



Labral Tear Size as a Predictor of Long-Term Outcomes and Conversion to Total Hip Arthroplasty: Minimum 8 Year Follow-Up

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DISCLOSURES

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- I (and/or my co-authors) have nothing to disclose directly related to this talk.
- I have no conflicts.



Background

- The acetabular labrum, cartilage lining the edge of the hip socket, remains a crucial anatomical component of the hip socket.
- If the acetabular labrum tears, the integrity of the hip joint could be compromised.
- Past studies have not explored long-term post-operative outcomes.¹



Figure 1. Acetabular labral tears occur on the labrum, which helps maintain a suction seal in the hip joint.

Purpose

- This study aims to contribute to the knowledge about the relative influences of factors affecting the outcomes of hip arthroscopy for symptomatic labral tears secondary to femoroacetabular impingement, specifically in the long-term.

Methods

- This retrospective cohort study (IRB approved) included patients who underwent primary hip arthroscopy for symptomatic labral tears secondary to femoroacetabular impingement.
- Patients completed surveys for an array of post-operative outcome measures (PROMs) designed to evaluate aspects of daily function, patient satisfaction, and pain relief.
- Patients ≤ 18 years of age, Tönnis grade ≥ 2 , and no labral tears were excluded. Included patients were stratified into two cohorts: small labral tear (SLT), $\leq 60^\circ$, and large labral tear (LLT), $>60^\circ$.

Figure 2. CONSORT Diagram

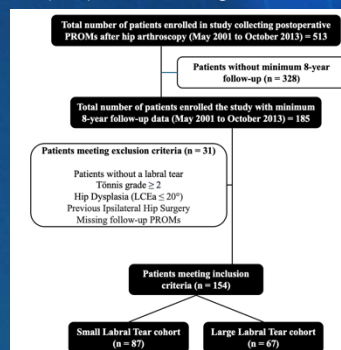


Table 1. Minimum 8-Year PROMs*

PROMs	SLT (n=87)	LLT (n=67)	P-value
mHHS	88.6 ± 12.4	83.4 ± 14.8	0.040
HOS-ADL	92.0 ± 10.4	87.2 ± 12.0	0.025
HOS-SS	81.0 ± 22.8	75.8 ± 20.1	0.219
iHOT-33	78.1 ± 21.9	69.4 ± 24.2	0.047

*Data are reported as mean ± standard deviation. **Bolded** P-values denote statistical significance ($p < 0.05$). Abbreviations: PROMs, Patient Reported Outcome Measures; SLT, Small Labral Tear; LLT, Large Labral Tear; mHHS, Modified Harris Hip Score; HOS-ADL, Hip Outcome Score Activity of Daily Living; HOS-SS, Hip Outcome Score Sport Scale; iHOT-33, International Hip Outcomes Tool-33.

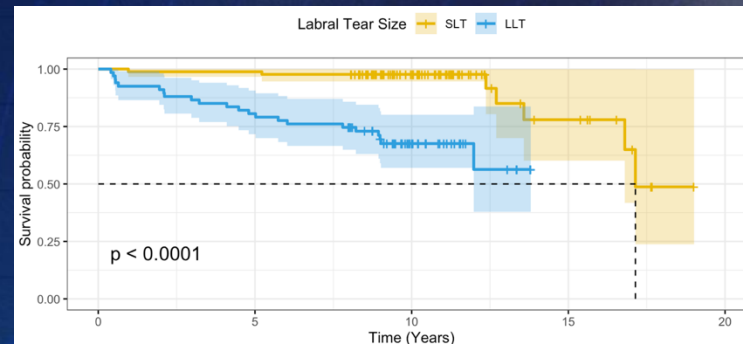


Figure 3. Unadjusted survival probability Kaplan-Meier curves and risk table comparing the SLT and LLT cohorts' conversion rate to THA.

Table 2. Weighted Cox Regression Adjusting for Patient Characteristics for Conversion to THA

Variable	Hazard Ratio (95% CI)	P-value
Large Labral Tear	5.51 (2.02-15.05)	<0.001
Age, per 10-year increase	2.21 (1.55-3.16)	<0.001
Tönnis grade, per 1 unit increase	2.27 (1.02-5.04)	0.044

***Bolded** P-values denote statistical significance ($p < 0.05$). Abbreviations: THA, Total Hip Arthroplasty.

Results

- Of 154 patients (48.7% female; mean age ± SD: 37.7 ± 11.03), there was a mean ± SD follow-up of 11.0 ± 0.38 years and body mass index (BMI) of 26.1 ± 0.71 kg/m².
- Females experienced a higher frequency of SLT than males (62.1% vs 37.9%, $p < 0.001$).
- SLT cohort experienced significantly better outcomes than the LLT cohort for mHHS (88.6 ± 12.4 vs 83.4 ± 14.8, $P = 0.040$), HOS-ADL (92.0 ± 10.4 vs 87.2 ± 14.5, $P = 0.025$), and iHOT (78.1 ± 21.9 vs 69.4 ± 24.2, $P = 0.047$). (**Table 1**)
- Multivariate linear regression analyses adjusting for demographic, radiographic, and intraoperative findings indicated that labral tear size can independently predict long-term outcomes for hip arthroscopy ($p < 0.05$).
- The conversion rate to THA for LLT is significantly greater than that of SLT (hazard ratio, 7.92; 95% CI, 2.96-21.2; $p < 0.001$). (**Figure 3**)
- There was no significant difference in pain relief between cohorts.
- The adjusted hazard ratio for large labral tears is 5.51 ($p < 0.001$), 2.21 ($p < 0.001$) per 10-year increase in age, and 2.27 ($p = 0.044$) per 1 unit increase in Tönnis grade. (**Table 2**)

Conclusion

- Labral tear size can independently predict long-term PROMs after primary hip arthroscopy.
- The LLT cohort has significantly worse outcomes and a significantly greater conversion rate to THA than the SLT cohort but experiences no significant difference in pain relief.
- Labral tear size is an effective prognosticator of long-term outcomes after hip arthroscopy for symptomatic labral tears secondary to femoroacetabular impingement.



REFERENCES

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