THE IMMOBILE MENISCUS

A COMMON SYNDROME IN MIDDLE AGE

F. A. SIMMONDS, F.R.C.S.

*Royal Surrey County Hospital, Guildford, Surrey.
Rowley Bristow Orthopaedic Hospital, Pyrford, Surrey.*

WE often see middle-aged patients who complain of pain over the inner side of the knee joint; the knee aches and any exertion makes it worse; sometimes it is uncomfortable in bed, and driving a car may be a misery. The joint may give way because of sudden pain, but it never locks or unlocks. The onset is usually insidious, though sometimes it is precipitated by a minor injury or by a burst of unaccustomed activity.

The signs are characteristic:—

1. Tenderness is localised to the middle of the medial joint line. There may be a small swelling at this site simulating a cyst of the internal meniscus.
2. Some fluid may be present. In all other respects the joint is normal; there is never any warmth, thickening, or tenderness elsewhere on the articular margins.
3. Full extension, external rotation, and abduction cause pain on the inner side of the joint. The last few degrees of extension may be limited by pain. Internal rotation and adduction movements are not painful.
4. The radiograph is normal; it shows no evidence of osteoarthritis.

Because similar symptoms may co-exist with osteoarthritis, all such knees are often classed as arthritic. We believe this is wrong; in the syndrome we are describing the radiograph is normal, movement is painless in certain directions and only the inner side of the joint is affected. Moreover, we found that nearly 70 per cent of patients lost their symptoms within three months.

The remaining 30 per cent, however, had lasting disability. Why did they continue to complain of symptoms when there was no evidence of osteoarthritis? Was it something to do with the attachment of the medial meniscus to the collateral ligament? Such a clinical syndrome seemed worthy of investigation and we decided therefore to operate on a group of such patients.

FIG. 1.—A diagram of a normal meniscus.

FIG. 2.—A diagram of an immobile meniscus, showing a horizontal tear only visible when the tibial surface of the excised meniscus is inspected.

Group I

Twenty-one patients had the inner side of the knee joint explored and the medial meniscus removed. Their average age was 47 years and the duration of symptoms ten months.

The results were good, nineteen out of twenty-one patients reporting virtually normal knees at ten weeks from operation.

The operative findings were significant.

Operation Findings

The articular cartilage seemed normal. The meniscus in all cases was thick, hard and immobile.

In fourteen cases there was a sliding type of horizontal tear in that part of the meniscus which corresponded to the tender area (Fig. 2). Two knees showed posterior tears, while on five occasions there was no tear present.

Microscopic examination showed degenera-

tion of the thick centre of the meniscus, or around the tear.

The constant loss of mobility of the meniscus, combined with the frequent finding of the sliding horizontal tear made it possible to suggest a pathological basis for the condition.

The Immobile Meniscus

The meniscus loses its mobility because of degenerative changes in its substance and in its main peripheral attachment. This is the deep part of the medial collateral ligament, where it blends with the coronary ligament.

Owing to this lack of mobility, such movements as external rotation of the tibia or full extension tend to buckle the meniscus at its most attached point, thus causing a ligamentous strain. This chronic strain is probably due to microscopic tears with adhesion formation—a sort of “tennis elbow” in the knee.

Often the sliding horizontal tear is produced in an attempt to regain mobility, but this merely perpetuates the symptoms and is likely to cause osteoarthritis later. A vicious circle is set up which can only be broken by regaining the normal mobility of the meniscus or by excising it. The lateral meniscus is not attached to its collateral ligament so the syndrome does not occur on the outer side of the joint.

The aim of treatment therefore should be to regain meniscus mobility before a horizontal tear develops. We think this can best be done by manipulating the knee under general anaesthesia, and injecting hydrocortisone in an attempt to prevent adhesion formation. The manipulation must give full rotation in all

degrees of flexion. It should include abduction strain in fifteen degrees flexion, and of course full extension must be regained. We use 125 mg. of hydrocortisone mixed with 5 ml. of one per cent lignocaine. This 10 ml. mixture is injected, half into the tender area and half into the joint.

Group II

Twenty-five knees were treated by manipulation and injection. The average age was fifty, the duration of symptoms seven months.

At follow-up, seventeen knees were pain free within a few weeks, six were improved but not free of pain seven months later. Two patients were not helped for more than a week or so, but their radiographs did reveal some early osteoarthritis.

Our impression is that earlier manipulation would have produced better results.

Summary

Pain on the inner side of a middle aged knee is not necessarily caused by osteoarthritis. It may be due to the medial meniscus becoming unduly tethered at the point where the medial collateral ligament is attached to it. Although many patients recover spontaneously, possibly assisted by physiotherapy, symptoms may be perpetuated by the development of a sliding horizontal tear.

The rational treatment is early mobilisation of the meniscus by manipulation under anaesthetic with injection of hydrocortisone, and to reserve excision of the meniscus for the few patients with sufficient persisting symptoms to justify operation in that age group.