

A Conceptual Review of Visvachi Lakshana according to Brhatray With Special Reference to Cervical Radiculopathy Correlated with Modern Diagnostic Modalities.

Dr. Anand V. Kalaskar¹, Dr. Umesh B. Pawar², Dr. Nikita K. Raskar³

M.D. Kayachikitsa - Vikriti Vigyan (BHU) and Associative Professor¹.

MD Scholar, PG Department of Rog Nidana Evum Vikriti Vigyan².

MD Scholar, PG Department of Rog Nidana Evum Vikriti Vigyan³.

Sumatibhai Shah Ayurved Mahavidyalaya, Hadapsar, Pune, India.

Abstract: *Visvachi is described in Ayurveda as a Vataja Vyadhi of the upper limb, characterized by radiating pain, stiffness, sensory changes, and functional loss, closely resembling cervical radiculopathy in modern medicine. Cervical radiculopathy presents with neck and arm pain, sensory disturbances, and motor weakness due to cervical nerve root involvement.*

Aim: *To present a conceptual review of Visvachi lakshana as described in the Brhatrayi (Charaka, Susruta, Astanga Hridaya) and to correlate them with the clinical features of cervical radiculopathy and findings obtained through modern diagnostic modalities such as MRI, EMG, nerve conduction studies, and X-ray.*

Materials and Methods. *A narrative literary review was performed using classical Ayurvedic texts (Charaka Samhita, Sushruta Samhita, Ashtanga Hridaya) for Visvachi lakshana, and standard modern neurology and orthopaedic references and review articles for clinical features and diagnostic criteria of cervical radiculopathy. Lakshana of Visvachi were systematically listed and juxtaposed with the symptom complex of cervical radiculopathy. Modern diagnostic modalities were described in terms of how they objectify the same clinical features.*

Results: *Visvachi lakshana—Ruk/Shoola (radiating pain), Stambha (stiffness), Gurutva (heaviness), Toda (tingling), Supti (numbness), Gatirodha (restricted movement), Karmakshaya (loss of function), and Spandana (twitching)—closely correspond to neck and arm pain, paresthesia, sensory loss, motor weakness, reflex changes, and restricted range of motion seen in cervical radiculopathy. Modern diagnostic modalities, especially MRI and EMG/nerve conduction studies, objectively demonstrate structural and functional nerve root involvement that explains these symptoms.*

Conclusion: *The Brhatrayi descriptions of Visvachi lakshana as described in Ayurvedic classics conceptually and clinically parallel the symptomatology of cervical radiculopathy. Modern diagnostic modalities serve as objective tools that corroborate the classical clinical picture, supporting an integrative diagnostic approach and strengthening the scientific understanding of Visvachi in the light of contemporary neurology.*

Keywords: Visvachi, Brhatrayi, Charaka, Susruta, Astanga Hridaya, Cervical Radiculopathy, Conceptual Review, MRI, EMG, Modern Diagnostic Modalities



I. INTRODUCTION

The Brhatrayi—Charaka Samhita, Susruta Samhita, and Astanga Hrdaya—form the core textual foundation of classical Ayurveda. Within these treatises, various Vataja Vyadhi are described, including Visvachi, a disorder predominantly affecting the upper limb. Visvachi is characterized by radiating pain from the neck and shoulder to the arm, palm and fingers, associated with stiffness, heaviness, tingling, numbness, and progressive loss of function. These lakshana strongly resemble the clinical manifestations of cervical radiculopathy described in modern neurology and orthopaedics. Cervical radiculopathy is a clinical condition resulting from compression or irritation of a cervical spinal nerve root, most commonly due to degenerative changes, disc herniation, or foraminal stenosis. It presents with neck and arm pain, dermatomal sensory symptoms, motor weakness and reflex changes, which can now be accurately assessed with modern diagnostic modalities like MRI, EMG, nerve conduction studies and X-ray. Understanding how Visvachi in the Brhatrayi corresponds to cervical radiculopathy is crucial to integrating classical diagnostic frameworks with contemporary neuro-musculoskeletal science. This conceptual review therefore focuses on three layers: (1) the Brhatrayi shloka-based description of Visvachi lakshana, (2) the modern symptom complex of cervical radiculopathy, and (3) the way modern diagnostic tools substantiate this correlation.

II. AIM AND OBJECTIVES

Aim

To carry out a conceptual review of Visvachi lakshana according to the Brhatrayi and to correlate them with the clinical features and modern diagnostic profile of cervical radiculopathy.

