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Original Research Paper

Orthopaedics

ROLE OF AUTOLOGUS BLOOD INFILTRATION IN THE MANAGEMENT OF TENNIS ELBOW

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ABSTRACT

Background: To evaluate the effects of autologus blood infiltration in patients with tennis elbow

Methods and Materials: The present study titled "Role ofautologus blood infiltration in the management of tennis elbow" was conducted in postgraduate Department of Orthopaedics, Bone and Joint Hospital Barzulla Srinagar from June 2017 to November 2019. 28 patients with tennis elbow of either sex were included in the study. After taking written informed consent all the patients received autologus blood ifiltration(2 ml)

Results: After 6 months of treatment patients with lateral epicondylitis had a statistically significant improvement in their Visual analogue scale

KEYWORDS :

INTRODUCTION:

Tennis elbow also known as lateral epicondylitis is a condition characterized by pain and tenderness over the lateral epicondyle of the humerus and pain on resisted dorsiflexion of the wrist. [1] Lateral epicondylitis can occur during activities that require repeated supination and pronation of the forearm with the elbow in near full extension. [2] Tennis elbow was first described by Runge in 1873.[3] Although originally described as an inflammatory process, the current consensus is that lateral epicondylitis is initiated as a micro-tear, most often within the origin of extensor carpi radialis brevis. [1,2]Tenderness is present over the lateral epicondyle approximately 5mm distal and anterior to the mid-point of the condylePlain radiographs usually are negative occasionally calcific tendinitis may be present. MRI shows tendon thickening with increased T1 and T2 signal. Most of patients with tennis elbow can be managed conservatively; treatment is successful in 95% of patients.[1,2] Initial non-operative management includes rest, ice, local corticosteroid injections, physical therapy with ultrasound, manipulation and soft tissue mobilization, friction massage, stretching and strengthening exercises and counterbracing.[2,4] We evaluated short term results of autologus blood infiltration in the management of tennis elbow.

MATERIALS AND METHODS

Twenty eight consecutive patients were evaluated with lateral epicondylitis.. Nonsurgical and surgical treatment options were discussed with all patients, which included nonsteroidal anti-inflammatory drugs, wrist splints, local injection of either steroid or autologous blood, or surgical release. Exclusion criteria included patients previously treated with surgery for lateral epicondylitis and patients receiving steroid injections within 3 months before blood injection. This study was approved by the local ethics committee and carried out in accordance with the Declaration of Helsinki. Informed consent was obtained from each patient. Two millimeters of autologous blood were drawn from the ipsilateral upper extremity and was injected .The needle was introduced just proximal to the lateral epicondyle and the contents were injected on the undersurface of the extensor carpi radialis group of muscles . After the injection the patient is kept in supine position without moving for 15 minutes. Patients were sent home with instructions to limit the use of the arm for 24 hours and given paracetamol or codeine for pain but not given NSAIDs. After 24 hours, patients were given a standardized stretching protocol for 2 weeks. A formal strengthening program was then initiated. At 6 weeks after the procedure, patients were allowed to proceed with normal sporting or recreational activities as tolerated.. The evaluation of the patients was carried out by the degree of the pain and the amount of disability in the pre injection phase, and at subsequent outpatient visits at 2, 4, 6, 10, and 12 weeks (the final follow up). The degree of pain was assessed by employing the Visual Analogue scale (VAS) and the degree of disability was evaluated by Nirschl staging [5].

Nirschl Staging Of Lateral Epicondylitis:

Phase 1: Mild pain with exercise, resolves within 24 hour.
Phase 2: Pain after exercise, exceeds 24 hour
Phase 3: Pain with exercise and does not alter activity
Phase 4: Pain with exercise and alters activity
Phase 5: Pain with heavy activities of daily living
Phase6: Pain with light activities of daily living and intermittent pain at rest
Phase 7: Constant pain at rest, disrupts sleep

Autologus Blood Infiltration

RESULTS

The 28 patients were followed-up for an 6 months. Before autologous blood injections the average pain score was 7.8 (range, 4–10). The average Nirschl stage was 6.5 (range, 5–7). After autologous blood injections the average pain score decreased from 7.8 to 2.3. The average Nirschl stage

decreased from 6.5 to 2.0 . Maximal benefit was reached at an average of 3 weeks (range, 1 wk to 8 wk) after injection. Nine patients had more than one injection. For these 9 patients the mean pain score and Nirschl stage before injection were 7.2 and 6.6, respectively. After the first injection these scores decreased to 4.6 and 4.1, respectively. Maximal benefit was achieved by an average of 1.6 weeks. After the second injection the pain and Nirschl scores were both 0.9. Maximal benefit was achieved by an average of 2.3 weeks after the second injection. 19 of 28 patients were relieved completely of all pain during even strenuous exercise after one autologous blood injection. 8 patients were relieved completely of all pain during even strenuous exercise after 2 injections.. All patients maintained their maximal benefit throughout the course of their follow-up evaluation. No patient reported worsening or recurrence of pain. No infection, reflex sympathetic dystrophy, elbow flexion contracture, or other untoward effects occurred. Two patients required short-term narcotics after blood injections. One patient failed to improve satisfactorily and eventually underwent surgery for lateral epicondylitis.

DISCUSSION:

Lateral epicondylitis or tennis elbow is a common condition that causes pain on the outside of the elbow, as well as pain and weakness during gripping. The natural course of lateral epicondylitis is self-limiting with nearly all studies suggesting 90% of all patients will have complete relief in 12 months. It is an overuse tendinopathy of the wrist extensors at the humeral attachment There are many conservative treatments, including splinting, massage, injection of nonsteroidal anti-inflammatories, iontophoresis, laser therapy, botulinum toxin A injections, extracorporeal, and alteration of tasks performed by the patient, however to date yet no optimal treatment has been proven to be consistently superior to the natural history of the disease. Biologic therapy modality including autologous whole blood injections (ABI's), platelet rich plasma (PRP) injections, and stem cell therapy has gained recent popularity in the management of tendinopathy conditions [6]. It has been hypothesized that applying biologic therapy to tennis elbow may result in improved symptom management with enhanced tendon healing providing functional cells to the site of injury to overcome the apoptotic process of tendinopathies in hopes of restoring tendon structure and function . Autologous blood injection stimulates the inflammatory cascade within the degenerated tendon by providing cellular and humoral mediators for regeneration . In this study after autologous blood injections the pain and the degree of disability decreased. The average time to maximal benefit from the injection was approximately 3 weeks (average 2.5 weeks), which is consistent with a healing process. limitations in our study were small size of the study groups as well as short period of follow up.

CONCLUSION:

Autologous blood injection is an effective way to treat patients of lateral epicondylitis improving pain, and functional status. It is recommended because it is simple, cheap, and effective.

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