



CERVICAL REDICULOPATHY: A CURE BY PANCHAKARMA ALONG WITH MARMA THERAPY (A CASE STUDY)

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ABSTRACT

Cervical radiculopathy is a pain and/or sensori-motor deficit syndrome that are defined as being caused by compression of a cervical nerve root. The compression can occur as a result of disc herniation, spondylosis, instability, trauma, or rarely, tumors. Patient presentations can range from complaints of pain, numbness, and/or tingling in the upper extremity to electrical type pains or even weakness. Surgery is advocated for cervical radiculopathy in patients who have intractable pain, progressive symptoms, or weakness that fails to improve with conservative therapy at about 6 months. A case of cervical spondylotic rediculopathy was followed up for 6 months upon an Ayurvedic composite intervention and subsequently reported. The composite treatment plan included Ayurvedic oral medicines as well as Panchakarma procedures along with Marma Therapy. A substantial clinical and patient centered outcome improvement in existing condition and quality of life was observed after the Ayurvedic treatment given to this patient.

Keywords: cervical radiculopathy, disc bulge, Panchkarma, Marma Therapy

INTRODUCTION

Cervical spondylosis is a general and nonspecific term that refers to the degenerative changes that develop either spontaneously with age, or secondarily as the result of trauma or other pathological condition. These changes develop slowly. The earliest event is probably a biochemical change in the substance of the disc, resulting in decreased water content. This causes an alteration in the biomechanics of the spine due to loss of the shock absorber-like action of the discs. As a result, secondary changes occur in the other component tissues (facet joints and ligaments) comprising the other elements of articulation between the vertebrae. The human body reacts to this abnormal state by attempting to heal the spine in the same way it deals with long bone fractures and by producing bridging bony deposits called marginal osteophytes. If this process successfully goes to completion, it results in an auto-fusion. Kirkaldy-Willis conceived of this process as passing through three phases:

- I. Dysfunction
- II. Instability
- III. Stabilization⁽¹⁾

The instability in phase II may either be painful micro-motion or frank subluxation (i.e. degenerative spondylolisthesis). Ultimately, the elder spine becomes shorter (due to loss of disc height) and stiffer (due to the spontaneous auto-fusion). Sometimes this process goes all the way to completion whereas in other patients it will stop and fail to progress. Occasionally the chronic clinical course is complicated by a superimposed acute disc herniation. The displaced nucleus pulposus and/or bulging annulus fibrosis is called an soft disc herniation. In contrast, the slowly developing calcified enlargement of a posterior marginal osteophyte is called a hard disc herniation. Both types may

coexist; as they are different manifestations of the same clinical spectrum. Three distinct clinical syndromes can result from cervical spondylosis:

Type I: Cervical Radiculopathy

Type II: Cervical Myelopathy

Type III: Axial Joint Pain, a.k.a. mechanical neck pain, motion segment pain, discogenic pain, facet syndrome, painful instability, etc.⁽²⁾

The first two reflect neurologic involvement, whereas the third represents painful joint dysfunction. There is often overlap between these syndromes, which can coexist simultaneously.

Cervical Radiculopathy (Type I Syndrome)

Cervical radiculopathy is the easiest syndrome to recognize and its clinical manifestations of neck pain with radiating upper extremity pain and/or weakness and/or numbness are familiar to every physician. Radiculopathy is caused by combined compression and inflammation of a spinal nerve. Both factors are necessary. This can be caused by either an acute soft disc, chronic hard disc, or more rarely by posterior compression from a hypertrophied facet joint.

The distribution of the upper extremity signs and symptoms correspond to a specific nerve root, with characteristic reflex, motor, and sensory loss. The two most common sites are the C5-6 disc (C6 nerve root) and the C6-7 disc (C7 nerve root). In the fully developed form, C6 deficit includes a decreased brachial radialis reflex, weakness of the biceps muscle, and pain and/or paresthesias radiating down the arm to the thumb and index finger (six shooter pattern). In contrast, involvement of the C7 root would cause loss of the triceps reflex, weakness of the triceps muscle, and pain and/or paresthesias radiating to the middle finger. In the absence of objective

neurologic deficit, three clinical signs are useful in diagnosing the presence of cervical radiculopathy. The first is the Spurling sign. Bending the neck laterally so that the ear approximates the shoulder safely performs the Spurling maneuver. This should be done without rotation but with some cervical extension. In other words, the patient looks straight ahead and up while attempting to touch the ear to the shoulder. If pain is increased with lateral bending toward the painful arm, radiculopathy is suggested (this maneuver tends to close the neural foramen). On the other hand, if it is more painful to laterally bend away from the side of the painful arm, then a non-specific soft tissue etiology is presumed (pain from further stretching of bruised or stretched musculo-ligamentous structures).

