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CLINICAL OUTCOMES OF MEDIAL QUADRICEPS TENDON FEMORAL LIGAMENT RECONSTRUCTION VERSUS MEDIAL PATELLOFEMORAL LIGAMENT RECONSTRUCTION FOR LATERAL PATELLAR INSTABILITY: A MATCHED-COHORT STUDY

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Disclosures

- Eric J. Strauss: American Academy of Orthopaedic Surgeons, American Orthopaedic Association, Arthrex, Inc, Arthroscopy Association of North America, Better PT, Cartiheal, Cartilage, Fidia, Flexion Therapeutics, Jaypee Publishing, Joint Restoration Foundation, Organogenesis, Smith & Nephew, Springer, Subchondral Solutions, Vericel, and Bulletin of the Hospital for Joint Diseases
- Kirk A. Campbell: American Academy of Orthopaedic Surgeons, Arthroscopy Association of North America, Mitek, and Stryker
- Michael J. Alaia: American Academy of Orthopaedic Surgeons, Arthrex, Inc, Arthroscopy Journal, Arthroscopy Association of North America, Journal of Cartilage and Joint Preservation, JRF Ortho, Mitek, Orcosa, Inc, and Springer
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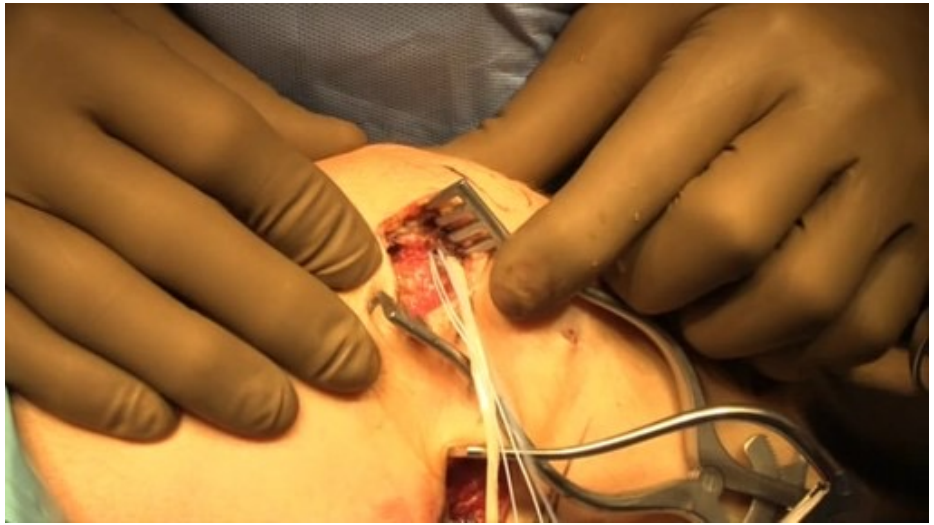
Background

- Patellar instability is a common source of anterior knee dysfunction associated with insufficiency of the ligamentous restraints to lateral patellar translation.
- Instability may be surgically treated via reconstruction of the medial quadriceps tendon-femoral ligament (MQTFL) or the medial patellofemoral ligament (MPFL).
- No study to date has compared clinical outcomes of MQTFLR versus MPFLR.



Objective

- The purpose of this study was to compare clinical outcomes of MQTFLR and MPFLR among patients with recurrent patellar instability. The specific aims were to:
  - (1) compare rates of complications and reoperations
  - (2) compare patient-reported knee pain and functional outcomes
  - (3) compare rates of return to sport and work

Methods

- Multi-surgeon, single-center retrospective cohort study
- Inclusion criteria: (1) diagnosis of lateral patellar instability, (2) MQTFLR or MPFLR with or without anteromedialization by tibial tubercle osteotomy (TTO), (3) skeletally mature at the time of surgery, (4) minimum follow-up of 10 months
- MQTFLR and MPFLR groups matched 1:1 on age, concomitant osteochondral allograft (OCA), concomitant TTO, and follow-up time
- Primary outcomes were recurrent instability, Visual Analog Scale (VAS) knee pain, return to sport, and MPFL-Return to Sport After Injury (MPFL-RSI) score
- Secondary outcomes were 90-day complications and reoperations

Table 1. Demographics and prior medical history.

