

Effects of platelet-rich plasma in supraspinatus tendinopathy

Supraspinatus tendinopathy is a common and perplexing problem in current clinical practice. It is one of the most common reason that patients seek medical attention accounts for patient visits to a medical practitioner.^[1] The most common reason for the supraspinatus tendinopathy is overuse injuries in sports as well as in jobs that require repetitive activity.^[2-5] Shoulder impingement is one of the most common causes of shoulder tendinopathy^[6-8] and refers to the compression of the subacromial structures against the coracoacromial ligament during the elevation of the arm.^[9] Excessive mechanical loading is considered the major causation factor. However, tendon problems are very frequent, and no clinical guidelines available to manage such problems. Apoptosis,^[10] vascular changes^[11,12] tears^[13] and calcifications^[14] of the supraspinatus tendon have been described in subjects who were treated with subacromial decompression.

Although originally considered an inflammatory problem, histopathologic analysis of tendinopathy has revealed evidence that this process is predominantly degenerative and is characterized by hypercellularity, vascular hyperplasia, and collagen disorganization. Since tendinopathy is primarily a degenerative condition, several new treatments have been developed in an attempt to stimulate tissue regeneration. One of these treatments is an injection of platelet-rich plasma (PRP). The use of autologous growth factors in the form of PRP may be just the beginning of a new medical frontier known as “orthobiologics.” PRP is a new technology focused on enhancing the healing response after injury of different tissue types.^[15,16]

In tendinopathy, changes in the composition of the tendinous matrix are in part mediated by inflammatory mediators and metalloproteinase enzymes and are consistent with changes in cell-mediated matrix remodeling, which precedes the onset of clinical symptoms. These biochemical changes around tendon may represent patients whom PRP may be beneficial. However, corticosteroids could mediate their own effect thorough alterations in the release of these harmful chemicals agents, the behavior of their receptors, or both.^[17] Essentially, corticosteroid aims to achieve a reduction in inflammation, but a negative effect on neo-vascularization by a general inhibition of protein synthesis.^[18] However, the patient who receives PRP may respond better due to the fact that human tenocytes with degenerative lesions showed neo-vascularization and new tenocytes formation.^[19,20]

It can also be hypothesized that the PRP can be a good treatment option for the patients with supraspinatus tendinopathy who

had involvement of substance of tendon and needed regeneration of the tendon.

**Pradeep K. Singh, Narendra Kumar Saxena,
Sohaheel Khan**

Department of Orthopaedics, Datta Meghe Institute of Medical Sciences, Wardha, Maharashtra, India

Address for correspondence:

Prof. Pradeep K. Singh,

Department of Orthopaedics, Datta Meghe Institute of Medical Sciences, Wardha - 442 001, Maharashtra, India.

E-mail: drpradeepsingh@gmail.com

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