

ABSTRACT FORM

Meeting of the International Patellofemoral Study Group

Helsinki Finland Aug 3-6, 2022

DEADLINE: April 15, 2022

AUTHOR, CO-AUTHORS (underline name of presenter): Elizabeth R. Dennis, William A. Marmor, Bennett E. Propp, Brandon J. Erickson, Simone Gruber, Joseph T. Nguyen, Beth E. Shubin Stein

INSTITUTION: Hospital for Special Surgery, Mount Sinai Hospital

TITLE OF ABSTRACT: ISOLATED MEDIAL PATELLOFEMORAL LIGAMENT RECONSTRUCTION FOR RECURRENT PATELLAR INSTABILITY REGARDLESS OF TIBIAL TUBERCLE-TROCHLEAR GROOVE DISTANCE AND PATELLAR HEIGHT: MINIMUM 5-YEAR OUTCOMES

Objectives: It remains unclear which subset of patients with recurrent patellofemoral instability would benefit from a concomitant bony realignment procedure in addition to a medial patellofemoral ligament (MPFL) reconstruction. The purpose of this study is to provide midterm results on previously reported patient reported outcomes (PRO), return to sport (RTS) and imaging measurements collected for patients who underwent an isolated MPFL reconstruction as part of an ongoing prospective trial. This includes minimum 5-year outcomes data on a cohort of 55 patients as well as 2-year outcomes data on an expanded cohort of 121 patients. **Methods:** Patients with recurrent patellar instability who did not meet exclusion criteria were prospectively enrolled in an institutional registry beginning in March 2014. Exclusion criteria included patients with a prior history of a patellar stabilization procedure, an off-loadable (inferior/lateral) Outerbridge Grade IV chondral defect, obligatory dislocators (patients who require patellar dislocation in order to achieve full knee extension) or patients with a “Jumping J” sign and patients who reported anterior knee pain as more than 50% of their chief complaint. All patients who were not excluded by the above criteria underwent primary, unilateral, isolated MPFL reconstruction regardless of their bony anatomy (tibial tubercle-trochlear groove (TT-TG), trochlear morphology, trochlear depth, or patellar height) for treatment of recurrent patellar instability. Patient data including PROs, episodes of recurrent instability or dislocation, and ability to RTS was obtained annually. Radiographic MRI measurements including TT-TG, Caton-Deschamps Index (CDI), Patellar Trochlear Index (PTI), Trochlear Depth Index (TDI), Patellar Tendon to Lateral Trochlear Ridge (PT-LTR) and Tibial Tubercle to Lateral Trochlear Ridge (TT-LTR) were obtained at baseline. **Results:** 138 patients (72% female; mean age 20.1 ± 6.1 years) underwent isolated MPFL reconstruction between March 2014 and December 2019. 55 patients reached the ≥ 5 -year postoperative time point, of which 40 (72%) completed follow-up PROs. 121 patients reached the ≥ 2 -year postoperative time point, of which 89 (74%) completed follow-up PROs. 99% (n=136) of patients at 2 years and 96% (n=132) of patients at ≥ 5 years had no self-reported post-operative patellofemoral instability: 6 patients (4%) reported recurrent instability at a mean of 3.0 ± 0.7 years postoperatively. Activities during which failure occurred included jumping on a trampoline, dancing, and playing lacrosse. Preoperatively, 100 (72%) patients participated in sports or physical activity, of which 87 reported RTS (87%). All patients that RTS did so within 24 months postoperatively with a mean RTS of 9.3 months. KOOS-QoL, Pedi-Fabs, IKDC, KOOS-PS and Kujala PROs are reported in Table 1. The mean TT-TG was 15.1 ± 4.9 mm (1.90 to 27.2 mm), mean CDI was 1.14 ± 0.16 (0.72 to 1.65), mean PTI was $46.9 \pm 15.1\%$ (13 to 100%) and mean TDI was 2.5 ± 1.2 mm (-1.55 to 5.15 mm). Trochlear dysplasia, defined as a TDI < 3 mm, was present in 77 (56%) of patients. The mean measure of extensor mechanism containment, TT-LTR, was -8.4 ± 5.7 mm (-24.0 to 3.20 mm) and the rate of TT-LTR within 1 mm, found to be predictive of recurrent instability, was 8% (n=11). The mean PT-LTR, a measurement of lateral patellar tracking, was 5.7 ± 6.2 mm (-5.70 to 21.1 mm). The six patients who experienced recurrent instability after an isolated MPFL reconstruction had a mean CDI of 1.19 and a mean TT-TG of 18.75.

Table 1: Patient Reported Outcomes at Baseline, 2 years and ≥ 5 years

PRO	Baseline	2-Year	Δ from Baseline	≥ 5 -Year	Δ from Baseline
KOOS-QoL	30.6 ± 20.6	75.0 ± 22.5	44.4	74.2 ± 20.6	43.6
Pedi-Fabs	13.6 ± 9.7	14.2 ± 9.4	0.6	11.7 ± 7.1	-1.9
IKDC	49.1 ± 17.6	84.2 ± 15.1	35.1	81.3 ± 15.3	32.2
KOOS-PS	33.2 ± 15.8	9.70 ± 10.5	-23.5	11.3 ± 10.3	-21.9
Kujala	58.5 ± 18.9	90.8 ± 12.0	32.3	89.4 ± 13.0	30.9

Conclusion: Midterm outcomes for patients who underwent isolated MPFL reconstruction (within strict exclusion criteria parameters) are shown to be favorable and maintained at 5 years. Additionally, the outcomes for the expanded cohort of patients with a minimum of 2-year follow up supports the previously published results. Most athletes were able to return to sport. Completion of this study enrollment with long term follow up will allow for more robust assessment of long-term outcomes and incidence of recurrent instability after isolated MPFL reconstruction. The ultimate goal of this work is the creation of a predictive model utilizing the bony and clinical characteristics of those patients who sustain recurrent instability in order to better predict who might benefit from additional bony realignment procedures at the time of their index procedure.

Guidelines for submission of Abstract

INFORMATION FOR AUTHORS AND GUIDELINES FOR PRESENTATION

- ❑ **Final abstracts must be submitted on this original official abstract form and written in English. Deadline April 15, 2022.**
- ❑ Authors will be informed of the committee's decision by May 15, 2022
- ❑ Abbreviations are allowed but must be clearly defined
- ❑ The entire abstract text, including title, author(s) and institution should be contained within the respective rectangular spaces
- ❑ Capitalize the entire TITLE
- ❑ You may submit more than one abstract but generally should only expect at most one accepted for podium presentation. Other abstracts may be published on our website as has been done previously.
- ❑ On site presentations will be **STRICTLY LIMITED TO 5 MINUTES PER PAPER.**

Return the abstract form by email to wpost@wvortho.com and it will be distributed to the program committee for review.