

Outcomes of isolated Medial Patellofemoral Ligament Reconstruction for Patellar Instability in Ehlers-Danlos Syndrome

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INTRODUCTION: Ehlers-Danlos Syndrome (EDS) is a heterogeneous group of connective tissue disorders characterized by joint hypermobility, skin hyperextensibility, and tissue fragility. Patients with EDS pose significant challenges in orthopaedic management. The outcomes of isolated medial patellofemoral ligament reconstruction (MPFL-R) for patellar instability in EDS patients are not known. This study analyzed demographic factors and midterm clinical outcomes of isolated MPFL-R in EDS patients.

METHODS: In a retrospective review, 47 knees (31 patients) with EDS that underwent isolated MPFL-R for recurrent patellar instability, with minimum 2 year follow up, were identified. Clinical outcomes, including postoperative complications, were noted. Failure was defined as the need for revision surgery for recurrent instability. Postoperative PROs (Pedi-IKDC, Kujala, HSS Pedi-FABS, BPII 2.0, and KOOS) were collected in a prospective fashion.

RESULTS: Mean age of the cohort was 14.9 years. At mean follow up of 7.2 years, 9/47 (19.1%) knees had failed MPFL-R and required revision stabilization. Another 9/47 (19.1%) required other subsequent surgeries. Seven of 31 knees (22.6%) with autograft failed compared to 2/16 (12.5%) with allograft (p=0.69). For autograft, 6 failures occurred with gracilis (17 knees), one with quadriceps tendon (1 knee), and none with semitendinosus (13 knees). Four of 16 (25%) patients with bilateral knee involvement had recurrent instability compared to 2/15 (13.3%) with unilateral involvement (p=0.69). Patients who required revision surgery were significantly younger (p<0.05) compared to those who didn't require revision (12.8 vs. 15.4 years). There was significantly (p=0.03) increased failure rate if patients were able to touch the palm to the floor with knees extended. At mean follow up of 5.2 years, the postoperative PROs were inferior to those reported in non-EDS population. Despite repeated surgery or ongoing symptoms, all but 1 patient were satisfied with index surgery.

DISCUSSION AND CONCLUSION: Isolated MPFL-R restored patellar stability in EDS patients with 19.1% failure rate at mid-term follow up. Failure was more likely in younger patients, bilateral involvement, and in those who can touch the palm to the floor with knees extended. Allograft should be favored over autograft. Postoperative PROs were inferior compared to non-EDS population. Patients should be adequately counselled about potential risks and complications prior surgery.

Comparison between knees with and without revision stabilization surgery

	No revision (n=38)	Revision (n=9)	% failed	p value
Age (yrs)	15.4 ± 1.8	12.9 ± 1.8	NA	p < 0.05*
Gender (27F,4M)	21,1	6,3	22.2%,75%	
Unilateral (n=15 patients)	13	2	13.3%	p = 0.65
Bilateral (n=16 patients)	12	4 (7 knees)	25%	
Beighton Score	6.7 ± 1.5	7 ± 1.5	NA	p = 0.59
L Recurvatum (n=32)	27	5	15.6%	
R Recurvatum (n=32)	27	5	15.6%	
Palm to Floor (n=26)	18	8	30.8%	p = 0.03*
Allograft (n=16)	14	2	12.5%	p = 0.69
Autograft (n=31)	24	7	22.6%	
Gracilis	11	6	35.3%	
Semitendinosus	13	0	0	
Quadriceps tendon	0	1	100%	

NA, not applicable

F, females

M, males

L, left

R, right

* Significant