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Case Report

Total knee arthroplasty with subvastus approach in patient with chronic post-traumatic patellar dislocation☆

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ABSTRACT

Chronic lateral dislocation of the patella is a rare condition and acquired causes are usually secondary to knee trauma. The neglected chronic dislocation leads to progressive genu valgum and external tibial torsion deformities with subsequent gonarthrosis, which becomes painful and debilitating. There is no consensus regarding treatment of these patients, but total knee arthroplasty (TKA) is a useful therapy in cases of painful symptomatic gonarthrosis. Few reports have shown that subvastus approach and lateral release may be a valid option for TKA, since it allows the correction of valgus deformity and patellar tracking without interrupting vascular blood supply of patella. This article reports a case of TKA and extensor mechanism realignment without patellar resurfacing in a patient with genu valgum and chronic post-traumatic patellar dislocation with satisfactory results after two years of follow-up.

Artroplastia total de joelho por via subvasto em paciente com luxação crônica pós-traumática de patela

Palavras-chave:
Osteoartrose
Joelho
Artroplastia
Luxação de patela

RESUMO

A luxação crônica da patela é uma patologia rara e o trauma sua principal causa adquirida. Quando negligenciada, leva ao geno valgo progressivo, torção externa da tíbia e subsequente artrose debilitante. Não existe consenso na literatura com relação ao tratamento desses pacientes, porém a artroplastia total de joelho (ATJ) tem se mostrado um procedimento eficaz em casos de gonartrose sintomática dolorosa. Poucos relatos mostraram que a via subvasto associada à liberação lateral é uma opção válida para ATJ, já

☆ Work developed in the Knee Group, Institute of Orthopedics and Traumatology, Hospital das Clínicas, Faculty of Medicine, Universidade de São Paulo, São Paulo, SP, Brazil.

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que permite a correção de deformidades em valgo e da boa excursão patelar, sem interrupção do suprimento sanguíneo. Relatamos um caso de uma paciente com geno valgo e luxação crônica pós-traumática de patela submetida a ATJ associada ao realinhamento do mecanismo extensor, com resultados satisfatórios persistentes após seguimento de dois anos.

Introduction

Chronic lateral dislocation of the patella is a rare condition that is usually congenital or acquired in origin.[1] Acquired causes are usually secondary to recurrent trauma about the knee, in patients who have predisposition for patellar dislocation. Femoral or tibial shaft fracture with valgus or external rotation malunion will exaggerate the valgus vector and increase this predisposition for dislocation.[2]

The neglected chronic patellar dislocation leads to progressive genu valgum and external tibial torcion deformities with subsequent gonarthrosis, which becomes painful and debilitating. Valgus malalignment of the lower extremity, a laterally dislocated patella, and a weak active knee extension are the typical physical findings.[3]

There is no consensus regarding treatment of these patients, but total knee arthroplasty (TKA) is a useful therapy in cases of painful symptomatic gonarthrosis.[4] Surgical reconstruction can be technically demanding and requires attention to restoring the extensor mechanism realignment, soft tissue balancing, good patellar tracking, as well as correction of the bony deformities present in the severe valgus knee.[2,5] Another concern is about the potential for osteonecrosis of the patella due to disruption of its blood supply during medial parapatellar approach and when performing extensive lateral release of the extensor mechanism.[1,3,6]

Only one report showed that subvastus approach and lateral release may be a valid option for TKA in patients with chronic post-traumatic patellar dislocation since it allows the correction of valgus deformity and patellar tracking without interrupting vascular blood supply of patella.[1]

We report a case of TKA and extensor mechanism realignment without patellar resurfacing in a patient with genu valgum and chronic post-traumatic patellar dislocation.

Case report

A 59-year-old woman with severe left knee pain, which she had experienced for 10 years, was referred to our Hospital. Pain has gradually worsened over the last 3 years because of a traumatic dislocation of patella. Ambulation and stair climbing were difficult for her but she could walk without support. She has no relevant family history or congenital disease. Conservative treatment with analgesics, anti-inflammatories and physiotherapy for muscle strengthening was not effective.

On examination, there was slight quadriceps atrophy in the left knee, partially reducible valgus deformity, passive range of motion from 0° to 100° with painful crepitus of lateral compartment and extension lag of 10°. The patella was dislocated laterally and it could not be reduced at full extension (Fig. 1). Minimal patellar mobility during flexion and extension was observed. No effusion was palpable and no signs of instability or ligamentous deficiency were observed.

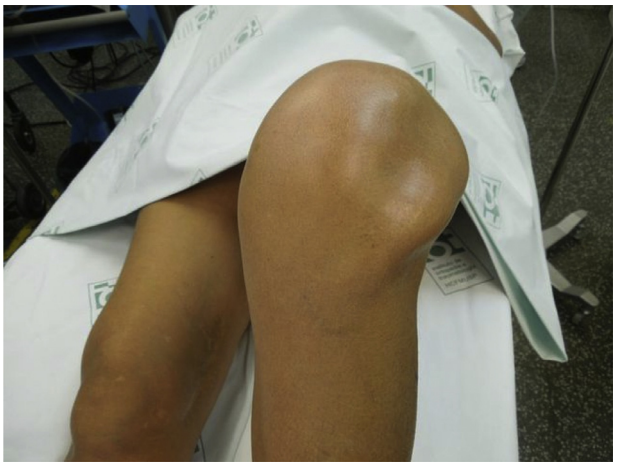

Fig. 1 – Preoperative clinical photography showing a completely dislocated patella.

A standing anteroposterior radiograph of the knee showed valgus deformity and osteoarthritic changes in all compartments with almost complete loss of the lateral joint space; lateral radiograph revealed that the patella was not in the anterior portion of the knee; skyline view radiograph showed a completely dislocated patella and its direct contact with the outer border of the lateral femoral condyle (Fig. 2).

Surgical technique

She underwent a TKA on the left knee (Medial Pivot, Wright Medical Technology, Inc.). A midline longitudinal skin incision was made over the patella in a subvastus approach with the objective to protect patellar circulation. The patella was located in the lateral gutter of the knee and the lateral femoral condyle was hypoplastic.

Distal femur was cut perpendicular to the mechanical axis (5° valgus), and tibia was cut perpendicular to its the long axis. Femoral component rotation was set based on the posterior condylar axis, biepicondylar line and Whiteside line. Tibial component was also slightly externally rotated relative to tibial anterior tubercle. Patella resurfacing was not performed because of its thickness (9 mm).