

KURPARA MARMA- AN ANATOMICAL & CLINICAL CORRELATION WITH THE ELBOW JOINT

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ABSTRACT

The *Kurpara Marma* is one of the vital and delicate points of body which has been located in the upper limbs mainly in the elbow joint. It is located both in upper limbs at the junction of the arm and the forearm. In the lower limb, this *Marma* is represented by *Janu Marma* or *Marma* located at the knee joint. A detailed understanding of *Kurpara Marma* along with its related structures and its injury. Current study is based on Literary Study on *Marma* available in Ayurvedic and modern text books. The principle of *Marma* was restricted to war science in ancient literatures such as the Vedas and Ayurvedic classics and *Marma* points were primarily recognized to be fatal points i.e. trauma to them results in debilitation or perhaps even fatality because they are the seat of *Prana*. However, the principle of *Marma* has expanded significantly in recent years.

KEYWORDS: Arm, Elbow Joint, Forearm, *Kurpara Marma*.

INTRODUCTION

Marma science is one of the unique and clinically significant concepts described in Ayurveda representing vital anatomical sites where muscles (*massa*), vessels (*sira*), ligaments (*snayu*), bones (*asthi*) and joints (*sandhi*) converge. These vital points are considered centers of *prana* (vital life force) and injury to them can lead to pain deformity, functional impairment or even death depending on their classification. Among the 107 *marma*^[1] points described in the classical Ayurvedic texts, *Kurpara Marma* is categorized as a *Sandhi Marma*^[2] (joint *marma*) or a *bahumarma* and is located at the elbow joint. It is classified as a *Vaikalyakara Marma*^[3] indicating that trauma to this region may result in permanent disability or deformity without necessarily causing death.

PARTICULARS	INTRODUCTION REGARDING KURPAR MARMA
1. Location	<i>Udarwashakha</i> (upper extremity)
2.Number	2 ^[4]
3.Particular structre	<i>Sandhi marma</i>
4.Partucular prognostic	<i>Vaikalyakara marma</i>
5.Anthropometric measurement	3 <i>Angula</i> ^[5]
6.Traumatic sign of <i>Marma</i>	<i>kuni</i> (dangling of hang)

From an anatomical perspective, the elbow is a complex synovial hinge joint formed by the articulation of the humerus, radius, and ulna. It provides stability while permitting flexion, extension, pronation and supination of the forearm. The region is reinforced by strong ligamentous structures, muscular attachments and an intricate neurovascular network including the median, radial and ulnar nerves as well as the brachial artery and its terminal branches. These structures collectively contribute to the functional integrity of the upper limb and correspond well with the Ayurvedic description of *Kurpara Marma* as a vital anatomical region.

The concept of *Kurpara Marma* exemplifies the remarkable correlation between ancient Ayurvedic anatomical knowledge and modern clinical anatomy. The functional significance attributed to *marma* aligns with the vulnerability of the elbow joint and its surrounding neurovascular structures where injuries may lead to sensory deficits, motor dysfunction, restricted joint mobility or vascular compromise. Understanding the anatomical basis of *Kurpara Marma* is therefore essential for interpreting its clinical importance in trauma, orthopedic conditions, rehabilitation and *marma* therapy.

This anatomical review aims to critically examine *Kurpara Marma* through the combined perspectives of classical Ayurvedic literature and contemporary anatomical science. By integrating traditional descriptions with modern evidence on the morphology, biomechanics, neurovascular anatomy, and clinical relevance of the elbow joint, the review seeks to establish a comprehensive understanding of *Kurpara Marma* and highlight its significance in both Ayurvedic practice and modern musculoskeletal medicine.

Location of Kurpara Marma

Kurpara Marma is situated at the junction of the arm (Bahu) and forearm (Prabahu) corresponding anatomically to the elbow joint.

Based on the classical description, *Kurpara Marma* is classified as.

- *Shakha Gata Marma*: As it is located in the upper limb, *Kurpara Marma* is included among the Marmas of the extremities (*Shakha*).
- *Sandhi Marma*: The elbow joint (*Sandhi*), formed by the articulation of the humerus, radius, and ulna constitutes the predominant structural component of this Marma. Other tissues such as *Sira* (blood vessels), *Snayu* (ligaments/tendons), *Asthi* (bone) and *Mamsa* (muscles) are also present but are secondary in composition.
- *Vaikalyakara Marma*: Injury to *Kurpara Marma* results in deformity and functional impairment of the elbow joint therefore, it is classified as a *Vaikalyakara Marma*.
- *Pramana* (Measurement): The dimension of *Kurpara Marma* is described as 3 *Angula*.

