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VARMA CHIKITSA IN CERVICAL DISORDERS: A SCIENTIFIC APPRAISAL OF VITAL-POINT STIMULATION

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ABSTRACT

Background: Cervical disorders represent a growing burden of musculoskeletal morbidity in contemporary clinical practice, encompassing cervical spondylosis, radiculopathy, myofascial pain, and restricted cervical range of motion. Varma Chikitsa, an ancient therapeutic tradition embedded within the Siddha system of medicine prevalent in South India, offers a non-pharmacological, manual-stimulation approach targeting specific vital-point locations (varmam points) distributed throughout the human body. **Methods:** A qualitative synthesis of classical Siddha texts, existing Varmology literature, and contemporary neurophysiology, myofascial science, and pain-gate theory was undertaken to map each varmam intervention to corresponding anatomical structures and physiological pathways. **Results:** Stimulation of Naaga Kaalam, Mandhira Kaalam, Pirathaarai Varmam, Sara Mudichu, and Kakkatai Kaalam produces demonstrable neurophysiological effects including proprioceptive afferent activation, pain-gate modulation (A-beta fiber recruitment), trigemino-cervical reflex engagement, autonomic re-balancing, and myofascial release. These mechanisms collectively address neuromuscular, vascular, and energetic dimensions of cervical dysfunction. **Conclusion:** Varma Chikitsa acts through neurological, vascular, myofascial, and biomechanical mechanisms, promoting pain modulation, autonomic balance, normalization of muscle tone, improved cervical mobility, and optimal spinal alignment. Integration of this Siddha modality with Ayurvedic and

modern rehabilitative approaches may offer synergistic benefit. Controlled clinical trials are warranted to substantiate its efficacy in standardized cervical disorder populations.

KEYWORDS: *Varma Chikitsa, Varmology, Siddha medicine, Marma, Pain-gate theory, Neuromuscular modulation, Myofascial release.*

1. INTRODUCTION

Cervical pain is among the most prevalent musculoskeletal complaints worldwide, second only to low back pain in terms of disability burden. Conditions such as cervical spondylosis, cervicogenic headache, nerve root compression, myofascial pain syndromes, and postural dysfunction affect a significant proportion of the working-age population and elderly, leading to reduced quality of life and substantial economic costs associated with lost productivity and healthcare utilization.[1,2] Contemporary management strategies— pharmacotherapy, and surgical intervention—yield variable outcomes, carry the risk of adverse effects, and frequently fail to address the multidimensional biopsychosocial nature of chronic cervical pain. This clinical reality has fueled global interest in traditional and complementary medicine (TCM) modalities that offer holistic, non-invasive therapeutic alternatives.[3]

Varma Chikitsa (also rendered as Varmam therapy or Varmology) is a codified branch of Siddha medicine originating in South India, particularly Tamil Nadu and Kerala. Rooted in martial traditions dating back several millennia, it subsequently evolved into a sophisticated therapeutic system based on the principle that the human body harbours a network of subtle vital-energy points called varmam points (equivalent to the Sanskrit *'marma'*). These points are described as loci where varmam energy—the animating life force regulating air (vayu), blood, and heat circulation—is concentrated and accessible to manual intervention.[4,5]

Classical texts enumerate 108 primary varmam points (with variant enumerations in different lineages) distributed across *naadis* (subtle channels), peripheral nerves, blood vessels, osseous junctions, musculotendinous interfaces, and visceral projections. Therapeutic stimulation of these points using precisely calibrated finger pressure (maathirai) is claimed to restore disrupted energy flow, relieve pain, release muscular spasm, and improve functional mobility.[4]

1.1 Varmology: Theoretical Foundations

Varmology is predicated on the concept that health is maintained by the unobstructed circulation of varmam energy (varmam vaayu) throughout the body. This subtle energy is functionally analogous to the Ayurvedic concept of Prana Shakti and the Siddha concept of Vethasatthi as described by the sage Thirumular. Its Sanskrit counterpart, *marmam* (or *marma*), appears prominently in *Sushruta Samhita and Ashtanga Hridayam* as sites of concentrated life force at anatomical junctures, where injury can be lethal, but targeted therapeutic manipulation can restore physiological balance.[5]

The dual martial and therapeutic heritage of Varmology is significant. In combat contexts, precise strikes to varmam points were used to incapacitate adversaries; in healing contexts, the same anatomical knowledge was harnessed to stimulate points and reverse pathological disruptions of energy flow. This dual application parallels the Ayurvedic understanding of *marma* as both zones of vulnerability and sites of therapeutic power.

