Return to sport (RTS) after patella stabilization surgery involves the return of strength and dynamic knee stability, which can be assessed using isometric strength and performance testing. Despite reports of objective strength recovery and performance-based outcome measures after ACL reconstruction in the adolescent population, such reports in patients after medial patellofemoral ligament (MPFL) reconstruction are limited.¹,²,³

To compare isometric strength and functional tests in the reconstructed limb with the non-injured limb.

Methods

An IRB-approved retrospective study.

• 21 athletes (15 girls, 6 boys) underwent MPFL reconstruction between May 2014 and June 2017 and underwent isometric and functional RTS testing.

• Single pediatric fellowship-trained orthopedic surgeon.

• Patients with bilateral surgery/complaints were excluded.

• Indwelling femoral nerve catheters (94.7%) or a single shot femoral nerve block (5.3%).

• Tourniquets were not utilized.

Results

Peak torques during isometric strength testing were performed with a handheld digital dynamometer (Fig. 1).

• Functional tests included: Lower Quarter-Y-Balance Test (LQYBT) (Fig. 2) and single-leg hop testing (Fig. 3).

Limb Symmetry Indices (LSI) were calculated using the following: LSI = (involved/uninvolved) x 100%.

• Recovery of muscle strength was defined by an LSI ≥ 90%.

• Passing the functional dynamic testing was defined as LSI ≥ 90% on all 4 components of the hop test.

• Differences in peak torque between the involved and uninvolved limbs were compared using paired t-tests.

• Correlations were examined among dependent and independent variables

Conclusions

• Adolescent athletes undergoing patella stabilization surgery do not consistently recover satisfactory strength and dynamic knee stability by 7.9 months postoperatively.

• There was a significant deficit in isometric strength in the involved limb after surgery, with deficits more pronounced in the quadriceps.

• Limitations included small sample size, no control group, single surgeon, lack of patient-reported outcome measures.

References


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