Two additional mechanical signs strongly suggest the presence of cervical radiculopathy: One is the relief of radiating extremity pain by applying manual traction to the neck. The other is relief of pain by placing and resting the patient's forearm on the top of the head. In fact, a few patients will have discovered the latter maneuver by themselves and adopt those positions spontaneously. These three mechanical signs have high specificity but only about 50% sensitivity. Therefore, the presence of these signs strongly suggests cervical radiculopathy. If these signs are absent, however, the diagnosis of cervical radiculopathy is by no means excluded⁽³⁾.

Cervical Myelopathy (Type II Syndrome)

The posterior longitudinal ligament is strongest in the midline, which directs most disc herniation off to one side or the other toward a nerve root and away from the spinal cord. Sometimes, however, either from acute or chronic processes, the spinal cord itself is involved. The recognition of severe cervical myelopathy is straight forward because the clinical manifestations

are so dramatic. There is weakness of all four extremities together with a sensory level below which there is reduced or absent appreciation of pain, touch, vibration, or position sense. Reflexes are too brisk and may be self-sustaining as with ankle clonus. Muscular tone is increased and some degree of rigidity of the extremities is present. This increased muscle tone is also present in the bladder wall, producing frequency and nocturia. In advanced cases, there may even be sphincter disturbance, although this is rare in the absence of significant trauma. Pathological reflexes are also present. Hoffmann's sign and Babinski's sign are important clinical manifestations. Flicking the middle finger nail and observing a reflex clawing flexion of the thumb and the other digits elicit Hoffmann's sign. With acute or advanced cervical myelopathy, the diagnosis is usually clear and the need for early referral for neurosurgical consultation is obvious.

The diagnosis of chronic or early cervical myelopathy can be extremely difficult as the signs and symptoms are notoriously subtle. The patient will often complain of difficulty with fine movements and control of the fingers. Fastening and unfastening buttons, for example, can become difficult. The gait disturbance may be described as a sense of unsteadiness, rather than weakness. Sensory loss is highly variable and sometimes takes the form of glove-and-stocking distribution that is often seen in peripheral neuropathy. A mild peripheral neuropathy often occurs normally in the elderly and is often non-symptomatic except for loss of the ankle reflex. When this coexists with chronic myelopathy, the expected increase in deep tendon reflexes may be masked. Increased tone may be the only abnormal sign in the lower extremities. This is checked by asking the seated patient to dangle the legs as loosely as possible off the edge of the examination table. Grasp the

lower leg and shake it gently back and both the foot and ankle should be floppy. If instead the lower leg, ankle, and foot move together stiffly as a unit, myelopathy should be suspected.

Two clinical signs are useful in detecting subtle myelopathy in the upper extremities. Ono et al described both of these: the Finger Escape and Grip-and-Release signs ⁽⁴⁾. To perform the Grip-and-Release test, the examiner measures the speed at which the patient's hand can alternate between closing into a fist and full finger extension. Normal adults can perform rapid complete grip and release to full finger extension 20 times in 10 seconds. This not only becomes slower but, in advanced cases, exaggerated wrist flexion occurs with attempted finger extension and exaggerated wrist extension occurs with finger flexion. Care must be taken to keep the wrist in a neutral position. The Finger Escape sign is elicited by observing that it is impossible for the patient to keep the fully extended fingers completely adducted. Instead, there is an irresistible tendency for the fingers, especially the little finger, to spread apart once severe neurologic deficits are present, they are unlikely to resolve spontaneously. Indeed, even appropriate surgical

intervention may not be able to recover lost function.

Type III Syndrome

The two types of joints in the adult spine include 1) diarthrodial joints (synovial joints of the gliding variety including not only the facet joints but also the costo-vertebral, atlanto-axial, and sacro-iliac joints) and 2) amphiarthrodial joints, which are slightly moveable non-synovial joints with two subtypes: Symphysis Type (the fibrocartilage of the intervertebral disc) and the Syndesmotoc Type (the ligamentum flava, as well as the inter-transverse, intraspinous, and supraspinous ligaments). The point is that the structures, which join the vertebral bones together to form the spinal column, are complex joints.

Type III syndrome is characterized by neck pain together with radiation to one or more of the following: the medial scapula, chest wall, shoulder area, and head. There may be a vague aching referred to the proximal upper extremity but pain referred below the elbow suggests nerve root involvement. In a pure Type III Syndrome there is no neurologic deficit because the symptoms stem from a joint(s). Headaches are usually associated with cervical muscle spasm and present occipitally, sometimes with secondary frontal radiation.

