

Long-Term Outcomes of Partial Meniscectomy for Medial Meniscus Posterior Root Tears: A Cautionary Tale

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INTRODUCTION:

Previous studies have demonstrated that repair of medial meniscus posterior root tears (MMPRTs) is superior to debridement in terms of patient-reported outcomes, rates of conversion to total knee arthroplasty (TKA), and long-term costs. Despite the known poor mid-term outcomes, long-term results of partial meniscectomy for MMPRTs have yet to be elucidated. Therefore, the purpose of this study was to 1) evaluate long-term patient-reported and radiographic outcomes of patients who underwent partial medial meniscectomy (PMM) for MMPRTs and 2) determine rate and risk factors for conversion to total knee TKA.

METHODS:

A previously identified cohort of twenty-six patients from 2005-2013 diagnosed with isolated MMPRTs was prospectively followed for long-term outcomes following partial meniscectomy for MMPRT at minimum 10-year follow up. Patients were evaluated for International Knee Documentation Committee (IKDC) outcome score, reoperation, and conversion to TKA. Failure was defined as conversion to arthroplasty or severely abnormal patients subjective (IKDC) score of <75.4.

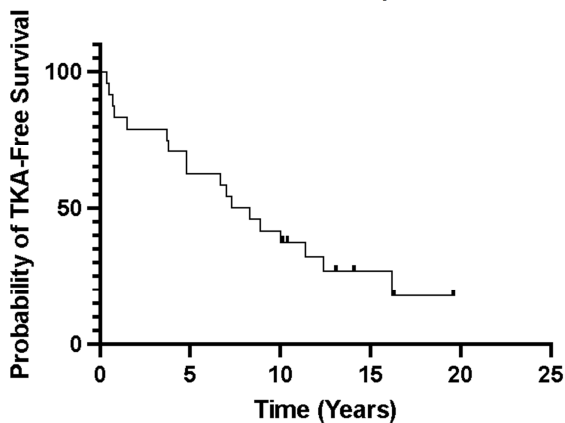
RESULTS:

This study included 26 patients (10 males, 16 females, age: 54 ± 8.7 years (range, 38-71) at diagnosis, BMI: 32.9 ± 5.5) who were followed for 14.0 ± 3.6 years (range, 10.1 - 19.6). At final follow up, one patient was deceased, and 18 (72%) of the remaining 25 patients had progressed to TKA (Figure 1), with one (4%) patient undergoing repeat meniscectomy. The six (24%) patients who had not progressed to TKA or revision surgery reported a mean IKDC score of 57 ± 23 . The Kellgren-Lawrence grades of these patients progressed from an initial baseline of 1.5 ± 0.5 (range 1 – 2) to a final K-L grade of 2.2 ± 0.4 (range, 2 – 3) ($p = 0.03$). Nineteen patients underwent subsequent surgery and 5 demonstrated severely abnormal IKDC scores resulting in a clinical failure rate of 96% (24 of the 25 living patients) at mean 14-year follow up. When stratified, patients with BMIs > 30 progressed to TKA at a higher rate than patients with BMIs < 30 (88% vs. 50% $p = 0.037$) (Table 1).

DISCUSSION AND CONCLUSION:

The primary finding of this study is the high rate of failure of PMM for the treatment of MMPRTs at mean 14 years follow up. Most patients progressed to TKA a mean of 6 years. Of those that did not progress to TKA, 5/6 (83%) reported severely abnormal IKDC scores, and 100% had progression of arthritis as determined by K-L grading. The current study reports a 96% rate of failure of PMM for treatment of MMPRTs, with 76% progressing to TKA or revision surgery.

Partial medial meniscectomy for medial meniscus posterior horn root tears demonstrates 72% progression to TKA and 96% failure of subjective clinical outcomes at minimum 10-year follow up.



Demographic	TKA or Revision	No TKA nor Revision	
Age	56 ± 8.2	52.7 ± 7.2	$p = 0.38$
BMI	33.3 ± 4.7	31.4 ± 7.7	$p = 0.54$
Baseline K-L grade	1.3 ± 0.89	1.5 ± 0.5	$p = 0.55$
BMI <30	4 (50%)	4 (50%)	$P=0.037$
BMI >30	15 (88%)	2 (12%)	
Male	5 (56%)	4 (44%)	$P=0.073$
Female	14 (87%)	2 (13%)	
Meniscus Extrusion >3 mm	12 (80%)	3 (20%)	$P = 0.60$
Meniscus Extrusion <3 mm	7 (70%)	3 (30%)	