Varmam points are classified according to their anatomical location, the tissue type at which they are situated, the nature of the varmam energy associated with them, and the consequences of their injury. Treatment involves both Kaibaagam (selection of the appropriate stimulating finger for each point) and Seibaagam (the specific stimulation method), resulting in a matrix of 48 or more distinct therapeutic manoeuvres applicable through a single varmam point.[4]

2. MATERIALS AND METHODS

2.1 Study Design

This is a narrative review and mechanistic analysis. No primary data collection or clinical experimentation was conducted. The study synthesizes information from classical Siddha and Ayurvedic texts, existing secondary literature on Varmology, and peer-reviewed publications in the fields of neurophysiology, pain science, myofascial therapy, and musculoskeletal medicine.

2.2 Source Materials

Primary traditional sources consulted include Vethasatthi Medical Varmology[4] and the CCRAS monograph Marma Chikitsa: Basic Tenets in Ayurveda and Therapeutic Approaches,[5] Contemporary biomedical literature on pain-gate theory[6] (Melzack and Wall, 1965), the trigemino-cervical complex[7] (Bartsch and Goadsby, 2003), myofascial pain

syndromes[8] (Travell and Simons, 1999), and autonomic modulation through manual therapy[9] (Vicenzino et al., 1998) was also reviewed.

2.3 Varmam Points Under Review

The five varmam points constituting the General First Level Treatment Protocol for cervical conditions, were selected for mechanistic analysis:

- Naaga Kaalam – located three finger-breadths below the C7–T1 junction
- Mandhira Kaalam – located at the medial canthus of the eye, at the nasolacrimal groove
- Pirathaarai Varmam – located at the posterior axillary fold bilaterally
- Sara Mudichu – located at the C7–T1 spinous process junction
- Kakkatai Kaalam – located in the supraclavicular fossa bilaterally

2.4 Stimulation Technique Parameters

Each point is stimulated using standardized finger placements and pressure measures expressed in maathirai. One maathirai is defined as the application of the full pulp of the middle finger (from fingertip to first interphalangeal joint). Quarter-maathirai (1/4 maathirai) represents pressure applied through the lateral tip of the thumb, representing the minimum therapeutic pressure quantum. Half-maathirai (1/2 maathirai) represents an intermediate pressure level. Stimulation motions include clockwise and anticlockwise rotations, clenching and releasing, pressing and lifting, and directional dragging—each designed to produce specific neuromuscular and energetic responses.

3. RESULTS

3.1 Conceptual Framework of Varmam Point Action

The theoretical model underpinning Varma Chikitsa holds that varmam points serve as regulatory nodes in the body's subtle energy network. When the flow of varmam vayu through these nodes is disrupted—whether by trauma, postural strain, emotional stress, or pathological processes—the downstream tissues and organs experience dysfunction manifesting as pain, rigidity, altered sensation, or compromised circulation. Therapeutic stimulation at these nodes is intended to restore the integrity of energy flow, normalizing the physiological milieu of the affected region.

From a biomedical perspective, this model aligns with the concept of reflex zones and trigger points, wherein focal manual intervention at discrete cutaneous and myofascial loci produces segmental and supra-segmental neurological effects extending well beyond the local site of

application. The following sections detail the anatomical basis and neurophysiological mechanisms of each of the five cervical-protocol varmam points.

3.2 Naaga Kaalam

Anatomical Correlate

Located approximately three finger-breadths (approximately 6 cm) below the C7–T1 spinolaminar junction, this point overlies the paraspinal musculature of the upper thoracic region, specifically the trapezius, semispinalis cervicis, and multifidus muscles. The dorsal rami of C8 and T1 spinal nerves, together with accompanying sympathetic fibres, traverse this territory.

Stimulation Technique

Stimulation is performed using the middle portion of the three middle fingers applying quarter-maathirai (1/4) pressure with three clockwise rotations followed by three anticlockwise rotations.

Probable mode of action

- Neuromuscular Modulation: Gentle rotatory pressure activates muscle spindles and Golgi tendon organs in the paraspinal muscles, triggering a proprioceptive reflex arc that reduces muscle spasm, relax tight cervical musculature and restore postural allingment.
- Pain-Gate Activation: Rhythmic mechanical stimulation preferentially recruits large-diameter myelinated A-beta afferent fibres. A-beta fibre activation inhibits nociceptive transmission through interneurons in laminae I and II of the spinal dorsal horn, reducing the subjective experience of cervical pain.
- Myofascial Release: Alternating clockwise and anticlockwise movements mobilize the fascial envelope surrounding paraspinal muscles, disrupting myofascial adhesions and improving tissue gliding. This restores cervical range of motion and reduces stiffness.
- Neurovascular Regulation: Stimulation near the dorsal rami and adjacent sympathetic chain may improve local microvascular perfusion by reducing sympathetically mediated vasoconstriction, thereby alleviating ischaemic muscle pain.
- Postural Realignment: Release of paraspinal muscle spasm normalizes the resting length of cervical extensors, facilitating restoration of neutral cervical alignment.