Objectives

1. To compile shloka-based descriptions of Visvachi lakshana from Charaka, Susruta, Astanga Hrdaya Samhita.
2. To summarize the key clinical symptoms and signs of cervical radiculopathy from modern medical literature.
3. To compare Ayurvedic lakshana of Visvachi with modern symptoms of cervical radiculopathy in a structured manner.
4. To outline the main modern diagnostic tools (MRI, EMG, nerve conduction studies, X-ray, clinical tests) relevant to cervical radiculopathy, highlighting how they correspond to the clinically observed lakshana.

III. MATERIALS AND METHODS

Study Design

- Conceptual, narrative literary review.
- No primary clinical data were collected; this is an analytical synthesis of classical and modern literature.
- Ayurvedic Sources (Brhatrayi-Oriented)
 1. Susruta Samhita – Nidana Sthana 1 (Vatavyadhi Nidana), where Visvachi is explicitly described.
 2. Astanga Hrdaya – Nidana Sthana 15 (Vata Vyadhi Nidana), describing Visvachi.
 3. Charaka Samhita – Sutra Sthana 20 (Tridosha/Kriyakala, listing Vata Nanatmaja Vyadhi); although Visvachi is not named separately, general Vata Vyadhi lakshana are relevant.

Modern Medical Sources

- Standard neurology and orthopaedic texts and review articles covering:
 - Definition and pathogenesis of cervical radiculopathy.
 - Clinical presentation (pain pattern, sensory changes, weakness, reflex changes).
 - Role of MRI, X-ray, EMG and nerve conduction studies.



Method of Review and Correlation

1. Listing Ayurvedic Lakshana: Visvachi lakshana from the Brhatrayi corpus were collected and organized into pain, sensory, motor, stiffness, movement restriction, and functional categories.
2. Listing Modern Symptoms: Cervical radiculopathy signs and symptoms were similarly categorized.
3. Symptom-by-Symptom Correlation: Each Ayurvedic lakshana was matched with the closest modern description based on location, character and effect on function.
4. Diagnostic Mapping: Modern diagnostic tools were described in terms of how they demonstrate structural or functional changes corresponding to the symptom complexes described classically.

IV. REVIEW OF LITERATURE

Ayurvedic review :

A. Ayurvedic Samhita (Brhatrayi) Part – Visvachi Shloka and Lakshana.

1. Sushruta Samhita – Nidana Sthana 1/75 (Vatavyadhi Nidana)¹

Susruta is the first among the Brhatrayi to explicitly mention Visvachi as a distinct Vata Vyadhi affecting the upper limb. A widely cited version of the Visvachi description is:

विश्विची मुहुश्छेदस्तलाङ्गुललघु विदना । बाहोर्गुरुता शूलं च प्रसारणकुञ्चनयोगुततरोधः ॥

- Vedana in Tala–anguli – Pain in palm and fingers.
- Bahoh Guruta– Heaviness of arm.
- Sula – Pain in the upper limb, typically radiating.
- Prasaraana–aakunchan gatirodha – Obstruction of extension and flexion movements.

2. Ashtanga Hridaya – Nidana Sthana 15/44 (Vata Vyadhi Nidana)²

तलप्रत्यङ्गुलीनां तु कण्डायां बहुपृष्ठतः । बाह्वः कर्माक्षयकरी विश्विची हह सूता ॥

- Tala–pratyangulinam – Relating to palm and fingers.
- Kandarya bahu–prsthatah – Disease of the tendon/nerve-like structures on the posterior aspect of the arm.
- Bahvah karmaksayakari – Causes reduction in functional capacity of the arm.

3. Charak Samhita-

अशीवतितातजा नानात्रा विकाराः ।

Unlike Susruta and Vagbhata, Charaka Samhita does not describe Visvachi as an independent disease entity. However, it is conceptually included among the Vata Nanatmaja Vyadhis, where aggravated Vata Dosha produces pain, stiffness, restricted movements, and functional impairment in different parts of the body.³

4. Consolidated Visvachi Lakshana from Brhatrayi Tradition

From the above, the consolidated Visvachi lakshana are:

- Ruk / sula – Radiating pain neck–shoulder–arm–palm–fingers.
- Stambha – Stiffness of neck/upper limb.
- Gurutva – Heaviness of arm.
- Toda – Tingling/pricking in palm and fingers.
- Supti – Numbness in hand and fingers.
- Gatirodha – Restriction of normal movements, especially extension and flexion.
- Karmaksaya – Reduced functional capacity and weakness in arm/hand.
- Spandana – Subtle muscle twitching (mentioned by later commentators).

