Meniscotibial ligament strains: a prospective survey

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Medial knee pain is an increasingly common presentation in sports medicine practice. A prospective review was undertaken of 72 patients, mean age 48 years, seen in 1986–1987. The physical findings which were most diagnostic were a loss of some degrees of flexion which was painful medially when forced, and tenderness over the posteromedial joint line. Treatment was either injection of local steroid, or physiotherapy, together with emphasis on quadriceps exercise. Five patients failed to respond and were referred for arthroscopy. Nine patients relapsed once but no subsequent episode has occurred. Meniscotibial ligament strain is a common cause of knee pain in middle-aged sports people.

Keywords: Knee, meniscus, meniscotibial ligament, medial knee pain

The past three decades have witnessed an explosion of interest in physical activity. This has spread to all age levels of the population and both sexes, but the response has been most marked in the middle and older age groups. This has led to a different clientele attending sports injury clinics for treatment of injuries that differ from the problems of the younger age groups. The knee is frequently affected with a diagnosis of osteoarthritis as the cause of pain being too often made.

Medial knee pain is a common problem in sport and affects all ages, but the syndrome of medial knee pain, tenderness over the joint line and restricted movement without a history of a specific injury, is an increasingly frequent presentation in middle-age. When recognized early, its treatment is simple and rewarding to both the patient and practitioner.

The syndrome has been described under varying titles in the past^{1–3}. To evaluate this syndrome a prospective study of 72 patients seen in 1986–1987 was undertaken. They were assessed at least 1 year after diagnosis.

Materials and methods

Seventy-two patients presented with a history of knee pain felt along the medial joint line. There was generally no history of a specific incident but rather the ache was gradual in onset and relieved by rest.

Lying in bed was uncomfortable if one leg lay upon the other.

On examination, wasting was either absent or minimal. Knee extension was full and flexion in most cases restricted by up to 30°. Forced flexion at the end of the patient's range was acutely painful. In cases where flexion was full, forced flexion at that point was painful. Tenderness was present over the medial joint line in the mid-third. Presence of any other lower limb condition eliminated the patient from the series. Radiography was not routinely advised as it did not contribute to the diagnosis.

Treatment consisted of the injection of 1 ml of triamcinolone suspension, 40 mg, with 2 ml local anaesthetic, followed by a period of quadriceps exercises or physiotherapy. For injection, the knee was flexed and the foot placed firmly on the bunk surface. The injection was placed in the deep tissue above the border of the medial tibial condyle, into the tender area.

Patients were reviewed in 3 weeks. If signs persisted a further infiltration was performed and the importance of quadriceps redevelopment was stressed. If symptoms persisted in a further 3 weeks the patient was referred for arthroscopy.

Results

There was a predominance of men (88%) in this series. The age distribution is shown in Table 1.

The mean (range) duration of symptoms was 16 (4–64) weeks. The sports to which the condition was attributed by the patients covered the whole spectrum available to this age group and many were involved in several activities. However, 74% could not ascribe their injury to any particular incident and stated that the symptoms 'just came on'; others described minor falls or twists but none had an event that stopped their activity.

There were 39 patients treated with local steroid and 33 with physiotherapy. Of those taking steroids,

Table 1. Age distribution of the 72 patients

Age (years)	n
35 or less	4
36–45	28
46–55	22
56–65	14
66 or more	4

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0306-3674/91/020094-02

30 required one injection and nine needed a second dose. The group undergoing physiotherapy averaged six treatment sessions using short-wave diathermy, ultrasonography and quadriceps exercises. Three patients on steroids and two of the physiotherapy group were referred for arthroscopy. Two declined to pursue the advice as they were much improved. The other three were shown to have degeneration of the mid-third of the medial meniscus and a small tear in the posterior third of the meniscus.

Nine developed a further episode between 6 and 12 months and all responded to the same local treatment. There has been no subsequent relapse.

Discussion

This syndrome has been an increasingly frequent presentation in this institute in the middle-aged population in the past two decades. It has been most frequently misdiagnosed as osteoarthritis, a reflection in many cases of the view that all people in this age group suffer from that disease and any condition not capable of more precise diagnosis falls into that basket.

Kerlan and Glousman³ described the syndrome as tibial collateral ligament bursitis, attributing the condition to involvement of the bursae described by Brantigan and Voshell⁴. As the medial ligament is lax in flexion it is difficult to understand how a 'tibial bursitis' would be painful on flexion rather than on extension, as in the syndrome described in this survey. The bursa in their description runs in a vertical direction whereas tenderness is horizontal; this suggests that these bursae are not the site of the pathological lesion. Previous experience showed that injections were ineffective unless placed deeply and some resistance was encountered.

Smith and Blair⁵ described 50 cases seen over 5 years of a syndrome bearing a strong resemblance to the present series. All patients were treated by arthrotomy and demonstrated cartilage damage or deformity and all recovered. At operation all had displacement, actual or potential, of the medial meniscus which could be reduced by abduction of the lower leg. Their diagrams show the degree of movement demonstrated in their cases, strongly supporting the view that ligamentous injury had occurred. They found no benefit from procaine (Novocain) injection but did not use local steroid.

Casscells¹ reported 60 cases with this symptom complex and he used local steroid therapy with good results. He pointed out that the condition in these patients differs from a meniscal injury in that they do not complain of locking, clicking or instability, and night pain is common, unlike the meniscal tear. He described the injection as being into the tender area but does not mention whether resistance to injection was found.

A review of previous experience strongly suggests that the deeper tissue is the likely seat of the lesion and that damage to the meniscotibial ligament is the most likely cause of the pain. Before this series started it was found that deeply placed injections gave a satisfactory response while injection of bursae was inadequate.

The choice of treatment depended to a great extent on the patient's wishes. Many athletic people strongly resist injection of material or medication, preferring 'natural methods'. This group opted for physiotherapy and the remainder underwent infiltration with steroid. Each group performed quadriceps work. Perhaps a trial of exercise alone may show this to be the curative factor.

The 'failed' cases at arthroscopy showed no damage attributable to steroid injection. Prevention of the injury could probably be achieved by encouraging all patients in this age group to undertake quadriceps exercises. These are very boring and it is unlikely they would be done. However, all athletes in the middle and older age groups could be advised to perform straight-leg raising if the knee becomes sore; this would not do any harm and, done in the early days, may prevent the further development of symptoms.

References

- 1 Casscells SW. Tibial collateral ligament sprain. *Clin Orthop* 1971; 76: 123-4.
- 2 Millar AP. *Sports Injuries and their Management*. Sydney: Williams and Wilkins, 1987.
- 3 Kerlan RK, Glousman RE. Tibial collateral ligament bursitis. *Am J Sports Med* 1988; 16(4): 344-6.
- 4 Brantigan OC, Voshell AF. The tibial collateral ligament and its relation to the medial meniscus. *J Bone Joint Surg [Am]* 1943; 25-A: 121-31.
- 5 Smith FB, Blair HC. Tibial collateral ligament strain due to occult derangements of the medial meniscus. *J Bone Joint Surg [Am]* 1954; 36-A: 88-93.