

TREATING DE QUERVEINS TENOSYNOVITIS USING THE PRP TECHNIQUE : A CASE SERIES

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PRP is the acronym for platelet-rich plasma, an autologous, biological blood derived product which is exogenously applied to tissue areas where regeneration or healing is desired. Together with the platelets, high concentration of essential growth factors is harvested, and these includes platelet-derived growth factors (PDGF), vascular endothelial growth factors (VEGF), interleukin-like factors (IGF), fibronectin to name but a few, which is thought to enhance repair. First described in 1987 with success in an open heart surgery in Italy, PRP has found its fame and is now widely used in many areas of specialty, including sports medicine for treatment of musculoskeletal injuries, orthopedics for enhancement of bone healing, osteoarthritis, aesthetics medicine where ladies and men alike inject PRP onto their faces to increase radiance and reduce wrinkles, and as recent as 2013 in the field of urology to treat organic erectile dysfunction. The potential of PRP treatment is limitless, with many upcoming large scale studies backing its success. Principles of its application include obtaining a platelet concentrate 3-5 times its normal physiological levels and injecting it into areas where healing is desired.

De Querveins' tenosynovitis affects the first dorsal compartment of the wrist which contains the abductor pollicis longus (APL) tendon and extensor pollicis brevis (EPB) tendon. The APL and EPB tendons tend to be injured and inflamed with repetitive wrist movements and patients typically present with pain and reduced range of motion of the wrist. Treatment for this condition includes taking oral analgesics, such as NSAIDS (non steroidal antiinflammatory drugs). Physiotherapy and wrist splintage to reduce wrist movements also helps to reduce the inflammation. The next line of treatment includes steroid injection into the affected dorsal compartment of the wrist which can be done in the outpatient clinic setting. When these measures fail, surgical release of the first dorsal compartment is done. PRP injection into the compartment of the wrist as a treatment for De Quervein's tenosynovitis has not been widely described³. This case series looks at our experience treating patients with De Quervein's using the PRP technique.

We looked at a total of 4 wrists belonging to 3 patients – 2 patients had unilateral pathology and 1 patient had bilateral wrist disease. Ages of patients ranged between 35 till 52 years old, 1 male and 2 female patients. All the patients had reduced range of motion of the wrist and pain over the first dorsal compartment of the wrist, with duration of symptoms lasting from 3 months to 1 year. All the patients were seen elsewhere and treated conservatively prior to presentation to our center. Clinically, all patients had a positive Finklestein's test and plain radiographs done over the wrist was normal. We proceeded with PRP injection over the wrist of these patients and the procedure was done under aseptic technique in the operating theatre as a daycare procedure. 30 mls of blood was harvested from the antecubital fossa and through a centrifugation process (Image 1), 4 mls of PRP obtained was injected into the first dorsal compartment, targeting at 2 mls for each tendon. The same commercially available kit was used, which was the Tricell PRP kit (Image 2), and all injection of the wrist was done by the same surgeon.

With regards to outcome, all 3 patients were assessed after the injection at 3 weeks, 6 weeks and 12 weeks post procedure. They all reported improvement in wrist motion and pain relief and objectively, the VAS (visual analogue score) and the DASH (disability of the arm, shoulder and hand) score showed improvement as well. The VAS score is the score looking at pain control and the higher the score, the worse the pain. The first patient had a score of 6/10 before the PRP treatment and the score given after 3 months of follow up was 2/10. The second patient had a score of 7/10 pre treatment and at 3 months of follow up, the score improved to 3/10. The third patient with bilateral pathology had a score of 7/10 pre injection and 3/10 at post injection (Table 1) Looking at the DASH scores which assessed patients function of the upperlimb, there was marked improvement of all 3 patients, pre and post injection (Table 2).

The treatment in De Quervein's tenosynovitis lies in reducing the pathological inflammatory process which takes place in the dorsal compartment of the wrist. This is traditionally achieved by taking oral NSAIDS (non steroidal anti inflammatory drugs), steroid injections and physiotherapy modalities aiming to strengthen the wrist muscles and reduce the inflammation. When all these conservative measures fail, surgery is the only option left. The advent of PRP injections, or rather the application of PRP injections to reduce unwanted inflammatory reactions is a breakthrough. PRP offers a good alternative mean of conservative measure to treat De Quervein's tenosynovitis without the side effects of oral NSAIDS or steroids. Surgical intervention is also avoided with the use of PRP injection, which is based from patients own blood product, as shown in this study.

