Outcomes of Surgical versus Non-Operative Management of Patellofemoral Pain Syndrome in the Pediatric Population

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INTRODUCTION: Patellofemoral Pain Syndrome (PFPS) is a common musculoskeletal disorder affecting up to 28.9% of children and adolescents, leading to significant pain and reduced sports participation. Despite initial management strategies, such as physical therapy and bracing, a substantial subset of patients continues to experience symptoms, raising questions about the optimal treatment approach and prompting investigation into surgical alternatives. This study aims to compare the 2-year post-treatment outcomes of patients with PFPS treated non-operatively with physical therapy versus those managed operatively with arthroscopic soft-tissue patella realignment, to evaluate the efficacy of these approaches in addressing persistent anterior knee pain.

METHODS: This retrospective cohort study evaluated patients aged ≤18 years diagnosed with patellofemoral disorder from 2020 to January 2023. Patients who elected arthroscopic soft-tissue patella realignment had persistent pain for at least one year, and no history of frank instability events. Comprehensive demographic and outcome data were systematically extracted from clinical records over a minimum follow-up period of two years. Power analysis using G-power software indicated 20 patients per group to be adequate for 0.8 power and p=0.05.

RESULTS:

Fifty-seven knees (70.2% female) were included in the analysis, 27 were treated operatively and 30 were treated non-operatively. For the operative group, the average age was 15.7±1.8 years at the time of surgery and the median follow-up length was 29.4 months. For the non-operative group, the average age was 13.2±2.9 years at the time of treatment onset and the median follow-up length was 33.8 months.

Mean patient reported outcomes for arthroscopic soft-tissue patella realignment patients including IKDC scores, KOOS, and Kujala scores were 91±11, 91±9, and 91±2 respectively. For conservatively managed patients, IKDC, KOOS and Kujala scores were 48±18, 51±20, and 51±18 respectively. Minor complications, were reported in three surgical knees (11.1%).

DISCUSSION AND CONCLUSION: Arthroscopic soft-tissue patella realignment in patients with persistent PFPS resulted in significantly improved functional scores compared to non-operative treatments. These findings support the procedure's efficacy, particularly for anatomically-driven PFPS.