

Yim JH, Seon J-K. et al. A Comparative Study of Meniscectomy and Nonoperative Treatment for Degenerative Horizontal Tears of the Medial Meniscus. Am J Sports Med 2013 41: 1565-1570.

Design: Randomized clinical trial

Study question: In patients with a horizontal degenerative tear of the medial meniscus, does arthroscopic meniscectomy yield better outcomes than nonoperative treatment?

Population/sample size/setting:

- 102 patients (81 women, 21 men, mean age 57) who had analyzable data in a randomized trial for degenerative meniscal tears in a university setting in Korea
- Eligibility criteria were daily knee pain on the medial side with mechanical symptoms limiting daily activities despite one month of treatment at a primary care clinic
- Exclusion criteria were a history of trauma, previous knee surgery, ligament deficiency, systemic arthritis, and osteonecrosis
 - o Osteoarthritis of Kellgren-Lawrence grade 2 or above were excluded as well

Interventions and comparisons:

- 108 patients were originally randomized, but after 6 dropouts, there were 102 patients randomized to either meniscectomy (n=50) or nonoperative treatment (n=52)
- Meniscectomy group had resection and limited debridement of the articular lesion; 3 patients who had more extensive surgery with curettage, abrasion arthroplasty, or subchondral drilling were excluded from the analysis
- Nonoperative group had prescription analgesics, NSAIDs, or muscle relaxants, and underwent scheduled physical exercise 3 times weekly for 3 weeks under the supervision of a physical therapist
 - o Following the three week supervised program, patients were given a home exercise program which they conducted without supervision for 8 weeks
 - Home exercise consisted of daily isometric and isotonic muscle exercises

Outcomes:

- Clinical results were assessed with the VAS pain scores, the Lysholm knee score, and the Tegner activity scale
 - o Degrees of pain relief were categorized as “complete relief” if the final pain score was 0 or 1, “improved” if there were a decrease of 2 points or more, and “persistent” if the final pain score was less than 2 points different from the baseline pain score

- Lysholm knee score was the outcome used to estimate sample size, and a minimal clinically important group difference of 10 points on a 100 point scale was assumed
- At baseline, average pain score in meniscectomy group was 5.2; in nonoperative group, average pain score was 4.9
- At baseline, average Lysholm score in meniscectomy group was 64.0; in nonoperative group, average Lysholm score was 65.2
- At 2 years, average pain score in meniscectomy group was 1.8; in nonoperative group, average pain score was 1.7
- At 2 years, average Lysholm score in meniscectomy group was 83.2; in nonoperative group, average pain score was 84.3
- At 2 years, 2 patients in the meniscectomy group and 3 patients in the nonoperative group had progressed to Kellgren-Lawrence Grade 2 osteoarthritis

Authors' conclusions:

- Both arthroscopic meniscectomy and nonoperative treatment result in substantial improvements in knee function in the setting of degenerative tears of the medial meniscus, but there are no differences in outcome at 2 years from the beginning of treatment

Comments:

- The meniscectomy group had an unsupervised home exercise program after surgery, but did not have a supervised exercise program similar to that of the nonoperative group
 - This could represent a form of performance bias, in that the two comparison groups had different co-interventions, and it is possible that the meniscectomy group would have fared better if it had had a supervised exercise program prior to home exercise
 - There is no information about other interventions in the nonoperative group, such as medication use, and no information about such use in the surgery group, nor is there information about whether strong analgesics such as opioids were used in either group
- The inclusion and exclusion criteria do not mention whether patients with locking of the knee were eligible for the study; it would generally be appropriate to exclude patients who cannot fully extend the knee, but this is not clearly stated
- Although the groups were aware of their treatment group, lack of blinding would be expected to favor the surgery group, and the conclusion of equal treatment benefit with nonoperative treatment is not undermined

- In contrast to some studies in which there was considerable crossover to surgery in nonoperatively treated patients, there was only one patient in the exercise group who had crossed over and had surgery at two years in this study
 - o The reasons for the very low crossover rate, compared to what has been reported in other trials of surgery versus exercise, cannot be explored with the published data alone, but could involve aspects of the therapy program not captured by a description of the exercise protocol alone
- Although a small number of patients were dissatisfied with their knee function at 2 years (4 in the meniscectomy and 6 in the nonoperative group), there is no information as to whether the 6 dissatisfied patients in the nonoperative group had surgery during the study period or later; presumably they did not
- Although the study is weaker than some other studies with better control of performance bias, it is adequate to support evidence that nonoperative treatment yields outcomes similar to those of meniscectomy in these patients

Assessment: Adequate for some evidence that in patients with degenerative tears of the medial meniscus, a conservative treatment plan which includes both supervised physical therapy and a home exercise program may yield substantial functional and symptomatic benefits similar to the benefits of arthroscopic meniscectomy when measured 2 years after the beginning of treatment