



Case Report

Ayurvedic management in cervical spondylotic myelopathy

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ABSTRACT

The age related spondylotic changes may result in direct compressive and ischemic dysfunction of the spinal cord known as cervical spondylotic myelopathy (CSM). Symptoms often develop insidiously and are characterized by neck stiffness, unilateral or bilateral deep aching neck, arm and shoulder pain, and possibly stiffness or clumsiness while walking. The management available in current mainstream medicine is not satisfactory. Various Ayurvedic treatments have been in use for these manifestations. We present a case of CSM, which was treated with a combination of *Panchakarma* procedures and Ayurvedic oral drugs. The patient was considered suffering from *Greevastambha* (neck stiffness) and was treated with *Shalishastika pinda svedana* (sudation with medicated cooked bolus of rice) for one month and *Mustadi yapana basti* (enema with medicated milk) for 16 days along with oral Ayurvedic drugs such as *Brihatavata chintamani rasa* 50 mg, *Ekgangaveer ras*-250 mg, *Ardhangavatari rasa*-125 mg *Amrita satva* (dry extract of *Tinospora cordifolia* Willd)-500 mg, *Muktasukti pisti*-500 mg, *Ashwagandha churna* (powder of *Withania somnifera* Dunal)-500 mg *Dashmool kvatha ghana* (solid extract of *Dashmool kvatha*)-500 mg, *Trayodashanga guggulu*-575 mg, twice a day with honey and *Eranda paka*-10 g twice a day with milk. Patient's condition which was assessed for symptoms of CSM and Chile's modified Japanese Orthopaedic Association (mJOA) score for cervical spondylotic myelopathy showed substantial improvement. This study shows that the cases of CSM may be successfully managed with Ayurvedic treatment.

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1. Introduction

A degenerative cascade due to age-related changes in the spinal column is known as spondylosis. These spondylotic changes may result in direct compressive and ischemic dysfunction of the spinal cord known as cervical spondylotic myelopathy (CSM) [1]. Symptoms often develop insidiously and are characterized by neck stiffness, unilateral or bilateral deep, aching neck, arm and shoulder pain; and possibly stiffness or clumsiness while walking. The hallmark symptom of CSM is weakness or stiffness in the arms. Clumsiness or weakness of the hands in conjunction with the legs is also characteristic of CSM. The incidence of CSM-caused hospitalization in eastern Asia is 4.04 per 100,000 person-years, with higher incidences observed in older and male patients [2]. The incidence of Ossification of the Posterior Longitudinal Ligament [OPLL], a common cause of cervical spondylotic myelopathy is 2.4%

in the Asian population, and 0.16% in the non-Asian population [3]. The overall prevalence in Indian population is unknown. The pathophysiology of CSM is thought to be multifactorial. Both static factors causing stenosis and dynamic factors resulting in repetitive injury to the spinal cord and spinal cord ischemia are involved in pathophysiology.

Only limited conservative and surgical procedures are available in modern medicine for disease but there is much limitation to use these procedures. The standard treatment for moderate to severe CSM is operative procedures which are least preferred by the elderly patients. Hence there is a need to search for effective treatment in alternative medicine. No study is published in PubMed for Ayurvedic approach on CSM till date. Here we represent a case of CSM which was successfully treated with Ayurvedic management with *Greevastambha* (neck stiffness) as the Ayurvedic diagnosis [4].

2. Case report

A 62 years old male patient was consulted in Out-Patient Department of National Institute of Ayurveda, Jaipur for

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complaint of gradually progressive weakness of both upper and lower limbs. Patient also had the complaint of giddiness, neck stiffness and pain around the neck region. Patient had suffered from these problems since 4 years. Symptoms were aggravated by prolonged sitting and standing and minimally eased with gentle movement. The patient also reported intermittent low back pain to varying degrees over the past 2 years which radiated to bilateral lower limbs and intermittent numbness and tingling in the posterior calf region. The patient had undergone neurologic and orthopedic consultations in a tertiary care hospital of Jaipur a year before and conservative and surgical management was recommended. He didn't have complaints of any bowel or bladder changes. The medical history was unremarkable, and his general health was good. He was not taking any medications at the time of consultation.

