Case Report

Habitual patellar dislocation 40 years after failed conservative treatment: A case report

Mikiko Handa*a, Tsuneari Takahashi*b*, Masaki Iguchi*a, Katsushi Takeshita*a

a Department of Orthopedic Surgery, Jichi Medical University, Shimotsuke, Japan
b Department of Orthopedic Surgery, Ishibashi General Hospital, Shimotsuke, Japan

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ABSTRACT

Patellar dislocation is often caused by congenital bone morphological abnormalities or joint laxity and is rarely traumatic. We report a case of long-term habitual patellar dislocation due to trauma 40 years ago without abnormal bone morphology, which required a combined procedure, including the Elmslie–Trillat (ET) procedure, massive lateral release, and medial patellofemoral ligament (MPFL) reconstruction, resulting in favorable outcomes. A 52-year-old male, with no specific underlying disease, dislocated his right patella due to falls when he was 13 years old and underwent conservative treatment. Subsequently, patellofemoral instability remained, and the patella began dislocating outward every time he flexed his knee joint; however, he could walk without pain. Therefore, he left it untreated for more than 40 years. His Lysholm and Kujala scores were 77 and 73 points, respectively. Radiographs showed no abnormal bone morphology with a tibial tuberosity–tibial groove (TT–TG) distance of 12 mm and a tibial external rotation angle of 5°. We released the distal iliotibial ligament and lateral bursa following the Fulkerson procedure, and the patella was stabilized from 0° to 60° of knee flexion. The ET procedure was subsequently performed. The patella was moved 13 mm medially and fixed using tibial coarse translation, which stabilized the patella up to 90°. However, when flexed beyond 90°, the patella was displaced laterally; therefore, MPFL reconstruction with autologous hamstring tendon was performed. Range of motion exercises were initiated 1 day postoperatively. Partial and full weight-bearing were allowed 2 and 4 weeks postoperatively, respectively. At the final outpatient follow-up at 8 months postoperatively, the patient could walk without patellofemoral instability; the Lysholm and Kujala scores had recovered from 77 to 97 and from 73 to 93 points, respectively. This combined patellofemoral-stabilizing procedure is considered the treatment of choice for patients with habitual patellar dislocation despite the chronicity.

Introduction

Patellar dislocation may be caused by congenital bone morphology, soft tissue laxity, or trauma. Patellar or femoral hypoplasia, a tendency toward internal rotation of the tibia, or loosening of the medial patellofemoral ligament (MPFL) may also be the cause, and congenital abnormalities increase the frequency [1]. The patella is stabilized by the soft tissue from extension to 30° of knee flexion and by bone morphology above 30° of knee flexion. The MPFL is easily damaged owing to the background of bone morphological

* Corresponding author at: Department of Orthopedic Surgery, Ishibashi General Hospital, 1-15-4 Shimokoyama, 329-0502 Shimotsuke, Japan. E-mail address: tsuneari9@jichi.ac.jp (T. Takahashi).

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abnormalities [2].

Conservative treatment is required for initial patellar dislocation. The knee joint should be immobilized for the first 3–4 weeks; subsequently, weight-bearing is allowed [3]. Surgical treatment, such as MPFL reconstruction or the Elmslie–Trillat (ET) procedure, may be chosen if the dislocation is repeated or habitual [1,2]. However, a consensus on the treatment of habitual patellar dislocation has not yet been established [4]. Most case reports of habitual patellar dislocation pertain to children with abnormal bone morphology, and there are no cases of traumatic patellar dislocation without abnormal bone morphology that have a long course. Therefore, we report a case of long-term habitual patellar dislocation due to trauma 40 years ago without abnormal bone morphology, which required a combined procedure, including the ET procedure, massive lateral release, and MPFL reconstruction, resulting in favorable outcomes.

