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Osteoarthritis with permanent dislocation of the patella treated by total knee arthroplasty through a lateral approach: A report of two cases



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ABSTRACT

INTRODUCTION: Permanent dislocation of the patella (PDP) is a rare condition. In cases of PDP with tibiofemoral arthritis, total knee arthroplasty may be performed through a medial parapatellar approach with patellar realignment. In this article we present two cases of PDP with tibiofemoral osteoarthritis successfully treated via lateral approach TKA without any additional realignment procedure. We performed two total knee arthroplasties for PDP with lateral tibiofemoral arthritis through a lateral approach without any realignment procedure. Mobile bearing inserts were used to adjust rotational alignment. The patients showed improved functional outcomes (Japanese Orthopaedic Association Knee score and Oxford Knee Score), and improved range of motion. Three years postoperatively, the patellae remain stable without dislocation nor maltracking, maintaining a high functional score.

CONCLUSION: To treat permanent dislocation of the patella with lateral knee osteoarthritis, TKA through a lateral approach have potential to be a new treatment option to achieve both a good outcome and repositioning of the patella.

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1. Introduction

Permanent dislocation of the patella (PDP) is a rare occurrence. Although it can be diagnosed easily, the best treatment for this condition has not been clearly established. Total knee arthroplasty (TKA) has been recognized as the best solution in cases with advanced tibiofemoral osteoarthritis. The medial parapatellar approach along with an additional proximal or/and distal realignment procedure has been used in previous reports [1–3]. Regarding tibiofemoral arthritis, the lateral compartment along with valgus deformity is frequently involved where the lateral structures such as lateral retinaculum, iliotibial band, lateral capsule and postero-lateral complex are shortened and tightened [4,5].

The lateral approach is a useful approach for valgus osteoarthritis because it is easy to release the lateral structures, retaining medial structures and patellar vascularity. In addition, the procedure itself involves lateral retinaculum release, therefore we believe it is the simplest and best solution for PDP. In this paper we describe two case of PDP combined with tibiofemoral osteoarthritis which were successfully treated by lateral approach TKA without realignment.

2. Operative procedure

We use cited pictures from another case of PDP with tibiofemoral osteoarthritis which was excepted in this report for the reason why the follow up period was very short. A lateral parapatellar incision was used, starting 5 cm proximal to the lateral border of the patella and extending along the lateral patellar border and down to end between the tibial tubercle and Gerdy's tubercle (Fig. 1a). An arthrotomy was performed just lateral to the patella and patella tendon, followed by muscle incision beneath the lateral border of the quadriceps tendon (Fig. 1b). If the patient did not have a severely dislocated patella, muscle could be retained by detaching the muscle belly from the surrounding fascia and capsules. Care must be taken not to damage the patellar tendon when the incision is made in the tibial periosteum. The iliotibial band is detached from Gerdy's tubercle with great care so as not to cause any damage (Fig. 1c). The knee is then flexed gently then internally rotated and the knee forced into a varus position so as to slide the patella into the medial gutter (Fig. 1d). The bone cuts were performed independently according to the procedure recommended by the manufacturer of the implant. We used a mobile-bearing type component (Nex-gen CR-Flex mobile, Zimmer Inc., Warsaw, IN, US). The femoral component was positioned in 3° external rotation and 4° valgus. Then the patella was resurfaced. Although some reports have suggested that the gap of the lateral capsule is to be covered by soft tissue such as the infrapatellar fat pad or the lateral menis-

