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Discoid lateral meniscus

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Summary. *Discoid meniscus is uncommon and usually affects the lateral meniscus. We present 16 patients (8 male and 6 female) with tears of a discoid lateral meniscus occurring in 1800 arthroscopies. We carried out an arthroscopic partial meniscectomy leaving an intact peripheral rim. This is biomechanically satisfactory and the early results are encouraging.*

Résumé. *Le ménisque discoïde est une anomalie que l'on rencontre principalement chez les hommes. C'est en général le ménisque externe qui est touché. Nous présentons 16 patients, avec un ménisque externe discoïde déchiré dans un groupe de 1800 examens arthroscopiques du genou. Notre attitude est de réaliser une méniscectomie arthroscopique partielle afin de laisser une zone périphérique de ménisque intact. Cette technique est satisfaisante sur le plan biomécanique et les premiers résultats sont encourageants.*

Introduction

Excision of a discoid lateral meniscus was first reported in 1910 and several papers have subsequently described the condition [3, 5, 10, 11, 12, 14, 19, 21].

The typical clinical features are a click during flexion and extension occurring in children and adolescents. In adults the symptoms of a typical internal derangement are present.

The first report of arthroscopic meniscectomy for a discoid meniscus was in 1982 [13], with other papers following [1, 2, 4, 6, 7, 8, 9, 13, 15, 20, 22]. Our purpose is to review the condition and to present a technique for partial arthroscopic meniscectomy.

Material and method

Between October 1982 and December 1988, we saw 16 patients with a complete discoid lateral meniscus in 1800 arthroscopies. Fourteen of these were torn and had symptoms; this group has been followed up. Mechanical symptoms, range of movement, joint line tenderness, effusion and muscle strength were recorded. Six patients were female and 8 male with an average age of 34 years (range 15 to 50 years). Only one had the snapping knee syndrome. One was seen following an injury with an associated partial tear of the anterior cruciate ligament. The others all had a gradual onset of lateral pain with an effusion.

Twelve of our cases were of Mediterranean origin, 2 African, 1 South American, and only 1 of Swiss extraction.

The type of tear found in every case is shown in Fig. 1.

There were osteoarthritic changes in the articular cartilage of one knee. Symptoms from the tear, which was associated with a large cyst, had been present for many years. The radiographs in the other cases did not show any osteoarthritic changes.

Ten patients were operated on as day cases; the others were in hospital for a short time.

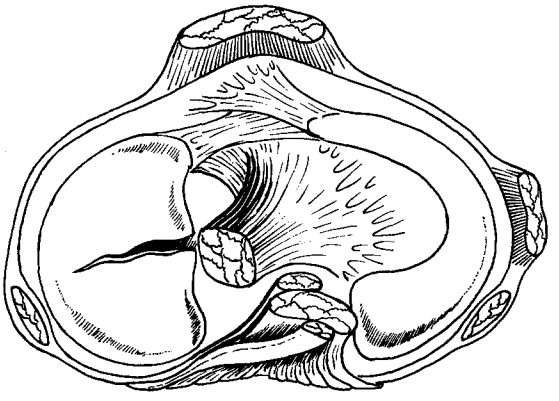

Fig. 1. Radial tear of a discoid lateral meniscus

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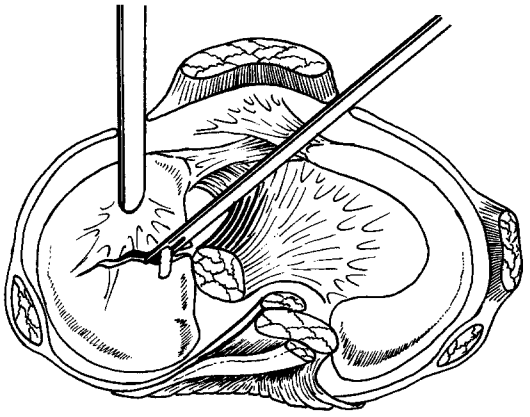

Fig. 2. Partial meniscectomy starting in the radial tear

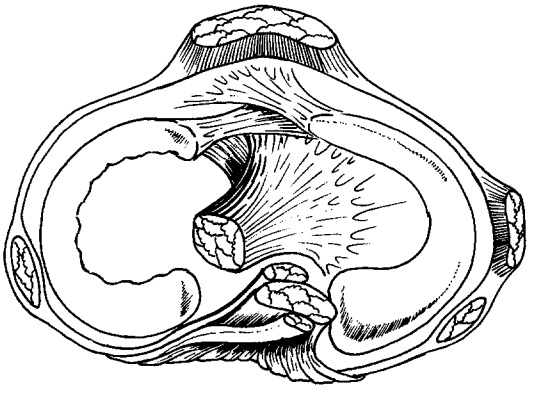

Fig. 3. The rim remaining after resection

The 14 patients were followed up for from 15 months to 5 years.

Arthroscopic technique

General anaesthesia and a pneumatic tourniquet were used. The arthroscope was introduced by the anterolateral portal; occasionally the anteromedial portal was used for part of the anterior horn resection. Instruments were introduced through one or two additional portals.

The meniscectomy was carried out by cutting into the tear from the free edge (Fig. 2). The resection was usually completed by using a basket suction punch and the remaining rim with a shaver.

An intact peripheral rim, which was usually the size and shape of a normal lateral meniscus, was preserved by this technique (Fig. 3).

Results

All the discoid menisci were complete (Fig. 4); 14 had a central radial tear occurring in the thinnest part, with an horizontal extension to the anterior or posterior horn, but leaving the rim intact (Fig. 5). Two discoid menisci were not torn, but were associated with a torn medial meniscus.

