Conservative Treatment of Meniscus Injuries Compared to Surgical Intervention

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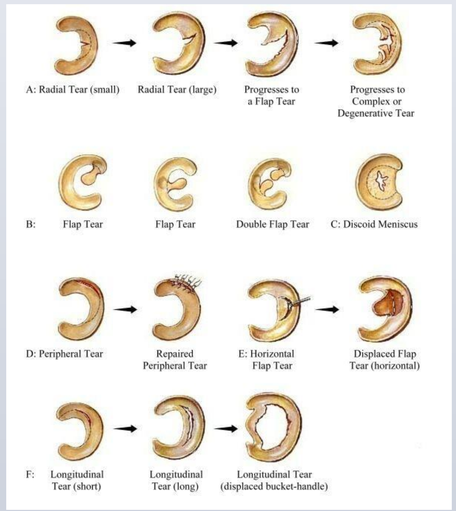
Introduction

Meniscal knee injuries are common in the adult population, most commonly in active individuals. The meniscus is a fibrocartilaginous structure that covers approximately 70% of the articular surface of the tibial plateau, and primarily function in shock absorption through the tibiofemoral joint. Menisci are wedge-shaped and thicker portions are at the periphery of the joint. The inner portion of the menisci are avascular, receiving nutrients through the synovial fluid, which greatly limits healing and repair of the structure. Meniscal injuries generally occur due to shearing force, most commonly occurring from; acceleration/deceleration movements, rotational and change of direction movements, jumping, and squatting or lifting heavy weights. Injury can also occur in traumatic impact of the knee, although this is less common. Individuals over 40, males in particular, and those with osteoarthritis are at greater risk of meniscal injuries (Raj & Bubnis, 2019). After clinical evaluation, Magnetic Resonance Imaging is the most accurate way to diagnose the extent and type of tear. Different classifications of tears include; partial or complex; anterior, lateral, or posterior; traumatic or degenerative; and horizontal, vertical, radial, flap, parrot beak or bucket handle. (Cardone & Jacobs, 2019).



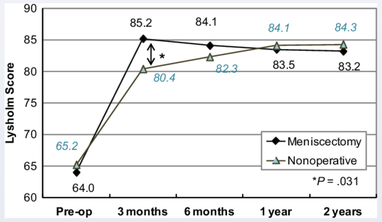
Objectives

- Evaluate primary research on conservative treatment of meniscus injuries in comparison to surgical intervention with or without physical therapy in patients with meniscus injuries.
- Determine if surgical intervention, conservative treatment, or a combination is the best course of action for managing pain and improving functionality.
- Established best evidence-based practice for evaluation of meniscus injuries and provide patients with options for management.

Methods

- Seven primary research studies were selected based on relevance.
  - Patients age needed to be between 30 and 65 years old.
  - Studies have a surgical group and a control group of conservative therapy.
  - Studies published between 2013 and 2019.
  - Studies used the Tegner and Lysholm, KOOS or WOMAC scales for evaluation of functionality and pain.
  - Studies had at least 12 months of follow up evaluation data on patient's outcome.

Results

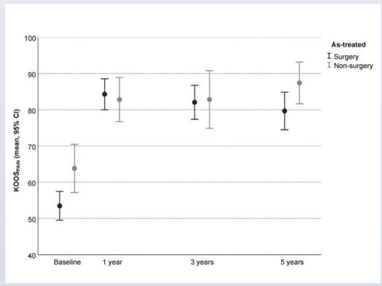


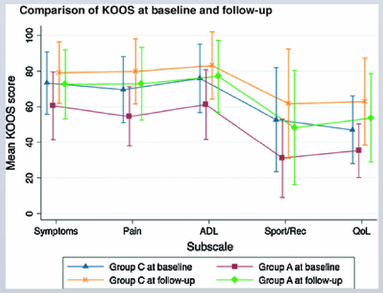
The average Lysholm knee scores were 83.2 (range, 52-100) and 84.3 (range, 58-100) at the 2-year follow-up in the meniscectomy and nonoperative groups, respectively, which were also not significantly different (P = .237). The Lysholm knee scores had improved when evaluated at the follow-up relative to before treatment in both groups, and the only significant intergroup difference was observed at 3 months

Yim et. al. (2013)

Mean KOOSPAINscores at baseline, 3, and 12 months according to treatmentgroup. A: Intention-To-Treat analysis (baseline n surgery group 74, non-surgery group74; 3 months n surgery group 66, non-surgery group 57; 12 months surgery group 70,non-surgery group 60), B: As-Treated analysis (baseline n surgery group 81, non-surgery group 67; 3 months n surgery group 52, non-surgery group 55; 12 monthssurgery group 74, non-surgery group 56).

Gauffin, Sonesson, Meunier, Magnusson, and Kvist (2013)



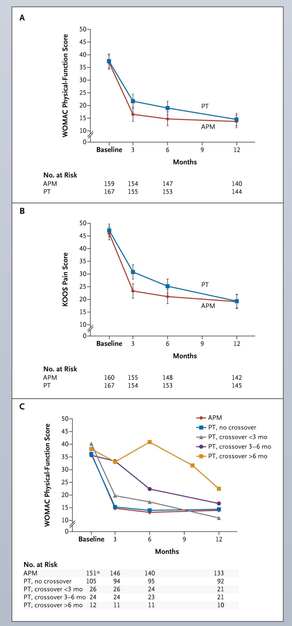


Mean KOOS subscales are presented and reported at baseline and follow-up as an outcome profile for the arthroscopy group (group A) versus the conservative group (group C). KOOS subscales: symptoms, pain, activity in daily living (ADL), sport and recreation (Sport/Rec) and quality of life (QOL)

Rathliff et.al (2013)

Scores on the WOMAC Physical-Function Scale and KOOS Pain Scale over the 12-Month Followup Period.
Panel A shows the scores on the physical-function scale of the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC), and Panel B shows the scores on the pain scale of the Knee Injury and Osteoarthritis Outcome Scale (KOOS); scores on both scales range from 0 to 100, with higher scores indicating more severe symptoms. I bars indicate 95% confidence intervals. Panel C shows WOMAC physical-function scores in the APM group and in the PT group according to crossover status. The asterisk indicates that nine patients assigned to APM did not undergo surgery.

Katz et. al. (2013),



Discussion

Studies show similar results for both surgical intervention and conservative treatment. Patients have improved evaluation scores quicker with surgical intervention, however, if patients are able to adhere to physical therapy and exercise regimens, they show slightly better outcomes in the long run. If patients do not show any improvement within the first 3 months of conservative treatment it appears that they would benefit from surgery. As with most soft tissue injuries, the more severe the tear the more likely the patient is to require surgery. Injuries such as displaced bucket handle or displaced flap tears are examples of more advanced injuries.

Conclusions

Surgical intervention has greater initial improvements but become less significant over relatively longer periods. There is strong evidence for conservative therapy as initial treatment with surgery as an alternate intervention if adequate improvement is not accomplished, especially in the first 3 months. It appears that degenerative related injuries have a worse prognosis than traumatic injuries, however this is likely related to the age and natural healing properties associated with age. Decision for conservative therapy and surgery should be a discussion between the patient, their PCP and an orthopedic surgeon based on the mechanism of injury, nature of the injury and expected outcome. More long-term studies need to be completed. If these authors are able to continue following up with the patients in their cohorts for long-term results, >5 years, it would provide increased data for prognosis

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