

Platelet-Rich Plasma Injection with Percutaneous Needling for Recalcitrant Lateral Epicondylitis

Comparison of Tenotomy and Fenestration Techniques

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Objective

- To determine whether percutaneous needle tenotomy is superior to percutaneous needle fenestration when each is combined with a PRP injection for the treatment of recalcitrant lateral epicondylitis (LE)

Methods

- Retrospective review with prospective follow-up of patients with recalcitrant LE treated with PRP injection and percutaneous needle fenestration or PRP + percutaneous needle tenotomy over a 5-year study interval
- Surgeries performed by two senior authors (ALO, RWC)
- Data queried:
 - Demographics
 - QuickDASH scores
 - Patient-Rated Tennis Elbow Evaluation (PRTEE) scores
 - VAS pain scale scores
 - Grip strength
- Secondary outcomes: complications, additional surgery
- Statistical analysis:
 - Pre- and postoperative values within each treatment group were compared using paired t testing
 - Differences in improvements between the 2 groups were compared using independent t testing

Study Cohort Demographics

- 93 patients (50 female, 43 male)
 - 45 patients in fenestration group
 - 48 patients in tenotomy group
- Mean age: 51.7 ± 8.1 years
- Mean follow-up period:
 - 39.7 ± 19.3 months
- Mean number of corticosteroid injections prior to PRP injection:
 - 1.54 ± 0.83
- Median interval from symptom onset to PRP injection:
 - 17.7 months (range, 6.2-127.8 months)

Results

Outcomes: Full study cohort

- Significant improvement in:
 - QuickDASH (-46; 95% CI, -52 to -40; P < .0001)
 - PRTEE (-57; 95% CI, -64 to -50; P < .0001)
 - VAS pain (-6.1; 95% CI, -6.8 to -5.5; P < .0001)
 - Grip strength (+6.1 kg; 95% CI, 4.9 to 7.3; P < .0001)
- No complications occurred in any patients

Results (cont.)

Outcomes: Tenotomy vs Fenestration

- No significant differences in pre- vs postoperative measures between the treatment groups (Table I)
- Additional procedures performed in 14 patients:
 - 22% of fenestration patients
 - 10% of tenotomy patients (P = 0.05)

Outcome	Tenotomy	Fenestration	P value
Grip Strength Improvement (kg)	5.2 ± 4.7	7.1 ± 5.4	0.12
VAS-P score improvement	6.5 ± 2.4	5.8 ± 2.4	0.28
PRTEE score improvement	61.6 ± 25.2	52.0 ± 24.1	0.18
QuickDASH score improvement	44.2 ± 22.0	47.5 ± 21.5	.56

Conclusions

- PRP injection + percutaneous needling is an effective treatment for recalcitrant LE:
 - Sustained improvements in pain, strength, and function demonstrated at a mean follow-up of longer than 3 years.
- The method of needling does not appear to have a significant effect on treatment outcomes
- However more aggressive needle tenotomy is less likely to require conversion to open tenotomy than needle fenestration