Concomitant Medial and Lateral Meniscus Root Tears: Demographics, Comparative Survivorship and Patient Reported Outcome Measures Comparing Dual-Repairs to Non-Dual-Repairs

Dane R.G. Lind, Annabel R. Geissbuhler, John M. Apostolakos, Peter S. Chang, Nicholas A. Felan, Grant J. Dornan, Joseph J. Ruzbarsky

THE STEADMAN CLINIC AND STEADMAN PHILIPPON RESEARCH INSTITUTE

U.S. OLYMPIC NATIONAL MEDICAL CENTER

Financial Disclosures

- Dr. Ruzbarsky has received travel and research support funding from Arthrex that may be related to this work

Background

- Meniscal root tears compromise knee joint load distribution and stabilization
- Surgical repair of torn meniscus roots is favored over non-operative management or meniscectomy due to improved long-term outcomes and reduced progression to osteoarthritis.
- Many studies have examined outcomes of isolated medial or lateral root repairs, yet few have explored concomitant medial and lateral dual-root-repairs

Purpose

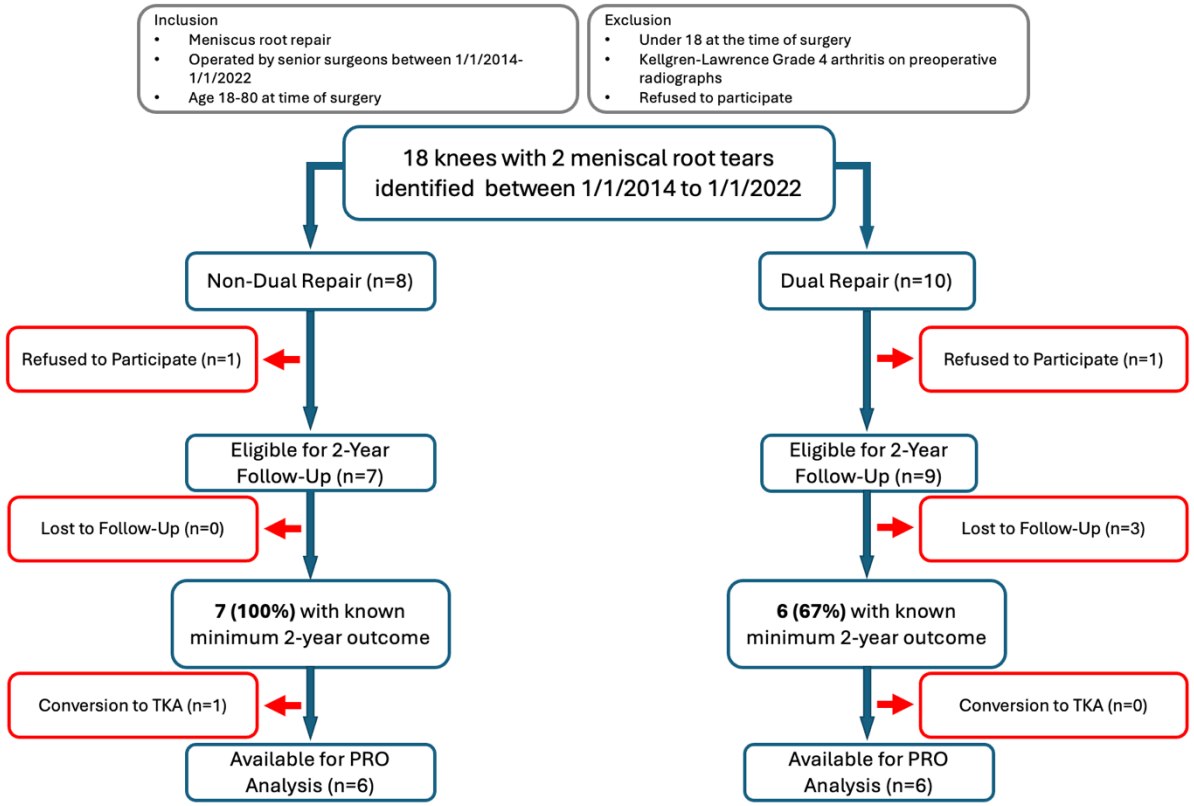
- To evaluate patient reported outcomes and mechanism of injury of dual-repair vs. non-dual-repair in patients with tears to both and medial and lateral meniscus root

Hypothesis

- We hypothesized that patients who underwent dual-repair would have significantly improved outcomes when compared to the non-dual-repair group

Methods – Study Design

- Retrospective review



Methods – PROs:

- International Knee Documentation committee Subjective Knee Evaluation (IKDC)
- Lysholm Score
- Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC)
- Short Form-12 Physical Component Summary (SF-12 PCS)
- Short Form-12 Mental Component Summary (SF-12 MCS)
- Tegner Activity Scale

