Redislocation After Medial Patellofemoral Ligament Reconstruction is Correlated with Preoperative Measurements and Intraoperative Instability Measurements

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Disclosure:

Introduction: The purpose of this study was to correlate demographic, anatomical, and clinical risk factors to redislocation following isolated medial patellofemoral ligament reconstruction (MPFLR).

Methods: A retrospective review of patients who underwent isolated MPFLR for recurrent patellar instability at a single institution between December 2015-June 2021 was performed. Included patients had a minimum of 2 years of follow-up data available. Demographic, pre-operative radiographic, surgical, and clinical data was compared between those who had a dislocation event after surgery and those who did not. Subluxation and subjective instability were not considered dislocation events. Independent samples T-test and univariate binary logistic regression was performed.

Results: This study included 126 patients with a mean age of 21.74 ± 9.20 and a mean BMI of 25.93 ± 6.36. Of these, 67.5% were female and 61.9% of operations were on the left knee. In total, 8.7% (11/126) of patients experienced a redislocation event with a mean time to redislocation of 19.11 months after surgery (range 5 – 32 months). On preoperative magnetic resonance imaging (MRI), greater trochlear bump height measured to bone (p=0.032) and measured to cartilage (p=0.033) was associated with redislocation (Table 1). Additionally, patients who redislocated were found to have a wider sulcus angle (p=0.022). On examination under anesthesia, a greater instability resolution angle – the angle of knee flexion at which the patella no longer dislocates – was found to be associated with redislocation (p=0.041). These variables all retained significance during univariate regression.

Conclusion: MPFLR is associated with a high level of success with a redislocation rate of 8.7% in this study. Pre-operative MRI measurements including sulcus angle and bump height to cartilage and bone, and IRA on examination under anesthesia were correlated with redislocation after surgery.

Significance/Clinical Relevance: This study identified risk factors for failure of MPFL reconstruction. This is valuable information that can aid orthopedic surgeons in identifying patients who are at risk of poor surgical outcomes.

Table 1. Variables associated with redislocation after MPFL reconstruction.

Variable	Redislocation	N	Mean	Std Dev.	P-value
Bump Height Bone	No	100	3.43	1.50	0.032
	Yes	10	4.51	1.47	
Bump Height Cartilage	No	100	5.30	1.64	0.033
	Yes	10	6.47	1.52	
Sulcus Angle	No	98	155.71	8.44	0.022
	Yes	10	162.45	11.41	
Instability Resolution Angle	No	64	56.42	22.89	0.041
	Yes	5	78	8.37	