Collectively, these Lakṣaṇas indicate that Visvachi is a Vata-dominant neuromuscular disorder characterized by pain, sensory disturbances, motor weakness, movement restriction, and



functional disability. These features closely parallel the clinical manifestations of cervical radiculopathy described in contemporary neurology.

V. MODERN VIEW

B. Modern Symptoms of Cervical Radiculopathy

Cervical radiculopathy is a neurological syndrome resulting from compression or irritation of one or more cervical spinal nerve roots. The most common etiological factors include cervical intervertebral disc herniation, cervical spondylosis, uncovertebral osteophyte formation, and foraminal stenosis. Compression of the cervical nerve root produces pain, sensory disturbances, motor weakness, and reflex abnormalities corresponding to the affected dermatome and myotome.⁴⁻⁸

1. Neck Pain

Neck pain is the most common presenting symptom and is usually unilateral. It is frequently associated with cervical paraspinal muscle spasm, tenderness, and stiffness. The pain typically increases with neck extension, lateral rotation, prolonged sitting, or sustained cervical posture.^{4, 5}

2. Radiating Arm Pain

Radicular pain originates in the cervical region and radiates to the shoulder, arm, forearm, and hand along the distribution of the affected nerve root. Patients commonly describe the pain as sharp, shooting, burning, or electric shock-like. The C5, C6, C7, and C8 nerve roots are most frequently involved.⁴⁻⁶

3. Paresthesia

Sensory irritation of the cervical nerve root produces paresthesia manifested as tingling, burning, or pins-and-needles sensation. The distribution depends on the affected cervical root:

- C5: Lateral aspect of the shoulder.
- C6: Lateral forearm, thumb, and index finger.
- C7: Middle finger.
- C8: Ring finger, little finger, and medial forearm.

Paresthesia is often intermittent during the early stages and may become persistent with progressive nerve root compression.^{5, 6}

4. Numbness (Sensory Loss)

Persistent compression of sensory nerve fibres leads to numbness or hypoesthesia in the corresponding dermatome. Careful neurological examination helps localize the affected cervical nerve root based on the pattern of sensory impairment.^{4, 5}

5. Motor Weakness

Motor deficits occur due to involvement of the anterior motor root and are characterized by weakness of muscles supplied by the affected cervical segment.

- C5: Weakness of shoulder abduction (deltoid muscle).
- C6: Weakness of elbow flexion and wrist extension.
- C7: Weakness of elbow extension and finger extension.
- C8: Weakness of finger flexion, grip strength, and intrinsic muscles of the hand.

Patients frequently report difficulty lifting objects, decreased hand grip, and impaired fine motor activities.⁴⁻⁷



6. Reflex Changes

Deep tendon reflexes are commonly diminished or absent and provide valuable clinical clues regarding the level of nerve root involvement.

- C5–C6: Reduced biceps reflex.
- C6: Reduced brachioradialis reflex.
- C7: Reduced triceps reflex.

These findings support clinical localization of the affected cervical root.^{4, 6}

7. Stiffness and Restricted Range of Motion

Pain-induced muscle spasm and inflammation result in restricted cervical range of motion, particularly during extension, lateral flexion, and rotation. Functional limitation of neck movement is a common clinical finding.^{5, 6}

8. Provocative Clinical Features

Symptoms typically worsen during neck extension, ipsilateral lateral flexion, axial compression, coughing, or sneezing because these manoeuvres increase nerve root compression. Pain may be partially relieved by cervical flexion or by placing the hand over the head (Bakody's shoulder abduction sign). Spurling's test is a commonly used provocative test for reproducing radicular pain.^{5, 7}

9. Chronic Neurological Manifestations

Long-standing cervical radiculopathy may lead to:

- Muscle wasting (atrophy) of the shoulder, arm, or hand.
- Persistent motor weakness.
- Chronic sensory deficits.
- Reduced grip strength and impaired manual dexterity.
- Functional disability affecting activities of daily living.

Electromyography (EMG) and nerve conduction studies (NCS) help identify chronic denervation and objectively assess the severity of neurological involvement.^{6–8}

The principal clinical manifestations of cervical radiculopathy include neck pain, radiating upper limb pain, paresthesia, numbness, motor weakness, diminished deep tendon reflexes, restricted cervical movements, and chronic neuromuscular deficits. These manifestations closely correspond to the classical Ayurvedic descriptions of Ruk (sula), Stambha, Gurutva, Toda, Supti, Gatirodha, and Karmaksaya described in Visvachi, providing a strong conceptual basis for correlating the two conditions.

