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Impact Of Physiotherapeutic Intervention Along with Ergonomic Modification in the Management of Cervical Radiculopathy: A Case Study

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ABSTRACT

Background: Cervical radiculopathy is a common cervical spine disorder as a result of the compression of nerve roots leading to pain on the neck, spreading to the upper limb, alterations in sensation, muscle weakness, restricted neck movement, and functional impairment. It is of major influence in quality of life, especially to the middle aged and office workers in bad posture and being overly inactive. Physiotherapy has an important role in its conservative treatment, and ergonomic interventions may aid in the improvement of the treatment outcomes.

Case Presentation: The case was introduced by the 48-year-old man who works in the administrative office and has acute cervical pain with a right upper limb location and a tingling effect and functional limitation of activities of daily living. The pain was rated as 9/10 using numerical pain rating scale (NPRS). Hypothesis Clinical Examination revealed Forward head posture, C4-C5 tenderness, loss of cervical range of motion and positive Upper Limb Tension Test (ULTT 1 and 3).

Intervention: The patient received a 10-day physiotherapy. Its early treatment involved traditional physiotherapy which comprised TENS, cervical range-of-motion exercises, stretching exercises as well as cervical isometrics. The limited improvement also included introducing ergonomic and posture corrective actions, which consisted of modifiability of workplace chair, adjustment of computer height, and altering sleeping position and the quality of the bed.

Outcome Measures: NPRS and cervical range of motion measured with goniometer and ULTT were used to assess the outcomes of the assessment.

Results: The pain, measured using 4 standard physiotherapy sessions (9/10 to 8/10 NPRS), and constant radiation, was improved partially. It resulted in a significant change when ergonomic/postural recommendations were introduced, and the symptoms became centralised, and the pain was completely removed (0/10 NPRS) during the ninth session. The patient had been able to resume functional independence without any difficulty in the day-to-day activities.

Conclusion: As this case study has shown, physiotherapeutic treatment combined with ergonomic and postural repositioning is superior to the standard physiotherapy when treating cervical radiculopathy. Rapid pain relief, functional outcomes, and quality of life can be incorporated into rehab by providing ergonomic education.

Keywords:- Cervical Radiculopathy, Physiotherapy, Ergonomics, Postural Correction, Neck Pain.

BACKGROUND

Cervical radiculopathy is said to be a condition caused by the malfunctioning of the cervical spine and Compression of the Nerve root of the cervical neck that may lead to chronic pain and lack of ability to move the face to the neck. It is characterized by cervical pain which spreads into the arm and forearm. Numbness, Tingling, Sensory Motor loss, neck muscle weakness, impaired reflexes, functional limitations, Cervicogenic Headache, and movement problems are also the symptoms of the patient.

It is common at 85/100000 people every year. Aetiology Radiculopathy may be herniation of cervical disc into spondylosis and intraspinal or extraspinal tumour, nerve root avulsion, synovial and meningeal cysts, dural arteriovenous fistula, or tortuous vertebral arteries. In the United States (US), the total morbidity of CR is estimated 83.2 per 100,000 of the total population per year.

The cervical radiculopathy can also be idiopathic. Radiculopathy can be divided into acute, subacute and chronic.

The age group that prevails most is 50 to 54 years. In individuals with CR, 21.9 per cent of the herniation of the cervical disc can be ascribed, and, a combination of discogenic and spondylotic can be ascribed to 68.4percent.

The use of different forms of Electrotherapeutic and manual Techniques has a major role to play in the treatment of Cervical Radiculopathy using physiotherapy. The proper arrangement of the physiotherapy treatment will allow minimising the symptoms, improving the quality of life of an affected person. The physiotherapy treatment methods are TENS, IFT, Ultrasound therapy, Manual Techniques including ROM Exercises, soft tissue release, Cervical Isometrics, Strengthening exercise, Traction, Mobilisation, Postural and Ergonomics advice.

Ergonomics is the science that is concerned with finding out how to make people safe, comfortable and productive in terms of consideration of human peculiarities, capacities and limitations in the product or process both at the workplace and home. Everything concerning ergonomics is to make sure that an individual fits the task rather than the other way round. Ergonomics is much-needed, most of all at work. About 33 percent of the days are attributed to musculoskeletal disorders (MSDs).

The away-from-work injuries and illnesses are the most prevalent form of occupational-related injuries.

UNIQUENESS

The Physiotherapy interventions are advantageous to the treatment of the patients with Cervical Radiculopathy and its symptoms. Physiotherapeutic interventions used to treat cervical conditions are of different types, but in this case where association is with postural and Ergonomics Advice, results of treatment are much better and this is the reason we recommend that Ergonomics advice should be followed by the individual following Ergonomics in his work daily, not just at home.

CASE PRESENTATION

The patient, with a chief complaint of cervical pain radiating to the arm 5 days prior to visit to the department, presented himself to the OPD of the Physiotherapy Department of People College of Paramedical Sciences as a 48 year old Male Administrative office worker. The initial symptom was cervical pain NRS of 6/10 Numerical Pain Rating Scale (NPRS) which abruptly manifested itself, as he pulled off the blanket that was under his back. The next day, the degree of symptoms and the intensity reached 7/10 NPRS and pain up to his right lateral side of the upper extremity accompanied by a tingling

sensation. It was progressive in nature and aggravated at night time at which the patient presented himself to the doctor on 3 rd day where he was prescribed Analgesics.

In the 4 th night patient pain was aggravated to 9/10 NPRS, patient came to the casualty where he was given analgesic and Physiotherapy was prescribed.

After examination, the findings are; posture of the head forward, palpation of spinous Process of C4 and C5, and tenderness in the cervical muscles. During Assessment ULTT 1 and 3 tests were positive. Cervical spine Range of motion examined by Goniometer by the manual Technique muscle strength is also identified.

The outcome measures are NPRS, Goniometer and ULTT.

PROCEDURE

The treatment was done over 10 days where the first procedure involved the 30 Minutes session per day that Conventional Physiotherapy methods employed to treat the Patient includes TENS,Flexibility ROM Exercises, Stretching, Cervical Isometrics. Post assessment of the patient with 4 days of treatment has shown that the patient has rated the pain as 8/10 NPRS, but the pain is radiating and also the patient has complained of difficulty in work and ADLs.

Certain Ergonomics Postural Correction is also provided and the customary Physiotherapy is provided after 4 days of attending. The Ergonomics Involves placing and changing of height of the chair and the sleeping patterns through application of diverse matters and cushions. Following 5 settings of sessions, after advice, the Ergonomic Postural Correction patient reported pain relief and his pain was being reduced NPRS 0/10 where the same treatment protocol was followed till 9 the session and was told to follow up after 2 days.

RESULT

The outcome is that, the initial stage of session 4 will be the same with a reduced level of pain 8 out of 10 NPRS of conventional Physiotherapy treatment. The pain at the end of the 9 th session in both the conventional Physiotherapy and the Ergonomics Advice is zero i.e. 0/10 NPRS and the patient denies experiencing any difficulty in working in his daily activities.

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