# Sensitivity of Magnetic Resonance Imaging for Detection of Medial Patellofemoral Ligament Injury

Daniel Berman, MD, **Harrison Volaski, MD,** Avinash Malaviya, MS, Shoran Tamura, BS, Michael Hossack, MD

# Disclosures

The authors have no relevant disclosures to report

# Background

Medial patellofemoral ligament (MPFL) injury occurs in the setting of acute versus recurrent patellar dislocations, acute multi-ligamentous injuries, and in those with predisposing anatomic factors

Incidence – ranges from 6-29 per 100,000 in patients aged 10-17 years old who sustained a lateral patellar dislocation

Prevalence – 94.7% in patellar dislocation events

MRI is the current diagnostic imaging modality of choice to evaluate the integrity of the MPFL

Limited literature that evaluates the sensitivity and specificity of MRI for diagnosing MPFL injuries

# Purpose

This study aimed to evaluate the diagnostic utility of MRI in identifying MPFL injuries

**Hypothesis**: Based on anecdotal surgeon experience at our institution, MPFL injuries confirmed intra-operatively are underdiagnosed by radiologists

# Methods

Retrospective chart review from 2015-2021

Inclusion Criteria: all patients undergoing MPFL reconstruction either in isolation or with other patellar stabilization procedures

Exclusion Criteria: Infection, proximal tibia or distal femur fracture (except MPFL avulsion), open injury, no pre-operative MRI

Primary Outcome: sensitivity of MRI in diagnosis MPFL rupture

Secondary Outcomes: physical exam maneuver sensitivity, X-ray findings, other associated procedures

# Results

Post exclusion, 113 patients identified (52 male, 61 female)

All patients had MPFL injury requiring reconstruction confirmed intra-operatively

27/113 (23.9%) of MPFLs were read as intact on the final dictated radiology report

43/113 (38.1%) of MPFLs were **not** mentioned on the final dictated radiology report

27/70 (38.6%) of MPFLs that were mentioned were read as intact on the final dictated radiology report

| Table 1. MPFL MRI Read |
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| Full Thickness Tear: 12/113 (10.6%) |
| Partial Thickness Tear: 13/113 (11.5%) |
| Thickened: 5/113 (4.4%) |
| Attenuated: 11/113 (9.7%) |
| Bony Avulsion: 2/113 (1.8%) |
| Intact: 27/113 (23.9%) |
| Not Mentioned: 43/113 (39.1%) |

# Conclusion

Even as the current gold-standard diagnostic imaging modality, MRI less sensitive than expected in this study

High percentage of MRI reads without MPFL mentioned by radiologists -> emphasizes important of communication when ordering studies to have focused evaluation of suspected pathology

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