Results - Demographics

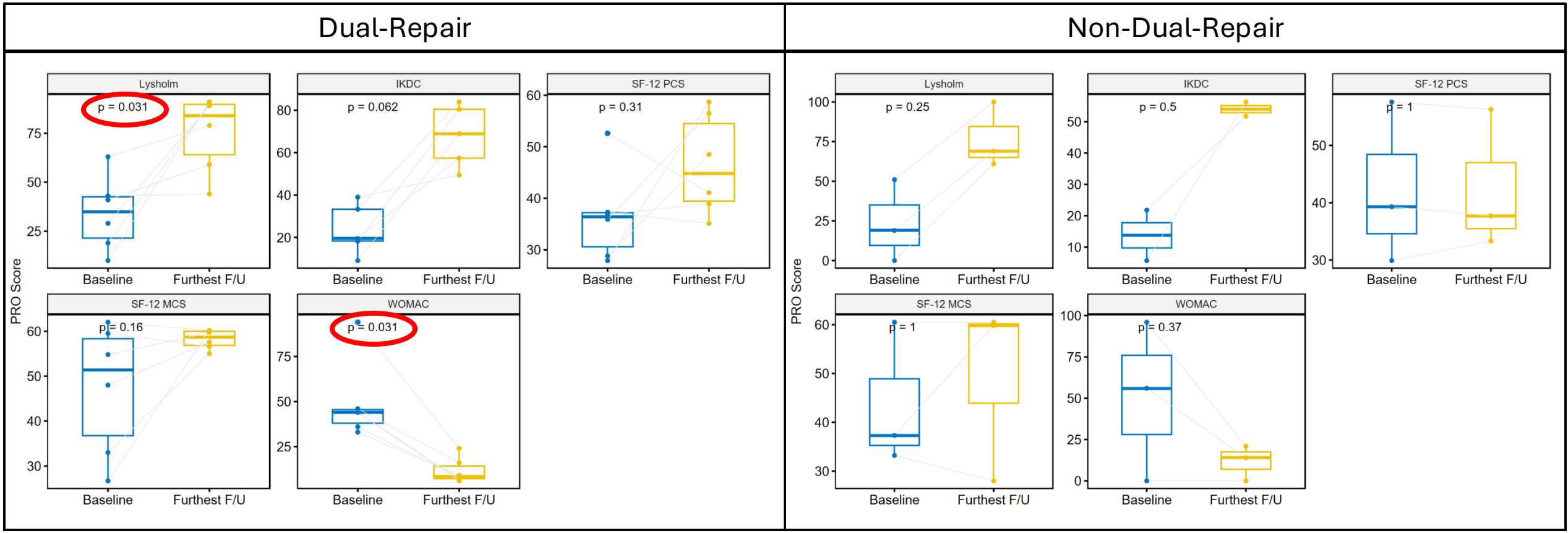
- 7 Dual-repair, 6 non-dual-repair
- Median age: 57 years
- Median BMI: 24.7
- 62% Female

PRO Comparisons

- Of the baseline PROs collected for 9/13 (69.23%) patients, there were no differences between the dual-repair and non-dual-repair groups at baseline nor at minimum 2-year follow-up
- However, **the dual-repair group showed significant improvement in Lysholm score and WOMAC from baseline to long term follow-up**, whereas the non-dual-repair group did not show significant improvements in any PROs

PRO Comparisons

THE STEADMAN CLINIC AND STEADMAN PHILIPPON RESEARCH INSTITUTE



Mechanism of Injury

THE STEADMAN CLINIC AND STEADMAN PHILIPPON RESEARCH INSTITUTE

Dual-Repair	Non-Dual-Repair

• 71.4% had acute, traumatic injuries
  • 57.1% were ski-related, involving:
  • Twisting injuries, hyperextension, high-impact collisions
• 28.6% had chronic or degenerative injuries
• 48.1 years average age
	• 50% had acute, traumatic injuries
	• 50% had chronic or degenerative injuries
	• 56 years average age

Key Findings

- Dual-repair contributed to improved PROs from baseline to long-term follow-up and appeared to be more effective than non-dual-repair, although our findings were not conclusive
- Dual-repair was typically reserved for patients suffering from more acute, traumatic injuries whereas non-dual-repair patients reported with more chronic, degenerative injuries

Limitations

- Small sample size
- Underpowered study
- Gender imbalance

Conclusions

- While dual meniscus root repair appears to be an effective treatment strategy for patients with concomitant medial and lateral root tears, there are a variety of factors that must be considered when determining ideal treatment.
- Future studies must include more subjects and track a wide range of outcomes in order to determine this procedure's efficacy