Case presentation

A 52-year-old male, with no specific underlying disease, dislocated his right patella due to falls when he was 13 years old and underwent conservative treatment. Subsequently, patellofemoral instability remained, and the patella began dislocating outward every time he flexed his knee joint; however, he could walk without pain. Therefore, he left it untreated for more than 40 years.

Two years ago, he fractured his right patella due to a fall and came to our outpatient clinic. He was hospitalized, tension band wiring was performed, and bony fusion was confirmed 10 months postoperatively. Postoperative knee joint range of motion (ROM) was 140° of flexion, with lateral dislocation at 45° of flexion (Fig. 1). The Lysholm and Kujala scores were 77 and 73 points, respectively. Radiographs revealed a skyline image of the patella dislocated laterally. Furthermore, computed tomography (CT)
Fig. 3. a) Image of the right knee joint following lateral release and the Elmslie–Trillat (ET) procedure. The patella is dislocated outward at 90° of knee flexion.  

b) Image of the right knee joint with lateral release and the ET procedure followed by MPFL reconstruction. The patella remains in the midline even at 130° of knee flexion.

Fig. 4. a) Postoperative range of motion is checked, and knee flexion is up to 130° with no lateral patellar dislocation.  
b) Postoperative radiographs of skyline view, AP view and lateral view.
showed a tibial tuberosity–tibial groove (TT–TG) distance of 12 mm, with a tibial external rotation angle of 5°. Lastly, magnetic resonance imaging showed MPFL elongation (Figs. 1 and 2). The patient complained of worsening discomfort when walking.

**Surgical procedure**

Surgery was performed under general anesthesia in the supine position without a pneumatic tourniquet. A medial longitudinal skin incision was made along the surgical wound of the previous internal fixation for right patellar fracture. First, the distal iliotibial ligament and lateral bursa were completely released following the Fulkerson procedure [5,6], and the patella was stabilized from 0° to 60° of knee flexion. The ET procedure was subsequently performed. The patella was moved 13 mm medially and fixed using tibial coarse translation, which stabilized the patella up to 90° (Fig. 3). However, the patella was displaced laterally when flexed beyond 90°; therefore, MPFL reconstruction with autologous hamstring tendon was performed (Fig. 3). The patella was stabilized without dislocation up to 130° of knee flexion and was no longer dislocated even in mid- and deep knee flexion (Fig. 4).

**Postoperative rehabilitation**

A rehabilitation protocol was initiated following this surgical procedure. He began with strength training, including straight leg raising and quadriceps setting. ROM exercises were started 1 day postoperatively. Partial and full weight-bearing were allowed 2 and 4 weeks postoperatively, respectively. At the final outpatient follow-up at 8 months postoperatively, the patient could walk without patellofemoral instability; the Lysholm and Kujala scores had recovered from 77 to 97 and from 73 to 93 points, respectively.

**Discussion**

This patient had patellar dislocation due to trauma at the age of 13. On CT, the TT–TG distance and tibial external rotation angle were within the normal range, and no congenital abnormality was found in the bone morphology. He was treated with cast immobilization and training of the medial vastus muscle as conservative therapy for the initial dislocation; however, the patella dislocated outward at 45° of knee flexion, resulting in habitual dislocation. Surgical treatment of habitual patellar dislocation has not yet been established and is much debated. MPFL reconstruction is performed in most cases. However, MPFL reconstruction alone lacked stability; therefore, we performed combined distal iliotibial ligament transection with the ET procedure to ensure stability all through the ROM. ROM exercises were started 1 day postoperatively. One month postoperatively, he was able to perform up to 120° of knee flexion and no longer experienced discomfort and apprehension when walking. The patient underwent distal iliotibial ligament dissection, ET procedure, and MPFL reconstruction for habitual patellar dislocation due to trauma and showed a good postoperative course. This combined patellofemoral-stabilizing procedure is considered the treatment of choice for patients with habitual patellar dislocation despite the chronicity.

**Conflict of interest**

The authors declare no conflict of interest.

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None.

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