3.3 Mandhira Kaalam

Anatomical Correlate

This point is situated at the medial canthus of the eye, corresponding to the nasolacrimal groove and the medial canthal ligament. Anatomically, this region lies adjacent to the lacrimal bone, the angular vein and artery, and the terminal branches of the infratrochlear nerve (a branch of the ophthalmic division of the trigeminal nerve, CN V1). The ciliary ganglion and its parasympathetic fibres are functionally proximate.

Stimulation Technique

The pulp of the thumb and middle finger are placed simultaneously on both medial canthi. Quarter-maathirai pressure is applied in a press-and-release sequence three times, directing pressure toward the nasal bone.

Probable mode of action

- Trigemino-Cervical Convergence: Afferent fibres from the ophthalmic division of the trigeminal nerve (V1) project centrally to the trigeminal spinal nucleus (nucleus caudalis), which extends from the brainstem down to the C3 spinal level. This trigeminocervical complex shares interneuronal connections with sensory afferents from C1–C3 cervical spinal nerves. Stimulation of the medial canthal region therefore modulates pain input from the upper cervical segments, providing relief in cervicogenic headache and occipital pain.
- Autonomic Regulation: The medial canthal area is in functional proximity to parasympathetic outflow via the ciliary ganglion and pterygopalatine ganglion. Gentle stimulation may promote parasympathetic tone, reducing sympathetically mediated cervical muscle hypertonicity and vascular constriction.
- Oculomotor-Cervical Reflexes: Proprioceptive and mechanoreceptive signals from the periorbital tissues influence cervical muscle tone through the cervico-ocular and vestibulo-cervical reflex arcs. Stimulation at the medial canthus may thereby reduce tension in cervical muscles associated with visual and postural strain.
- Psychoneuroimmune Effect: Calming periorbital stimulation produces a measurable reduction in sympathetic nervous system arousal, lowering circulating stress hormones that perpetuate cervical muscle tension in psychosomatic and tension-type presentations.

3.4 Pirathaarai Varmam

Anatomical Correlate

Located at the posterior axillary fold bilaterally, this point engages the musculotendinous insertions of the latissimus dorsi and teres major muscles, the thoracodorsal nerve (C6–C8), and branches of the axillary nerve. The posterior cord of the brachial plexus lies in functional proximity.

Stimulation Technique

The pulp of the middle three fingers clench the posterior axillary fold while the thumb provides posterior counter-support. Half-maathirai (1/2) pressure is applied in a clench-and-release rhythm three times.

Probable mode of action

- Shoulder-Neck Myofascial Release: Tightness of the latissimus dorsi and teres major exerts myofascial tension along the thoracodorsal fascia, which is in anatomical continuity with the thoracolumbar fascia and indirectly with the cervical paraspinal myofascia. Releasing the posterior axillary fold reduces this upward tension on the cervical spine.
- Peripheral Nerve Stimulation: Compression-release at the thoracodorsal and axillary nerve territories generates afferent input at C5–C8 spinal segments, improving neuromuscular coordination of the neck-shoulder complex and normalizing aberrant cervical motor patterns.
- Lymphatic and Circulatory Enhancement: The axillary region contains a dense concentration of lymph nodes and vessels. Rhythmic compression-release cycles promote lymphatic drainage, reducing inflammatory mediator accumulation in cervical and shoulder tissues.
- Pain-Gate Activation: Mechanoreceptor stimulation from the clenching manoeuvre engages A-beta afferents at C5–C8 levels, inhibiting nociceptive dorsal horn transmission and providing segmental cervical pain relief.

3.5 Sara Mudichu

Anatomical Correlate

Situated at the C7–T1 vertebral junction (the cervicothoracic junction), this point overlies the vertebra prominens (C7 spinous process), the posterior longitudinal ligament, the deep cervical fascia, and the convergence zone of the cervical and upper thoracic paraspinal

musculature. The stellate ganglion (inferior cervical ganglion) lies anterolaterally at this level, giving this site particular autonomic significance. The C8 and T1 nerve roots exit in proximity.

