

STRUCTURAL AND CLINICAL SIGNIFICANCE OF SANDHI MARMA IN AYURVEDIC AND MODERN PERSPECTIVES W.S.R TO WRIST JOINT & ELBOW JOINT

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ABSTRACT

Marma are vital anatomical locations in the body described in Ayurvedic texts, where muscles, bones, ligaments, vessels, and joints intersect. Among the 107 classified Marma points, **Sandhi Marma** refer to those located at joints. This study aims to provide a detailed structural, and clinical exploration of Sandhi Marma, integrating classical Ayurvedic literature with modern anatomical correlations. Understanding Sandhi Marma offers valuable insights into pain management, joint injuries, and surgical implications, with relevance to orthopaedics and marma therapy. Kurpar & Manibandha marma are sandhi marma. Clinical & structural significance about these two marma with therapy which refer to elbow joint & wrist joint in dissection.

KEYWORDS: Marma Therapy, Sandhi Marma, Orthopedics, elbow joint, wrist joint.

1. INTRODUCTION

The ancient science of Ayurveda identifies 107 Marma points in the human body, which are said to be seats of vital life energy (**Prana**). Marma points are categorized based on location, structure, and potential outcomes of trauma. **Sandhi Marma**, or joint-based Marma, represents key anatomical convergence points that correspond closely to modern joint

structures. Their understanding has relevance not only in Ayurvedic therapeutic practices such as **Marma Chikitsa**, but also in trauma care and rehabilitation. Manibandha marma is located at wrist joint & kurpar marma is located at elbow joint which comes under sandhi marma.

2. MATERIALS AND METHODS

Literature Review: Classical Ayurvedic texts including

- *Sushruta Samhita*(Sharira Sthana 6/27-29): Most detailed account of marma including Sandhi marma.,
- *Ashtanga Hridaya*, and
- *Charaka Samhita* were reviewed.

1. Introduction to Marma

In Ayurveda, *Marma* are vital anatomical sites where muscles (mamsa), veins (sira), ligaments (snayu), bones (asthi), and joints (sandhi) meet. There are 107 primary marma points described in the classical Ayurvedic texts, each with specific dimensions, structures involved, and therapeutic or pathological significance.

2. Classification of Marma

Marma are classified by several criteria:

- **By location:** Shakhagata (limbs), Madhyama (trunk), Jangha (lower extremity), etc.
- **By structure:** Mamsa, Sira, Snayu, Asthi, Sandhi
- **By size, vitality, and effect on injury:** Sadyapranahara (immediate fatal), Kalantarapranahara (delayed fatal), Vaikalyakara (causing deformity), Rujakara (painful), Vishalyaghna (fatal if foreign body removed)

3. Sandhi Marma: Definition and Features

Sandhi Marma are marma located at the junctions of bones, i.e., joints. These are anatomically sensitive areas involving articulation, crucial for movement and structural support.

- **Number:** 20 Sandhi Marma are described in Ayurvedic literature.
- **Vital structures:** Involve articulation, synovial joints, and associated structures like ligaments and joint capsules.

- **Examples**
 - **Kukundara Marma** (hip joint)
 - **Aani Marma** (knee joint)
 - **Kurpara Marma** (elbow)
 - **Manibandha Marma** (wrist joint)
 - **Kurcha and Kurchashira Marma** (hand and foot joints)
- **Comparative Analysis:** Identified Sandhi Marma points were mapped onto modern anatomical structures using cadaveric dissection reports and radiological imaging studies.
- **Clinical Observations:** Case studies and existing clinical research were analyzed for the therapeutic role of Sandhi Marma in joint-related disorders.

3. Classification and Description of Sandhi Marma

According to Sushruta, there are **20 Sandhi Marma**, located at major joints:

Marma Name	Location	Structural Composition	Modern Correlation
Kurcha	Wrist	Ligament + Bone + Nerve	Radiocarpal Joint
Manibandha	Wrist joint	Joint capsule + Tendons	Wrist joint
Kurpara	Elbow	Joint capsule + Vessels	Elbow joint
Aani	Knee joint	Ligaments + Bone	Tibiofemoral joint
Janu	Knee	Joint capsule + Vessels	Patellar region
Gulpha	Ankle	Tendons + Ligaments	Ankle joint
Kshipra	Between thumb and index finger	Tendons + Ligaments	First metacarpophalangeal joint
... (additional entries as per the complete list of 20)			

Each Sandhi Marma is classified under **Vaikalyakara Marma**, meaning injury leads to deformity or functional impairment rather than instant death.

