Spring 5-4-2017

Arthroscopic partial meniscectomy versus nonoperative therapy in the treatment of degenerative meniscus tears

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INTRODUCTION

Arthroscopic partial meniscectomy (APM) is the most commonly performed orthopedic procedure in the United States.[1] Currently, APMs are offered to patients with a degenerative meniscus tear experiencing knee pain with mechanical symptoms. Significant variation exists among surgeons regarding the decision to perform APM.[2] Currently, there is no consensus on an evidence-based treatment of choice; practitioners continue to question whether operative or nonoperative treatment yields better short- and long-term results, particularly for those aged 30 and over and those with baseline evidence of osteoarthritis. The goal of this study is to compile evidence and determine the efficacy of the traditional treatment (APM) and compare it with nonoperative therapy.

Tegner Lysholm Knee Scoring Tool

A patient reported qualitative, condition specific, scoring questionnaire that assesses both pain and activity levels. Lower scores indicate more severe symptoms.

Western Ontario Meniscal Evaluation Tool (WOMET)

The first meniscal pathology-specific measurement of quality of life. It contains 16 items addressing physical symptoms, activity/lifestyle, and emotions. Lower scores indicate more severe symptoms.

Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC)

A set of standardized questionnaires used to evaluate osteoarthritis based on pain, stiffness, and physical functioning of the joints. Higher scores indicated more severe symptoms.

Kellgren-Lawrence Grading Tool

Used to grade the severity of knee osteoarthritis based on characteristics of joint space narrowing, osteophytes, sclerosis, and bony deformity.

Clinical Question: Does arthroscopic partial meniscectomy provide long term pain relief to those with degenerative meniscus tears >35 y/o?

METHODS

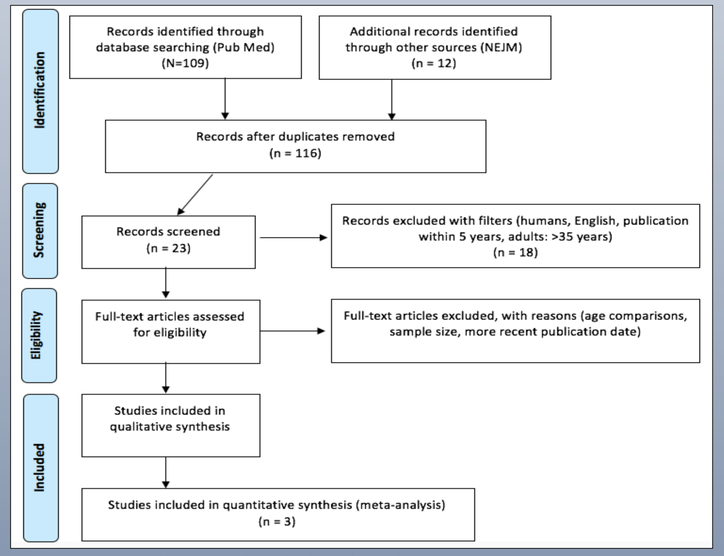

Figure 1. PRISMA Flowchart

RESULTS

Table 1. Cumulative Study Data; Overview

Study	Yim et al.	Katz et al.	Sihvonen et al.
Year	2013	2013	2013
Country	South Korea	United States	Finland
Design	Randomized control trial	Multicenter, randomized control trial	Multicenter, randomized, double-blind, sham-controlled study
Mean age, year	56	58	52
Male sex %	21	43	61
Conservative	52 NSAIDS, 3 week supervise physical exercise followed by 8 week home exercise	169 Individualized physical therapy consisting of progressive home exercise	76 Sham surgical procedure
Surgical	50 Arthroscopic partial meniscectomy	161 Arthroscopic partial meniscectomy	70 Arthroscopic partial meniscectomy
Major Outcome Measures	Lysholm Knee Scoring Scale, WOMET, VAS, 15D (15 dimensional score of function), patient satisfaction scores at 2, 6, 12 months	WOMAC, KOOS pain scale, SF-36 physical activity scores at 3, 6, 12 months	Lysholm Knee Scoring Scale, WOMET, VAS, 15D, patient satisfaction scores at 2, 6, 12 months
OA Inclusion	Kellgren– Lawrence grade 0–1	Kellgren– Lawrence grade 0–3	Kellgren–Lawrence grade 0–1
Loss to follow up	6	C: 2/169 S: 1/161	0
Critique of Study	(+) Standardized regimens, single surgeon, 2 year follow up (-) Subjective results, patients with osteoarthritis excluded	(+) Large study size, patients with mild-moderate osteoarthritis included (-) High crossover rate	(+) Double-blind (-) Unclear post-op physical therapy regimen, patients with osteoarthritis excluded

