



# CONCEPTUAL STUDY ON CERVICAL DERMATOMES SENSORY LOSS WITH SPECIAL REFERENCE TO VISHWACHI

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**Abstract :** Cervical dermatomes are specific areas of skin that receive nerve supply from the cervical spinal nerves. When these nerve roots are damaged, it can cause loss of sensation, tingling, or numbness in the arms and hands. In *Ayurveda*, a condition called *Vishwachi* is described as a *Vata* disorder (*Nanatmaja Vata Vyadhi*) that leads to weakness, stiffness, and numbness in the upper limbs. These symptoms are similar to what is known in modern medicine as cervical radiculopathy. This article tries to connect the modern neuroanatomical concepts of cervical sensory loss with the Ayurvedic understanding of *Vishwachi*, to help in integrative diagnosis and treatment.

**Keywords :** Cervical Dermatomes, sensory loss, *Vishwachi*, *Vata vyadhi*, neuropathy, *Vata prakopa*, Integrative Approach

## INTRODUCTION:

Cervical dermatomes refer to skin regions over the neck, shoulders, and arms that are connected to nerves arising from the cervical spine. When these nerves are compressed or damaged—due to conditions like disc prolapse, cervical spondylosis, or injury—it can cause symptoms such as tingling, numbness, or loss of feeling in those areas. In modern medicine, this condition is known as cervical radiculopathy<sup>1</sup>.

**Table 1: Cervical Dermatomes and Sensory Distribution**

Cervical Nerve Root	Dermatome Area	Common Sensory Symptoms if Involved
C2	Back of the head, upper neck	Occipital headache, numbness in scalp
C3	Side of neck	Tingling or numbness in lateral neck
C4	Top of shoulder, clavicle area	Numbness over shoulder tip

<b>C5</b>	Lateral upper arm	Sensory loss in outer arm, decreased touch
<b>C6</b>	Lateral forearm, thumb	Numbness/tingling in thumb and forearm
<b>C7</b>	Middle finger, center of palm	Decreased sensation in middle finger
<b>C8</b>	Little finger, medial forearm	Numbness in little finger and inner forearm

In *Ayurveda*, which is India's traditional system of medicine, similar symptoms affecting the upper limb are described under a condition called *Vishwachi*. *Vishwachi* happens when aggravated *Vata dosha* affects the *kandara* (ligaments and tendons) on the back side of the arm and spreads to the palms and fingers (*Tala-pratyanguli*). This leads to *karmakshaya*, which means loss of function or movement in the arm. Clinically, it appears like paralysis of one arm, with difficulty in grasping, lifting, and performing other voluntary activities<sup>2</sup>.

According to *Ayurvedic* texts, *Vishwachi* causes sudden weakness, numbness, stiffness, and loss of movement in a single arm. Although *Ayurveda* and modern medicine use different words and concepts, the clinical features are quite similar. Both describe loss of sensation and muscle weakness due to nerve involvement. Recognizing this overlap can help combine both systems to improve treatment strategies. It also helps practitioners and students understand how ancient descriptions relate to today's neurological conditions.

Objectives of this study:

- To explore and understand cervical dermatomes and the mechanisms of their sensory loss
- To learn about the *Ayurvedic* concept of *Vishwachi*.
- To compare the causes and symptoms explained in both systems.
- To highlight an integrative approach for diagnosis and management

## CERVICAL DERMATOMES

Dermatomes are specific skin areas supplied by sensory nerve fibers from a single spinal nerve root. Cervical dermatomes are those linked to the cervical spinal nerves (C1–C8) in the neck region. Each cervical nerve root carries sensory information from a defined band of skin<sup>3</sup>.

## SENSORY LOSS IN CERVICAL DERMATOMES

Sensory loss means numbness, tingling, or reduced feeling in the affected skin zone. This happens when the nerve root or peripheral nerve supplying the dermatome gets compressed or injured<sup>4</sup>.

## MECHANISMS OF SENSORY LOSS :

### 1. Compression (Radiculopathy)<sup>5</sup>:

A herniated cervical disc or bony growth presses on the nerve root as it exits the spinal canal, blocking sensory signals.

