

UNDERSIDE LESIONS OF THE MENISCUS

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A total of 180 meniscectomies were performed with special attention to lesions located only on the underside of the menisci. Thirty-six lesions (20 per cent) were found with this location, all in the posterior part of the menisci. Half of these were atypical horizontal cleavage lesions.

The clinical features of these lesions were compared with normal meniscal lesions and no differences could be demonstrated. The subjective results after meniscectomy for 35 underside lesions were 94 per cent good or excellent after an average follow-up period of 22.3 months.

Meniscectomy is the treatment of choice for these lesions. It is emphasized that careful examination of the underside of the meniscus is necessary if a patient presents a clinical picture of meniscal lesion and no other lesions can be found.

Key words: knee joint injury; meniscus lesions; semilunar cartilage, injury, pathology; trauma, knee joint

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The anatomy of the knee makes it difficult to recognize lesions in the posterior part of the meniscus (Henderson 1930, Platt 1930, Slocum & Moore 1943, Palmer 1949, Lescoeur 1969, Smillie 1975).

Underside lesions are always found in the posterior segment of the meniscus and are difficult to diagnose. They are distinguished from other lesions by not penetrating the upper surface of the meniscal substance.

It is not known whether the symptomatology of these lesions is different from other lesions. Underside lesions are not given much attention in the literature and this investigation was undertaken to clarify the incidence of underside lesions and to compare their symptoms with those in other lesions of the menisci.

PATIENTS AND METHODS

The material comprises 180 meniscal lesions in 172 patients (63 women, 109 men) operated upon

in a 3-year period. All the meniscectomies were performed with special attention to underside lesions. The diagnosis was made by careful examination of the underside of the meniscus with a nerve hook. If other lesions were found in the meniscus the patient was excluded from the underside lesion group. This group was compared with the rest of the patients with other kinds of meniscal lesions. The patients with underside lesions were examined after a period of 8 months to 3½ years and the results were analysed.

RESULTS AND FINDINGS

Thirty-six underside lesions were diagnosed among 180 meniscectomies; 30 of these lesions (83 per cent) were in the medial meniscus, and 14 (39 per cent) were found in women.

In 144 ordinary lesions 97 (67 per cent) were in the medial meniscus, and 65 (45 per cent) were found in women. (There were 23 lesions of both the anterior and the posterior horn; 45 posterior horn; 10 anterior horn; 43

