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Case Report

Osteochondritis dissecans of the trochlea: case report☆

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ABSTRACT

The authors report a rare case of osteochondritis dissecans of the trochlea. The treatment of these lesions, in which the osteochondral fragment is not viable, is difficult and often limited in Brazil. A clinical case is presented with functional and radiological outcomes after treatment with microfracture technique, bone graft, and collagen membrane coverage.

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Osteocondrite dissecante da tróclea: relato de caso

Palavras-chave:
Articulação do joelho
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Osteocondrite dissecante

RESUMO

Os autores relatam um caso raro de osteocondrite dissecante de tróclea. O tratamento dessas lesões com inviabilidade do fragmento osteocondral é difícil e muitas vezes limitado no nosso meio. Os autores apresentam resultados clínicos e radiológicos após o tratamento com a técnica de microfratura, enxertia óssea e cobertura com membrana de colágeno.

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Introduction

Osteochondritis dissecans (OD) of the knee is an idiopathic, acquired, and focal lesion of the subchondral bone, which may involve the adjacent articular cartilage. It occurs mainly in active children and adolescents, affecting the femoral condyles of the knee. The patella (5–10%) and the trochlea (0.6–1%) are among the least-affected areas. The scientific literature on OD of the trochlea is scarce, and there is no consensus on the best treatment options.[1]

Treatment of juvenile OD is based on preservation of the prominent osteochondral fragment, and efforts are made to reinsert these fragments using metallic or absorbable screws.[2] In adult OD, the viability of the osteochondral fragment must be taken into account. If the fragment is viable, it is treated as the juvenile OD; if not, treatment follows the precepts of that for adult osteochondral lesions.[2] Because these are extensive lesions with subchondral bone involvement, subchondral bone and cartilage repair techniques are used. The techniques include autologous osteochondral transplantation (mosaicplasty), fresh homologous osteochondral transplantation,[2–4] and bone grafting with collagen membrane/autologous matrix-induced chondrogenesis (AMIC®) treatment,[5–7] recently made available in Brazil.

Clinical case description

Male patient, 19 years of age, with history of pain and knee effusion two years after sports practice. He had practiced recreational football for four years. He denied instability and current or previous trauma. At physical examination, he presented hypotrophy of the left quadriceps, symmetrical range of motion (ROM; 5° recurvatum and 140° of flexion), joint effusion +2/+4, and patellar pain at compression (positive Rabot). The preoperative magnetic resonance image (Fig. 1) showed joint effusion and osteochondral lesion of the lateral trochlear region (2.2° × 1.7° × 0.6 cm) with penetration of synovial fluid in to the bed of the lesion, signs that are characteristic of osteochondral fragment instability. The imaging exam also showed signs of chronic lesion, with the presence of subcortical cysts, bone edema at the base of the lesion, and partial bone marrow discontinuity of this fragment with horizontal orientation.

In the intraoperative period, the osteochondral lesion was unstable but not displaced (ICRS osteochondritis classification: Grade 3). The fragment measured 2.5 cm × 2.6 cm × 0.7 cm, with rounded edges, yellowish color, signs of bone resorption of the subchondral region, and deep osteochondral cleft (typical signs of non-viability) (Fig. 2).

The authors chose to resect the lesion and use de microfracture technique for treatment, using collagen membrane (AMIC®) associated with bone grafting for coverage. A lateral parapatellar incision was made; the retinaculum and joint capsule were opened, and the osteochondral fragment was identified and resected. The wound bed was debrided with a curette. The edges of the lesion were cut vertically and microfractures were made with a small joint icepick.

An opening was made in the lateral cortical of the femur and the cancellous bone graft was removed with a curette. The bone graft was impacted at the bottom of the osteochondral lesion up to one millimeter above the level of the adjacent subchondral bone. The defect was measured, and the porcine collagen membrane (Chondro-Gide/Geistlich®) was cut to fit, and sutured with monochryl 5.0. Fibrin glue was placed at the edges of the membrane as an additional sealing and fixation method (Fig. 3).

In the immediate postoperative period, full weight-bearing in full extension (knee brace) was authorized as tolerated. Physical therapy with passive assisted ROM was authorized on the second postoperative week. After four weeks, a conventional physical therapy protocol was initiated, with emphasis on analgesia, muscle strengthening, stretching, and sensory-motor training.

After 12 months, the patient reported improvement in pain; complete ROM and moderate quadriceps hypotrophy were observed. The magnetic resonance imaging evidenced repair tissue that filled the surface of the lesion with satisfactory bone integration and adequate leveling. No unstable fragments were detected (Fig. 4). The IKDC score improved from 62.7 to 74.7. The KOOS-pain improved from 83.3 to 94.4; KOOS-symptoms, from 60.7 to 85.7; KOOS-quality of life, from 56.2 to 81.2; finally, the KOOS-daily life activity was 100 points in the

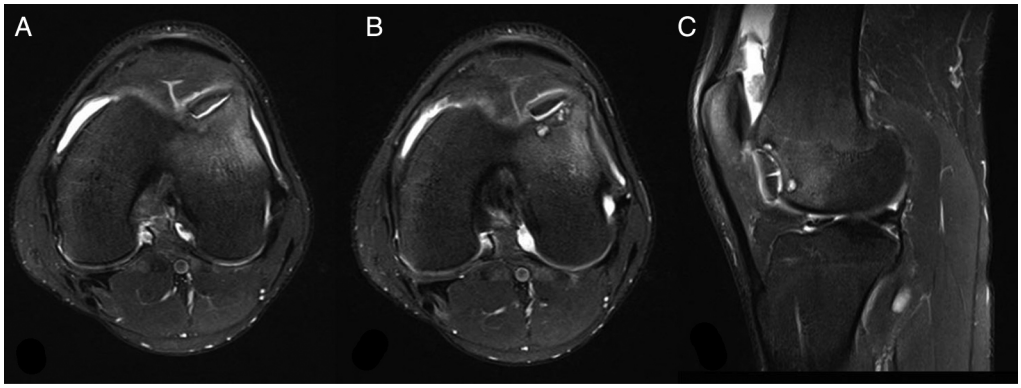

Fig. 1 – Preoperative magnetic resonance imaging. A and B, axial sections indicating unstable osteochondral lesion with subchondral bone cysts; C, sagittal section showing partial reabsorption and fragmentation of the subchondral bone of the osteochondral fragment.

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