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Partial Meniscectomy Provides No Benefit for Symptomatic Degenerative Medial Meniscus Posterior Root Tears

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Summary:
Partial meniscectomy for the treatment of MMRTs provides no benefit in halting arthritic progression and patients who undergo arthroscopic debridement for MMPRTs still progress to arthroplasty at a high rate (52%), significant arthritis, and poor clinical outcomes at over 5-year follow-up.

Abstract:
Purpose: Medial meniscus posterior root tears (MMPRTs) are recognized as a source of pain and dysfunction, but treatment options remain a challenge. The purpose of the study was to determine (1) the efficacy of partial meniscectomy to treat MMPRTs compared to a matched group of non-operatively treated MMPRTs, and (2) risk factors for worse clinical and radiographic outcome.
Methods: This retrospective comparative study was performed to include patients with complete, isolated MMPRTs with documented clinical symptoms and were treated with arthroscopic partial meniscectomy (PMM) and a minimum 2-year follow-up. These patients were then matched by age, gender, and BMI to patients with the same diagnosis who were treated non-operatively. Clinical and radiographic outcomes were compared between the two groups. Analysis was performed to determine risk factors for worse clinical and radiographic outcome in the PMM group alone.
Results: Overall, 52 patients were included in the study. Twenty-six patients (9M:17F) with a mean age of 55±9 and a mean BMI of 32.8±5.3 were treated with PMM and followed for 5.5±2.0 years (Range, 2.3-9.3 years). In the PMM group, final median Tegner score was 3, mean IKDC score was 67.8±20, and more patients had grade II or higher arthritis at final follow-up than baseline (91.3% vs. 36% $p<0.01$. Overall, 14 of the 26 patients (54%) treated operatively progressed to total knee arthroplasty at a mean of 54.3 months. There was no significant difference in final Tegner scores, IKDC, K-L grades, progression to arthroplasty, or overall failure rate between the PMM group and non-operative group. Following PMM, female patients had lower final IKDC scores (44.0±2.8 vs. 74.6±16.7, $p=0.02$) compared to males, as well as a higher rate of arthroplasty (70.6% vs, 20.0%, $p=0.009$). Higher BMI correlated with lower IKDC scores ($r=-0.91$, $p=0.01$) and meniscal extrusion was associated with higher rate of arthritis at final follow-up ($p=0.02$).
Conclusion: Partial meniscectomy for a complete MMPRT provides no benefit in halting arthritic progression. Patients who undergo PMM for MMPRTs still progress to significant arthritis, poor clinical outcomes and a high arthroplasty rate (54%) at over 5-year follow-up. Female gender, increased BMI, and meniscus extrusion were associated with worse outcome.