

# Kukundar Marma And Its Correlation with Sciatic Nerve Compression Syndromes: A Narrative Review

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**Abstract—Background:** Marma Sharira is a vital concept described in Ayurvedic classics, referring to specific anatomical sites where injury can lead to serious functional impairment or death. Among the 107 Marma points described in classical literature, Kukundar Marma is categorized under Sandhi Marma and is situated in the region of the sacroiliac joint. Injury to this Marma is said to result in loss of movement and sensation in the lower limb. In modern medicine, similar clinical manifestations are observed in sciatic nerve compression syndromes, where irritation or compression of the sciatic nerve leads to pain, numbness, and motor deficits. **Objective:** To review the classical description of Kukundar Marma and to analyze its anatomical and clinical correlation with sciatic nerve compression syndromes. **Results:** The review highlights a strong overlap between the anatomical location and clinical manifestations of Kukundar Marma injury and sciatic nerve compression syndromes, particularly in relation to radiating pain, sensory disturbances, and functional impairment. **Conclusion:** A significant anatomical and clinical correlation exists between Kukundar Marma and the sciatic nerve. Understanding this relationship may help bridge Ayurvedic and modern medical concepts, offering potential benefits in integrative management of sciatica.

**Index Terms—**Kukundar Marma, Sciatic nerve, Marma Sharira, Sciatica, Lumbosacral plexus, Ayurveda.

## I. INTRODUCTION

Marma Sharira is an important branch of Ayurveda that deals with vital anatomical locations in the human body. Classical Ayurvedic texts, especially the Sushruta Samhita, describe 107 Marma points formed by the confluence of structures such as mamsa (muscle), sira (blood vessels), snayu (ligaments), asthi (bone), and sandhi (joints).<sup>1</sup> These points are

considered highly sensitive, and trauma to them may lead to severe functional impairment or even fatal outcomes.

Kukundar Marma is one of the Sandhi Marmas described in Ayurvedic literature and is located in the region of the sacroiliac joint on either side of the vertebral column. It is classified as a Vaikalyakara Marma, meaning that its injury results in deformity or disability. Classical texts describe that trauma to Kukundar Marma leads to loss of movement (chesta hani) and loss of sensation (sparsha agyana) in the lower limbs, suggesting involvement of important neuromuscular structures.<sup>2</sup>

In modern anatomy, the sciatic nerve is the largest nerve in the human body, originating from the lumbosacral plexus with root values from L4 to S3. It exits the pelvis through the greater sciatic foramen and travels through the gluteal region into the posterior compartment of the thigh. It provides motor and sensory innervation to a major portion of the lower limb.<sup>3</sup> Compression or irritation of this nerve results in sciatica, a condition characterized by radiating pain, numbness, tingling, and muscle weakness along the distribution of the nerve.<sup>4</sup>

The similarity between the anatomical location of Kukundar Marma and the course of the sciatic nerve, along with the resemblance in clinical manifestations, suggests a possible correlation between the two. Establishing this relationship may provide a scientific basis for Ayurvedic anatomical concepts and support their integration with modern clinical knowledge. It may also contribute to improved understanding and management of sciatic nerve disorders through an integrative approach.

## II. AIM & OBJECTIVES

### Aim:

To evaluate the anatomical and clinical correlation between Kukundar Marma and sciatic nerve compression syndromes.

### Objectives:

- To review the classical Ayurvedic description of Kukundar Marma
- To study the anatomy and function of the sciatic nerve
- To analyze similarities between Kukundar Marma injury and sciatic nerve compression syndromes
- To assess the clinical relevance of this correlation in sciatica

## III. REVIEW OF LITERATURE

### A. Kukundar Marma in Ayurveda

Kukundar Marma is located in the dorsolateral pelvic region, specifically near the sacroiliac joint. <sup>1</sup> This anatomical area corresponds to the gluteal region, which is structurally complex and functionally significant due to the presence of major joints, muscles, and neurovascular structures. It is classified as a Sandhi Marma, indicating that the joint component is predominant in its structural composition.

Furthermore, Kukundar Marma is categorized as a Vaikalyakara Marma, meaning that its injury leads to deformity or long-term disability rather than immediate death. The size of this Marma is described as Ardhangula, signifying a small but critically important anatomical location.

