Unilateral Balance in Total Joint Patients One Year Following Surgery

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Gait Symmetry Changes Following Total Ankle Replacement

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Disclosures are in the Final AOFAS Program Book
Background & Purpose

• Total joint surgery is effective at alleviating pain associated with Osteoarthritis (OA)\(^5\)
• Surgery is not able to normalize the side-to-side asymmetries seen post-op during the stance phase of gait\(^1\text{--}^4\)

Purpose

• Understand if fundamental differences exist in single leg stance ability in patients following total joint replacement surgery
**Methods**

149 Total Joint Replacement Patients

**Inclusion Criteria:**
- At least 1 year post-op from TAR, TKA, THA
- Unilateral involvement
- No Contralateral Pain or Symptoms of OA
- Not currently using on Assistive Device

**Balance Assessment:**
- Single Leg Stance time surgical and non-surgical sides
- Testing completed with eyes open
- > 10s bilaterally – Passed Test

- N=45
- N=50
- N=54
Methods

Balance Assessment:
- Single Leg Stance time surgical and non-surgical sides
- Testing completed with eyes open and barefoot
- > 10s bilaterally – Passed Test

Statistical Analysis:
- Chi-Squared for Pass:Fail Ratio
- All Failures assessed using 2X3 (side X surgery) ANOVA to examine symmetry across surgeries
Single Leg Stance Pass Rate

Pass Percentage

THA 68.0%
TKA 53.7%
TAR 8.9%
Differences between Surgical Procedures

- Results for patients that failed single leg stance test (stance < 10s)
- No significant differences in single leg stance time between the three surgeries (THA, TKA, TAR) independent of stance limb (p=0.738)
• Results for patients that failed single leg stance test (stance <10s)
• Significant increase in Single Leg Stance time on the non-surgical side independent of the total joint surgery (p<0.001)
Conclusion

- Patients following THA and TKA exhibit improved balance when compared with TAR
- Age matched mean balance time previously reported is 26.0s
- Future outcome studies in total joint replacement patients may consider the use of single leg stance time as a clinically efficacious and meaningful screening tool for unilateral function