Table 1. Differential Diagnosis of Clinical Syndromes Resembling Cervical Spondylosis ^[5]

	Radiculopathy (Type I Syndrome)	Myelopathy (Type II Syndrome)	Axial Joint Pain (Type III Syndrome)
Acute	Lateral disc herniation Brachial plexitis	Central disc herniation Pathologic fracture Guillain-Barr. syndrome	Cervical strain or sprain Painful amphiarthrodial joint (disc) Painful diarthrodial joint (facet joint)
Chronic	Lateral disc herniation Focal facet hypertrophy Shoulder pathology:	Central disc herniation Cervical canal stenosis: Congenital, Metabolic, and Acquired Spinal instability	Fibromyalgia Nonorganic, malingering and/or symptom magnification, Hypochondriasis and/or

	Adhesive capsulitis, Recurrent anterior subluxation, and Impingement syndrome Entrapment neuropathy: Carpal tunnel syndrome, Thoracic outlet syndrome	Multiple sclerosis Normal pressure hydrocephalus Vitamin B12 deficiency Neoplasm: Vertebral metastasis and Infection: Discitis/osteomyelitis, Pancoast's tumor Epidural abscess, Neurosyphilis, Subdiaphragmatic pathologies and HTLV-1 Syringomyelia Arteriovenous malformation Myopathies	somatoform disorders Failed surgical fusion Referred visceral pain: Angina pectoris Pancoast's tumor Subdiaphragmatic pathologies
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TREATMENT

1. Medications
 1. Non-Steroidal Anti-Inflammatory Drugs (NSAID's)
 2. Opioid Analgesics
 3. Muscle Relaxants
 4. Antidepressants
 5. Anticonvulsants
 6. Corticosteroids
 7. Botulinum-A. There is moderate evidence that botulinum- A injections are of no benefit [6].
 8. Physiotherapy
 9. Alternative Medicine
 - 1) Chinese Herbal Medicine
 - 2) Acupuncture
 2. Operative treatment
 - Anterior approach
 - 1) Anterior cervical discectomy – ACDF (Anterior cervical decompression and fusion).
 - 2) Cervical disc arthroplasty
 - Posterior approach
 - Posterior decompression – PCF (Posterior cervical foraminotomy)

A CASE STUDY

A 27 years old female patient of medium built working as a constable in Delhi Police, residing in urban area visited the Panchkarma OPD CBPACS, New Delhi on 28 December 2015 with following chief complaints since 1 week:

1. Severe acute pain in cervical region radiating to left hand up to fingertips (episodic)
2. Stiffness in neck region
3. Unable to move neck and left arm
4. Unable to sit and stand without support

The patient was asymptomatic 1 week back. On 21st December suddenly she felt mild pain in her neck region when she was on duty in office. She went to the nearby hospital immediately after the duty and was treated symptomatically but the pain persisted progressively to such extent that she was not able to lift her left hand and movement of the neck was completely restricted. So patient was admitted in modern hospital for 1 week and was on best conservative treatment there but there was no improvement in condition. On the basis of MRI report she was advised surgery

immediately but patient was not willing for that. So she was discharged and came to CBPACS in the hope of non-invasive treatment. She was admitted in hospital immediately with OPD/IPD no. 23360/1474. After careful history taking, it was revealed that patient had 2 episodes of cervical pain since last 6 months. First episode was in June 2015 which patient managed with self medication and second episode was in September 2015 radiating pain which was subsided after 10 days of treatment by a general physician but mild pain in cervical region was continue which was ignored by patient and relieved by local application of sprays, herbal oil etc.

On examination it was noticed that neck movements were severely reduced due to acute pain and muscle spasm. Patient was unable to perform flexion and extension of left shoulder joint. Abduction of left shoulder was completely absent while adduction was much painful. There was no sensory loss, numbness or tingling sensation. Other systemic examinations revealed no abnormality. MRI report of cervical spine dated on 23/12/2015 was as following:

- Straightening of cervical spine with reversal is seen
- Diffuse disc bulge with posterior central and left paracentral protrusion is seen at C₅-C₆ level causing effacement of left lateral recess
- Small annular tear is seen in posterior aspect of C₅-C₆ iv disc

*All other routine investigations were within normal limits.

The case was already diagnosed as **Cervical spondylotic rediculopathy**. Considering the consistent request of the patient for Ayurvedic treatment in her case and considering her young age for the recommended surgery, the patient was planned for Panchakarma and Marma therapy for 21 days along with oral medicines. The patient was kept under close observation and was followed up on periodic basis. Patient was again admitted for the 2nd sitting of Panchakarma Therapy from 12th March 2016 to 22nd March 2016 for 10 days. The Ayurvedic treatment given to the case was as follows:

Table2: Treatment during 1st sitting

Oral medicines	Panchakarma therapy	Marma therapy
1. Trayodashang guggulu 500 mg twice a day with lukewarm water 2. Agnitundi vati 125mg trice a day 3. Dashamoola kwath (decoction) 40ml twice a day 4. Ashwagandharista 2oml with equal water twice a day after meal 5. Vrihat vata chintamani ras 125 mg twice a day with honey	1. *PPS with Saindhavadi Tail 2. Nadi Swedan on neck region and surrounding area with Dashamoola and Nirgundi kwatha 3. *GB with Mahanarayana Tail *All therapies once a day	Marma therapy as per guidelines by Thirumoolar Varmology Institute, Coimbatore was provided to the patient 6 hourly daily