The results in the 14 patients with torn discoid lateral menisci at follow up were good in 10, fair in 3 who had persistent joint line tenderness, and

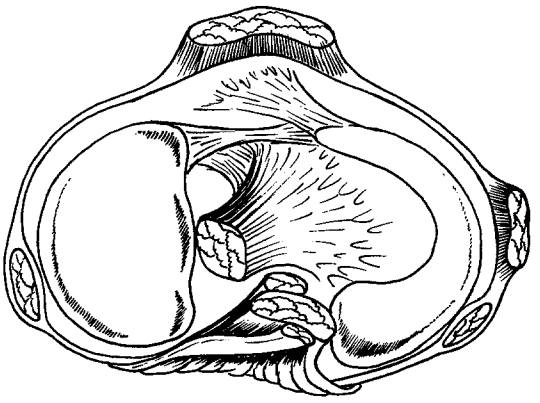

Fig. 4. A complete discoid lateral meniscus

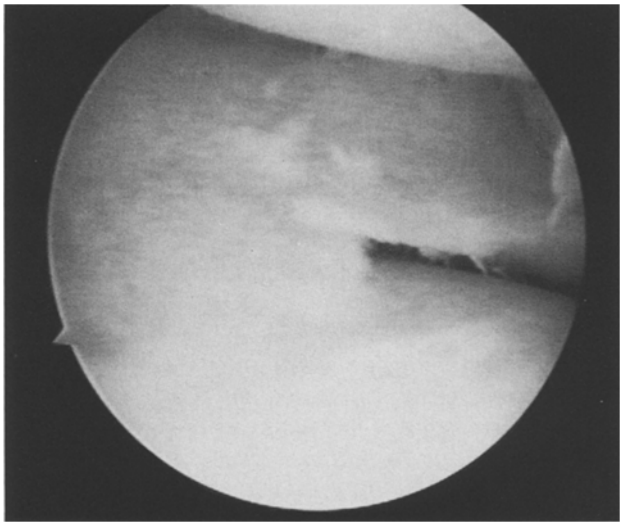

Fig. 5. Tear in the weak central part of the lateral meniscus, seen at arthroscopy

poor in 1. In the last patient, osteoarthritic changes had been found at arthroscopy and a total knee replacement was carried out 2 years later. Another patient had a second arthroscopy for recurrent symptoms 10 months after the first when a new tear was found in the remaining rim and a further arthroscopic partial meniscectomy undertaken.

The seven patients who were followed up for more than 3 years had a good result, but in the remainder the time is relatively short so that the future is uncertain and conclusions cannot be drawn. The presence of the peripheral rim after partial meniscectomy is shown in Fig. 6.

The two patients whose discoid lateral menisci were not torn were rated as good.

Discussion

The natural frequency of discoid meniscus is unknown. It is uncommon, more frequent in males

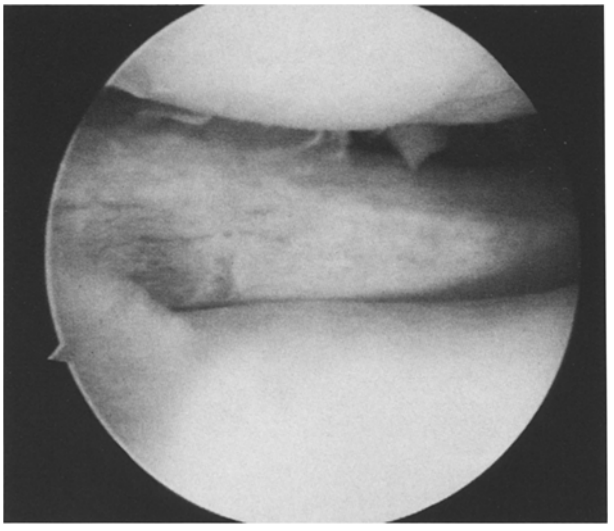

Fig. 6. Arthroscopic appearance of the peripheral rim left after partial meniscectomy

and almost always on the lateral side. Age at meniscectomy is from 8 to 50 years. Our series showed an incidence of 0.9% in arthroscopies done for various indications. Ikeuchi reports an incidence of 16% [13], and the difference is probably explained by the selection of cases for arthroscopy. A racial factor is probably also present as the condition is more common in the Japanese. The shape and thickness of the lateral meniscus varies and Smillie divided discoid menisci into 3 groups which represent arrested development at different embryological stages [21]. Kaplan found that in some individuals there was no meniscotibial ligament, and the only attachment of the lateral meniscus was by the ligament of Wrisberg [16]. The associated abnormal mobility resulted in central thickening of the meniscus. Watanabe put forward a further classification: (1) complete type; (2) incomplete, and (3) Wrisberg ligament type [23]. We did not find any examples of the latter in our series.

Most cases of discoid meniscus reported have radial or longitudinal tears. Cysts and localised thickening of the fat pad are less common.

Children often present with a characteristic click for which various explanations are given [16, 21]. Although clicking may occur in adults [14, 16, 21], most present with symptoms typical of an internal derangement. In all our cases, and in most of those reported in the literature, the discoid meniscus produced symptoms only when it had been torn.

The choice of treatment lies between total meniscectomy by arthrotomy, and partial or total arthroscopic meniscectomy. Although open meniscectomy has been reported to be satisfactory, arthroscopic surgery seems to give better results [1, 2, 13, 22]. We believe that partial meniscectomy has the important advantage of leaving a rim of meniscus which has a biomechanical function, and our results of this technique are encouraging.

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