Functional Outcomes 6 Months after ACL Reconstruction: The Impact of Meniscus Treatment

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Team Effort

• UVA Orthopaedic Surgery, Sports Medicine, and Kinesiology
How do we decide when an athlete returns to play?

- **Time?**
  - 6 months
  - 9 months
  - Longer? Shorter?

- **Graft type?**
  - BTB or Soft tissue
  - Allograft

- **Quad strength**
  - 85% or better symmetry
How do we make the decision?

• What is safe?
• Can we accelerate?
• Combine
  – Strength and symmetry measures
  – Functional testing
  – Subjective outcome scores
• Lower Extremity Assessment Protocol (LEAP)
  – Testing at 6 months and every two months thereafter for return to play decision
UVA Experience with LEAP

- Nearly 400 ACL Reconstructed patients
- Plus 141 healthy controls
- Extensive database to study how different variables affect outcomes
- Our method for
  - Clearing an athlete for return
  - Directing rehab in targeted fashion for deficits
  - Motivation
What about time on crutches?

• Meniscal repair protocol
  – 6 weeks with 25-50% weight bearing
  – IROM hinged knee brace 0 – 90 degrees for ambulation

• Meniscectomy or no meniscal treatment protocol
  – Immediate weight bearing as tolerated
  – Off crutches when demonstrate stable gait
    • 1-2 weeks

• Our hypothesis: this slower rehab protocol would result in delayed strength gains
Methods

- Patients evaluated 5-7 months post ACLR
- Completed IKDC, KOOS
- Isokinetic (90°/sec) and Isometric (at 90°) strength tests for flexor and extensor muscle groups
- Strength normalized to mass (Nm/kg), and symmetry involved:uninvolved torque
- Stratified into groups by type of meniscal treatment
Statistical analysis

• One-way ANOVA with post-hoc Tukey’s test for equal variances used for differences in subjective knee function and quad and hamstring strength between groups

• Significance defined as p<0.05
Patients
- 306 individuals: 165 ACLR (6 ± 0.5 months post surgery)
  - ACLR w/o meniscal involvement (n=50)
  - ACLR + Menisectomay (n=44)
  - ACLR + Meniscal Repair (n=71)
  - Healthy Controls (n=141)

Findings:
- ACLR had weaker quads across all subgroups compared to healthy controls.
- **No difference between meniscal treatment sub-groups**
  - Quad Strength or symmetry
  - Subjective scores
- No difference in hamstring strength or symmetry between any group
Summary

• Quadriceps and Hamstring Strength were NOT affected by meniscal involvement, disproving our hypothesis.

• Meniscus repair with 6 weeks on crutches did not affect strength gains or time to meet criteria for release to sports.

• Patients can be reassured that time on crutches will not delay overall return to sport following ACLR.