NSAIDS = Nonsteroidal anti-inflammatory drugs; KOOS = Knee injury and osteoarthritis outcome score; VAS = Visual analogue scale, SF-36 = 36-item short form survey

Table 2. Outcome of Trials

Study	Outcome	Meniscectomy Group	Nonoperative Group
Yim et al	Lysholm knee Score at 2 years	83.2	84.3
	Visual Analog Scale Score	1.8	1.7
Katz et al	WOMAC physical-function score at 1 year	13.7	14.5
	KOOS pain score at 1 year	19.1	19.3
	SF-36 physical-activity score at 1 year	`69.0	71.4
Sihvonen et al	Lysholm knee score at 1 year	82.2	83.4
	WOMET score at 1 year	81.0	79.9
	Knee pain after exercise at 1 year	2.7	2.9

RESULTS, cont.

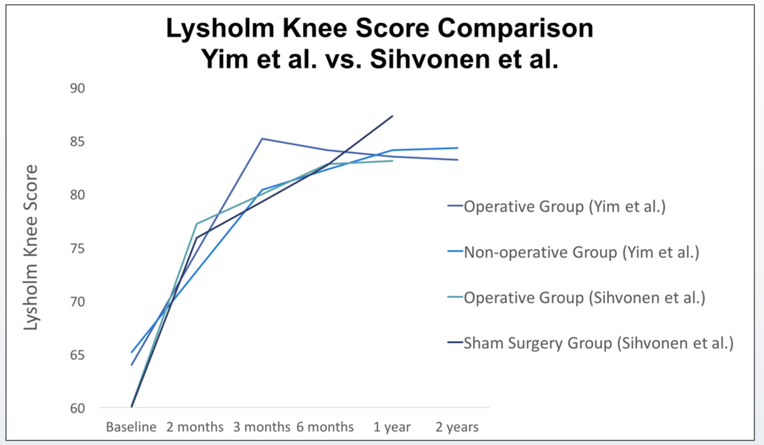

Figure 2. Lysholm Knee Score Comparison of Study 1 to Study 3

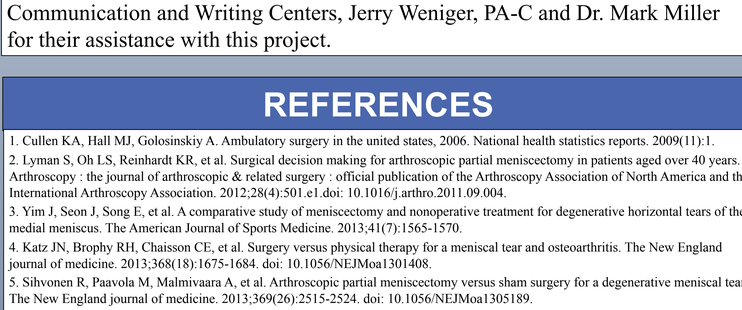

Figure 3. Comparison of Baseline Improvements of Study 2 and Study 3

CONCLUSION

A well-adhered-to physical therapy regimen is shown to be an effective treatment option for middle aged adults with non-traumatic, degenerative meniscal tears. At 12 months post-treatment, there is no significant benefit to undergoing an APM compared to physical therapy alone in relation to patient satisfaction, functional status of the knee, and pain.[3,4,5] Since the research suggests structured physical therapy provides similar outcomes and fewer risks than the now commonly performed APM, a standardized physical therapy regimen should be first line treatment.

ACKNOWLEDGEMENTS

We would like to thank Dr. Erika Kancler, Carolyn Schubert, the JMU Communication and Writing Centers, Jerry Weniger, PA-C and Dr. Mark Miller for their assistance with this project.

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