

PRP as a treatment alternative for Symptomatic Rotator Cuff Tendinopathy for patients failing conservative treatment

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Background: Platelets secrete different cytokines essential in the processes of skeletal muscle healing. It has been shown, in-vitro, that when injured skeletal muscle is enriched with platelet rich plasma (PRP), there is an increase in cell proliferation, satellite cell differentiation and synthesis of angiogenic factors.

Hypothesis: An environment was created by adding an autologous platelet concentrate preparation where the injured muscle is bathed in growth factor rich fluid to ascertain whether this helped tissue regenerate.

Study Design: Clinical trial; Level of evidence, 1.

Methods: A prospective study was carried out in 14 patients. The patients all had *rotator cuff tears with no significant AC joint thickness with impingement and no other significant symptomatic pathology including labral tears, GH arthrosis, or gross instability. All of the patients failed non-operative treatments such as NSAIDS, physical therapy, and corticosteroid injections and all patients were considering surgical options.* The skin was anaesthetized with 1% xylocaine and under ultrasound guidance, 3ml of APC+™ (autologous platelet concentrate from Harvest Technologies Corp., Plymouth, MA) was injected directly into the tendon sheath at the injury site. The effect of the PRP was measured radiographically with MRI, strength and endurance was tested and patients underwent an analog pain scale. Each measurement was done prior to PRP injection, 4 weeks post-injection, and 8 weeks post-injection.

Results: Of the 14 patients, 12 have had statistically significant improvements in their pain scale and their strength and endurance at 8 weeks. Of the 12 patients, 6 had radiographic evidence of healing of their tendinopathy on MRI at 8 weeks. Of the 4 patients who were considering surgery because of persistent pain, only 2 went on to have rotator cuff surgery. No severe complications of the procedure occurred.

Conclusion: Ultrasound guided injection of an autologous preparation rich in growth factors within the injured muscle enhances healing and functional recovery. This simple procedure, of considerable economic importance, confirms that a concentration of viable platelets have healing properties that extend beyond their known function in haemostasis. This therapy should be recommended to patients considering surgery for partial rotator cuff tears and in patients who are not surgical candidates due to other medical comorbidities.