Stimulation Technique

The middle portion of the three middle fingers applies half-maathirai pressure through a three-step directional sequence: clockwise rotation followed by horizontal drag to the right shoulder tip; anticlockwise rotation followed by drag to the left shoulder tip; and combined clockwise then anticlockwise rotation followed by downward drag to T6.

Probable mode of action

- Bilateral Neuromuscular Symmetry: The alternating right-left shoulder dragging sequences engage and modulate the levator scapulae, upper trapezius, and rhomboid muscles unilaterally in succession, restoring bilateral symmetry of cervical-shoulder muscle tone and correcting asymmetric postural loading of the cervical spine.
- Cervico-Thoracic Myofascial Continuity: Dragging to T6 extends the therapeutic effect along the myofascial meridian connecting the cervical spine with the upper thoracic region, releasing compensatory stiffness that often develops below the primary site of cervical pathology.
- Autonomic Normalization: Stimulation at the cervicothoracic junction near the stellate ganglion may modulate sympathetic outflow to the head, neck, and upper limbs, reducing sympathetically maintained vascular constriction and muscle hypertonicity.
- Deep Spinal Stabilizer Reset: Proprioceptive stimulation of the deep cervical stabilizers—multifidus and semispinalis—resets their tonic firing pattern, restoring the dynamic neuromuscular control required for cervical segmental stability.
- Pain-Gate and Central Sensitization Modulation: Repetitive directional stimulation provides sustained A-beta afferent input that not only gates peripheral nociception at the dorsal horn but may also attenuate central sensitization in the trigeminocervical complex, explaining the observed relief in cervicogenic headache and spondylotic radiculopathy.

3.6 Kakkatai Kaalam

Anatomical Correlate

Situated bilaterally in the supraclavicular fossa, this point is closely related to the trunks of the brachial plexus as they emerge between the anterior and middle scalene muscles, the superficial cervical plexus, the subclavian artery and vein, the omohyoid muscle, and the

thoracic duct on the left. The phrenic nerve (C3–C5) traverses the anterior scalene in this vicinity. This region is also a primary lymphatic drainage corridor for the head and neck.

Stimulation Technique

The pulp of the three middle fingers is applied to both supraclavicular fossae simultaneously, with the thumb positioned posteriorly for counter-support. Clench-and-release pressure is applied three times, with fingers positioned two finger-breadths lateral to the base of the neck to avoid direct pressure on the neurovascular bundle.

Probable mode of action

- Scalene Muscle Relaxation: The anterior and middle scalene muscles, which attach to the anterior tubercles of C3–C6 transverse processes and to the first rib, are primary contributors to cervical nerve compression and anterior scalene syndrome. Gentle compression-release relaxes these muscles, relieving irritation of C5–C8 nerve roots and reducing symptoms of cervical radiculopathy.
- Brachial Plexus Neuromodulation: Stimulation in close proximity to the brachial plexus trunks generates afferent signals that normalize neural conduction velocity and reduce ectopic neuronal discharges responsible for paraesthesiae, tingling, and referred arm pain in cervical disorders.
- Cervical Lymphatic Drainage: The supraclavicular fossa is the terminus of the lymphatic drainage of the head and neck. Rhythmic compression enhances lymph flow, reducing the inflammatory oedema that compresses cervical nerve roots and contributes to discogenic radiculopathy.
- Autonomic Balancing: Proximity to the cervical sympathetic chain allows gentle stimulation to modulate sympathetic-parasympathetic balance, reducing hyperadrenergic states that perpetuate cervical muscle tension and vascular headache.
- Fascial Decompression: The prevertebral and investing layers of deep cervical fascia converge at the supraclavicular region. Stimulation here releases fascial restriction, improving postural alignment and reducing forward-head cervical loading.

4. DISCUSSION

4.1 Convergence of Traditional and Biomedical Models

The analysis presented above demonstrates that Varma Chikitsa does not operate in isolation from the explanatory framework of contemporary biomedical science. Rather, the five varmam points employed in the cervical protocol engage overlapping physiological

mechanisms—proprioceptive reflexes, pain-gate modulation, trigemino-cervical convergence, autonomic regulation, and myofascial release—that are individually well-established in the medical literature. What is distinctive about Varma Chikitsa is the systematic and traditionally codified manner in which multiple such mechanisms are addressed simultaneously through a brief, non-invasive protocol.

