

Selected Summaries

Exercise or surgery for meniscal tears: Do we have an answer?

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SUMMARY

The authors conducted this randomized controlled trial (RCT) to determine whether exercise therapy is superior to arthroscopic partial meniscectomy in degenerative meniscal tears. They included 140 adults (age 35.7–59.9 years) and the meniscus tear was verified by magnetic resonance imaging (MRI). One group of patients was given 12 weeks of supervised exercises and the other group was treated by arthroscopic partial meniscectomy. The main outcome measures of this study were thigh muscle strength from baseline to 3 months and four of five KOOS (knee injury and osteoarthritis outcome score) subscale scores (pain, other symptoms, function in sports and recreational knee-related quality of life). The authors reported 19% crossover of patients from the exercise to the surgery group. They found that thigh muscle strength was significantly better in the exercise group at 3 months and there was no clinically relevant difference in KOOS₄ between the two groups at 24 months.

COMMENT

The study hypothesizes that meniscectomy is not useful. However, I believe that for the following reasons a different conclusion can also be drawn.

1. The primary end-points used by the authors were four of the five subscales in KOOS. The authors have not given any reason for excluding the fifth subscale of 'function in daily living'. I consider this an important component of KOOS which reflects the real needs and requirements of the patient. Inclusion of this component could have changed the final conclusion in favour of surgery.
2. The authors reported that 19% (13/70) of participants in the exercise group crossed over to receive surgery. This cohort of unsatisfied patients in the exercise group should be factored in the final analysis.
3. The study shows that the change in KOOS₄ was more in the surgery group between 3 and 24 months. It seems that if the

fifth component of KOOS was included, the scores would be even more in favour of surgery.

4. The study also shows better knee bend in the lower extremity performance test at 12 months in the surgery group. The authors have not documented the lower extremity performance tests at 24 months.
5. While the study shows KOOS₄ in favour of exercise therapy, the subcomponents of knee-related quality of life and sports/recreation favour surgery. This supports the above view.
6. The scoring in the physical component of SF-36 also favours surgery.
7. The authors have emphasized on better muscle strength in the exercise group. This is not a patient-reported outcome and beyond a certain point, it plays a minor role in the total function of the knee.
8. The authors have not described the fate of the torn meniscus in the exercise group. If the torn meniscus is the cause of pain, exercises do not address the pathology. We presume that the torn meniscus withers away in 2 years and then behaves like a partially excised meniscus (as in the surgery group). This may explain the similar functional outcome at 2 years in both the groups.

The authors draw support from the six RCTs which show a similar outcome and conclusion. However, there is abundant literature that shows a different conclusion of these RCTs as well as other studies. El Ghazaly *et al.* showed that patients were not satisfied after physical therapy due to a limited range of motion and were more satisfied after partial meniscectomy.¹ Demange *et al.* showed significant benefit of arthroscopic partial meniscectomy in 'fatigue meniscal tears' with no evidence of osteoarthritis.² Østerås *et al.* concluded that the relief from arthroscopic partial meniscectomy can be obtained quickly, within 3 months postoperatively.³ Other authors have not emphasized this important conclusion. Waiting for 6–24 months for pain relief by exercises can be frustrating. In the Indian scenario, this can well mean loss of job and livelihood. Indian patients, who do not enjoy insurance and government security benefits, would certainly like to get back to work as early as possible. Herrlin *et al.* noted significant improvement after arthroscopic partial meniscectomy up to 5 years postoperatively.⁴ However, they found that one-third of patients treated non-operatively required arthroscopy secondary to incomplete pain relief.⁴ This again is a considerable proportion and should be considered before drawing any conclusion. A similar number of patients crossed over from the non-operative group to the arthroscopic partial meniscectomy group in the MeTeOR study by Katz *et al.*, who concluded that arthroscopic partial meniscectomy is not beneficial compared to exercise.⁵

Meniscus tear in osteoarthritis is not a uniform entity. Different patterns of meniscus tears can occur and there can be concomitant different grades of articular cartilage injuries. The published RCTs have not considered these variables while making conclusions. This was emphasized by Howell *et al.* who said that arthroscopic partial meniscectomy is not a guaranteed success if there is concomitant articular pathology.⁶ Different grades of meniscus and articular cartilage injuries produce different symptoms and operative interventions are required in subgroups that have mechanical symptoms such as locking.⁷ These patients

would not improve with physical therapy alone. The published RCTs have not stratified the population and hence their conclusions are not valid. Lamplot *et al.* reviewed 5 published RCTs and 1 cross-sectional study on this subject.⁸ They found that the degree of osteoarthritis and the rate of cross-over varied in these studies. Two RCTs showed benefit of surgery in patients with limited osteoarthritis compared with conservative treatment. In a similar study, Ha *et al.* found that each RCT suffered from selection, performance, detection and/or transfer biases that reduce confidence in their conclusion.⁹ Under alternative analysis of treatment, two studies had more success in arthroscopic partial meniscectomy although the original intention-to-treat analysis showed no difference. Cross-over remained an important problem. With the available RCTs, no conclusion could be drawn for optimal treatment of meniscus tears. A recent meta-analysis of RCTs has shown that there is significant difference in favour of the arthroscopic partial meniscectomy group for physical function and pain up to 6 months.¹⁰ There is no difference at long-term follow-up. Thus, I believe that arthroscopic partial meniscectomy has a definite role in the management of meniscus tears, especially in the Indian scenario, where patients cannot wait for 24 months for their knee pain to settle down.

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