



Original Article

Autologus Blood Injection for Lateral Epicondylitis in Tertiary Level Hospital

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Abstract

Tennis elbow is a common and well defined clinical entity. It is an extra articular affection characterised by pain and acute tenderness at the origin of the mainly extensorcarpi radialis brevis, but can involve the tendons of the extensorcarpi radialis longus and the extensor digitorum communis. It is also called lateral epicondylitis. Various types of treatment option for this disease that is conservative and operative. An injection of autologus blood might provide the necessary cellular and humoral mediators to induce a healing cascade. The purpose of the study was to evaluate result of epicondylitis treated with autologus blood injection. Total 19 patients with tennis elbow treated in this study. Among the patients 9 were male and 10 were female. Age of the patients were 25yrs – 60yrs, average 41.63yrs. All patients had failed previous non-surgical treatment. Duration of the pain 1 month to 6 months. All the patients got autologus blood injected every 21 days interval (one or three times). Before autologus blood injection average pain score was 6.2 and average Nirschi score was 5.8. After autologus blood injection pain score and Nirschi score decreases 2.2 and 2 respectively. Average follow-up period was 7 months.

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Introduction

Lateral epicondylitis was first described in the medical literature by Runge in 1873¹. It results from either acute strain or more commonly repetitive stresses to the origin of the extensorcarpi radialis brevis. One third of the patients also have involvement of the origin of the extensor digitorum communis². Although the terms epicondylitis and tenonitis are used commonly to describe tennis elbow, histopathologic studies have shown that the tennis elbow is not an inflammatory condition. Rather tennis elbow is a fibroblastic and vascular response called angiofibroblastic degeneration now more

commonly known as tendinosis. In United Kingdom it affects between 1% - 3% of the population, mainly those aged from 35 to 55 years with an equal gender distribution³.

Various types of treatment option for tennis elbow i.e. conservative and operative. Conservative treatment includes physiotherapy and eccentric exercises⁴, shock-wave treatment⁵, laser therapy⁶, acupuncture⁷, tropical nitrates⁸, epicondylar elbow straps⁹, injection of corticosteroid¹⁰, botulinum toxin¹¹, autologus blood¹², or platelet-rich plasma¹³. Patients who failed to conservative measures may repair surgery i.e. open or arthroscopic method¹⁴⁻¹⁶.

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Materials & Methods

19 consecutive patients were evaluated with lateral epicondylitis. Exclusion criteria include patients previously treated with surgery for lateral epicondylitis and patients receiving steroid injection within 3 months before autologous blood injection. Non-surgical and surgical treatment options were discussed with all patients which included non-steroidal anti inflammatory drugs, wrist splint, local injection of either steroid or autologous blood or surgical release. 19 patients opted for autologous blood injection. Of the 19 patients 9 male and 10 female, ages ranges from 25 to 60 years, mean age was 41.63 years. Symptoms had persisted for at least one month despite conservative treatment. 17 patients had not received steroid injection, 2 patients had received steroid injection previously.

1 ml of autologous blood was drawn from the ipsilateral upper extremity and mixed with 1ml of 2% lidocaine. The needle was introduced proximal to lateral epicondyle along the supracondylar ridge and gently advanced into the under surface of the extensorcarpi radialis brevis while infusing the blood anesthetic mixture extra articularly. Patients rated their pain on scale of 0 to 10 with 0 representing no pain and 10 the worst pain and categorised themselves according to Nirschi staging (0 to 7).

Nirschi Staging of Lateral Epicondylitis	
Phase 1 :	Mild pain with exercise; resolves within 24 hours
Phase 2 :	Pain after exercise; exceeds 48 hour
Phase 3 :	Pain with exercise; does not alter activity
Phase 4 :	Pain with exercise; alters activity
Phase 5 :	Pain with heavy activities of daily living
Phase 6 :	Pain with light activities of daily living, intermittent pain at rest
Phase 7 :	Constant pain at rest; disrupts sleeps

Pain Scale	
0 : No pain	
1 to 2 : Slight pain	Pain is present but does not limit activity
3 to 4 : Mild pain	Can do most activities with rest periods
5 to 6 : Moderate	Unable to do some activities because of pain
7 to 8 : Severe	Unable to do most activities because of pain
9 to 10 : Worst pain	Unable to do any activities because of pain

Pain ratings and Nirschi stages were recorded every week. If pain was not relieved entirely 3 weeks after the autologous blood injection a repeat injection was offered to the patient. Informed consent was obtained from all patients participating in this study.

Results

The 19 patients were followed up for an average 7 months. Before autologous blood injection the average pain score was 6.2 (range 3 to 7). The average Nirschi stage was 5.8 (range 5 to 7). After autologous blood injection the average pain score decreased from 6.2 to 2.2 The average Nirschi stage decreased from 5.8 to 2. Six patients had more than 1 injection. Out of 19 patients 2 patients received steroid injection before enrolling in this study. Maximum benefit was achieved by average 2.2 weeks. One patient relapsed during first six months follow up and she did not satisfy with this treatment. No infection, reflex sympathetic dystrophy, elbow flexion contracture or other untoward effects occurred.

Discussion

Chronic elbow pain is a frequent disability in patients and more commonly it is diagnosed as lateral epicondylitis or tennis elbow. Though majority of the patients respond to non-surgical treatment a small majority needs surgery. Autologous blood injection for tennis elbow is based on the histopathological observation that, tennis elbow is not an inflammatory condition, but a fibroblastic and vascular response called angiofibroblastic degeneration more commonly known as tendinosis. This is characterised by invasion of blood vessels, fibroblasts and lymphatics into the symptomatic area of the extensorcarpi radialis brevis. The injection of the autologous blood is thought to provide the necessary cellular and humoral mediators to induce a healing cascade.

In our study 14 of the 19 patients (73.68%) were relieved completely of pain during stress, activity after autologous blood injection. 4 (21.05%) had mild pain during strenuous activity. No patient rated pain score more than the pre-injection scale though. Most patients related their pain relief to

first injections though repeat injection improved outcome.

Instead of autologous blood Mishra and Pavelko injected platelet rich plasma for chronic elbow tendinosis and at a final follow up 12 to 38 months, patient reported 93% reduction in pain compare with the pre-injection status. The mechanism of action and the final outcome may not differ much.

Conclusion

Autologous blood injection is effective for treating lateral epicondylitis. Its application being minimally traumatic, simple to acquire and prepare and inexpensive are the main advantages. We feel with a large case series, a longer follow up and refinement of the procedure and a fair conclusion can be drawn with regard to efficacy and otherwise of this treatment module.

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