively and postoperatively

REFERENCES

- 1) Deie M, Ochi M, et al: Medial patello-femoral ligament reconstruction for the treatment of recurrent or habitual dislocation of the patella in children *J Bone Joint Surg* 85B:887-890, 2003.
- 2) Ochi M, Sota T, Matsuda T, et al: The significance of roentgenograph of patella under 2 kg stress in the skyline view. (in Japanese) *Bessatsu Seikeigeka* 38-43, 1992.
- 3) Ochi M, Manabe H, Okada Y, et al: The isometricity of tendon transfer procedures for patellar dislocation (in Japanese). *Bessatsu Seikeigeka* 22:6-11, 199.