### 2. Trauma:

Fractures or dislocations of the spine can stretch or tear nerve roots, causing sudden sensory loss.

### 3. Degenerative Changes:

With aging, cervical spondylosis (wear and tear arthritis) narrows the openings where nerves exit, compressing them and leading to gradual numbness, tingling, and weakness.

### 4. Inflammation or Infection:

Shingles (Herpes Zoster) can reactivate in the dorsal root ganglion, causing intense pain and a rash along the dermatome area.

## AYURVEDIC CONCEPT OF VISHWACHI

### **Etimology**

“*Vis*” (to spread)+ “*Achi*” (to go upwards)

It indicates pain and dysfunction spreading along the arm

**NIDANA<sup>6</sup>**

- *Ativyayama* (excessive physical exertion)
- *Vega Dharana* (suppression of natural urges)
- *Abhighata* (trauma)
- *Ati Ruksha bhojana* (intake of dry and rough food)

**LAKSHANA<sup>7</sup>**

When *Vata* afflicts the *kandara* of the back of the arm extending to the palm and fingers it produces loss of function and movement in the arm, other lakshanas are:

- *Toda*
- *Bahu Shoonyata*
- *Stambha*
- *Ruja*
- *Karmakshaya*
- *Shirashoola*

**SAMPRAPTI**

Due to causative factors (*Nidana*) such as *Ativyayama*, *Vegadharana*, *Abhighata*, *Ruksha ahara sevana*, *Vata dosha* becomes aggravated in the body<sup>8</sup>. The aggravated *Vata* moves into the *kandara* (tendons and ligaments) and *snayu* (nerves and fibrous tissues) located in the shoulder and upper limb. This leads to *Margavarodha* (obstruction of the normal pathways of movement and nourishment), And *Dhatukshaya* (gradual depletion and weakness of body tissues). As a result, there is loss of motor and sensory functions, producing the clinical features of *Vishwachi*, including pain, stiffness, numbness, and weakness of the arm<sup>9</sup>.

**SAMPRAPTI GATAKA**

- Dosha: Vata*
- Dushya: Kandara of bahu & prista*
- Srotas: Chestavaha srotas*
- Sroto dusti: Sanga*
- Adhistana: Greeva*
- Vyaktastana: Bahu, Talapratyanguli*
- Rogamarga: Madhyama*
- Vyadhi Swabhava: Chirakari*

**CHIKITSA**

- According to *Charaka*, The aggravated *Vata* should be pacified by<sup>10</sup>:

*Snehana, Svedana, Nasya, Basti*

The physician should specially plan *basti* therapy with *Vata* pacifying medicines. *Basti* is the best therapy for all *Vata* disorders

- According to *Sushruta*- *Snehana, Svedana, Basti* are considered primary<sup>11</sup>
- According to *Vagbhata*- *Snehana, Svedana, Basti* are effective in relieving pain and dysfunction additionally, *Mamsa, majja, stanya yukta virechana* can be administered<sup>12</sup>

Table 2: Comparison of Modern and Ayurvedic Perspectives

Aspect	Modern Medicine(Cervical Radiculopathy)	Ayurveda(Vishwachi)
Cause	Nerve root compression (Disc, spondylosis)	Vata vitiation due to overexertion, dryness
Symptoms	Pain, numbness, weakness in dermatomes	Shoonyata, Stambha, Karmakshya
Diagnosis	MRI, Nerve conduction study	Clinical assessment, Nadi pariksha
Management	Medicines, Physiotherapy, Surgery	Snehana, Swedana, Nasya, Basti
Dosha Involvement	Not applicable	Vata predominant

