COMPARISON OF THE RESULTS OF PLATELET RICH PLASMA INJECTION VERSUS THE RESULTS OF CORTICOSTEROIDS INJECTION IN DE-QUERVAIN TENOSYNOVITIS

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Introduction

De Quervain tendinopathy is one of the most common wrist pathologies. It is a condition that affects the 1st compartment of the wrist, resulting in stenosing tenosynovitis. The condition causes thickening of the sheaths that encompass the abductor pollicis longus (APL) and extensor pollicis brevis (EPB) tendons as they traverse through their fibro-osseous tunnel, which is located along the radial styloid. De Quervain tendinopathy usually affects females, more than males, aged 30-50 years. Risk factors include overuse, such as knitting, sewing, dish washing, and phone texting. It can also occur post traumatic, or postpartum. Patients usually present with radial-sided wrist pain aggravated by thumb and wrist movement. Patients face difficulty in performing daily tasks such as opening a jar lid and lifting objects. pain over the radial styloid along with fusiform swelling are appreciated as well. Diagnosis can be made clinically by the presence of radial sided wrist pain along with swelling. Special tests such as Finkelstein test, Eichhoff test, and WHAT test aid in the diagnosis. X-rays are of no diagnostic but may show generalized signs and can aid in ruling out other causes of pain such as fracture, and arthritis. Ultrasound and MRI scans are the diagnostic radiological modalities for this condition The treatment regimens consist of non-operative methods and operative ones. The non-operative methods, include immobilization and local injection. Corticosteroid injection is most commonly used, but recently platelet-rich plasma (PRP) injections are emerging as a viable option for the treatment of tendinopathies that have proven to be resistant to conservative management strategies

Aim of the work

The aim of this study was to evaluate the effects of PRP injection in the treatment of De-Quervain's Disease in comparison with corticosteroid injection.

Patients and Methods

We prospectively compared the results of corticosteroids injection versus PRP injection in patients with De-Quervain Disease. The study included 40 patients: They were divided randomly into two equal groups : group A(odd numbered patients); PRP and group B(Even numbered patients); Corticosteroids. The mean age was 43.40 +-11.83 In the PRP group, sixteen patients (80%) were females, 60% were housewives, and eighteen patients (90%) were right hand dominant. In the CS group, seventeen patients (85%) were females, 70% were housewives, and ninteen patient(95%) were right hand dominant. All patients were assessed after 2 weeks and after 6 months according to Quick Disabilities of shoulder, Arm, Hand (Quick Dash-9) score, Visual analogue score (VAS),and according to presence of complications

Results

The mean difference in VAS score after 2 weeks was ↓1.40 ± 0.99 in group I and ↓4.35 ± 1.79.in group II. According to Chi square this difference (P=<0.001) was statistically significant in favor of patients injected with Corticosteroid. However, after 6 months the mean difference was ↓6.10 ± 1.77 in group I and ↓1.80 ± 1.58 in group II. These results denoted that PRP was statistically superior to CS (P<0.001) in the 6 months post injection period

Table (1): Comparison between the two studied groups according to VAS.

VAS	Group I (n = 20)	Group II (n = 20)	U	p
Before injection				
Min. – Max.	5.0 – 9.0	6.0 – 9.0		
Mean ± SD.	7.40 ± 1.23	7.35 ± 1.23	192.50	0.841
Median (IQR)	7.0 (6.5 – 8.5)	7.0 (6.0 – 8.5)		
After injection				
2 weeks				
Min. – Max.	4.0 – 9.0	0.0 – 7.0		
Mean ± SD.	6.0 ± 1.72	3.0 ± 2.0	48.50*	<0.001*
Median (IQR)	6.0 (4.50 – 7.5)	3.0 (2.0 – 3.50)		
6 months				
Min. – Max.	0.0 – 7.0	2.0 – 8.0		
Mean ± SD.	1.30 ± 1.63	5.55 ± 1.57	19.0*	<0.001*
Median (IQR)	1.0 (0.0 – 2.0)	5.0 (4.5 – 7.0)		
Improvement (before vs 2 weeks)	↓1.40 ± 0.99	↓4.35 ± 1.79	39.0*	<0.001*
Improvement (before vs 6 months)	↓6.10 ± 1.77	↓1.80 ± 1.58	17.50*	<0.001*
% of improvement (before vs 2 weeks)	↓19.82 ± 13.87	↓60.30 ± 25.81	41.50*	<0.001*
% of improvement (before vs 6 months)	↓82.89 ± 20.25	↓23.91 ± 20.21	14.50*	<0.001*

After 2 weeks, there was statistically significant difference (P<0.001) between group I and group II with more improvement (mean difference of ↓31.3 ± 16.7 in group II and ↓3.59 ± 4.01 in group I) in QuickDASH-9 score in group II (CS). However. After 6 months, there was a statistically significant difference between group I and group II with more improvement (mean difference of ↓33.22 ± 16.98 in group I and ↓15.84 ± 13.31 In group II), in QuickDASH-9 score in group I(PRP). CS was better than PRP in intermediate term, unlike PRP which was superior to CS on the long term with regards to QuickDASH-9

Table (2): Comparison between the two studied groups according to QuickDASH-9 score.

Quick Dash 9 score	Group I (n = 20)	Group II (n = 20)	U	p
Before injection				
Min. – Max.	25.50 – 74.25	28.30 – 82.50		
Mean ± SD.	48.95 ± 15.37	52.07 ± 17.05	177.0	0.547
Median (IQR)	54.20 (35.25 – 55.9)	55.20 (36.35 – 65.9)		
After injection				
2 weeks				
Min. – Max.	20.50 – 70.00	9.10 – 65.50		
Mean ± SD.	45.37 ± 15.30	20.77 ± 15.00	43.0*	<0.001*
Median (IQR)	49.10 (31.5 – 55.3)	14.15 (10.65 – 23.3)		
6 months				
Min. – Max.	6.80 – 72.70	9.10 – 73.20		
Mean ± SD.	15.74 ± 14.83	36.23 ± 19.95	52.0*	<0.001*
Median (IQR)	11.25 (9.1 – 16.0)	30.35 (20.3 – 51.5)		
Improvement (before vs 2 weeks)	↓3.59 ± 4.01	↓31.3 ± 16.7	20.0*	<0.001*
Improvement (before vs 6 months)	↓33.22 ± 16.98	↓15.84 ± 13.31	78.0*	0.001*
% of improvement (before vs 2 weeks)	↓7.64 ± 9.72	↓60.40 ± 22.27	21.0*	<0.001*
% of improvement (before vs 6 months)	↓67.71 ± 22.04	↓32.96 ± 24.04	43.0*	<0.001*

Complication rate There was no statistically significant difference in complication rate between 2 groups (P=0.487). However, 2 cases injected with CS had post injection flare

Table (3): Comparison between the two studied groups according to complications.

Complications	Group I (n = 20)		Group II (n = 20)		χ^2	^{FE}p
	No.	%	No.	%		
Uncomplicated	20	100.0	18	90.0	2.105	0.487
Complicated	0	0.0	2	10.0		

Conclusion

Corticosteroids are more effective than PRP in the short term (2 weeks). PRP is more effective on the intermediate term (6 months). Both modalities are safe, however PRP is relatively safer than CS.