

Chronic Lateral Elbow Pain with Nerve Entrapment - An Advanced Physiotherapeutic Approach

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Abstract

The case study was conducted on a female patient age 45 years, a computer professional complaining pain on lateral elbow. Study was conducted to differentially diagnose the lateral elbow pain as it is difficult to diagnose because of different pathologies. Secondly this study was done to see the effectiveness of nerve tension testing procedure as a diagnostic and treatment tool. Based on result of the study, it is concluded that lateral elbow pain in this case was due to radial tunnel syndrome which is mostly misinterpreted as lateral epicondylitis. In this two nerve tension tests were used i.e. ULTT 1, ULTT.2b and it is concluded that mobilisation of nerve is a very effective tool in cases of RTS.

Key Words: Radial Tunnel Syndrome, Mobilisation, Lateral Epicondylitis, VAS Scale

Introduction

Patient experienced right lateral elbow pain from last four months. Cause of the injury could not be identified but complained of increased pain while working on a key-board. Her pain varied day to day depending upon activities. Gripping activities like using scissors, wringing aggravated her symptoms. Occasionally she felt burning pain over the lateral epicondyle. She pointed to an area corresponding to radial tunnel as location of her pain. VAS scale varied from 1 to 6 depending upon the activity.

Evaluation & Assessment

1. Cervical Clearing Examination ROM was normal.
2. Compression & Distraction tests were negative.
3. No movement produced elbow pain.
4. ROM of shoulder, elbow, wrist, fingers was normal.
5. Passive stretching of extensors forearm musculature with wrist and fingers flexed and elbow extended caused moderate tolerable pain with no limitation in ROM
6. Isometric contraction of wrist extensors with elbow extended caused pain in radial tunnel area

7. M.M.T: Wrist finger thumb extensor – 4
Grip force measured by Hand Dynamometer was 28kg on left with no pain. 14 kg right with pain

On Palpation: Mild discomfort was noted on palpation of Lateral Epicondyle while patient reported acute pain on palpation of radial tunnel. Tenderness on muscle bellies of external Carpi Radialis Brevis & Longus.

Neural Tension Testing: was performed on both upper limbs for comparison.

Median nerve testing (ULTT1) & Radial nerve testing (ULTT 2b) was performed. With Median Nerve Test there was limitation of 15 degree of elbow extension when the wrist was extended before elbow. Radial Nerve Testing reproduced pain in the right lateral elbow.

Differential Diagnosis

Radial tunnel Syndrome & Lateral Epicondylitis.

1. Patient felt burning sensation over lateral elbow which indicated nerve irritation.
2. On palpation she had more pain on radial tunnel than lateral epicondyle.
3. Resisted wrist extension caused more pain over the radial tunnel.

4. Based on MMT, patient had weakness in wrist, thumb & finger extension & decreased Grip force.

Provisional Diagnosis

Patient’s primary problem was entrapment of Deep Radial Nerve.

Intervention

- Patient was instructed to avoid activities that aggravate her problem.
- Ultrasound was given on radial tunnel 1MHz at 0.5 W/cm sq for 8 min to improve soft tissue extensibility followed by neural mobilization techniques
- Mobilisation of radial & median nerve was done 6 to 7 mobilization were done emphasizing the median & Radial Nerve
- Patient was instructed to perform neural mobilization one time per day at home.
- Patient was treated on alternative days

Outcome:

1. After one week of Physical Intervention ROM in right upper limb increased.
2. Patient’s pain rating on the VAS remained the same.
3. Grip Force in right hand increased 20kg
4. During palpation there was decreased tenderness over right radial tunnel & lateral epicondyle
5. Strengthening & stretching programs was started after one week.
6. Strengthening consisted of resistive exercises with 1/2kg weight 3 sets of 10 repetitions was done followed by 20 seconds stretch of wrist extensors.
7. After two weeks pain rating on VAS ranged from 1 To 4.

VAS Scale

Pre intervention depending on activity 0-----6-----10

Post intervention - 2 weeks depending on activity 0-----4-----10

Post intervention - 3 weeks No Pain

Treatment was continued for a total of 3 weeks. After three weeks ROM of elbow extension was same on both sides during ULTT1.

8. Grip force improved to 30 kg on right & patient had no pain on slight stretching of right wrist extension.

Grip Strength with Dynamometer

	Right	Left
Pre Intervention	14 Kg	28 Kg
Post Intervention	30 Kg	28 Kg

Discussion

Lateral elbow pain was difficult to diagnose because of different pathological and combination of pathologies. Patient in this case had variety of signs and symptoms that let us conclude that primary problem was mild entrapment of deep radial nerve that led to Radial Tunnel Syndrome. Radial tunnel begins where the radial nerve runs in a furrow between brachoradialis and brachialis. The nerve passes through substance of supinator muscle and exist the supinator muscle about 6.4 cm. distal to Radiohumeral joint where radial nerve terminate. It innervate the extensor digitorum, extensor digiti minimi, extensor carpi ulnaris, extensor pollicis longus, extensor pollicis brevis, extensor indicis. Entrapment of radial nerve in the area of radial tunnel often causes lateral elbow pain. Symptoms which mimic lateral epicondylitis and are often treated wrongly. In this study, we have pointed to some science and symptoms that clearly differential diagnose RTS from lateral epicondylitis and we have worked on two nerve tension testing procedures i.e. ULTT1, ULTT2b which have markedly improved symptoms in case of RTS within three weeks.