

Meniscal Tear May Be First Indicator of Knee OA

BY BRUCE JANCIN
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VIENNA — Long-term outcomes after partial meniscectomy in middle-aged and elderly patients aren't nearly as favorable as they ought to be for an operation that does a good job of preserving the key meniscal functions of shock absorption and load transmission—and the reason may be that the procedure is often misapplied to patients who already have early osteoarthritis at the time of surgery.

"I suggest that many meniscal lesions may be associated with early-stage knee osteoarthritis [OA] that also involves the knee menisci. A meniscal tear may therefore represent the first signal feature of the osteoarthritis. It is then not surprising that treatment directed toward the meniscus-only has limited influence on the outcome. The intervention merely removes evidence of the disorder, while osteoarthritic joint degradation proceeds," Martin Englund, M.D., asserted at the annual European Congress of Rheumatology.

If this argument is correct, it has important take-home messages both for non-surgeons and surgeons. Nonsurgeons shouldn't be so quick to label OA arising after partial meniscectomy as a secondary arthritis attributable to the surgical procedure, as they typically do.

And for surgeons, the message is that they need to become more selective in their use of meniscectomy. It can be difficult to reliably discriminate between knee pain caused by a meniscal tear and the symptoms of incipient OA. Surgeons are better off in operating on the basis of mechanical symptoms rather than pain. Unless a knee joint is producing specific mechanical symptoms of a traumatic longitudinal meniscal tear—that is, painful locking or catching of the knee—meniscal surgery is probably not indicated, according to Dr. Englund, an orthopedic surgeon at Lund (Sweden) University.



But adopting a more selective approach to meniscectomy is easier said than done, he conceded. Arthroscopic partial meniscectomy is the most commonly performed operation by orthopedic surgeons, with more than 450,000 per year done in the United States.

"It would be quite fair to say that if you send a patient with knee osteoarthritis for an MRI, there most certainly will be meniscal pathology found. And when you've got a patient demanding treatment of a verified meniscal tear, it's tempting to offer an arthroscopy," he observed at the meeting, sponsored by the European League Against Rheumatism.

Sports trauma involving a younger individual with a previously healthy knee is a common cause of longitudinal meniscal tears featuring a dislocated central cleavage.

Today the treatment of choice for such lesions involves stitching the torn part back into place, with resection of the torn portion being employed only when repair isn't possible. Rehabilitation following repair is, however, more arduous than after resection.

DR. ENGLUND

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Far more common than the longitudinal meniscal tears seen in athletes are degenerative tears occurring predominantly in middle-aged and elderly patients. These lesions typically involve a horizontal cleavage and a more complex tear pattern than seen in young athletes. A growing body of evidence points to an association between these degenerative meniscal lesions and early OA, with much of the evidence having been generated by Dr. Englund and his colleagues.

Animal data suggest a possible mechanism for this association: Collagenase released in the OA disease process degrades the collagen-proteoglycan complex of the meniscal matrix, with a resultant decrease in the matrix's tensile strength and ability to withstand loads.

In one Lund study involving 170 patients who had undergone isolated menis-

ectomy 17-22 years earlier, radiographic evidence of knee OA was present at follow-up in 55% of the operative knees and 28% of non-operated contralateral knees.

In a multivariate analysis, radiographic hand OA—a rheumatologic disorder known to have a strong genetic component—was associated with a highly significant 3.0-fold increased likelihood of radiographic OA in the operative knee and a 3.5-fold increased risk in the other knee (Arthritis Rheum. 2004;50:469-75).

Another study featured 317 patients evaluated after having undergone meniscectomy 15-22 years earlier, along with 68 nonoperative control subjects. Radiographic tibiofemoral OA was found in 48% of operated knees, 27% of contralateral knees, and 9% of control knees. But nearly half of patients with radiographic OA were asymptomatic, while 21% of those without radiographic OA did have knee symptoms.

Patients with a degenerative type of meniscal tear had an increased likelihood of subsequently developing radiographic OA; they also showed a higher frequency of intraoperative degenerative patellofemoral cartilage changes suggestive of incipient OA (Arthritis Rheum. 2004;50:2811-9).

In a more recent analysis of the same patient cohort, Dr. Englund showed there was an increased frequency of patellofemoral OA with coexistent tibiofemoral OA following meniscectomy.

While 15% of patients had symptomatic tibiofemoral OA at 15-22 years of follow-up, and another 14% had asymptomatic tibiofemoral OA, 12% of patients had symptomatic mixed tibiofemoral/patellofemoral OA (Ann. Rheum. Dis. [Epub ahead of print], April 20, 2005. Ar-



Patients with a degenerative type of meniscal tear have an increased likelihood of developing osteoarthritis.

ticle DOI: 10.1136/ard.2005.035568. Available at <http://ard.bmjournals.com>).

One likely explanation for the common finding of mixed knee OA following meniscectomy is that OA disease activity in the knee releases protease and cytokine cascades that act locally on both the tibiofemoral and patellofemoral joints as well as the type I collagen-rich menisci.

Patients with mixed OA had worse knee symptoms and poorer knee-related quality of life on structured measures than those with only tibiofemoral OA. This is an important new observation because epidemiologic studies of knee OA as well as treatment studies have focused solely on tibiofemoral OA as an end point, he said.

In a multivariate logistic regression analysis, the risk factors for radiographic patellofemoral and tibiofemoral OA were essentially the same: obesity, age beyond 60 years, a degenerative type of meniscal tear, and total or subtotal, as compared with partial meniscectomy.

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Acupuncture May Beat Sham for Knee Osteoarthritis Pain

BY MICHELE G. SULLIVAN
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Acupuncture relieves pain and improves function in knee osteoarthritis significantly better than sham acupuncture, at least in the short term, according to the findings of a randomized controlled study.

Over the long term, however, real and sham acupuncture provide about the same benefits. And patients in both groups improved more than patients who had neither treatment, according to Claudia Witt, M.D., and her colleagues (Lancet 2005;366:136-43).

The investigators randomized 294 patients with knee osteoarthritis to acupunc-

ture (149), minimal acupuncture (75), or a waiting list (70). Both acupuncture groups received 12 30-minute sessions over 8 weeks.

The true acupuncture group received needle stimulation at acupuncture points as identified by traditional Chinese medicine practices.

Minimal acupuncture consisted of superficial needling at nonacupuncture points and these needles were not manipulated.

At 8 weeks, response rates, defined as at least a 50% improvement on the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC), were 52% in the acupuncture group, 28% in the minimal acupuncture group, and 3% in the wait list group.

At baseline, the median WOMAC pain score was 51. After 8 weeks, the mean baseline-adjusted WOMAC score decreased to 27 in the acupuncture group and 36 in the minimal acupuncture group.

The score did not change significantly in the wait list group.

On all WOMAC subscales measuring pain, stiffness, and physical function, the acupuncture group showed significantly greater improvement than did the minimal acupuncture and wait list groups.

The percentage of patients taking analgesics decreased from 42% to 22% in the acupuncture group, 38% to 23% in the minimal acupuncture group, and 52% to 45% in the waiting group.

Improvements at 8 weeks persisted in both acupuncture groups throughout the 52 weeks of follow-up.

However, the differences between the groups were no longer significant at 26 or 52 weeks.

In an accompanying editorial, Andrew Moore, Ph.D., and Henry McQuay, M.D., who conduct pain research at Churchill Hospital, Oxford, England, said that while using needles "still has little long-term benefit without continuing acupuncture," the technique obviously benefits patients (Lancet 2005;366:100-1).

"Certainly, a major benefit patients report is that acupuncture makes them feel better," they said. "Making patients feel better is important."