C. Correlation of Ayurvedic and Modern Symptoms

Visvachi Lakshana (Brhatrayi)	Clinical Meaning	Modern Cervical Radiculopathy Symptom
Ruk / Sula in Greeva–Amsa–Bahu–Tala–Pratyanguli	Radiating pain neck → shoulder → arm → palm → fingers	Neck pain with arm pain in dermatomal distribution
Stambha	Stiffness of neck and upper limb	Cervical and shoulder stiffness, reduced ROM
Gurutva	Heaviness in arm and hand	Subjective heaviness/fatigue of affected upper limb
Toda	Tingling/pricking sensation in palm/fingers	Paresthesia (tingling, pins and needles) in fingers/hand



Supti	Numbness/sleep-like feeling in palm/fingers	Numbness/sensory loss in dermatomal pattern
Gatirodha	Restriction of extension and flexion movements	Restricted neck and arm movements due to pain and spasm
Karmaksaya	Reduced functional ability, weak grip	Motor weakness, dropping objects, difficulty with tasks
Spandana	Fine muscle twitching	Fasciculations / EMG evidence of denervation in chronic cases

This correlation shows that the Brhatrayi description of Visvachi precisely captures the same clinical dimensions that modern neurology identifies in cervical radiculopathy: pain distribution, sensory disturbance, motor deficit, stiffness, and functional impairment.

D. Modern Diagnostic Tools in Cervical Radiculopathy

1. Magnetic Resonance Imaging (MRI) – Cervical Spine

Magnetic Resonance Imaging (MRI) is considered the gold standard imaging modality for evaluating cervical radiculopathy because it provides excellent visualization of soft tissues, intervertebral discs, spinal nerve roots, spinal cord, and neural foramina without ionizing radiation.

Role -

Visualizes intervertebral discs, nerve roots, spinal cord, and foramina.

Detects -

- Disc herniation or protrusion.
- Foraminal stenosis.
- Osteophyte complexes.
- Nerve root compression.

Relevance to symptoms:- Radiating pain and sensory loss often match the level of disc/foraminal pathology (e.g., C5–C6, C6–C7).

2. Electromyography (EMG) and Nerve Conduction Studies (NCS)

Electrodiagnostic studies, including electromyography (EMG) and nerve conduction studies (NCS), evaluate the functional integrity of peripheral nerves and muscles. These investigations are particularly valuable when clinical findings and imaging are inconclusive or when differentiation from peripheral neuropathy is required

Role:-

- Assess the electrical activity of muscles and the conduction of impulses in nerves.

EMG detects:

- Denervation potentials (fibrillation, positive sharp waves). Reduced recruitment patterns.

NCS detects:

- Slowed conduction velocity.
- Reduced amplitude of compound muscle action potentials.
- These tests objectify Karmaksaya (weakness) and chronic neural involvement suggested by Spandana and persistent sensory symptoms.



3. X-ray Cervical Spine

Plain radiography remains an important initial imaging investigation because of its wide availability, low cost, and ability to detect degenerative bony abnormalities

○ **Role:**

Simple, widely available imaging for bony changes: Disc space narrowing.
Osteophyte formation. Alignment abnormalities.

○ **Relevance to symptoms:**

Supports chronic degenerative changes that may underlie stiffness (Stambha) and chronic pain.
Does not directly show nerve root compression, but suggests risk

4. Clinical Neurological Examination and Provocative Tests

- Myotome and dermatome testing directly map to the regions described in Ayurveda as Bahu, Tala and Pratyanguli.
- Tests like Spurling's maneuver provoke radicular pain similar to how certain neck movements aggravate Visvachi symptoms clinically.

Modern diagnostic modalities therefore do not create a new disease picture; they confirm and refine what the Brhatrayi already capture clinically in the description of Visvachi.

VI. DISCUSSION

Visvachi is a well-recognized Vataja Vyadhi described in the Brhatrayi, primarily affecting the upper extremity. The present conceptual review demonstrates that the Ayurvedic description of Ruk (Sula), Stambha, Gurutva, Toda, Supti, Gatirodha, and Karmaksaya closely corresponds to the characteristic symptoms of cervical nerve root compression.¹⁻⁸ According to Susruta Samhita, Visvachi is characterized by pain involving the upper limb, heaviness, and restriction of flexion and extension movements, indicating functional impairment due to aggravated Vata Dosha.¹ Astanga Hrdaya further emphasizes involvement of the Kandara and describes progressive loss of upper limb function (Karmaksaya), suggesting affection of structures responsible for movement and stability.² Although Charaka Samhita does not describe Visvachi as a separate disease entity, the principles of Vata Nanatmaja Vyadhi provide a conceptual basis for understanding its pathogenesis.³

