

Platelet Rich Plasma Augmentation to Surgical Treatment of Lateral Epicondylitis: Technique and Early Results



Christopher Frey¹, Kalpit Shah¹, Allan Mishra¹, Jeffrey Yao¹

¹Department of Orthopaedic Surgery, Stanford University School of Medicine, Stanford, CA

Background

Lateral epicondylitis is a common cause of elbow pain associated with overuse and eccentric loading of the wrist extensors, now recognized as a degenerative.^{1,2} Although it is often self-resolving, a variety of treatment options have been reported with the goals of pain control, improvement in motion, strength, and function, and the prevention of recrudescence.³ While surgical debridement and ECRB repair have reported high satisfaction rates, return to work or play may take several weeks to months for the high-use populations such as laborers and athletes.⁴ There is evidence PRP augmentation may accelerate rotator cuff healing, but this has not been assessed for lateral epicondylitis.⁵

Aim

In this retrospective study, sought to determine if surgical debridement and ERCB repair for lateral epicondylitis augmented with the intraoperative augmentation of PRP was associated with faster recovery to surgical debridement alone.

Methods

A retrospective chart review was performed utilizing the STARR database. Inclusion criteria was surgery with the senior author and a baseline QuickDASH score. Exclusion criteria included age younger than 18 and other concomitant or perioperative surgery other than soft tissue release. The same surgical technique was used for each patient plus or minus PRP augmentation. Patients then underwent routine postoperative protocol. QuickDASH surveys were administered preoperatively, 1, 6, and 12 weeks postoperatively. A multivariate regression and ANOVA test were used to analyze results.

Demographics		
PRP Group, n (%)	No	23 (82%)
	Yes	5 (18%)
Age, mean (SD)		55.3 (7.6)
Gender, n (%)	Male	14 (50%)
	Female	14 (50%)
Handedness, n (%)	Right	26 (93%)
	Left	2 (7%)
Occupation, n (%)	Not Labor Intensive	25 (89%)
	Labor Intensive	3 (11%)

Operative Technique

- The patients were supine on the operating table with a hand table
- In cases with PRP augmentation, 30 mL of venous blood was drawn and spun, providing 3 mL of LR-PRP for use
- A 2.5 cm incision was made from the lateral epicondyle towards ulnar styloid
- After subcutaneous dissection, the fascia of ECRB was divided longitudinally.
- The ECRB tendon was identified, and the degenerative tissue was debrided sharply, taking care to protect the LUCL
- Adjacent common extensor tendon was elevated off the lateral epicondyle and degenerative tissue was debrided down to a flat surface of bleeding bone
- If PRP was used, the 2-0 Vicryl suture was soaked in PRP with the aim of delivering some of the PRP into the tendinous substance
- The tendon was then repaired back down to the bleeding bony bed of the base of the lateral epicondyle
- The remainder of the PRP was injected after skin closure around the lateral epicondyle and the common extensor tendon repair site

