

Clinical Correlation of *Kukundara Marma* with Sciatic Nerve Compression Syndromes: A Review

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Abstract

Marma Sharira is a fundamental concept in Ayurveda that describes 107 anatomically and clinically significant vital points where trauma may produce severe pain, functional disability, or even fatal outcomes. Among these, *Kukundara Marma* is classified as a Sandhi Marma and is located in the gluteal region near the sacroiliac joint. Classical Ayurvedic texts state that injury to *Kukundara Marma* results in motor and sensory impairment of the lower limb.¹

Objective

To review the traditional description of *Kukundara Marma* and examine its anatomical and clinical correlations with sciatic nerve compression syndromes. The review revealed a strong overlap between the anatomical location and clinical manifestations of sciatic nerve compression syndromes and *Kukundara Marma* injury, particularly regarding radiating pain, sensory disturbances, and functional impairment.

Keywords: Sciatic Nerve, Sciatica, Sciatic Nerve Compression, Sacroiliac Joint, Gluteal Region, Neuroanatomy, Anatomical Correlation, Clinical Correlation, Lower Limb Dysfunction, Radiating Pain, Integrative Medicine

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Introduction

Marma Sharira is a significant area of Ayurveda that addresses crucial anatomical sites in the human body. The 107 Marma points described in classical Ayurvedic scriptures, particularly the Sushruta Samhita, are created when structures such as mamsa (muscle), sira (blood vessels), snayu (ligaments), asthi (bone), and sandhi (joints) come together. Trauma to these areas can result in serious functional impairment or even death because they are thought to be extremely sensitive.²

One of the Sandhi Marmas mentioned in Ayurvedic literature is *Kukundara Marma*, which is situated on either side of the spinal column in the sacroiliac joint. It is categorized as a Vaikalyakara Marma, indicating that the injury causes a disability or deformity. According to classical sources, injuries to *Kukundara Marma* cause loss of lower-limb sensation (sparsha agyanam) and movement loss (chestahani), indicating involvement of significant neuromuscular structures.³

According to current anatomy, the sciatic nerve, which originates from the lumbosacral plexus and has root values ranging from L4 to S3, is the largest nerve in the human

body. It enters the posterior compartment of the thigh from the gluteal region after leaving the pelvis via the larger sciatic foramen. It supplies a significant amount of the lower limb with motor and sensory innervation. Sciatica, a disorder marked by radiating pain, numbness, tingling, and muscular weakness along the nerve's distribution, is caused by compression or irritation of this nerve.⁴

There may be a connection between *Kukundara Marma* and the sciatic nerve because of their similar anatomical locations and clinical signs.

Aim

Evaluation of the anatomical and clinical correlation between *Kukundara Marma* and sciatic nerve compression syndrome

Objective

- □ Comparison of the clinical features of *Kukundara Marma* injury and sciatic nerve compression syndrome

CLINICAL CORRELATION OF KUKUNDARA MARMA WITH SCIATIC NERVE COMPRESSION SYNDROMES: A REVIEW

- □To study the anatomy and functional role of the sciatic nerve.

Literature Review

1. In Ayurveda, *Kukundara Marma*

Kukundara Marma is situated close to the sacroiliac joint in the dorsolateral pelvic area. Due to the presence of important joints, muscles, and neurovascular structures, this anatomical region correlates to the gluteal region, which is both architecturally complicated and functionally crucial. Because the joint component predominates in its structural composition, it is categorized as a *Sandhi Marma*. *Kukundara Marma* is classified as a *Vaikalyakara Marma*, which means that its harm results in long-term impairment or deformity rather than sudden death. This Marma's size is referred to as *Ardhangula*, which denotes a tiny but crucial anatomical region.

Loss of mobility, loss of sensation, and difficulty walking are the traditional indicators of injury (*Viddha Lakshana*). These characteristics clearly indicate that neuromuscular and sensory circuits are involved. Impaired gait and the inability to execute coordinated motions are other signs that the mechanisms involved in locomotion have been disrupted. According to Ayurveda, Marma points are the seats of Prana or vital life force, and any damage to them causes Vata dosha, which controls movement, nerve impulses, and sensory functions to become deranged. *Kukundara Marma* damage can therefore be understood as a disruption in the neuromuscular system.⁵

B. The Sciatic Nerve in Contemporary Anatomy

With root values ranging from L4 to S3, the sciatic nerve emerges from the lumbosacral plexus. It develops inside the pelvis and leaves through the larger sciatic foramen, which is often located beneath the piriformis muscle. It descends along the back of the thigh after passing through the gluteal area, before splitting into the tibial and common peroneal nerves.

The sciatic nerve supplies sensory innervation to the majority of the lower limbs and motor innervation to the muscles of the posterior thigh, leg, and foot. It is essential for tasks like standing, walking, and keeping good posture.⁶

1. Syndromes of Sciatic Nerve Compression

Sciatic nerve compression syndromes, sometimes known as sciatica, are characterized by sciatic nerve compression. Intervertebral disc prolapses, which result in nerve root compression, are the most frequent cause. Trauma, spinal stenosis, inflammatory diseases, and piriformis syndrome are further causes.

