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Does Post-Operative PRP Injection Increas Healing Rate After Rotator Cuff Repair?

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Summary:
Although PRP application after arthroscopic repair of the rotator cuff has no effects on clinical recovery and structural integrity, it reduces the postoperative occurrence of shoulder stiffness. Further studies should support these findings.

Abstract:
BACKGROUND
Rotator cuff healing after an arthroscopic repair is discussible because of the high incidence of failures. Among biologic augmentations currently used, platelet-rich plasma (PRP) is one of the most applied, supposed to enhance and accelerate the healing process in different musculoskeletal disorders. However, the evidence supporting its successful administration is still lacking, especially in the field of the rotator cuff repair.

PURPOSE
In this randomized controlled trial, our purpose is to clarify if the recovery is accelerated and the integrity of repaired construct is increased in patients undergoing PRP injections after arthroscopic repair of the rotator cuff.

METHODS
Thirty-eight patients with full-thickness rotator cuff tears have been enrolled. After they had been informed about the use of PRP and the timing of its application postoperatively, they were randomized in two arms. 17 patients underwent arthroscopic rotator cuff repair and PRP injections (3 injections at 10 days each other), 21 underwent arthroscopic rotator cuff repair without PRP injections. Outcomes were assessed preoperatively, at 3, 6, 12, and minimum 16 months after surgery (average 17.7 +/- 1.7 months). Constant system, the University of California at Los Angeles (UCLA) system and a Visual Analogue Scale (VAS) scale were used; range of motion and strength in all planes were also assessed.
The healing of the repair was assessed at magnetic resonance imaging at a minimum follow up of 6 months from surgery. All patients had the same rehabilitation protocol.

RESULTS
Platelet-rich plasma gel application after to arthroscopic rotator cuff tear repairs did not accelerate recovery with respect to pain, range of motion, strength, functional scores, or overall satisfaction as compared with conventional repair at any time point. There was no difference between the 2 groups after 3, 6, 12, months and at final follow up. The follow-up MRI showed no significant difference in the healing rate of the rotator cuff tear. In addition, magnetic resonance imaging , at a minimum of 6 months after surgery , demonstrated a retear rate of 23.5 % in the PRP group and 19% in the conventional group, there was no statistical significance between the groups (P = .658).

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CONCLUSION

Although PRP application after arthroscopic repair of the rotator cuff has no effects on clinical recovery and structural integrity, it reduces the postoperative occurrence of shoulder stiffness. Further studies should support these findings.