1.2 Abhighata Lakshana (Effects of Injury) of Kurpara Marma

कूर्पराख्ये कुणीः ।

(सु.शा.६/२५)

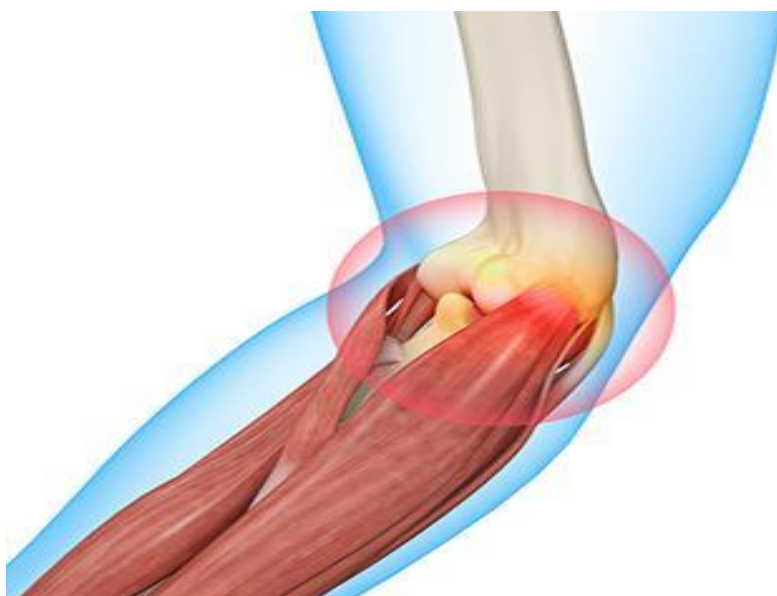
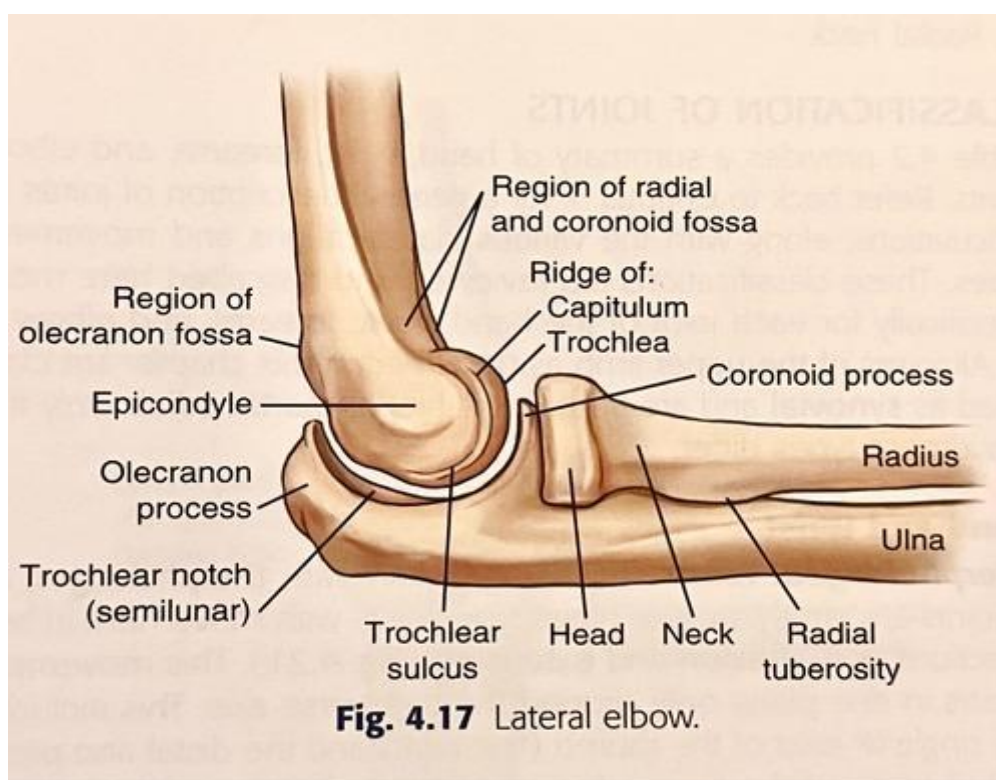
According to *Acharya Sushruta*, trauma to *Kurpara Marma* produces *Kuni* which denotes deformity or functional disability of the elbow joint. Since the elbow plays a vital role in upper-limb movements required for daily activities injury to this Marma significantly impairs limb function.