Table 3. Integrative approach to diagnosis and Management

Aspect	Ayurvedic Perspective	Modern Perspective
definition	Vatavyadhi affecting Kandara/Snayu of arm,causing radiating pain, stiffness, weakness	Cervical radiculopathy due to nerve root compression
etiology	Ativyayama, ruksha ahara, abhighata, vishamasayana	Disc herniation, degenerative spondylosis, trauma/strain
Samprapti (Pathogenesis)	Vata prakopa- kandara & snayu avarana-karmakshaya	Nerve root compression – sensory& motor deficits
Clinical Features	Toda, Ruja, Stamba, karmakshaya	Neck & arm pain radiating in dermatome, numbness,tingling
Examination	Sparsha-Asparsha vedana	-Spurling test +ve -Decreased reflexes
Investigations	N/A	-x-ray cervical spine -MRI Cervical spine
Local treatments	Abhyanga, Swedana, Upanaha	-Physiotherapy
Systemic Treatments	-Basti (niruha+Anuvasana) -nasya , - Snehapana	-NSAIDs -Neuropathic pain medications
Oral medicines	-Dashamoola kwata -Yogaraja guggulu	- Oral Analgesics -short term steroids
Diet and life style	Usna,sngdha ahara sevana	-Neck support
Prognosis	Early stages-Sadhya Chronic- Asadhya	Most impove in 6-12 weeks conservatively

By combining modern anatomical understanding with Ayurvedic principles, we can develop a more holistic perspective to manage conditions involving nerve-related sensory loss

## DISCUSSION:

Cervical dermatomes are areas of the skin supplied by nerves coming from the neck part of the spinal cord. When these nerves are compressed or damaged, they cause numbness, tingling, pain, or weakness in certain regions of the arm and hand. Modern medicine calls this cervical radiculopathy, and it is usually diagnosed through clinical examination and imaging like MRI<sup>13</sup>. In Ayurveda, similar symptoms are described under the disease called Vishwachi. According to Ayurvedic texts, Vishwachi happens mainly due to Vata dosha vitiation. Vata is responsible for controlling movements, nerve impulses, and sensory functions in the

body. When *Vata* gets aggravated by factors like overexertion, dryness, or cold exposure, it disturbs the normal function of nerves and muscles, leading to *Shoonyata* (numbness), *Stambha* (stiffness), and *Karmakshaya* (weakness) in the arm.

This shows that even though modern medicine and *Ayurveda* use different explanations, both agree on the following points:

- The problem involves nerve dysfunction in the upper limb.
- There is loss of sensation and weakness.
- It can progress gradually if not treated.

Modern treatment focuses mainly on reducing nerve compression through medications, physiotherapy, and sometimes surgery. However, these treatments may not always help restore nerve function completely, especially in chronic cases. *Ayurveda* offers a different approach that aims to balance *Vata*, improve circulation, nourish nerves, and strengthen muscles through:

- *Snehana* (oil massage) to reduce dryness and stiffness.
- *Swedana* (fomentation) to relieve pain and improve flexibility.
- *Nasya* (nasal therapy) to act on nerves in the head and neck region.
- *Basti* (medicated enema) to pacify *Vata* at its main site (colon) and support nerve regeneration.

This integrative understanding shows that combining modern diagnostic tools with Ayurvedic treatment principles can provide a holistic management plan. For example, early physiotherapy can be supported by Ayurvedic therapies like *Abhyanga* and *Basti* to achieve better recovery of sensation and function.

Further clinical research and case documentation are needed to scientifically validate the effectiveness of Ayurvedic treatments for conditions like cervical radiculopathy and *Vishwachi*. Studies comparing conventional treatments alone and in combination with Ayurvedic methods can help establish evidence-based protocols for integrative care.

## CONCLUSION:

Cervical dermatomes sensory loss is a common neurological problem that causes numbness, pain, and weakness in the upper limb due to nerve root compression. In *Ayurveda*, similar symptoms are described under the condition called *Vishwachi*, which is caused by the vitiation of *Vata dosha*.

Even though modern medicine and *Ayurveda* use different terms and explanations, both recognize similar signs and symptoms. Understanding this connection helps in forming an integrative approach for diagnosis and treatment.

While modern treatment focuses on nerve decompression and pain relief, Ayurvedic therapies like *Snehana*, *Swedana*, *Nasya*, and *Basti* aim to balance *Vata* and support nerve healing.

Combining both systems can provide better results, especially in chronic cases. Further research and clinical studies are needed to scientifically validate Ayurvedic treatments in such conditions.

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