

The Effects of Platelet-Rich Plasma Injections on Patellar Tendinopathy

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INTRODUCTION

Patellar tendinopathy is very common among elite and recreational athletes who participate in sports that involve jumping and quick directional changes. Several different therapies and modalities have been experimented with to increase the healing of the tendon. The purpose of this case study and review is to evaluate the effectiveness of platelet-rich plasma injection therapy on treating refractory long-term patellar tendinopathy.

The administration of platelet-rich plasma (PRP) is a new and clinically successful approach in the management of tendinosis and/or tendinopathy. PRP is an autologous blood derivative that contains a higher concentration of platelets with respect to baseline blood level. The biological rationale is that the platelets are a source of several growth factors amongst several other bioactive molecules that play an important role in tissue homeostasis and the healing cascade. The application of PRP into a damaged tendon could therefore encourage tissue regeneration. PRP has been applied in several clinical conditions, both as a conservative injective approach or to augment surgical procedures.

METHODS

A full history was taken from the case study subject and a thorough evaluation was performed. The patient began physical therapy 3 weeks post-injection and continued through a progressive 5 week physical therapy program beginning with proprioception and stretching exercises and progressing into plyometrics and sport-specific training.

An extensive and comprehensive evidence-based literature search was conducted looking in 4 different databases, including PubMed, CINAHL Plus, Cochrane, and Web of Knowledge. A total of 20 articles were collected, and of those, 8 were selected for extensive analytical review.

FINDINGS

Case study subject regained full functional strength and range of motion and a complete relief of knee pain at completion of physical therapy, 8 weeks post-injection. There was limited research on this topic, and even less published research that is considered high quality evidence. Much of the published research have high clinical and statistical relevance, but the sample sizes are smaller and lack randomization, blinding, and a control group. Platelet-rich plasma (PRP) injection looks to be a promising treatment for patellar tendinopathy from a standpoint of

clinical relevance. This type of modality looks to provide another treatment option for those with unrelenting, reoccurring, or recalcitrant tendinopathy.

CONCLUSION

Physical therapy is often a very successful tool in the treatment of patellar tendinopathy and should be followed and implemented for at least 3 to 6 months as a first line of treatment. For those individuals suffering from recalcitrant patellar tendinopathy that have failed more conservative treatments, it may be worthwhile to include PRP injection therapy as a recommendation. Studies have shown decreases in tendon irregularities and results of pain reduction and/or increased function after PRP injection. Although current research is of lower quality and confers no clear benefit that can be stated with certainty, we can say PRP injection is a very safe and minimally invasive procedure that almost always provided patients with some sort of pain reduction and allowed many of the subjects to return to sport and play to full capacity. Further high quality research is needed in this area.