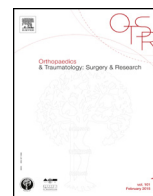




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Original article

Meniscopectomy for lateral discoid meniscus tears: Long-term results of 14 cases



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ABSTRACT

Introduction: Discoid lateral meniscus lesions are relatively rare. The objective of this study was to determine the long-term results of 14 cases of discoid lateral meniscus tears treated by arthroscopic meniscopectomy between July 1991 and May 2009, and to assess the development of osteoarthritis in the lateral compartment.

Methods: The series consisted of 10 patients (14 knees): 3 girls under the age of 15, 3 men and 4 women aged from 16 to 47 years (mean age: 31.4 ± 11.1 years). The main reason for consultation was pain in 10 cases, locking in 2 cases and pain associated with locking in 2 cases. The diagnosis was confirmed pre-operatively by MRI in 10 cases, CT-arthrography in 1 case and arthrography in 3 cases. The indication for surgery was made because of a symptomatic discoid lateral meniscus. All cases were treated by arthroscopic meniscal reshaping. Functional results were evaluated using the Lysholm–Tegner, IKDC, KOOS and satisfaction scores. Radiological results were evaluated based on the modified Alhåck classification for osteoarthritic (OA) changes.

Results: No complications were found. Two patients were lost to follow-up. The remaining eight patients (12 knees) were reviewed at a mean of 157.5 ± 72.1 months (61–276). The mean Lysholm–Tegner score was 88.9 ± 10.6 points (67–100), the mean KOOS was 92.4 ± 9.5 (65–100) and the mean IKDC score was 85.4 ± 16.5 points (65–100). All eight of the reviewed patients were satisfied or very satisfied with the result. Radiological analysis found that five knees had no signs of OA, five knees had stage 1, one had stage 2 and one had stage 3. At last follow-up, no patient had been reoperated.

Conclusion: Meniscopectomy of discoid lateral meniscus tears leads to excellent long-term functional results despite signs of osteoarthritic changes in the lateral compartment of the knee.

Level of evidence: IV (retrospective study).

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1. Introduction

The knee's lateral meniscus can be affected by congenital abnormality, such the discoid meniscus first described by Young in 1889 [1]. The prevalence of discoid meniscus is 0.4% in Caucasians and 20% in Asians [2–4]. Because of its shape, this type of meniscus type is subjected to shear stresses during anteroposterior translation of the lateral femoral condyle [5]. The result is damage to the lateral discoid meniscus due to repeated trauma [6,7] or dysplasia of the meniscal tissue [8].

Total meniscectomy of the lateral meniscus is no longer performed because it leads to development of premature degenerative osteoarthritis in the lateral compartment [9]. The gold-standard treatment is now arthroscopic meniscal reshaping or

meniscopectomy, where the central part of the meniscus is removed so as to restore its normal crescent shape. Meniscus repair or peripheral reattachment can be performed at the same time if there is associated instability. Surgical treatment is guided by the type of discoid meniscus as defined by Watanabe et al. [10] and more recently Ahn et al. [7].

The objective of this study was to evaluate the long-term functional and radiological outcomes after meniscopectomy of symptomatic ruptured lateral discoid menisci. We hypothesized that meniscopectomy of the lateral discoid meniscus will lead to osteoarthritis in the lateral compartment as does total lateral meniscectomy.

2. Material and methods

2.1. Patient series

Between July 1991 and May 2009, 14 arthroscopic meniscopectomy procedures were performed in 10 patients (4 bilateral

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Fig. 1. Widening of the lateral tibiofemoral joint space.



