

Evaluating First-Time Pediatric Patellar Dislocation: A Prospective Cohort Comparing Surgical versus Non-Surgical Treatment Outcomes

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INTRODUCTION: Patellofemoral instability (PFI) in the pediatric population is a common knee injury with long term potential morbidity, yet the standard of practice for intervention remains unclear. The purpose of this study is to compare the failure rate and functional outcomes following operative and non-operative intervention of first-time patellar dislocation in the pediatric population.

METHODS: We prospectively grouped a consecutive cohort of skeletally immature patients that had sustained a first-time patellofemoral dislocation into non-operative management (bracing and physical therapy) and operative management (medial patellofemoral ligament/medial quadriceps tendon–femoral ligament reconstruction) cohorts. The primary outcome, failure, was defined as subsequent dislocation or subluxation. Additional collected outcomes included patient demographics, risk factors for patellofemoral instability, functional outcomes (Kujala and IKDC scores), return to sports, and complications. Minimum follow up was 2 years. A correlation analysis attempted to identify potential associations between failure and risk factors.

RESULTS: There were no significant differences in demographic variables or known risk factors for dislocation between the 2 groups. Success rates differed by intervention; those receiving operative management had significantly lower failure rates than conservative management (15.4% versus 58.8%, $p<.0001$). The time to failure was shorter for the non-operative group compared to the operative group (9.2 ± 5.6 versus 15.4 ± 6.1 months, $p<0.01$). Functional outcomes including Kujala scores, IKDC scores, and rates of return to sport were significantly higher in the operative group, as compared to the non-operative group (91.5 ± 7.8 vs. 82.5 ± 12.1 , $p<.001$; 89.0 ± 9.3 vs. 78.4 ± 12.9 , $p<.001$; 88.5% vs. 66.2% , $p<.001$, respectively). Complication rates were higher in the operative group compared to the non-operative group (11.5% versus 1.1% , $p=0.01$).

DISCUSSION AND CONCLUSION: Operative management in skeletally immature patients with first-time patellofemoral dislocation demonstrated lower failure rates and improved functional outcomes, as compared to non-operative management in this cohort. However, this intervention showed increased complication rates, which must always be considered in clinical decision-making.