Variable	MQTFLR (n = 10)	MPFLR (n = 10)	P-value
Age	28.7 ± 10.6	29.1 ± 10.6	0.74
Sex			1.00
Male	2 (20%)	1 (10%)	
Female	8 (80%)	9 (90%)	
BMI	26.5 ± 5.5	26.4 ± 5.1	0.91
Traumatic onset	4 (40%)	4 (40%)	1.00
Prior index knee surgery	7 (70%)	2 (20%)	0.07
Preoperative TT-TG distance (mm)	13.8 ± 7.2	18.9 ± 5.0	0.10
Follow-up time (months)	19.7 ± 8.7	28.3 ± 9.9	0.06

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Table 2. Intraoperative information.

Variable	MQTFLR (n = 10)	MPFLR (n = 10)	P-value
Allograft type			<0.001*
Gracilis	0 (0%)	10 (100%)	
Semitendinosus	4 (40%)	0 (0%)	
Tibialis anterior	6 (60%)	0 (0%)	
Concomitant procedures	10 (100%)	10 (100%)	1.00
TTO	6 (60%)	6 (60%)	1.00
Meniscus root repair	1 (10%)	0 (0%)	1.00
Partial medial meniscectomy	0 (0%)	1 (10%)	1.00
Loose body removal	2 (20%)	2 (20%)	1.00
OCA	7 (70%)	7 (70%)	1.00
Area of chondral defects (mm^2)	410 ± 200	383 ± 215	0.95

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Table 3. Clinical and patient-reported outcomes.

Variable	MQTFLR (n = 10)	MPFLR (n = 10)	P-value
Arthrofibrosis	1 (10%)	3 (30%)	0.58
Manipulation under anesthesia	1 (10%)	3 (30%)	0.58
Lysis of adhesions	0 (0%)	3 (30%)	0.21
VAS pain at rest	1.1 ± 1.9	0.6 ± 1.1	0.31
VAS pain during sports	2.6 ± 2.5	3.2 ± 3.1	0.71
Satisfaction	79.7% ± 28.9%	86.9% ± 21.2%	0.44
Would repeat surgery	7 (70%)	6 (60%)	1.00
Kujala score	81.4 ± 12.2	82.9 ± 12.1	1.00
MPFL-RSI score	56.2 ± 32.3	50.7 ± 23.0	0.33
Passing score (≥56)	6 (75%)	3 (38%)	0.31
Arthrofibrosis	1 (10%)	3 (30%)	0.58

Table 4. Recurrent instability and return to sport/work.

Variable	MQTFLR (n = 10)	MPFLR (n = 10)	P-value
Postoperative subluxation	2 (20%)	0 (0%)	0.47
Postoperative dislocation	0 (0%)	0 (0%)	1.00
Participated in sports prior to injury	8 (80%)	8 (80%)	1.00
Returned to sport after surgery	4 (50%)	6 (75%)	0.61
Returned at the pre-injury level	2 (50%)	2 (33%)	1.00
Employed prior to injury	8 (80%)	8 (80%)	1.00
Returned to work after surgery	8 (100%)	7 (88%)	1.00
Postoperative subluxation	2 (20%)	0 (0%)	0.47
Postoperative dislocation	0 (0%)	0 (0%)	1.00
Participated in sports prior to injury	8 (80%)	8 (80%)	1.00
Returned to sport after surgery	4 (50%)	6 (75%)	0.61

Results

- One MQTFLR patient (10%) and three MPFLR patients (30%) underwent reoperation for postoperative arthrofibrosis.
- Postoperative VAS resting pain was not significantly different between the groups (MQTFLR mean 1.1, MPFLR mean 0.6, p = 0.31).
- There were no significant differences in rates of recurrent subluxations (MQTFLR 20%, MPFLR 0%, p = 0.47), return to sport (MQTFLR 50%, MPFLR 75%, p = 0.61), or return to work (MQTFLR 100%, MPFLR 88%, p = 1.00).
- Although the passing rate on the MPFL-RSI was higher in the MQTFLR cohort (MQTFLR 75% vs MPFLR 38%), this difference did not reach statistical significance (p = 0.31).

Conclusions

- There were no significant differences in knee pain and function, return to work, and rates of recurrent patellar instability between patients who underwent MQTFLR versus MPFLR.

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