

WHY A MENISCECTOMY FAILS

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The clinical and roentgenological data on 30 patients with unsatisfactory recovery or recurrent symptoms after meniscectomy were analyzed. The meniscectomy was regarded as having been the wrong choice of therapy in four patients and as ineffective therapy in 11. In 10 patients other knee lesions dominated postoperatively, in three the recovery was delayed for no obvious reason but the symptoms slowly disappeared, and in the remaining two patients a degenerative osteoarthritis developing some time after the meniscectomy was regarded as the cause of the recurring symptoms. We conclude that with an optimal clinical and arthrographic analysis and with careful operative technique as many as 17 arthrotomies (out of 30 primary and 13 reoperations) in the material presented could have been avoided.

Key words: arthrography; arthrotomy; knee injuries; semilunar cartilages

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An unsatisfactory recovery or recurring knee symptoms after a meniscectomy present the clinician with a problem, especially when he also has to consider the indications for a rearthrotomy (Schaefer 1953, Schilling 1963).

Arthrography can provide valuable support in the solving of the problem, but even the findings in a postoperative arthrogram are not conclusive evidence (Fischedick 1963, Thiemann & Fischer 1970, Debnam & Staple 1974).

In our hospital an unsatisfactory postmeniscectomy recovery is as a rule re-evaluated with double-contrast arthrography. In trying to discover "why a meniscectomy fails", we have made a clinical and roentgenological analysis of the pre- and postoperative data on a series of patients with unsatisfactory postmeniscectomy recovery.

PATIENTS AND METHODS

From 714 arthrographies made during a 2-year period, from March 1973 to March 1975, we have selected the 30 meniscectomized patients with one or two postoperative arthrograms. The age of these patients ranged from 16 to 59 years; 18 were men and 12 women.

A primary arthrogram had not been carried out in eight cases, seven of the patients having been operated upon before 1970. Again in eight cases the primary operation had been performed elsewhere, but in these cases, too, the aim had been a total meniscectomy. The rearthrography and rearthrotomy have in all cases been carried out in our hospital, the total number of reoperations required being 13, eight of which have already been performed. Of these 13 patients, eight had undergone the primary operation in our hospital and five elsewhere. The time interval between the first operation and the postoperative arthrography is presented in Figure 1.

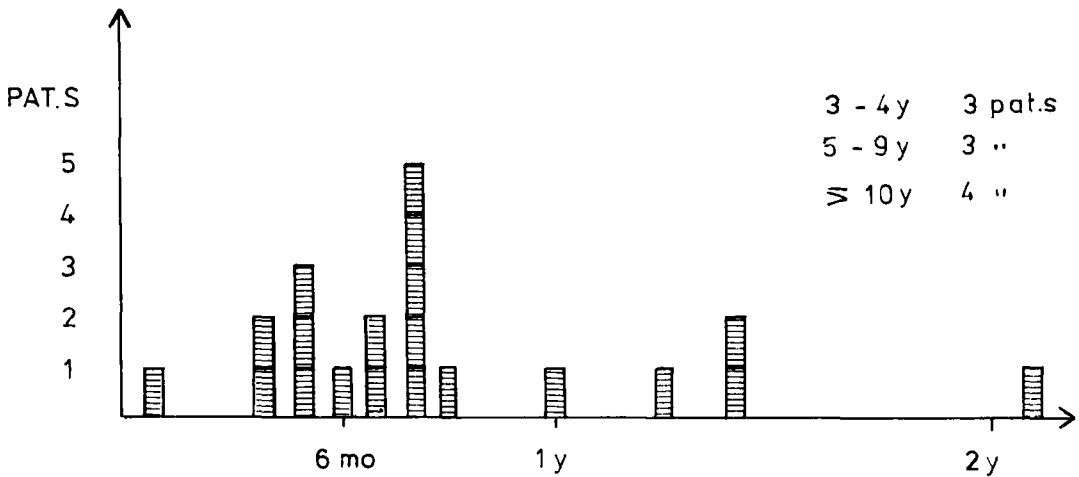


Figure 1. The interval between meniscectomy and postoperative rearthrography in 30 patients with unsatisfactory recovery.

RESULTS

The patients were divided into five groups, according to the etiological factor (Table 1).

Table 1. Cause of unsatisfactory postmeniscectomy recovery in 30 patients.

Incorrect therapy	4
Ineffective therapy	11
Another lesion	10
Delayed recovery	3
Late osteoarthritis	2

Incorrect therapy (4 patients). In three patients another lesion explaining the symptoms was found; in two cases it was a rupture of the medial collateral ligament and in one case chondromalacia of the patella. In all these the preoperative arthrogram had been negative and the meniscus intact at operation. In one patient a rupture of the medial meniscus had been clinically and roentgenologically diagnosed in another hospital, but an intact meniscus was found at operation, and retrospectively the arthrogram can be regarded as negative (Figure 2). In this case, we were not able to explain the patient's knee symptoms.

Ineffective therapy (11 patients). The

cause of postoperative symptoms was, in nine cases, a retained fragment of the posterior horn of the medial meniscus and in two cases a fragment of the lateral meniscus. The remnant was always more than 10 mm long; in 10 patients it was infiltrated by contrast medium indicating degenerative changes, and in seven there was a rupture in the remnant (Figure 3). In the patient without degenerative changes in the remnant, the rearthrogram was made 1 month postoperatively. Eight of these patients have already been

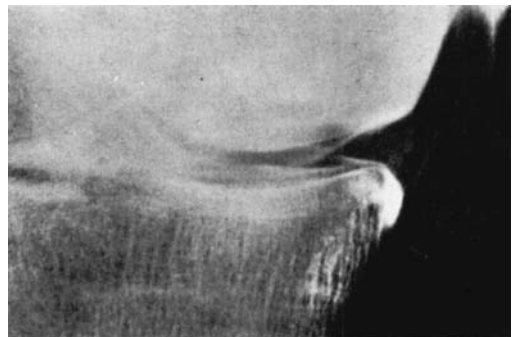


Figure 2. A radiograph of the medial meniscus corpus. The oblique projection with overlying facets of the meniscus may have led to an erroneous rupture diagnosis.