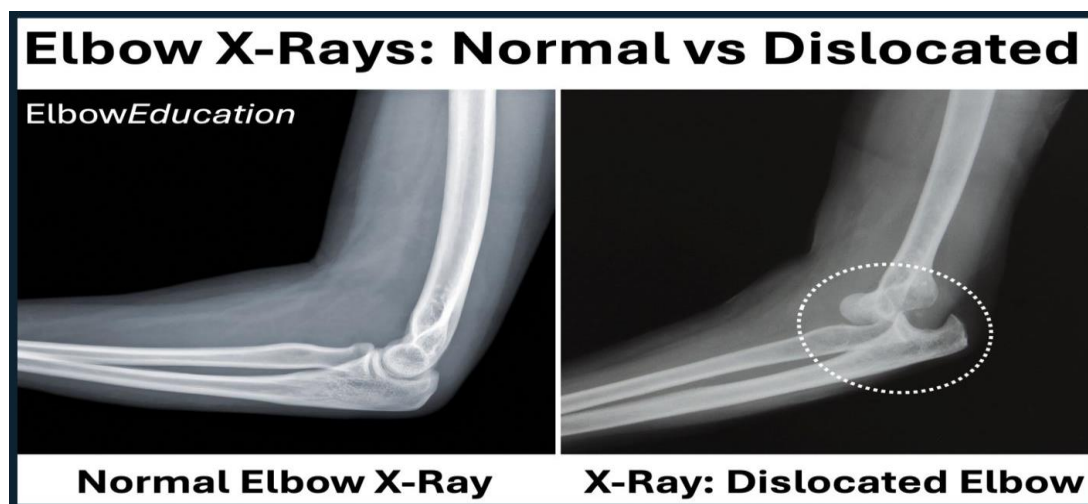
Clinically, *Kuni* may be correlated with

- Difficulty in flexion and extension of the elbow.
- Weakness or loss of coordinated upper-limb movements.
- Hand drop or impaired grip resulting from associated neuromuscular involvement.
- Partial or complete loss of functional integrity of the elbow joint.

These manifestations may occur due to damage to the anatomical structures around the elbow including the biceps brachii tendon, bicipital aponeurosis, pronator teres, flexor carpi radialis, palmaris longus, flexor carpi ulnaris and related neurovascular structures.

Thus, the classical description of "कूर्पराख्ये कुणीः"^[6] supports the concept that *Kurpara Marma* is a *Vaikalyakara Sandhi Marma* where traumatic injury leads to partial or permanent residual deformity and functional disability of the elbow joint.





Clinical correlation (modern anatomy)

Common injuries involving this region include.

- Elbow dislocation
- Fracture around the elbow
- Ligament injury
- Tendon injury
- Ulnar nerve injury (causing numbness of the little finger and weakness of hand muscles)