The classical signs of injury (Viddha Lakshana) include loss of movement, loss of sensation, and difficulty in walking. These features strongly suggest involvement of neuromuscular and sensory pathways. The inability to perform coordinated movements and impaired gait further indicate disruption of structures responsible for locomotion.

From an Ayurvedic perspective, Marma points are considered seats of Prana (vital life force), and any injury to them leads to derangement of Vata dosha, which governs movement, nerve impulses, and sensory functions. Therefore, Kukundar Marma injury can be interpreted as a disturbance in neuromuscular

coordination, correlating with modern neurological deficits.

### B. Sciatic Nerve (Modern Anatomy)

The sciatic nerve originates from the lumbosacral plexus with root values from L4 to S3. It is formed within the pelvis and exits through the greater sciatic foramen, usually inferior to the piriformis muscle. After entering the gluteal region, it travels downward along the posterior aspect of the thigh and eventually divides into the tibial and common peroneal nerves.

The sciatic nerve provides motor innervation to the muscles of the posterior thigh, leg, and foot, and sensory innervation to most of the lower limb. It plays a vital role in activities such as walking, standing, and maintaining posture.

An important clinical aspect is that the sciatic nerve supplies the posterior thigh and lower limb, making it essential for both voluntary movement and sensory perception. <sup>5</sup> Due to its long course and proximity to multiple anatomical structures, it is highly susceptible to compression and injury.

### C. Sciatic Nerve Compression Syndromes

Sciatic nerve compression syndromes, commonly referred to as sciatica, are characterized by pain along the sciatic nerve pathway. The most common cause is intervertebral disc prolapse, which leads to compression of nerve roots. Other causes include piriformis syndrome, trauma, spinal stenosis, and inflammatory conditions.

Clinically, sciatica presents with radiating pain from the lower back or gluteal region down the posterior aspect of the leg. This is often accompanied by numbness, tingling, and muscle weakness. In severe cases, patients may experience difficulty in walking, reduced reflexes, and significant functional impairment.

The severity and distribution of symptoms depend on the level of nerve involvement. Chronic compression may result in long-term disability and reduced quality of life. <sup>6</sup>

### Correlation Between Kukundar Marma and Sciatic Nerve

A strong correlation exists between Kukundar Marma and the sciatic nerve based on anatomical location and clinical manifestations. Both are situated in the

sacroiliac and gluteal region, which is a critical area for neural structures.

The symptoms described in Kukundar Marma injury—loss of movement, loss of sensation, and difficulty in walking—closely resemble those seen in sciatic nerve compression. Radiating pain is a common feature in both conditions.

The involvement of the lumbosacral plexus explains this similarity, as it gives rise to the sciatic nerve and is located in the same region.

This striking similarity suggests that Kukundar Marma anatomically corresponds to the lumbosacral plexus and sciatic nerve.<sup>7</sup>

Table: Comparative Analysis<sup>8</sup>

Feature	Kukundar Marma	Sciatic Nerve
Location	Sacroiliac region	Same region
Nature	Vaikalyakara	Disability on damage
Function	Movement & sensation	Motor & sensory
Injury	Loss of function	Weakness & numbness
Pain	Radiating	Sciatic pain

#### IV. DISCUSSION

The present review highlights a strong correlation between Ayurvedic and modern anatomical concepts. Marma points can be interpreted as neurovascular junctions where multiple structures converge.<sup>9</sup>

The role of Vata dosha in governing neurological functions aligns with modern concepts of nerve conduction and neuromuscular coordination. Disturbance of Vata due to Marma injury can be correlated with nerve dysfunction and neuropathic pain.<sup>10</sup>

Marma Chikitsa, which involves stimulation of specific Marma points, may have therapeutic potential in the management of sciatica. Integration of Ayurvedic and modern medical approaches may provide better clinical outcomes.<sup>11,12</sup>

#### V. CONCLUSION

The present study demonstrates a strong anatomical and clinical correlation between Kukundar Marma and

the sciatic nerve. The similarity in location, structure, and clinical features supports this association.

This correlation reinforces the relevance of Ayurvedic anatomical concepts in modern medicine and highlights the potential for integrative approaches in managing sciatic nerve disorders. Further research is required to validate these findings.

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