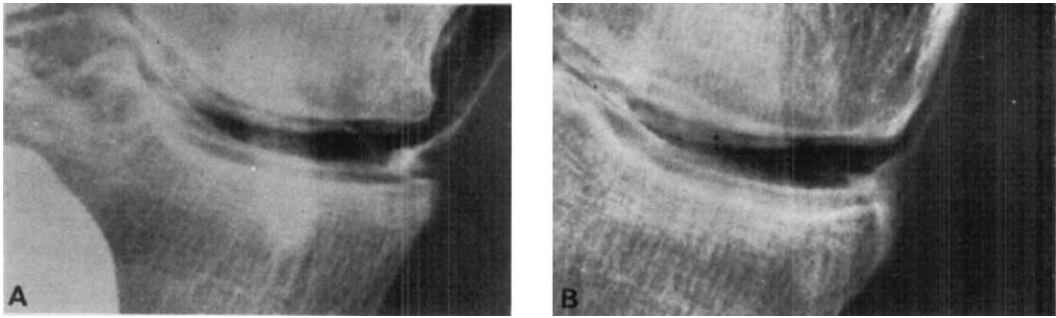


Figure 3. (A) A radiograph from the border of the medial meniscus corpus and the posterior horn. An insignificant remnant, but also an elongated piece of meniscus centrally from it, indicating a remnant of the whole posterior horn with a rupture in it (postoperative arthrogram I). (B) Almost the same projection of the same knee after reoperation. Good result (postoperative arthrogram II).

reoperated, and three are awaiting reoperation.

Another lesion dominating postoperatively (10 patients). The meniscus lesion was obvious in all cases at the primary operation, and significant relief of the symptoms was experienced postoperatively. In three patients there was a concomitant traumatic lesion, in two instances a tear of the other meniscus and in one instance a tear of the anterior cruciate ligament. The latter was sutured in the primary operation but still causes problems, and the patients with a tear in the other meniscus are awaiting reoperation. In two patients there had been a new trauma after the operation; in both, the rearthrogram revealed a minimal remnant of the meniscus and the patients recovered slowly without any reoperation. In five patients symptoms of early degenerative osteoarthritis were already present, either during the primary clinical investigation (1 patient) or soon after the meniscectomy (4 patients). Dissecting osteochondritis was found to be the cause in three cases, chondromalacia of the patella in one case, and an unexplained early femoropatellar osteoarthritis in the remaining case. Two of these patients were active sportsmen.

Delayed recovery (3 patients). A medial meniscus tear had been success-

fully operated and a minimal remnant was seen on the rearthrogram made 5–12 months postoperatively. However, pain symptoms during heavy labor and sporting activity persisted, without diagnostic signs. In all three patients the symptoms gradually disappeared without reoperation. In one of these a hemarthron and a deep venous thrombosis of the same leg were diagnosed as postoperative complications.

Late degenerative osteoarthritis (2 patients). After a long symptom-free period, these two patients complain, 9 and 13 years postoperatively, of slowly increasing symptoms which can be attributed to osteoarthritis. The symptoms are worse in the operated knee, and especially bad in the operated compartment.

DISCUSSION

Patients can usually return to work 1–2 months after meniscectomy, although there may be minimal symptoms or some limitation of movement up to 6 months postoperatively (Böhler 1955). The surgeon will therefore need great experience in order to recognize the necessity and the right time for a thorough re-evaluation, including arthrography. In our material, the peak number of arthro-

ographies has been carried out 4 to 9 months postoperatively.

The correlation of a positive arthrogram and the operative finding is usually high (Bessler 1965, Ricklin et al. 1971). The necessity for meniscectomy with a negative arthrogram has to be reconsidered very carefully, especially if some other possible reason for the symptoms is present (Wilppula & Vahvanen 1971).

In the largest patient group (11/30) of our material the symptoms were caused by a remnant of the posterior horn of the operated meniscus. If the totality of the meniscectomy is in doubt during operation, the surgeon should always consider an additional posterior approach to remove the remnant under visual control. In postoperative arthrography it is difficult to differentiate between a remnant and a regenerate. The length of the remnant (more than 10 mm), the infiltration by contrast medium, and a rupture in the remnant are all indicative of a remnant with clinical significance (Fischedick 1963, Thiemann & Fischer 1970).

A high occurrence of osteoarthritis in postmeniscectomy knees has been reported both clinically (Jackson 1967, Tapper & Hoover 1969), in the radiographs (Appel 1970), and in arthroscopically examined material (Dandy & Jackson 1975).

A combined clinical and radiological investigation can clarify the cause of postoperative symptoms in 90 per cent of cases. The value of rearthrography is beyond dispute, especially when a rearthrotomy is being considered. With a critical appraisal of the indications and with a careful operative technique, as many as 17 of our 43 arthrotomies (30 primary + 13 rearthrotomies) might have been avoided (17 = 4 primary with wrong indications + 11 rearthrotomies

for removing the remnant + 2 rearthrotomies for removing the second, also ruptured, meniscus).

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