All 3 patients seen at our center showed improvements in wrist functions seen as early as 3 weeks after the injection, and objective measurements showed improvement as well. Many limitations in this study however, sample size being too small to be significant is one of them. A longer duration of follow up is also necessary to fully assess efficacy of PRP treatment for De Quervein's tenosynovitis to see if its effect is being temporary or permanent. Other aspects to look at is to conduct larger scale RCT's (randomized control trial) to compare the conventional steroid injection to the new PRP injection technique in treating De Quervein's tenosynovitis of the wrist.

From this small scale case series, it is our opinion that the PRP injection is a good alternative treatment for De Quervein's tenosynovitis of the wrist in patients who do not respond to conventional conservative treatment, thus delaying or preventing

surgical release in recalcitrant condition. With the above limitations in mind, PRP proves very promising in this field as it does not contain any foreign chemical substances in its constituents, as only harvested blood from patients themselves are used.

Table 1 : VAS scores

	PRE	3 weeks	6 weeks	12 weeks
Patient 1	6	4	3	2
Patient 2	7	4	4	3
Patient 3	7	5	3	3

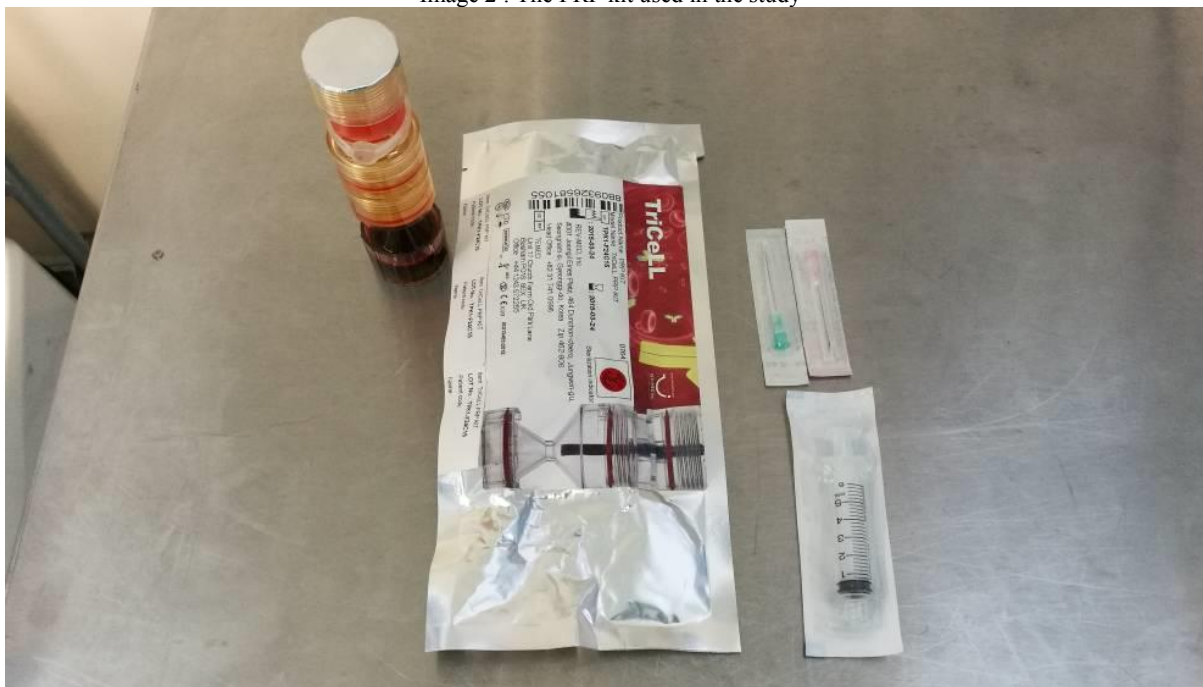
Table 2 : DASH scores

	PRE	3 weeks	6 weeks	12 weeks
Patient 1	67	50	42	32
Patient 2	72	46	40	30
Patient 3	78	62	52	28

Image 1 : The centrifugation machine used in processing the whole blood to achieve a platelet concentrate to be used in the PRP injection



Image 2 : The PRP kit used in the study



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