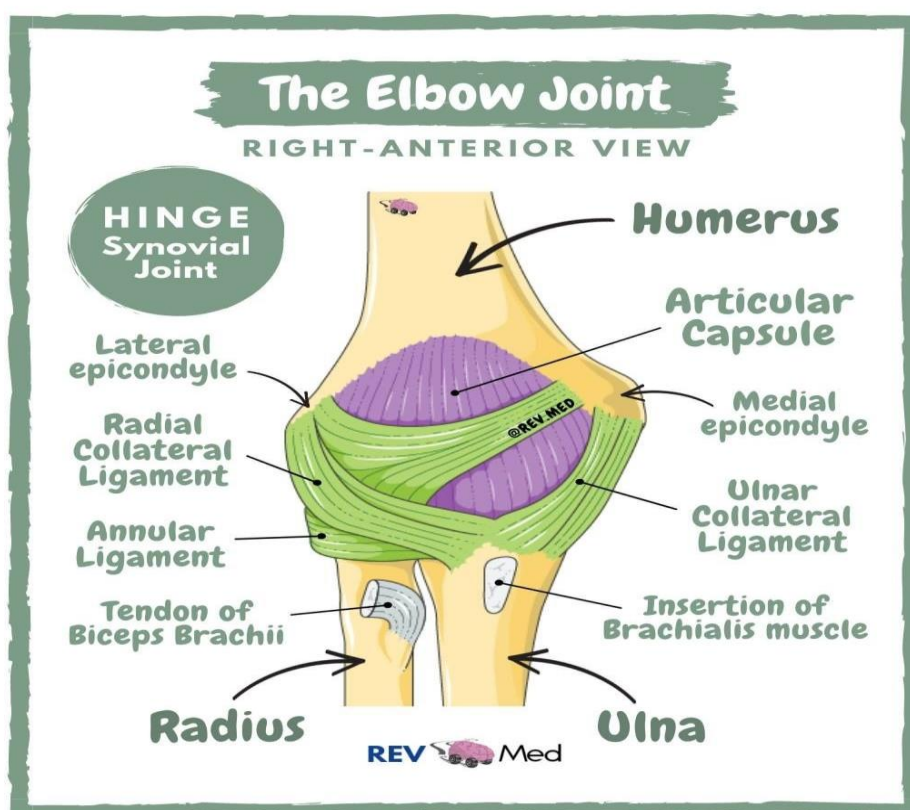
1.3 Modern Review

From a modern anatomical perspective, *Marma* can be understood as a vital region of the body where five major structural components—*Asthi* (bones), *Sira* (blood vessels), *Snayu* (ligaments and tendons), *Sandhi* (joints) and *Mamsa* (muscles)—converge. These sites are considered functionally important because they contain several essential anatomical structures within a limited area. In Ayurveda, these locations are believed to be associated with *Prana* (vital life force) making them clinically significant.

The *Kurpara Marma* corresponds anatomically to the elbow region which consists of several important musculoskeletal and neurovascular structures, including.

- Elbow joint
- Capsular ligament
- Radial collateral ligament
- Ulnar collateral ligament
- Annular ligament

The surrounding muscular structures include the biceps brachii, triceps brachii, supinator, pronator teres, and extensor carpi radialis muscles. The neurovascular structures associated with this region include the brachial artery, median nerve and its branches, median cubital vein, and tributaries of the cephalic vein. The bony components consist of the distal end of the humerus and the proximal ends of the radius and ulna.



The elbow is formed by the humeroulnar, humeroradial and proximal radioulnar joints which together provide stability and facilitate flexion, extension, pronation and supination of the forearm. These movements are essential for performing routine daily activities. Therefore any injury or pathological condition affecting the elbow joint can significantly impair upper limb function and reduce the quality of life.

Although several tissues such as muscles, blood vessels, nerves, ligaments, and bones are present around the *Kurpara Marma*, the principal anatomical component is the elbow joint. For this reason Ayurvedic literature classifies it as a *Sandhi Marma* (joint-type Marma). Trauma to this region may involve damage to multiple structures including bones, muscles, ligaments, tendons and blood vessels. However the joint itself is usually the most severely affected, resulting in pain, restricted movement, joint instability and functional disability.

Clinically, injury to the *Kurpara Marma* may initially present with pain and limitation of movement which can progress to permanent deformity or loss of function if left untreated. Since the elbow serves as the junction between the arm and forearm damage to this region may severely compromise upper limb mobility and strength. The anatomical features of *Kurpara Marma* closely correspond to modern descriptions of elbow joint injuries, which are well known to cause functional impairment.

In the present era, increasing road traffic accidents, occupational injuries and sports-related trauma have raised the incidence of elbow injuries. Therefore understanding and protecting *Kurpara Marma* is important not only from an Ayurvedic perspective but also in modern clinical practice, as preservation of this vital region is essential for maintaining normal upper limb function.

DISCUSSION

The concept of *Marma* occupies a unique position in Ayurvedic anatomy and surgery, representing anatomically and functionally significant regions where *Mamsa (muscles)*, *Sira (blood vessels)*, *Snayu (ligaments and tendons)*, *Asthi (bones)* and *Sandhi (joints)* converge. Among the 107 Marma points described by *Acharya Sushruta*, *Kurpara Marma* is classified as a *Sandhi Marma* situated at the elbow joint and is categorized as a *Vaikalyakara Marma* indicating that injury results in permanent deformity or functional disability rather than immediate death. The findings of the present review demonstrate a close correlation between the classical Ayurvedic description of *Kurpara Marma* and the modern anatomical understanding of the elbow region.

