Clinical evaluation of the effect of Ayurvedic oil enema therapy in the management of Cervical Radiculopathy

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ABSTRACT
Cervical Radiculopathy (CR), a common cause due to nerve compression. CR occurs when one or more nerves are impaired. When the motor nerves are compressed, it causes pain in the arms. In the cervical radiculopathy, the problem occurs at the brachial plexuses; it also affects the cervical area of the spinal cord. However, the symptoms related to the cervical radiculopathy are radiated and expressed in arms. The treatment is available for cervical radiculopathy, but the medicine is not satisfactory. Hence, we prepared medicated oil with the help of some nerve nourishing herbs, and we used this oil through Ayurvedic medicated enema therapy (Matra basti) for the cervical radiculopathy. Enema of medicated oil (Matrabasti) was administered for 21 days. The treatment was also validated. The nerve conduction was taken as a tool and the changes observed were confirmed. The observed result showed the scale of pain reduced from 7.55 to 1.12 among the CR patients. Motor nerve conduction parameter like latency, amplitude and Conduction velocity was 6.46, 3.95, 47.07 ms in the cervical radiculopathy patients. With the treatment of the medicated oil enema, it was 6.75, 6.97 and 60.41 ms respectively, which is a phenomenal increase. We concluded that, in the pain scale, it reduced which was 85.16%. In this study of 21 days, the Conduction velocity parameters, which was used to assess patients, showed considerable improvement. This study attempts to ascertain cervical radiculopathy may be successfully managed through the medicated oil enema (Matrabasti).

INTRODUCTION
Cervical Radiculopathy (CR) is a neurological disorder in which cervical spinal nerve dysfunction, wherein nerve roots begin to impair from brachial plexuses. It mainly presents pain in the neck and arm, along with the motor and sensory impairment or it affects nerve roots (Bogduk, 2003). Electrophysiological tests can detect clinical problems in many patients, and each modality has inherent strengths and weaknesses (Wainner and Gill, 2000). The nerve root fibre gets inflamed from the brachial...
plexus’ upper, middle, and lower trunks, and the inner and outer cords run through the forearm, though the carpel tunnel’s underside, and expanded sensory nerves to the affected side. Median nerve impairment causes many difficulties in daily living activities because people use their hands frequently, and deterioration of the senses increases the risk of serious harm.

Nervous system damage, which can be inflicted by many causes, may obstruct nerve conduction, which is a unique function of the nervous system, possibly leading to sensory disturbance or motor disturbance (Ha et al., 2012). Most of the other cause of median nerve injury are trauma, A-V fistula, Humeral fracture, crutch-induced nerve injury in the axilla (Chouhan, 2012). An analysis of NCV is a method that is helpful for to determine the functional nerve capability of the human body’s motor and sensory nerves to conduct electrical impulse. NCV is a commonly used measure of how rapidly electrical impulses travel along a nerve during the test. Out of which, most important nerves in the upper arms is the median nerve. They are both responsible for the movement, and the hand feel. The capture of this nerve, for fairly obvious reasons in carpal tunnel syndrome, will cause a decrease in these modalities (Kumar and Prasad, 2016). The measurement of motor and sensory conduction velocities is becoming a more visible tool and is considered an essential technique for assessing peripheral nerve condition. NCV studies are primarily for the assessment of arm and leg parenthesis. “In this type of study required dependence on the part by the symptoms presented. A physical exam and complete history of the present and the past also help detect the investigation. It helps the clinician differentiate between peripheral and axonal degeneration” Say and Pattanaik (2016).

The most common NCS tests are performed in the median nerve study, which usually is helpful in research and clinical practice. Such type of parameter wasn’t introduced in Ayurvedic context. So, for confirmation of neuropathy, we used this type of setting and study was conducted to see the effect of nourishment of nerve through Ayurvedic Medicated oil as a treatment.

**MATERIAL AND METHODS**

The study was conducted in the Panchakarma department, MGACH & RC, Salod (H), Wardha. In this study, 40 subjects were included. These particular patients were diagnosed with cervical radiculopathy based on their clinical examination and physical history. After these patients were sent for nerve conduction investigation in Electrophysiology Lab, Acharaya Vinobha Bhave Rural Hospital, Sawangi Meghe, Wardha, this test was carried out in all the subjects using a computerised RMS Polyrite (16 channel RMS Polygraph AD).