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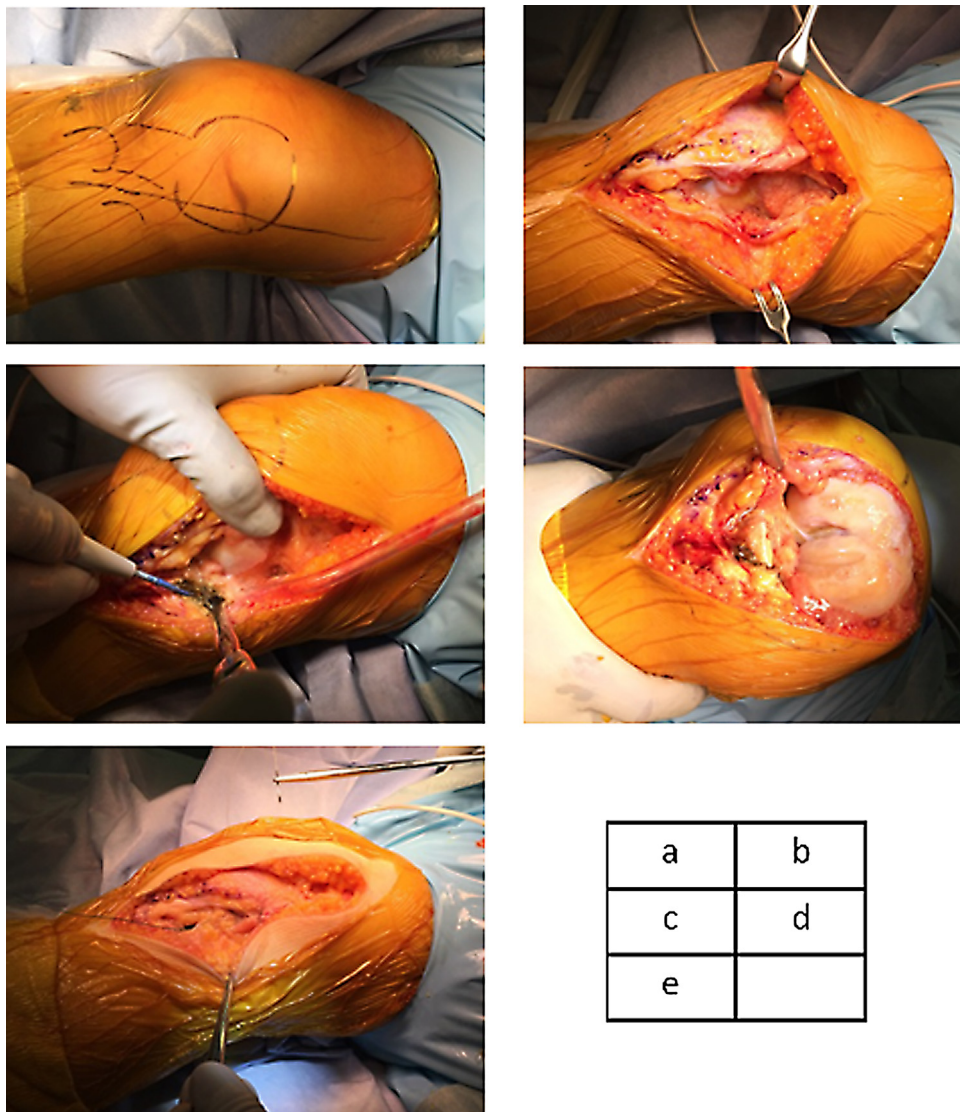


Fig. 1. a) Skin incision b) arthrotomy c) detach the iliotibial band from Gerdy's tubercle. d) Slide a patella e) capsule suture with the gap of the lateral capsule.

cus [4,5], and others have described tibial tubercular osteotomy for wider and safer exposure, we did not need to use these (Fig. 1e).

3. Case reports

This study was approved by The Institutional Review Board of Takatsuki General Hospital and has been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki. All patients gave their informed consent prior to their inclusion in the study. This work has been reported in line with the SCARE criteria [12].

3.1. Case 1

A 74-year-old woman came to our hospital complaining of right knee pain which she had suffered for several years. She had also experienced an uncomfortable feeling during walking which had persisted since childhood.

On physical examination, 10° valgus alignment and lateral dislocation of the patella at any flexion angle were observed in the right knee. The range of motion was -15° to 75° on the affected side and -5° to 130° on the other. An anteroposterior x-ray showed osteoarthritic changes in the lateral compartment of the right knee.

The skyline view showed the complete dislocation of the patella and an absence of the femoral sulcus (Fig. 2).

The right knee was followed up for three years, during which she had no pain when walking and the range of motion was improved (0–140°). The radiographs showed no loosening of implants and no dislocation of the patella (Fig. 3). We assessed knee function using the Japanese Orthopaedic Association (JOA) score and Oxford Knee Score (OKS). Preoperative JOA score and OKS were 35 and 30 points respectively. Three years postoperatively, JOA and OKS were improved to 95 and 37 points, respectively.

3.2. Case 2

An 83-year-old woman presented at our clinic with a complaint of right knee pain and giving way. She had previously undergone joint puncture of her right knee several times at another clinic because of intra-articular hemorrhage (Fig. 4).

On physical examination, 2° valgus and dislocation of the patella at any flexion angle were present in the right knee. The range of motion was -10° to 140° on the right side and 0°–140° on the left. The JOA and OKS score were 50 and 14 points, respectively.

A TKA (Zimmer, NexGen, CR-flex) was performed in the same manner (Fig. 5). However the PCL was found to be damaged, so we

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