According to *Acharya Sushruta Samhita*, injury to *Kurpara Marma* causes "*Kuni*" which denotes deformity or impairment of elbow function. Although the classical texts do not elaborate on the exact anatomical structures involved modern anatomy explains that trauma to the elbow frequently affects multiple structures simultaneously including the humeroulnar, humeroradial, and proximal radioulnar joints, collateral ligaments, muscles, tendons, nerves, and blood vessels. Such injuries commonly result in pain, stiffness, instability, restricted range of motion and varying degrees of motor and sensory deficits. Thus the Ayurvedic description of *Kuni* closely corresponds with the clinical manifestations observed following elbow trauma.

The anatomical composition of the elbow supports its classification as a ***Sandhi Marma***. The elbow is a compound synovial joint formed by the articulation of the distal humerus with the proximal radius and ulna. It is stabilized by the joint capsule, ulnar collateral ligament, radial collateral ligament, and annular ligament, while numerous muscles and tendons surrounding the joint facilitate upper-limb movements. This concentration of essential anatomical structures reflects the Ayurvedic principle that *Marma* represents regions where multiple tissues converge to perform vital functions.

The neurovascular anatomy of the elbow further emphasizes the importance of *Kurpara Marma*. The brachial artery divides into the radial and ulnar arteries in the cubital region, while the median, radial, and ulnar nerves traverse close to the joint. Injury to these structures may result in ischemia, muscle weakness, sensory disturbances, impaired grip strength or paralysis of the forearm and hand. Such complications explain why trauma to *Kurpara Marma* produces significant functional disability, supporting its categorization as a ***Vaikalyakara Marma***.

Biomechanically the elbow is essential for positioning the hand in space and for performing activities of daily living. Flexion, extension, pronation and supination enable functions such as eating, writing, dressing, lifting objects and personal hygiene. Even minor impairment of elbow movement substantially reduces upper-limb efficiency. Therefore, the functional significance attributed to *Kurpara Marma* in Ayurveda closely parallels modern orthopedic concepts regarding the critical role of the elbow in upper-extremity biomechanics.

The present review also highlights that Ayurvedic *Marma* classification is based on the predominant anatomical structure rather than the exclusive presence of a single tissue. Although muscles, ligaments, blood vessels, nerves, and bones are all present around the elbow, the joint forms the central structural and functional component. This observation justifies the designation of *Kurpara* as a ***Sandhi Marma*** and demonstrates the logical anatomical basis underlying classical Ayurvedic classifications.

Modern clinical evidence further supports the importance of *Kurpara Marma*. Elbow fractures, dislocations, ligament injuries, tendon ruptures, cubital tunnel syndrome, radial nerve palsy, and vascular injuries are well-recognized causes of long-term disability if not appropriately managed. Similarly, Ayurvedic texts emphasize that injury to *Kurpara Marma* produces deformity and permanent functional impairment. The similarity between these

observations suggests that the ancient Ayurvedic scholars recognized the clinical importance of the elbow through careful anatomical observation and surgical experience.

From a therapeutic perspective, knowledge of *Kurpara Marma* has applications in **Marma Chikitsa**, Panchakarma procedures, physiotherapy, orthopedic rehabilitation, sports medicine, and trauma care. Appropriate stimulation or protection of this region may contribute to pain relief, restoration of joint mobility and improvement in upper-limb function. However therapeutic interventions should be performed with detailed anatomical knowledge because of the proximity of major nerves and blood vessels.

Despite the strong conceptual correlation between Ayurveda and modern anatomy, scientific evidence regarding the physiological basis of Marma and the mechanisms underlying Marma therapy remains limited. Most available literature is descriptive, and there is a need for well-designed anatomical, radiological, biomechanical, and clinical studies to establish objective evidence for the structural and functional significance of *Kurpara Marma*. Future research integrating cadaveric dissection, imaging techniques, electrophysiological studies, and clinical outcome assessments may further clarify the relationship between the classical Marma concept and contemporary medical science.

Overall, the present review demonstrates that the classical description of *Kurpara Marma* shows remarkable agreement with modern anatomical and clinical knowledge of the elbow joint. The Ayurvedic concepts of **Sandhi Marma**, **Vaikalyakara Marma** and **Kuni** can be meaningfully interpreted in light of current understanding of elbow anatomy, biomechanics, neurovascular structures and traumatic injuries. This integrative perspective not only validates the anatomical relevance of *Kurpara Marma* but also provides a scientific basis for its application in contemporary orthopedic practice, rehabilitation, and Marma therapy.

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