

Do Outcomes Differ Following Proximal Hamstring Repair for Patients Receiving Workers' Compensation?

Kali J. Sullivan, BS¹; Sophie M. Nemec, BS²; Kuhan A. Mahendraraj, BA, MS²; Daniel P. Swanson, BS²; Sundeep S. Saini, DO³; Suzanne L. Miller, MD²³

¹Tufts University School of Medicine, Boston, MA, USA

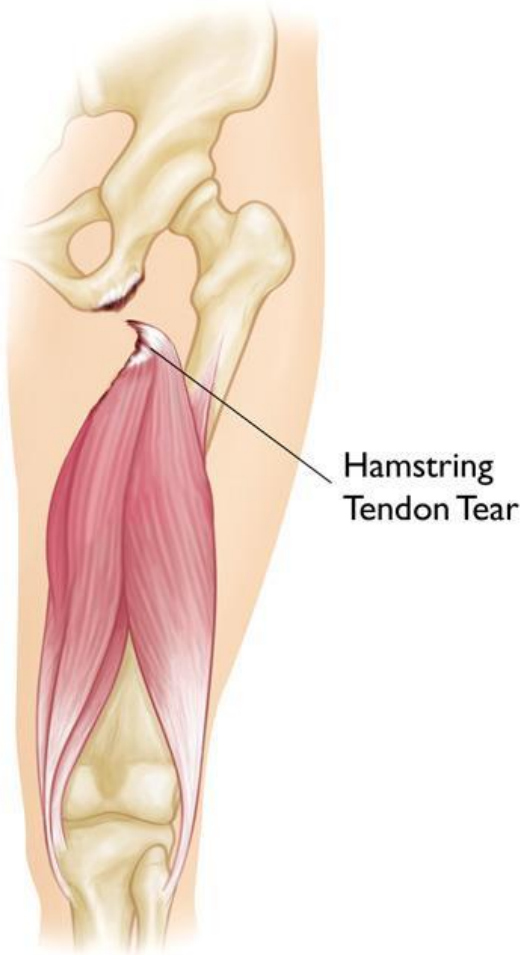
²Boston Sports and Shoulder Center, Waltham, MA, USA

³New England Baptist Hospital, Boston, MA, USA

Disclosures

- Suzanne L. Miller: Education payments from Kairos Surgical and Arthrex; Ownership/investment interest from Anika Ther.
- Sundeep S. Saini: Education payments from Kairos Surgical, Liberty Surgical, Smith & Nephew; Grant from Arthrex
- Kali J. Sullivan, Sophie M. Nemec, Kuhan A. Mahendraraj, and Daniel P. Swanson have no disclosures

Background



Surgical treatment for full proximal hamstring injury has been shown to produce excellent, reliable outcomes with high patient satisfaction.^{1,2}

Patients insured under worker's compensation (WC) are often shown to experience inferior patient reported outcomes (PROs) following orthopaedic surgical intervention³⁻⁶

- shoulder arthroplasty
- isolated biceps tenodesis
- Rotator cuff repair
- lumbar discectomy

There is minimal evidence comparing PROs for WC patients to non-WC patients following proximal hamstring repair (PHR).

Purpose

We sought to compare post-operative PROs of patients insured by WC to those who are not after PHR.

Hypothesis: WC patients will have inferior surgical outcomes after proximal hamstring repair.

Methods

Study Design: Retrospective Case-Control Study of a single surgeon's database

Patients undergoing open PHR from November 2011 to September 2020 were matched by age, gender, and body mass index (BMI) using the Propensity Score (PS) Matching methodology. Comorbidity and work-related data, as well as postoperative PROs were collected via telephone

- Lower Extremity Functional Scale (LEFS)
- Hip Outcome Score (HOS)
- The Short Form-12 (SF-12)

Methods

Follow-up was determined based on the date on which a telephone survey was completed following the procedure with a minimum of 1-year.

After losing 2 WC patients to follow-up, a total of 30 patients (20 non-WC and 10 WC) were included in the study.