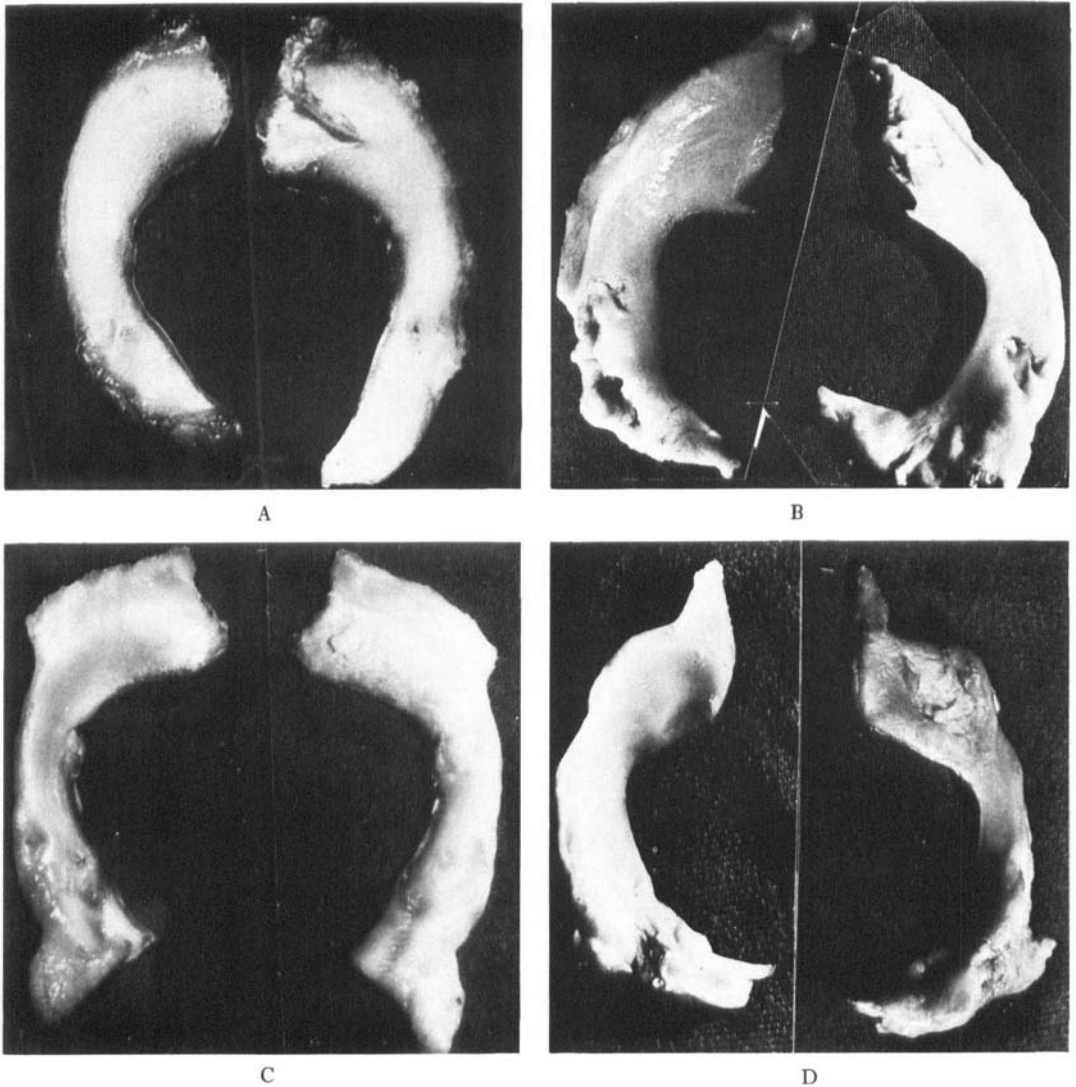


Figure 1. The different kinds of underside lesions. Both sides of each meniscus are shown with the posterior part upwards. The undersides are to the right. Marks from Martins forceps occur in the frontal part of the menisci.

A and B show horizontal cleavage lesions – atypical by not penetrating the upper surface of the menisci. Fourteen were found in medial menisci and four in lateral menisci.

C shows a rough and worn lesion on the underside of the meniscus. This lesion was found in six medial menisci and in two lateral menisci.

D shows that the posterior part of the underside of the meniscus is completely crushed. This type of lesion was found in 10 menisci – all medial.

bucket handle lesions; and 23 peripheral tears, five with a transverse rupture.)

Figure 1 shows the different kinds of underside lesions. A and B lesions were found in 18 patients with a mean age of 40.1 years;

C lesions in 8 patients, mean age 32.6 years; D lesions in 10 patients, mean age 44 years.

Patients with underside lesions were distributed more equally in the various age groups (Figure 2) than patients with other lesions.

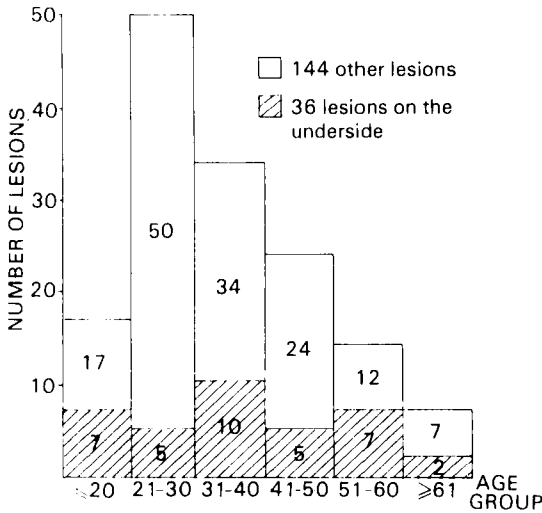


Figure 2. Age distribution.

Forty-seven per cent of the patients over 50 years of age had underside lesions.

The symptoms are shown in Tables 1 and 2. Patients with underside lesions more often presented with periodical symptoms. The period of time before surgery is shown in Table 3. The percentage of other abnormal findings (Table 4) in the knees is the same in both groups except as regards meniscal cysts; these occurred two to three times more often in patients with underside lesions.