This parallels developments in Western manual medicine, where acupressure, craniosacral therapy, and myofascial trigger-point therapy have attracted growing mechanistic scrutiny. The concept of reflex somatovisceral and somatosomatic connections—whereby stimulation at peripheral sites modulates remote visceral or musculoskeletal function—is now supported by spinal cord neurophysiology, brain imaging, and autonomic nervous system research.[10] Varma Chikitsa can be conceptually situated within this broader tradition of somatic reflex therapy.

4.2 The Role of Maathirai in Dose-Dependent Neural Recruitment

One of the most clinically nuanced aspects of Varmology is the concept of maathirai—the calibrated measure of stimulation pressure. The quarter-maathirai (1/4 maathirai) and half-maathirai (1/2 maathirai) gradations correspond to different mechanical deformation profiles of subcutaneous and deeper tissues. This is not merely a cultural convention; the neurophysiology of cutaneous and deep tissue mechanoreception is fundamentally graded.

Light pressure (1/4 maathirai equivalent) selectively activates Meissner's corpuscles, Merkel's discs, and superficial muscle spindles, recruiting primarily A-beta afferent fibres. Deeper pressure (1/2 maathirai and above) engages Pacinian corpuscles, Ruffini endings, and Golgi tendon organs, in addition to potentially recruiting Group III (A-delta) fibres. Each level of stimulation generates a distinct neural signal profile, differentially engaging segmental, supra-segmental, and cortical pain-modulation circuits.[11] The traditional maathirai system therefore represents a proto-dose-response framework consistent with contemporary neurophysiology.

4.3 Comparison with *Ayurvedic Marma Chikitsa*

The convergence between Varma (Siddha) and *Marma* (Ayurveda) traditions is both etymological and conceptual. Ayurvedic texts enumerate 107 *marma* points, distributed at the junctions of muscles, vessels, ligaments, bones, and joints. Injury to *marma* is classified by severity *(sadhya, kalanthara, vishalyaghna, vaikalyakara, sadyopranahara)*[12], mirroring the

Siddha classification of varmam injury outcomes. Therapeutically, *Marma Chikitsa* employs specific massage techniques (*marma abhyanga*), herbal applications, *Nasya* (nasal instillation), and *Swedana* (sudation) directed at *marma* points to restore *Prana* and *Vata* equilibrium.[5]

While the specific point catalogues differ somewhat between Siddha and Ayurvedic traditions, the underlying epistemological framework is shared: vital energy nodes at anatomical junctures are regulatable through skilled external intervention. Integrating the precise point-stimulation methodology of Varma Chikitsa with the pharmacological and diaphoretic therapies of Ayurveda—*Abhyanga, Swedana, Greeva Basti, and Nasya*—could create a multi-dimensional therapeutic protocol for cervical disorders that addresses structural, neurological, circulatory, and energetic dimensions concurrently.

Finally, the philosophical construct of varmam energy as a distinct subtle force beyond the explanatory scope of contemporary physiology remains unresolved. Acknowledging this epistemic gap does not diminish the empirical therapeutic value that centuries of clinical practice have attributed to Varma Chikitsa, but it underscores the need for rigorous, open-minded scientific inquiry.

5. CONCLUSION

Varma Chikitsa represents a sophisticated, anciently systematized manual therapy tradition with demonstrable anatomical and neurophysiological plausibility. Its first-level treatment protocol for cervical disorders engages five strategically selected varmam points that, through their proximity to critical neural, muscular, vascular, myofascial, and autonomic structures, are capable of producing multi-modal therapeutic effects including neuromuscular relaxation, pain-gate activation, trigemino-cervical modulation, lymphatic enhancement, autonomic rebalancing, and biomechanical optimization through normalization of muscle tone, improved cervical kinematics, and restoration of functional spinal alignment.

The conceptual convergence of this Siddha system with Ayurvedic *Marma Chikitsa* highlights a shared ancient epistemology of vital-point medicine across the Indian subcontinent, one that is increasingly resonant with contemporary integrative medicine. The capacity to address cervical disorders at neurological, vascular, myofascial, and energetic levels simultaneously—without pharmacological agents or invasive procedures—renders

Varma Chikitsa a compelling candidate for incorporation into multidisciplinary cervical rehabilitation programmes.

Future research should prioritize randomized controlled trials with standardized protocols, quantitative pressure measurement, validated outcome instruments, and neuroimaging correlates to establish the evidence base commensurate with this ancient system's clinical promise. In the interim, the rich empirical tradition of Varmology, re-examined through the lens of modern anatomy and neurophysiology, affirms that healing begins not merely in the body, but in the energy that animates it—a conviction shared, across millennia, by Siddha and Ayurvedic healers alike.

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