Efficacy of Isometric Neck Strengthening Exercises Versus Nerve Gliding Exercises Along with TENS in Cervical Radiculopathy

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ABSTRACT

Introduction: Cervical radiculopathy is a clinical condition resulting from compression of cervical nerve roots. The clinical manifestation of cervical radiculopathy are broad and may include pain, sensory deficits, motor deficits, diminished reflexes or any combination of the above. The incidence of cervical radiculopathy is high . Typical symptoms of cervical radiculopathy are: irradiating arm pain corresponding to a dermatomal pattern, neck pain, paraesthesia, muscle weakness in a myotomal pattern, reflex impairment, headache, scapular pain, sensory and motor dysfunction in upper extremities and neck . Studies showed that among computer professionals, 80% of the problem is cervical radiculopathy. These results indicated serious ergonomic deficiencies in office workstation, design, layout and usage.

Aim:
To evaluate the efficacy of isometric neck strengthening exercises versus nerve gliding exercises along with TENS in cervical radiculopathy

Research Design:
The research design was correlational in nature. This study is experimental in nature . The data was collected directly from OPD, University College of Physiotherapy, Faridkot. The size of the sample is 20. The method used for a present study is the purposive sampling method.

Inclusive Criteria:
- Age group 20 to 60 years.
- Both males and females.
- Radiating pain to arm.

Exclusive criteria:
- Osteoporotic patient
- Vertigo
- Torticollis

Procedure:-
The study was conducted at University College of Physiotherapy, Faridkot. A total number of 20 patients were screened according to the selection criteria. The patient's demographic profile and detailed medical history was taken through individual interviewing and a written informed consent was received from twenty patients suffering from chronic cervical radiculopathy. The study was performed by assigning twenty patients (i.e. 10 in each group), namely the nerve gliding exercises + TENS (group 1) and isometric exercises + TENS (group 2) respectively. Pre-test measurement was taken with the help of Visual Analogue Scale (VAS) scores and using manual muscle testing (MMT) prior to the intervention of neck strengthening exercises along with TENS.

DATA ANALYSIS & RESULTS
The data in this study was collected using Visual Analogue Scale (VAS) and Manual Muscle Testing (MMT) and further analyzed using “unpaired t-test” and “chi square tests.”

Table 1.1:- comparison of VAS score between group 1 and group 2

<table>
<thead>
<tr>
<th>Group</th>
<th>No</th>
<th>Mean</th>
<th>Stan. Dev</th>
<th>T</th>
<th>DF</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRE</td>
<td>10</td>
<td>5.20</td>
<td>1.317</td>
<td>-8.42</td>
<td>18</td>
<td>Significant</td>
</tr>
<tr>
<td>POST</td>
<td>10</td>
<td>3.50</td>
<td>1.437</td>
<td>3.193</td>
<td>18</td>
<td>Significant</td>
</tr>
</tbody>
</table>

Table 1.2:- Post treatment comparison of MMT of neck flexors, neck extenders between Group 1 and Group 2

<table>
<thead>
<tr>
<th>Post Neck Flexors</th>
<th>GROUP</th>
<th>CHI</th>
<th>DF</th>
<th>P</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>6.667</td>
<td>2</td>
<td>0.036</td>
<td>SIG</td>
</tr>
</tbody>
</table>

DISCUSSION
The study shows that, participation in a three weeks neck strengthening program lead to a considerable reduction in the average cervical pain and improvement of neck muscle power in the group of patients who performed nerve gliding exercises along with TENS.

Carrette S.Michael G and Fehling MG performed a study on cervical radiculopathy showed that neuro-mobilization is one of the conservative methods used in physical therapy it is an innovative tool which involves decompression of nerves, using different neural mobilization techniques and patient education techniques. Conservative management including nonneural tissue interventions and neurodynamic mobilization techniques can be effective in addressing musculoskeletal presentation of peripheral neuropathic pain.

CONCLUSION:-
It is concluded that nerve gliding exercises are more effective than isometric exercises in chronic cervical radiculopathy, indicating the
improvement in the intensity of pain and muscle strength at the end of treatment session.

REFERENCES