The subjective results are shown in Table 5. Fifty-seven per cent (20) had no complaints and were able to perform all previous activities even sport. In 37 per cent (13) the results were good. The patients felt discomfort after hard or long lasting physical strain or during changes in the weather. Six

per cent (2) of the patients did not notice any improvement after meniscectomy.

One of these patients, a 49-year-old male, had arthrosis in the knee and a Benjamin osteotomy was performed later. The other patient was a 29-year-old male in whom a large osteochondritic defect was found on the femoral condyle. Later a hemialloplasty was performed.

From Table 5 it can be seen that six of the patients with residual discomfort had either patellar chondromalacia or disease in the condylar cartilage. Five patients with the same findings obtained excellent subjective results and so did seven patients with either arthrosis or lesions of the ligaments. Of the six patients with a second meniscectomy on the other side of the knee, three had sustained a new trauma.

DISCUSSION

Noble (1977) found, in 200 autopsies, nearly 20 per cent with meniscal lesions. The lesions were all horizontal cleavages, which probably had not given rise to any symptoms. Smillie (1977) states that cleavage lesions in general are more frequent now than previously and they occur in an older age group. He demonstrates that some of these lesions are the result of degenerative changes in the substance of the meniscus and that they will often start on the inferior surface of the meniscus.

Careful examination of the inferior surface

Table 1. Subjective symptoms

	Underside lesions	Other lesions
Locking	14/36	64/144
Intermittent symptoms: pains, click, giving way	21/36	67/144
Constant pains	9/36	61/144
Constant pains with periods of worsening	6/36	16/144

Table 2. Objective symptoms

	Underside lesions	Other lesions
Direct tenderness at the line of the joint	34/36	129/144
Rotational tenderness at the line of the joint	26/36	86/144
Clicking or snapping felt or heard during examination	12/36	92/144
Limitation of extension	9/36	44/144
No findings at the time of operation	0/36	7/144

Table 3. Duration of symptoms before operation

	Underside lesions	Other lesions
Less than 1 month	6/36	35/144
1 month to 1 year	24/36	71/144
More than 1 year	6/36	38/144

Table 4. Percentage of the various pathological findings in the knees (at meniscectomy).

	36 Underside lesions	144 Other lesions
Lesions of the ligaments	16	14
Osteochondritis or damaged condylar cartilage	19	23
Osteoarthritis	11	14
Chondromalacia of patella	16	14
Synovial effusion or irritation	44	47
Loose bodies	8	6
Meniscal cysts	8	3

Table 5. Subjective results after meniscectomy of 35 underside lesions. The main findings during the operation and the later operations on the knees are shown in each group

		Lesions of cruciate ligaments	Chondromal- acia of patella	Osteochondritis or cartilage damage	Arthrosis	Later operations on the knee
Excellent	20 (57 per cent)	4	2	3	3 (1 severe)	3 (2 meniscectomies 1 Hauser operation)
Good	13 (37 per cent)	1	3	3		4 (meniscectomies, one also synovectomy)
Unchanged	2 (6 per cent)	1	1	1	1	2 (1 Benjamin operation 1 hemialloplasty)

of the meniscus with a nerve hook revealed that one fifth of the meniscal lesions were located here, always in the posterior part of the meniscus. Half of these lesions were obviously atypical horizontal cleavage lesions and the other half might have developed from similar lesions. The symptoms in patients with underside lesions were the same as the symptoms in patients with other well known types of meniscal lesions. After meniscectomy for underside lesions, 94 per cent achieved excellent or good results. This is in agreement with the results from the literature, i.e. good or excellent results in 65 to 100 per cent of the cases (Saugmann-Jensen 1963). The results of this follow-up must be considered with reservation as the observation period is only 22.3 months on an average.

Underside lesions may be symptomless, but a patient with a clinical picture of meniscal lesion must be carefully examined for underside lesions, if no other lesions are found in the meniscus. In such cases underside lesions are an indication for removal of the meniscus. Whether the examination for

underside lesions can be performed as reliably by arthroscopy as by arthrotomy has not yet been clarified.

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