

## COMPARATIVE ANALYSIS OF OUTCOMES FROM MENISCECTOMY WITH OR WITHOUT CONCURRENT SYNOVECTOMY

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**INTRODUCTION:** Meniscectomy is the most performed procedure for meniscal injury due to its cost-effectiveness and fast rehabilitation. Synovitis is linked to knee joint dysfunction and the progression of knee osteoarthritis (OA), which have been associated with poor post-operative outcomes. Concurrent synovectomy with meniscectomy may help prevent cartilage damage and alleviate pain and dysfunction.

**OBJECTIVES:** The purpose of this study is to determine whether patients who underwent an arthroscopic meniscectomy with concurrent synovectomy exhibited similar outcome scores compared to patients who underwent arthroscopic meniscectomy alone for up to 2 years of follow-up.

**METHODS:** Patient-reported outcomes (PROs), including the Knee Injury and Osteoarthritis Outcome Score (KOOS) subscales, were collected pre-operatively and up to 2-years post-operation from patients who received a meniscectomy (M) or meniscectomy and synovectomy (M+S). Of 132 cases from seven physicians, 68 (51.5%) received meniscectomy alone and 64 (48.5%) had both meniscectomy and concurrent synovectomy. Medical record chart reviews were performed to record demographic and injury details, including age, gender, BMI, smoking history, and Kellgren Lawrence (KL) OA grade. Failures were defined as patients who had a subsequent procedure on the same knee.

**RESULTS:** While all PRO metrics were found to improve between baseline and all time points, KOOS subscale scores were not statistically significant between cohorts except for 6-month KOOS Pain (Mann-Whitney  $p=0.024$ ) and 6-month KOOS Symptoms (Mann-Whitney  $p=0.047$ ). Follow-up Kolmogorov-Smirnov tests were not statistically significant and in line with other KOOS subscales (KOOS Pain:  $p=0.13$ , KOOS Symptoms:  $p=0.14$ ). We observed a higher proportion of severe OA in the meniscectomy + synovectomy group (M+S=34%, M=15%;  $p=0.06$ ). Over the period surveyed (3.5 years), 7 cases were considered failures; 2 cases were in the meniscectomy cohort and 5 from the meniscectomy + synovectomy group. In failures, the average BMI trended higher (31.3 vs. 27.8 in non-failures,  $p=0.1205$ ), the average KL OA grade trended higher (3.1 vs. 2.69 in non-failures,  $p=0.22$ ), and we observed a higher proportion of subjects with a smoking history (28.6% vs. 21.1% in non-failures), but no comparison was statistically significant. There was no observed difference in BMI ( $p=0.23$ ), OA grade ( $p=0.94$ ), or age ( $p=0.89$ ) between the failure and non-failure group. The failures observed occurred between 210 and 1,281 days after surgery.

**CONCLUSION:** PROs from patients without synovitis who underwent surgical meniscectomy were no different from those patients who had synovitis and underwent a meniscectomy and concurrent synovectomy, despite the larger proportion of high-grade OA in the latter. Further sample collection over a longer period than our 3.5-year period is needed to determine predictive factors of failures.