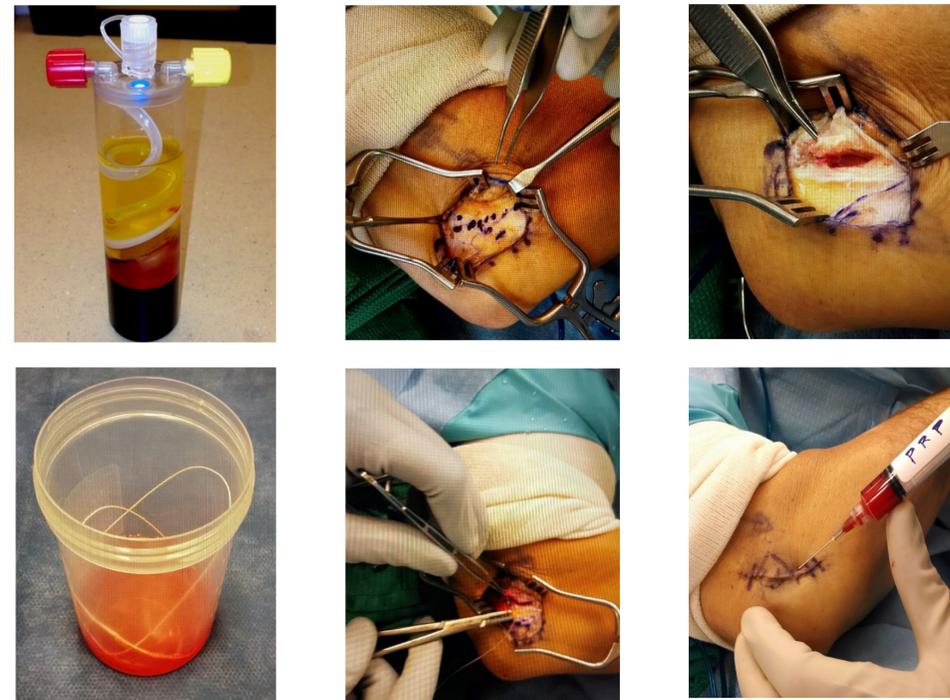
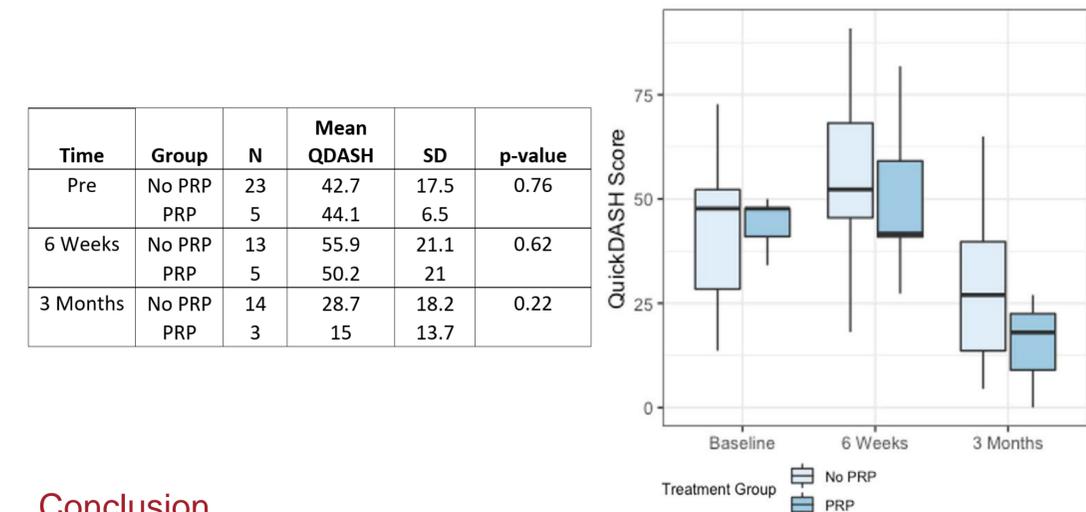


Image 1: LR-PRP (yellow layer on top). Image 2: Fascial layer over the extensor tendon. The dotted blue line represents the proposed fascial division over the ECRB tendon to expose the ECRB tendon prior to debridement. Image 3: ECRB tendon and the underlying lateral epicondyle following debridement. Image 4: 2-0 vicryl suture soaked in PRP while the extensor tendon and lateral epicondyle are being debrided. Image 5: PRP-soaked 2-0 vicryl suture being used for the extensor tendon repair. Image 6: PRP injection at the site of the extensor tendon repair after tendon repair and skin closure.

Results

5 of 28 patients (18%) received PRP augmentation. Patients across both groups had significant increase in QuickDASH scores at 6 weeks ($p < 0.01$) and a decrease by 3 months ($p < 0.001$). Increasing age and not having diabetes was significantly associated with a greater decrease in QuickDASH scores ($p < 0.01$). There was no significant difference between PRP-augmented and non-PRP-augmented groups. There were no complications.

Comparison of QuickDASH scores at select peri-operative time points



Conclusion

There was no significant difference in postoperative QuickDASH scores between augmented and non-augmented lateral epicondyle debridement. Patients across both groups had significant increase in QuickDASH scores at 6 weeks and a decrease by 3 months to below baseline. Older and non-diabetic patients experienced greater improvement in QuickDASH scores.

References

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