**Ayurvedic Medicated oil enema (Matrabasti)**

**Matra Basti**

*Matra Basti,* is a type of *Sneha Basti* (oil enema) also known as *Anuvasanbasti* in Ayurveda. Moreover, *Basti* is best to pacify *Vata* and even for *Asthi Gata* diseases (Diseases related to bone). *Asthi* (bone) being the site of *Vata* and influences the *Purishadhar* (*asthidhara*) *Kala*, i.e. *Pakwashaya* (Rectum) and *Asthi Vaha* *Srotas* (Locomotors system), the vitiated *Vata* gets subsided when the *asthi* is treated with *Basti*, as the primary site of *Vata*, the *Basti* acts better with its *Sneha* and *Shamaka* (pacification) properties.

**Medicine**

Here, it is noteworthy that the MASAM oil is the partial composition of *Maha Kukkatamamsaras tailam* prescribed for *Vishwachi* (Cervical Radiculopathy) as *Basti*. The present structure of MASAM oil is with their rational along with *Masha* substitute of Mamsa in.

**Manjishta**

*(Rubiacordifolia)* also provide neuroprotective effects due to VEGF (vascular endothelial growth factor) induction promotes the development of new cerebral vessels (Krum et al., 2002).

**Ashwagandha**

*(Withania somnifera)* (withanolide) thus proves to be a paramount contestant for the treatment of neurodegenerative disorders because it can reassemble neural chains (Maity, 2019).

**Sahachar**

*(Barleriaprionitis)* Several reports established the usage of Barleria prionitis in the treatment of inflammations. “B. prionitis whole plant reported to have significant anti-inflammatory activity may be due to the presence of iridoid glucosides, shanzhiside methyl ester, acetyl barlerin and barlein” (Banerjee et al., 2012). This plant is regularly used for neurological disorders in South India (Khare, 2004).

**Atmagupta**

*(kapikacchu)* L-DOPA has shown a significant level of neuroprotective activity (Dora and Kumar, 2018).

**Masha**

*(Vingna Mungo)* - is Anti-inflammatory and Nervine tonic. The inflammatory response involves a com-
plex array of enzyme activation, mediator release, fluid extravasations, cell migration, tissue breakdown and repair (Zia-Ul-Haq et al., 2014).

**Preparation of Medicated oil**

We collected all raw herbs from the authentic pharmacy and made oil at our Dattatray Rasashala with classical methods. When oil prepared, it analysed in an analytical lab and then used for enema.

**Nerve conduction Test**

Nerve conduction study, the account cathode was put near the motor purpose of abductor pollicis brevis and referenced anode 3 centimetres distal from the outset metacarpophalangeal joint. The ground cathode is placed between the accounting terminal and the animating anode. A supramaximal incitement is given at 3 centimetres proximal to the distal wrist wrinkle and the elbow. The distal idleness, nerve conduction speed of various portions and compound muscle activity possibilities are estimated.

**OBSERVATION AND RESULT**

In this study, we analysed data on an intervention basis of Ayurvedic Medicated oil enema (Matra-basti) among the patients suffering from cervical radiculopathy, and the observation is as follows. Statistical analysis of all parameters showed that there is a significant difference in motor nerve conduction study latency, amplitude and conductional velocity which was highly significant in the cervical radiculopathy patients after the treatment and significance level in parameter was near to 0.05. Table 1.

Graph 1: It shows Anthropometric parameters (age, Gender, weight, height and body Mass index)

Anthropometric parameters were measured in the study before the patient are recruited in the study, which was depicted in Graph 1 were age, gender, weight height and body mass index mention.

Graph 2: It shows patients involved neuropathy and their occupation.