Fig. 2. MRI of a discoid lateral meniscus showing a horizontal fissure.

cases) who had a symptomatic ruptured lateral discoid meniscus. The average patient age at the time of surgery was 26.1 ± 12.6 years (range 12 to 47). Three patients were less than 15 years of age (all girls) and seven were adults (4 women, 3 men) who had an average age of 31.4 ± 11.1 year (range 16 to 47). Pain was the primary reason for consultation in 10 cases, locking in 2 cases and pain associated with locking in 2 cases. Clinical examination found snapping in 4 cases, flexion deformity in 2 cases and synovial effusion in 2 cases. Only three knees had suffered a traumatic injury. Standard A/P and lateral knee X-rays provided little information to support the diagnosis, but were indirectly suggestive: angled lateral tibial plateau in 2 cases, square lateral femoral condyle in 3 cases and joint space widening in 1 case (Fig. 1). All patients underwent additional pre-operative imaging tests to confirm the diagnosis: MRI in 10 cases (Fig. 2), CT-arthrography in 1 case and arthrography in our first 3 cases. The mean time between the start of symptoms and surgery was 19.1 ± 17 months (3 to 60).

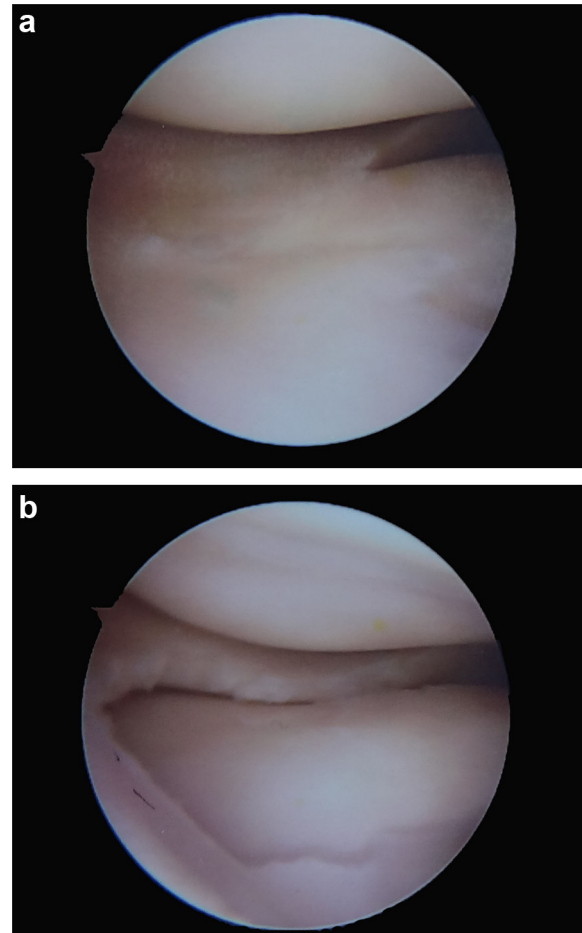


Fig. 3. Intraoperative view before (a) and after (b) arthroscopic meniscal reshaping of a damaged lateral discoid meniscus.

2.2. Surgical treatment

All procedures were performed arthroscopically by the same senior surgeon (DS). Patients were set up with their thigh in the knee vice, the leg hanging down and a tourniquet placed at the vice. The lateral tibiofemoral compartment was explored with the knee slightly flexed and in forced valgus. The type of discoid meniscus was classified according to Watanabe et al. [10]. Nine were type I (incomplete), 5 were type II (complete) and none were type III (hypermobile Wrisberg). In 3 cases, the meniscus had a displaced longitudinal bucket-handle tear and in 11 cases, the meniscus had a horizontal fissure that was more or less associated with a radial tear. One female patient also had sequelae of osteochondritis of the lateral femoral condyle with a loose body in the joint. Meniscopectomy was performed in 11 cases to excise the damaged portion of the meniscus (Fig. 3). The goal was to restore normal meniscal shape by removing the central portion of the discoid meniscus from central to peripheral. In the three cases with a bucket-handle tear, the handle portion was removed and the remainder of the meniscus was reshaped. The remaining meniscus was stable in the joint. The meniscus was not repaired in any of the cases.

2.3. Postoperative recovery

The postoperative course was the same one used with standard arthroscopy procedures: immediate weight-bearing with early mobilization.

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