3. Clinical findings

The case was subsequently admitted to the male *Panchakarma* ward of National Institute of Ayurveda, Jaipur on March-10, 2016 for the administration of therapeutic procedures. On physical examination, patient was anxious, appetite was apparently normal and tongue was uncoated. Micturition and bowel movement were normal. Patient had *Vatapitta prakriti* with *Madhyam samhanana* (medium body built), *Madhyam sara* (medium purest body tissue), *Sama pramana* (symmetrical body proportion), *Madhyam satmya* (medium homologation), *Madhyam satva* (medium mental strength), *Madhyam vyayamshakti* (medium capability of physical activities), *Madhyam Aharshakti* and *Jaranshakti* (medium food intake and digestive power). The patient demonstrated normal gait. The active movements of lumbar spine were within functional limits with reported pain at the end of forward flexion. Straight leg raise (S.L.R.) was negative bilaterally. Tenderness was noted over the spinous processes of L4 and L5. The range of motion for the bilateral knee and ankle joints was normal and the strength of the hamstrings and quadriceps musculature was also normal. On neurological examination, higher mental function and speech were normal. All cranial nerves were normal. On motor examination, bulk, tone, power and coordination of arms and legs were normal bilaterally. Power in both upper limbs was grade 4 on medical research council score. Power in left leg was grade 4+ and in right leg was grade 5. Hyperreflexia was found in upper extremities bilaterally. Hoffman reflex and Babinski reflex were positive bilaterally. A multidermatomal decrease of sensation in bilateral upper extremities during pinprick testing was revealed during examination. Lhermitte's sign was positive. Deep tendon reflex examination revealed a diminished left Achilles tendon reflex. Joint position sense and vibration sensation was normal bilaterally. All laboratory and biochemical investigations were normal. Magnetic resonance imaging (MRI) of cervical spine that was done on March 2, 2016 revealed diffuse desiccated disc bulging at C3-4, C4-5, C5-6 and C6-7 level causing indentation over ventral thecal sac with associated ligamentum flavum hypertrophy causing spinal canal narrowing and spinal cord compression at multiple levels most notably at C-3-4 level with thinning of spinal cord at this level with T2 and STIR hyper intensity cord edema-suggestive of compressive myelopathy.

4. Diagnostic focus and assessment

The patient was a known case of cervical spondylotic myelopathy. It was confirmed by previously done MRI. The condition was also associated with lumbar spondylosis. *Greevastambha* was considered as Ayurvedic diagnosis which is included in *Nanatamaj Vatavyadhi* (~neurological, rheumatic and musculoskeletal diseases). Amyotrophic lateral sclerosis (ALS), primary spinal cord tumors,

syringomyelia, extramedullary conditions (e.g., metastatic tumors), sub acute combined degeneration of the spinal cord (vitamin B₁₂ deficiency), hereditary spastic paraplegia, normal pressure hydrocephalus and spinal cord infarction were the differential diagnosis for the case. The presence of extremity sensory abnormalities and the absence of fasciculation on examination in this case excluded the diagnosis of ALS. Other conditions were excluded on the basis of characteristic MRI findings. In cervical spondylotic myelopathy, MRI shows narrowing of the spinal canal caused by osteophytes, herniated discs and ligamentum flavum hypertrophy [5].

5. Treatment plan

As no specific line of treatment is described for *Greevastambha* in Ayurvedic texts, general line of management of *Vatavyadhi* such as *Abhyanga* (massage), *Svedana* (sudation), *Mridu virechana* (mild purgation) and *Basti* procedures were adopted for the patient [6]. Considering the patient's *Vatapitta prakriti* and physical constitution, mild massage and mild sudation in the form of *Shalishastika pinda svedana* and *Mridu basti* (a milder form of Basti) in the form of *Mustadi yapana basti* were given to the patient.

6. Intervention

Various *Panchakarma* interventions were adopted to treat this patient. *Mridu virechana* with castor oil in dose of 20 ml with lukewarm milk was given at night prior to the beginning of medical intervention to the patient. From next day *Shalishastika pinda svedana* for 30 days along with *Mustadi yapana basti* for 16 days were adopted [Table 1]. Along with these *Panchakarma* interventions, selected Ayurvedic oral medicine-*Brihatavata chintamani rasa* 50 mg, *Ekanagaveera rasa*-250 mg, *Ardhangavatari rasa*-125 mg, *Amrita satva* (starch of *Tinospora cordifolia* Willd)-500 mg, *Muktasukti pisti*-500 mg, *Aswagandha churna* (powder of *Withania somnifera* Dunal)-500 mg, *Dashmool kvatha ghana* (solid extract of *Dashmool kvatha*)-500 mg and *Trayodashanga guggulu*-575 mg (The said combinations prescribed in a single dose of 3 g with proprietary name-Aghat™) administered with honey twice a day and *Eranda paka*-10 g twice a day with milk.[Table 2] These oral medicines were continued for next 2 months.

7. Outcome measures and follow up

After completion of *Panchakarma* procedures patient condition was assessed for pain, giddiness, neck stiffness, neck motion, power and reflexes of upper and lower limbs. Pain had subsided. Patient had no giddiness. Neck stiffness had substantially reduced. Range of motion of neck was normal. Power of both upper and lower limbs was 5/5 on medical research council scale. Reflexes of both upper and lower limbs were 2+. Bilateral straight leg rising test had increased to 90° for hip flexion. Bilateral Hoffman reflex, bilateral Babinski reflex and Lhermitte's sign was negative at this time. mJOA score for cervical spondylotic myelopathy was-08 before treatment and improved to 14 after one month of treatment [7]. Patient was discharged on April 12, 2016 with instruction to continue oral medicines. Patient condition was stable after one month of treatment but patient felt some stiffness in lumbar region. MRI done on May 31, 2016 revealed concentric desiccated diffuse disc bulge seen at C3-4 to C6-7 levels with postero-lateral disc protrusion causing central canal and bilateral neural foraminal narrowing resulting mild compression over bilateral exiting nerve roots (Table 3). There was a remarkable improvement in MRI as ligamentum flavum hypertrophy causing spinal canal narrowing and spinal cord compression at multiple levels most notably at C-3-4 level with thinning of spinal cord at this level with cord edema were not

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