*PPS- PatrapindaPottali Sweda

*GB- Greeva Basti

Table3: Treatment during 2nd sitting

Oral medicines	Panchkarma therapy	Marma therapy
1. Trayodashang guggulu 500 mg twice a day with lukewarm water 2. Navajeevan ras 125mg trice a day 3. Dashamoola kwath (decoction) 40ml twice a day 4. Ashwagandharista 2oml with equal water twice a day after meal 5. Ras Rajeshwar ras 125 mg OD with honey	1. PPS with Panchaguna Tail 2. GB with Mahanarayana Tail 3. Nasya with Anu Tail (For 7 days) *All therapies once a day	Marma therapy as per guidelines by Thirumoolar Varmology Institute, Coimbatore was provided to the patient twice a day

Results

Assessment Criteria for efficacy of the therapy

Table No.4

Grading	NURICK clinical scale ^[7]	Before Treatment	After 21 days of Treatment	After 2 nd sitting of 10 days
Grade 0	Signs and symptoms of root involvement but without evidence of spinal cord disease.	-	-	+*
Grade 1	Signs of spinal cord diseases but no difficulty in walking.	-	-	-
Grade 2	Slight difficulty in walking which does not prevent full-time employment.	-	+*	-
Grade 3	Extreme difficulty in walking that requires assistance and prevents full-time employment and occupation.	-	-	-
Grade 4	Able to walk only with someone else's help or with the aid of a walker.	-	-	-
Grade 5	Chair bound or bedridden.	+*	-	-

Table no.5

S. No.	Signs and Symptoms	Before treatment	After treatment
1.	Ability to turn on the bed	Absent	Present
2.	Ability to sit	With support	Normal
3.	Ability to stand	With support	Normal
4.	Pain in neck region	Severe (with injectable analgesic)	Mild (without any analgesic)
5.	Neck movements	Absent	Normal

6.	Left arm movements	Extremely painful, abduction absent	Normal
7.	Neck rigidity	Severe	Absent

Table6: NDI (Neck Disability Index)^[8]

Section	Symptom	Before treatment	After 1 st sitting	After 2 nd sitting
1.	Pain Intensity	5	1	0
2.	Personal Care (Washing, Dressing etc.)	5	2	0
3.	Lifting	5	3	1
4.	Reading	5	3	1
5.	Headaches	5	1	0
6.	Concentration	5	2	0
7.	Work	5	3	2
8.	Driving	5	3	1
9.	Sleeping	5	3	1
10.	Recreation	5	3	1
Total Score	Out of 50	50	24	7
Percentage	Total score/50 x100	100%	48%	14%

Discussion

As per the Ayurvedic point of view of this case, the pain in neck region started after the patient went on a 9 days trip to Manali (a hilly area) and travelled for 13 hours by road in sitting position (in June 2015). The condition aggravated after she went on a trip to kerala for 9 days (in September 2015) and did horse riding & elephant riding along with other adventures activities there. She remained in abnormal posture for prolonged time during the journey and her sleep was also improper. All these factors worked in the vitiation of *vata* dosha. The vitiated *vata* did *sthansanshraya* in the *greeva* (neck region) due to *Khavaigunya* there because of her daily routine office work (continuous writing and a constant computer work). As a result symptoms of aggravated *vata* dosha were

observed. So while planning for the treatment as oil is said to be the most effective dravya to pacify *Vata* dosha, so accordingly her panchakarma therapies accomplished of sthanic *vatahara* modilities. Special Marma Therapy was also added to it as it connects the mind, body and soul which was required by the patient to relieve her mental stress and balance the energy of chakras. At the time of admission the NDI score was 100% which was reduced to 48% after 1st sitting and 14% after 2nd sitting which was significant. Before the patient was admitted for 2nd session, MRI was repeated which showed almost similar condition but the annular tear was not noted. Symptomatically, the patient's condition was improved greatly. She was able to do her normal office work after 2.5 months. The case was followed up till May 2016.

She was stable only with local application of oil. She was advised to discontinue the medication when she conceived in June 2016.

CONCLUSION

The case presented here has been treated with a full and composite management plan as per the convenience of Ayurveda. As the treatment was able to make improvements in existing conditions, this approach should be taken into consideration while making any further clinical trial to treat similar or new conditions with the help of Ayurveda. This is single well documented case study, but we are treating a lot of cases of cervical spondylosis successfully in daily clinical practice with Panchakarma along with Marma Therapy.

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