

## Do Postoperative Platelet-Rich Plasma Injections Accelerate Early Tendon Healing and Functional Recovery After Arthroscopic Supraspinatus Repair? A Randomized Controlled Trial

Allan Wang, FRACS PhD FA OrthA, AUSTRALIA  
Phillip Mccann, FRCS(Tr &Orth), UNITED KINGDOM  
Jessica Colliver, MSc, AUSTRALIA  
Bill Breidahl, AUSTRALIA  
Timothy Ackland, PhD, FASMF, AUSTRALIA

St John of God Hospital  
Perth, Western Australia, AUSTRALIA

### Summary:

After arthroscopic supraspinatus tendon repair, ultrasound guided PRP injections on two occasions to the tendon repair site do not improve early tendon bone healing or accelerate functional recovery.

### Abstract:

#### Introduction

Establishing early tendon bone healing is critical for subsequent rehabilitation and optimal functional outcome after rotator cuff repair. Biological therapies that elevate local growth-factor concentrations may promote early rotator cuff healing after surgery. The aim of this study was to determine whether postoperative and repeated application of platelet-rich plasma (PRP) to the tendon repair site resulted in improved early tendon healing and enhanced early functional recovery after double-row arthroscopic supraspinatus repair.

#### Methods

A total of 60 patients underwent arthroscopic double-row supraspinatus tendon repair. Thirty patients were randomised to receive two ultrasound-guided injections of PRP to the tendon repair site at postoperative days 7 and 14. The control group did not receive placebo injections. Early structural healing of the tendon repair was assessed with MRI at 16 weeks post surgery by a blinded musculoskeletal radiologist, and cuff appearances were graded according to the Sugaya classification. Functional scores were recorded with the Oxford Shoulder Score, quick DASH, and visual analogue scale for pain; and were measured preoperatively and at postoperative weeks 6, 12, and 16. Isokinetic strength and active range of motion were measured in both operated and non-operated shoulders at 16 weeks post surgery.

#### Results

All patients complied with the study protocol and no patients were lost to followup. There were no differences in MRI structural integrity of the supraspinatus repair between the PRP group (0% full-thickness re-tear; 23% partial tear; 77% intact) and the control group (7% full-thickness re-tear; 23% partial tear; 70% intact) at 16 weeks postoperatively ( $p = 0.35$ ). Significant improvements in clinical function and VAS pain scores were observed in both PRP and control groups at 12 weeks and 16 weeks post surgery ( $p < 0.01$ ). However PRP treatment did not result in superior functional scores, range of motion, shoulder strength or pain scores compared to the control group.

#### Conclusions

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After arthroscopic supraspinatus tendon repair, image-guided PRP treatment on two occasions does not improve early tendon-bone healing or functional recovery.