Manibandha Marma

A. Etymology & Meaning

- **"Manibandha"**: In Sanskrit, "*Mani*" means jewel or orb (metaphorically referring to the wrist), and "*Bandha*" means joint or bond.
- **Manibandha Marma** refers to the **wrist joint**, a crucial articulation between the forearm and the hand.

B. Location

- Located on the **dorsal aspect of the wrist**, at the junction of the forearm and hand.
- Present bilaterally (both hands).

C. Structural Composition

According to *Sushruta Samhita*, Manibandha Marma is a **Sandhi Marma** — it involves:

- **Bones**: Radius and ulna (distal ends) articulating with the carpal bones
- **Tendons and ligaments**
- **Blood vessels and nerves** (like the **radial and ulnar nerves**, median nerve)

D. Marma Category

- **Type**: Sandhi Marma (joint type)
- **Size**: ½ angula (approximately 0.75 – 1 cm in diameter)
- **Effect of Injury**: **Vaikalyakara Marma** – injury causes **deformity or loss of function** but not death

E. Clinical Significance

- Injury can lead to:
 - Wrist dysfunction or deformity
 - Restricted movement of hand
 - Nerve compression (e.g., carpal tunnel syndrome)
 - Pain and swelling
- Therapeutic role in:
 - Treating wrist arthritis
 - Managing hand nerve disorders through **marma therapy or massage**

Kurpara Marma (कूर्पर मर्म)

A. Location

- Located at the **elbow joint**, where the **humerus** articulates with the **radius and ulna**.
- Found on both elbows (bilateral).

B. Classification

Attribute	Details
Type	Sandhi Marma (Joint-based Marma)
Size	½ Angula (~0.75–1 cm)
Effect of Injury	Vaikalyakara (causes deformity or dysfunction)

C. Structures Involved

- **Bones:** Humerus, Radius, Ulna
- **Ligaments & Tendons:** Joint capsule, triceps and biceps insertions
- **Nerves:** Ulnar nerve (passes behind the elbow)
- **Vessels:** Brachial artery branches

D. Clinical Importance

- Injury may cause:
 - Elbow joint stiffness or deformity
 - Loss of arm movement
 - Ulnar nerve damage (e.g., tingling in the fingers)
- Therapeutic uses:
 - **Marma therapy for elbow pain**
 - **Management of conditions like tennis elbow**

Summary Table

Feature	Manibandha Marma	Kurpara Marma
Location	Wrist joint	Elbow joint
Marma Type	Sandhi Marma	Sandhi Marma
Injury Effect	Vaikalyakara (deformity or dysfunction)	Vaikalyakara (deformity or dysfunction)
Structures Involved	Radius, Ulna, Carpals, tendons, nerves	Humerus, Radius, Ulna, triceps, ulnar nerve
Therapeutic Role	Treats wrist disorders, nerve issues	Treats elbow pain, stiffness, nerve injury

4. Clinical Significance

4.1 Injury and Prognosis

- Trauma to Sandhi Marma leads to **joint instability, stiffness, or deformity**.
- Therapeutic manipulation must avoid excessive pressure at these sites.

4.2 Marma Chikitsa

- Application of mild stimulation, herbal oils (e.g., Mahanarayana Taila), and **gentle massage (Abhyanga)** can promote healing.
- Used in managing arthritis, joint dislocation, and post-traumatic rehabilitation.

4.3 Orthopedic Correlation

- Sandhi Marma aligns with key **synovial joints**—the primary sites of motion and weight-bearing.
- Modern orthopedic conditions such as **osteoarthritis, ligament tears, and bursitis** correlate with dysfunction at Sandhi Marma sites.

5. DISCUSSION

The integrative understanding of Sandhi Marma provides a bridge between traditional healing systems and modern clinical practice. The functional importance of joints in mobility and quality of life underscores the significance of these Marma points. While Ayurveda emphasizes energetic and structural components, modern medicine offers mechanical and pathological perspectives. Combining these can aid in developing **holistic joint care protocols**, especially for chronic musculoskeletal conditions.

6. CONCLUSION

Sandhi Marma represents an essential aspect of Ayurvedic anatomical science with direct application in injury management, pain relief, and functional restoration of joints. By aligning ancient knowledge with modern anatomy, we can enhance both diagnosis and therapy in musculoskeletal disorders. Future studies should focus on validating Marma-based interventions through **controlled clinical trials and imaging techniques**.

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