One of the most significant correlations observed in the present review is between Ruk (Sula) and radicular pain. In Ayurveda, Ruk and Sula denote severe pain radiating through the upper limb, whereas modern medicine explains this symptom as irritation of cervical nerve roots with pain following a dermatomal distribution. Likewise, Toda and Supti closely correspond to paresthesia and sensory loss caused by compression of sensory nerve fibres. These similarities indicate that classical Ayurvedic clinicians accurately recognized the sensory manifestations of upper limb neurological disorders through careful clinical observation.^{1, 2, 4, 5}

Similarly, Karmaksaya described in Astanga Hrdaya reflects impairment of upper limb function, which is comparable to the motor weakness, reduced grip strength, and functional disability observed in cervical radiculopathy. In modern clinical practice, these deficits are objectively evaluated by neurological examination, electromyography (EMG), and nerve conduction studies (NCS), which demonstrate denervation and reduced motor unit recruitment.⁵⁻⁸

From a modern medical perspective, cervical radiculopathy results from compression or irritation of one or more cervical spinal nerve roots due to intervertebral disc herniation, cervical spondylosis, osteophyte formation, or foraminal stenosis. This pathology produces neck pain radiating to the shoulder and upper limb, paresthesia, sensory loss, motor weakness,

diminished reflexes, and restriction of cervical movement.⁴⁻⁸ These manifestations closely parallel the Lakṣaṇas described for Visvachi in the Ayurvedic texts. The integration of modern diagnostic modalities further strengthens this conceptual correlation. MRI accurately demonstrates intervertebral disc prolapse, foraminal stenosis, osteophyte



formation, and cervical nerve root compression responsible for the patient's symptoms. EMG and NCS objectively assess the functional status of the affected nerve roots and muscles, while clinical neurological examination localizes the involved cervical segment based on dermatomal sensory loss, myotomal weakness, and reflex abnormalities. These investigations provide objective evidence supporting the clinical manifestations described in Ayurveda.

The present review highlights that Ayurveda and modern medicine approach the same clinical condition from different perspectives. Ayurveda explains Visvachi in terms of Vata Dosha, Snayu, Kandara, and Sandhi involvement, whereas modern medicine attributes the disease to cervical nerve root compression. Despite these conceptual differences, both systems describe similar sensory, motor, and functional abnormalities. Therefore, integrating Ayurvedic clinical assessment with contemporary diagnostic modalities may improve understanding of the disease and facilitate a more comprehensive diagnostic approach.

VII. CONCLUSION

The present conceptual review demonstrates that the classical descriptions of Visvachi in the Brhatrayi show a close conceptual and clinical resemblance to the modern clinical entity of cervical radiculopathy. The Ayurvedic Lakṣaṇas, including Ruk (Sula), Stambha, Gurutva, Toda, Supti, Gatirodha, and Karmaksaya, closely correspond to the characteristic manifestations of cervical nerve root compression, such as neck pain, radiating upper limb pain, paresthesia, sensory loss, motor weakness, restricted cervical movements, and functional disability.¹⁻⁸

Among the Brhatrayi, Susruta Samhita and Astanga Hrdaya provide explicit descriptions of Visvachi, whereas Charaka Samhita offers the conceptual basis for understanding the disease under the spectrum of Vata Nanatmaja Vyadhis. These classical descriptions highlight the predominant role of aggravated Vata Dosha affecting Snayu, Kandara, and other musculoskeletal structures, resulting in pain, stiffness, sensory disturbances, and impaired upper limb function.¹⁻³

Modern diagnostic modalities such as Magnetic Resonance Imaging (MRI), Electromyography (EMG), Nerve Conduction Studies (NCS), and detailed neurological examination objectively demonstrate the structural and functional abnormalities responsible for cervical radiculopathy. These investigations complement the Ayurvedic clinical assessment by confirming nerve root compression, motor dysfunction, and sensory impairment, thereby strengthening the conceptual correlation between Visvachi and cervical radiculopathy.⁴⁻⁸

VIII. FUTURE SCOPE

Future prospective clinical studies incorporating Ayurvedic clinical assessment, neurological examination, MRI findings, and electrodiagnostic investigations are needed to validate the proposed correlation. Standardized diagnostic criteria integrating classical Ayurvedic Lakṣaṇas with contemporary neurological parameters may improve the scientific understanding and clinical management of Visvachi.

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