Combined Posterolateral Corner and Acute Anterior Cruciate Ligament Injuries in a Pediatric Cohort

K. Aaron Shaw, DO, CPT, MC, USA, Brian Dunoski, MD, Neil Mardis, DO, Donna Pacicca, MD
• ACL disruptions are not infrequent injuries in pediatric patients

• Untreated PLC injury is an identified cause of failed ACL reconstruction
  – Increased varus translation in mid-flexion (LaPrade et al. AJSM. 2004)

• Incidence of combined ACL, PLC injuries range from 5-14.7% in adult literature
Material and Methods

- Retrospectively reviewed MRI studies over 4 year period identifying all ACL disruptions
- Inclusion: complete ACL injury with PLC injury
- Exclusion: prior ACL reconstruction, partial ACL disruption, tibial spine avulsion, isolated Grade 1 or 2 LCL injury
Material and Methods

- **Data**
  - Age, Gender, Associated Injuries, Skeletal Maturity

- **Control Group**
  - ACL injuries without concomitant PLC injury

- **Statistics**
  - Chi-square test
  - Logistic Regression
Results

- 128 patients identified with an ACL disruption (74 M, 54 F; average age 15.2 years)
- Concomitant PLC injury in 13.3% - 17 patient (13 M, 4 F; average age 16.1 years)
- Lateral meniscal pathology
  - occurred more often with combined ACL, PLC injuries ($p=0.02$)
  - predictive of PLC injury by logistic regression analysis ($p=0.05$, Odds Ratio=4.43)
Discussion

- Unrecognized PLC injury is an identified cause of ACL reconstruction failure
  - Significantly less anterior tibial translation with concomitant reconstruction (Kim et al. JBJS. 2012)

- Lateral meniscal injury was predictive of concomitant PLC injury
Conclusion

- Combined ACL and PLC injury was identified in 13.3% of patients
- Lateral meniscal injury in association with an ACL disruption was predictive of concomitant PLC injury
References