Graph 3: It shows the pain scale in the patients of cervical radiculopathy before and after the intervention

Graph 4: It shows Latency, Amplitude and conduction velocity in the patients of cervical radiculopathy before and after the medicated enema
Table 1: It shows motor nerve conduction before and after the treatment in the cervical radiculopathy (n=40 in each parameter)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Mean</th>
<th>Std Dev</th>
<th>SEM</th>
<th>t test</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latency Pre</td>
<td>6.464</td>
<td>1.802</td>
<td>0.285</td>
<td>1.859</td>
<td>0.03</td>
</tr>
<tr>
<td>Latency Post</td>
<td>6.758</td>
<td>1.436</td>
<td>0.227</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amplitude Pre</td>
<td>3.958</td>
<td>3.085</td>
<td>0.488</td>
<td>8.522</td>
<td>0.001</td>
</tr>
<tr>
<td>Amplitude Post</td>
<td>6.977</td>
<td>2.071</td>
<td>0.327</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conduction velocity Pre</td>
<td>47.07</td>
<td>15.349</td>
<td>2.427</td>
<td>12.69</td>
<td>0.001</td>
</tr>
<tr>
<td>Conduction velocity Post</td>
<td>60.413</td>
<td>13.108</td>
<td>2.073</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Result obtained in the professional occupation of studied sample size indicates that the cervical disease radiculopathy is more common in housewife (21) followed by service occupation (12). Prevalence of this disease is low in a business occupation which may be due to the location of the study area, and thus this prevalence can be considered as Vidarbha region Graph 2.

The observation depicted in Graph 3 indicated that there is a significant improvement in pain scale in neuropathy as the average has been reduced from 7.55 to 1.12, which was 85.16% improvement in reducing pain.

In this study result, Graph 4 shows that Latency was 6.46 ms in the patients of cervical radiculopathy before the treatment after the ayurvedic management it was 6.75 ms, which was statistically significant. Another parameter of the of MNCV amplitude was 3.95 ms in the patient of cervical radiculopathy after the medicated enema it was improved in the patients 6.97 ms. The mean value of the conducting velocity was 47.07 ms in the patients of cervical radiculopathy before the medicated enema, after medicated enema it was 60.41 ms which was significantly improved.

DISCUSSION

Research conducted on cervical radiculopathy has established that the prevalence of this condition is almost 3.5 (Salemi et al., 1996). Other researches on cervical radiculopathy indicate that it is more common in the sport-related profession or a profession involving more movement of shoulder and neck (DeFranco and Schickendantz, 2008; Maroon et al., 2013). In present work, sportspersons were not available for study however the maximum occurrence of the disease is found in housewife and Indian housewife has to perform massive tasks at home which involve much stress on shoulder and neck. It may be the reason that most cases are of housewife occupation. Considering the increasing use of technologies in all professions, it is clear that most service members have to spend much more time working with mobile and computer. The outcomes show that cervical circle degeneration might be related to excessive cell phone use; such use may prompt cervical spondylosis (Zhuang et al., 2020).

This might be another case of cervical radiculopathy in which their work of nature is related to service but reaching that working place they are using transport of two-wheeler and drive. This type of working pattern may also influence cervical radiculopathy. In our study, the pain scale was in the cervical radiculopathy. Initially, it was high after the enema of medicated oil it was sharply reduced. Based on the results of this study, the Hindi version of the Neck pain and disability scale (NPAD) is a stable and legitimate instrument for the appraisal of torment in cervical radiculopathy patients (Agarwal et al., 2006).

At the same time, cervical footing and a neural slider assembly of the average nerve were applied to decrease torment and handicap estimated at a pattern and 2 and a month utilising the Numeric Pain Rating Scale, improvements were noted in all outcome measures over four weeks Savva and Giakas (2013).

Motor nerve conduction velocity in the patients of cervical radiculopathy shows reduced Latency, amplitude as well as conduction velocity, after the medicated oil enema these values significantly increased our study.

It is intended for physicians who conduct electrodiagnostic procedures as an extension of their clinical review. It would be of benefit to neurologists, and naturopathic doctors interested in neuromuscular disorders and non-invasive electrodiagnostic methods, like nerve conduction velocity improvement in parameters through the medicated oil enema may use another line of treatment in cervical radiculopathy.
The improvement of explicit symptomatic models and proper consideration for the administration of patients with cervical radiculopathy need Ayurvedic medicated oil enema. These Ayurvedic the board of cervical radiculopathy will, in general, be commonly good.

CONCLUSION

These above mentioned Ayurvedic management of the drugs (medicated oil) are given through the rectal route (oil enema) which is one of Pancharakma procedure, helped treat in the cervical radiculopathy. The patients satisfied with improvement, they can do routing work, and their pain was reduced through this treatment.

Conflict of interest

The authors declare that they have no conflict of interest for this study.

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