Clinically, sciatica manifests as pain that radiates down the posterior side of the leg from the gluteal region or lower back. Muscle weakness, tingling, and numbness frequently accompany sciatica. Patients may experience considerable functional impairment, diminished reflexes, and difficulty walking in extreme situations.

The degree of nerve involvement determines the severity and spread of the symptoms. Reduced quality of life and long-term incapacity are possible outcomes of chronic compression.⁷

Kukundara Marma and Sciatic Nerve Correlation

Based on anatomical location and clinical signs, there is a close association between *Kukundara Marma* and the sciatic nerve. Both are located in a crucial place for brain structures, the sacroiliac joint, and the gluteal region.

The symptoms of sciatic nerve compression are similar to those of *Kukundara Marma* injury, including loss of movement, loss of sensation, and difficulty walking. In both disorders, radiating pain is a common feature.

This similarity can be explained by the involvement of the lumbosacral plexus, which is situated in the same area and originates from the sciatic nerve.

This remarkable resemblance suggests that *Kukundara Marma* corresponds anatomically to the sciatic nerve and lumbosacral plexus.

Feature	<i>Kukundara marma</i>	Sciatic nerve
Sthan	Sacroiliac region	Gluteal region
Prakruti	Vaikalyakara	Disability due to damage
Karya	Movement and sensation	Motor and sensory
Aghata Lakshan	Loss of function	Weakness and numbness
Shool	Radiating	Sciatic pain

Discussion

According to Ayurvedic literature, *Kukundara Marma* is a vital anatomical point located in the pelvic and gluteal regions adjacent to the hip joint. It is classified as a *Vaikalyakara Marma*, where trauma or dysfunction may result in impairment of normal bodily functions. From a modern anatomical viewpoint, this region can be correlated with structures such as the sacroiliac joint, gluteal muscles, deep fascial tissues, and the course of the sciatic nerve.

The sciatic nerve is the largest nerve in the peripheral nervous system and is formed by the L4–S3 nerve roots of the lumbosacral plexus. It passes through the gluteal area,

commonly beneath the piriformis muscle, and is responsible for motor and sensory functions of the lower limb. Compression, irritation, or injury to this nerve may lead to sciatic nerve compression disorders, which are commonly associated with radiating pain, altered sensation, numbness, weakness, and reduced mobility.

The symptoms described in *Kukundara Marma* Abhighata, such as ruka and toda (pain around the hip region), sparshaagyan (loss of sensation), chestahani (impairment of lower limb), difficulty in ambulation, weakness of the lower extremity, and functional limitation, show a close clinical resemblance to the manifestations of sciatic nerve disorders. Conditions,

including trauma, inflammation, muscle spasm, or pathological alterations in surrounding tissues, may affect the sciatic nerve and can be interpreted in relation to the Ayurvedic concept of Marma injury.

Based on modern anatomical correlation, *Kukundara Marma* may represent an area involving structures such as the sciatic nerve, piriformis muscle, gluteus maximus, pelvic supporting ligaments, and nearby neurovascular structures. Clinical conditions like piriformis syndrome, sacroiliac joint dysfunction, and lumbar intervertebral disc disorders may present with symptoms similar to *Kukundara Marma* impairment.

The therapeutic approach of Marma therapy focuses on the stimulation of vital points to promote functional balance and healing responses. The proposed mechanisms may include muscle relaxation, improved regional circulation, reduction of soft tissue tension, modulation of nociceptive pathways, and influence on neurological regulation. However, its application should be supported by anatomical understanding and evidence-based clinical research.

In conclusion, *Kukundara Marma* provides an important Ayurvedic framework that can be correlated with modern concepts of sciatic nerve compression and lumbogluteal disorders. Combining Ayurvedic descriptions with contemporary anatomical knowledge may improve the understanding of pain mechanisms and functional disturbances in this region. Further clinical and experimental studies are necessary to confirm this correlation scientifically.

Conclusion

The structural and clinical correlation between *Kukundara Marma* and sciatic nerve compression syndromes suggests a significant anatomical and functional relationship between the classical Ayurvedic concept of Marma and modern neuroanatomy. *Kukundara Marma*, located in the gluteal region, corresponds closely with the anatomical area through which the sciatic nerve, gluteal muscles, and sacral plexus are clinically relevant. Injury, dysfunction, or irritation at this site may manifest as pain, radiating symptoms, sensory disturbances, and restricted lower limb movements, similar to presentations observed in sciatica and piriformis-related nerve compression.

From a modern perspective, compression or inflammation of neural structures in the deep gluteal region can affect sciatic nerve conduction, while the Ayurvedic description of *Kukundara Marma* injury (Marma aghataj) highlights pain, functional impairment, and neurological symptoms of the lower limb. This conceptual similarity indicates a possible correlation between Marma anatomy and peripheral nerve pathology.

However, while the traditional understanding provides valuable clinical insights, further anatomical, radiological, and clinical research is required to establish measurable correlations between *Kukundara Marma* injury due to stimulation and sciatic nerve disorders. Integrating Ayurvedic Marma principles with contemporary neuromusculoskeletal science may contribute to a broader understanding of pain management and rehabilitation approaches for sciatic nerve compression syndromes.

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