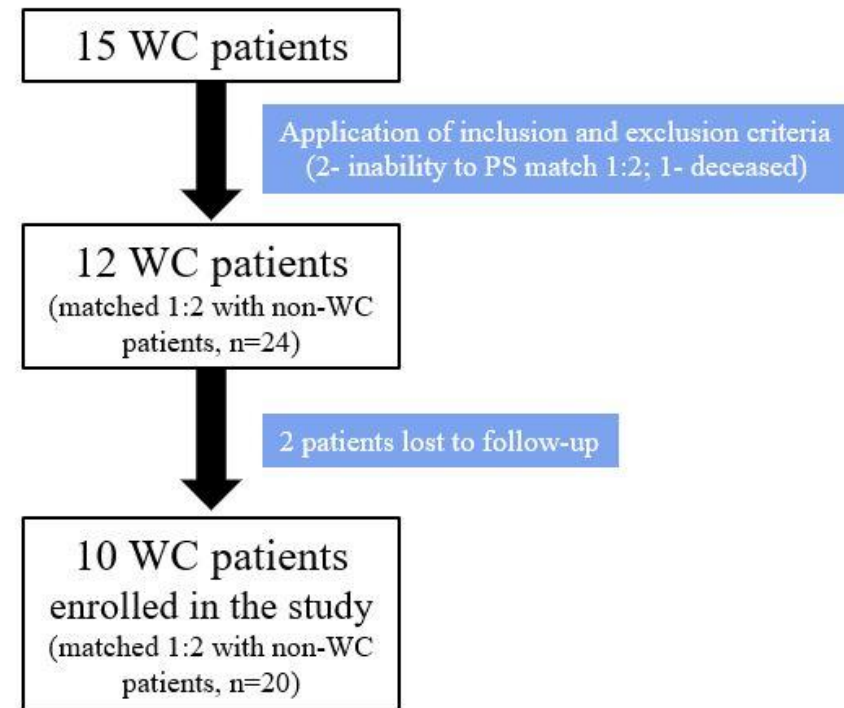


Figure 1. Flow diagram demonstrating patient inclusion and exclusion criteria for the Workers' Compensation cohort

Results

Baseline demographics did not differ between groups.

Table I. Demographic Information Between Patient Cohorts			
Parameter	Work Comp n = 10	Non-Work Comp n = 20	P-Value
Age†	58.0 ± 5.2	58.0 ± 9.1	1.000
Female Sex‡	5 (50.0)	8 (40.0)	0.706
BMI†	28.4 ± 2.8	28.4 ± 2.9	0.912
Follow-up (months)	57.2 ± 31.0	58.5 ± 32.4	0.916

BMI - Body mass Index
† Data represented as means ± standard deviation
‡ Data represented as n (%)

Results

Table III. Differences in Weeks of DOI to DOS			
	Work Comp n = 10	Non-Work Comp n = 20	P-Value
Weeks DOI to DOS	3.5 (2.0, 6.5)	3.5 (2.0, 11.0)	0.894
Data represented as Median (1st, 3rd Q), analyzed with Mann Whitney U Test DOI- Date of Injury; DOS- Date of surgery			

There were no significant differences in work duty or time between DOI to DOS between cohorts.

Table II. Work Duties Stratified By Work Comp Status			
Work Duties	Work Comp n = 10	Non-Work Comp n = 20	P-Value
Light	4 (40)	14 (77.8)	0.145
Medium	3 (30)	2 (11.1)	
Heavy	3 (30)	2 (11.1)	
Data represented as n (%) Two retired patients excluded from this analysis			

Results

WC status was associated with an increased time needed for patients to return to Full Duty work and no effect on Light Duty return.

WC cohort showed inferior SF-12 Mental Scores compared to the non-WC group.

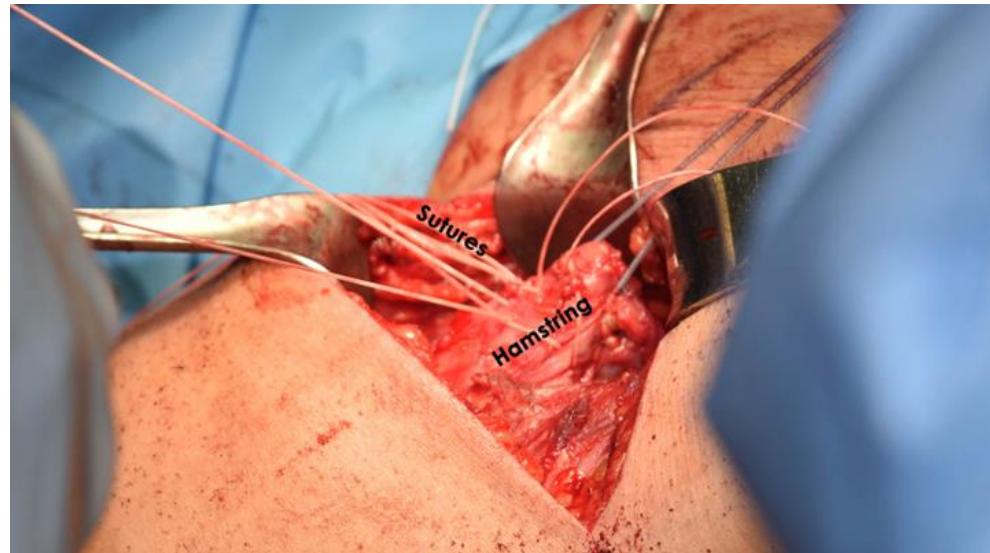
There were no significant differences in postoperative PRO averages measured by the LEFS, HOS, and Physical Score from the SF-12 Health Survey.

Table IV. Effect of Work Comp Status on Proximal Hamstring Repair Outcomes			
Parameter	Work-Comp n = 10	Non-Work Comp n = 20	P-Value
Return to Work (weeks)			
Light Duty	13 ± 14	10 ± 8	0.688
Full Duty	21 ± 9	9 ± 8	0.005*
Hip Outcome Score			
Total ADL Score	91 ± 13	98 ± 4	0.233
Total Sports Score	80 ± 34	93 ± 11	0.754
Total Score	89 ± 18	97 ± 5	0.466
LEFS Percent of Maximal Function	84.75 ± 23.44	96.19 ± 7.03	0.488
SF-12 Health Survey			
Physical Score	48.93 ± 9.16	52.33 ± 5.65	0.521
Mental Score	49.28 ± 9.97	54.26 ± 9.69	0.032*
LEFS- Lower Extremity Functional Scale; SF-12- 12-Item Short Form Health Survey; ADL - Activities of Daily Living			
* Represents Significant Values with alpha-risk set at 0.05			
Data represented as means ± standard deviation			

Discussion

Our findings suggest WC and non-WC patients undergoing PHR have comparable outcomes.

Differences in SF-12 Mental Scores and return to work time for Full Duty Capacity warrant further investigation.



Moatshe G, Chahla J, Vap AR, et al. Repair of Proximal Hamstring Tears: A Surgical Technique. *Arthrosc Tech.* 2017;6(2):e311-e317. Published 2017 Mar 13. doi:10.1016/j.eats.2016.10.004

Conclusion



Our findings portray a trend of mental health struggle for WC patients, warranting further investigation and support for patients in the WC system.

Evidence of longer return-to-work times can help guide expectations for patients and providers following surgery.

References

1. Bowman EN, Marshall NE, Gerhardt MB, Banffy MB. Predictors of Clinical Outcomes After Proximal Hamstring Repair. *Orthop J Sports Med.* 2019;7(2):S, Kaila R. The surgical repair of proximal hamstring avulsions. Bon2325967118823712. Published 2019 Feb 15. doi:10.1177/2325967118823712
2. Wood D, French SR, Munir e Joint J. 2020;102-B(10):1419-1427. doi:10.1302/0301-620X.102B10.BJJ-2019-1112.R1
3. Atanda A Jr, O'Brien DF, Kraeutler MJ, et al. Outcomes after distal biceps repair in patients with workers' compensation claims. *J Shoulder Elbow Surg.* 2013;22(3):299-304. doi:10.1016/j.jse.2012.11.011
4. Atlas SJ, Tosteson TD, Blood EA, Skinner JS, Pransky GS, Weinstein JN. The impact of workers' compensation on outcomes of surgical and nonoperative therapy for patients with a lumbar disc herniation: SPORT. *Spine (Phila Pa 1976).* 2010;35(1):89-97. doi:10.1097/BRS.0b013e3181c68047
5. Denard PJ, Lädermann A, Burkhart SS. Long-term outcome after arthroscopic repair of type II SLAP lesions: results according to age and workers' compensation status. *Arthroscopy.* 2012;28(4):451-457. doi:10.1016/j.arthro.2011.09.005
6. Lu Y, Agarwalla A, Patel BH, et al. Influence of workers' compensation status on postoperative outcomes in patients following biceps tenodesis: a matched-pair cohort analysis. *J Shoulder Elbow Surg.* 2020;29(12):2530-2537. doi:10.1016/j.jse.2020.03.048



Thank you!