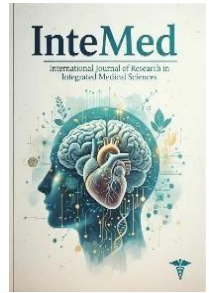




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Review Article

Kurcha Marma in the Hand and Foot as a Layered Anatomical Region

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Abstract:

Background: *Kurcha Marma* is described at four limb sites, yet the classical sources do not provide a modern sectional map. This has led authors to assign the term to different structures in the first web regions of the hand and foot. Purpose: This review examines what can be fixed from the textual landmarks and what remains an anatomical hypothesis. Sources and approach: Statements in the *Sushruta Samhita* and *Ashtanga Hridaya* were compared with published *Kurcha* interpretations and research on the first intermetacarpal and intermetatarsal regions. Results: *Kshipra* gives the most useful starting point because *Kurcha* is placed proximal to it and is allotted four *angula*. The hand field may cross the first dorsal interosseous, adductor pollicis, deep ulnar motor branches, and radial arterial pathways. The foot field may extend from dorsal intermetatarsal tissues into plantar fascia, intrinsic muscles, flexor elements, and neurovascular structures. Such layered anatomy offers several explanations for the reported movement disturbance, but it does not identify one necessary correlate. Conclusion: *Kurcha* is best treated at present as a three-dimensional region referenced to *Kshipra*. Fixed boundaries should await agreement studies, imaging, and dissection.

Keywords: *Kurcha Marma*; first intermetacarpal space; first intermetatarsal space; regional anatomy; *Marma Sharir*; anatomical validation.

Problem and Scope

Descriptions of *Marma* link location to the effect of injury. Their categories do not correspond neatly to the boundaries used in contemporary regional anatomy. The *Sushruta Samhita* counts 107 *Marma* and classifies them by dominant tissue and expected consequence. *Kurcha* appears once in each hand and foot. It is grouped under *Snayu Marma* and under *Vaikalyakara Marma*.¹

The difficulty lies in drawing the site, not in naming these classifications. For the foot, the text places *Kurcha* proximal to *Kshipra*, which lies between the great toe and second toe. The hand is interpreted through the matching limb arrangement. Proposed surface markings vary because the source gives neither a dissection plane nor a single modern structure.¹⁻⁵ This review asks two separate questions: where the classical landmark leads, and which tissues occupy that region at different depths.

Sources and Review Method

Sources available up to September 2026 were examined in a focused narrative review. The classical reading used the *Sushruta Samhita*, *Sharira Sthana* 6, and the *Ashtanga Hridaya*, *Sharira Sthana* 4. Searches included both *Kurcha* and *Kurca* spellings, together with terms for the first web space, first dorsal interosseous muscle, deep plantar artery, and plantar intrinsic musculature. Articles on *Kurcha* were read beside original anatomical or functional studies of the proposed sites. During synthesis, direct textual statements were kept apart from observed modern anatomy and from interpretive associations.

Classical Landmarks and Injury Description

Kurcha belongs to the limb group of *Marma*. In the lower limb, Sushruta locates it above *Kshipra*. Injury is followed by *bhramana* and *vepana*, words associated with abnormal turning or tremulous movement. The *Ashtanga Hridaya* retains the same spatial relation and similarly describes loss of normal foot movement. The corresponding hand sites follow the limb pattern, whereas the accounts of the larger joints are qualified separately.^{1,2} These Sanskrit terms should remain descriptions from the classical system rather than being converted into a modern diagnostic label.

The label *Snayu Marma* identifies the tissue category, but *snayu* has a broader interpretive range than the English word ligament. Tendon-like and other dense supporting tissues may be relevant within the proposed site. *Vaikalyakara* indicates the possibility of persistent functional impairment after trauma; it does not imply that every wound has the same result. The stated extent is four *angula*. Because *angula* is based on the person's own proportions, a single centimetre conversion would erase the intended variability.^{1,2} Nor does this measurement establish a surgical clearance zone.

Three adjacent names provide an important check on localization. *Kshipra* occupies the first interdigital interval, *Kurcha* follows proximally, and *Kurchashira* lies farther toward the ankle in the lower limb. Injury to *Kurchashira* is associated with pain and swelling.¹ If the three are plotted at one point, the sequence and the distinction between them are lost.

Anatomical Layers in the Hand

On the hand, a line drawn proximally from the first web reaches the space between the first and second metacarpals. The first dorsal interosseous forms much of its dorsal muscular bulk, while adductor pollicis lies deeper on the palmar side. Both receive motor fibres through branches of the deep ulnar nerve. Dissections show variation in their nerve supply and describe vascular contributions to the first dorsal interosseous from dorsal and palmar sources.^{6,7} *Kurcha* cannot therefore be matched to one structure without first defining the surface and depth.

Near the proximal part of this space, the radial artery turns into the deep palm. The arteries supplying the thumb and first dorsal metacarpal region are variable. An additional artery has also been found on the dorsal surface of the first dorsal interosseous in a minority of dissected specimens.⁸ A shallow distal wound and a deep proximal wound within the same broadly marked area would consequently endanger different tissues.

Two common markings create opposite problems. A wide label over the thenar eminence exceeds the first intermetacarpal field, while a mark confined to the skin cleft approaches *Kshipra* rather than *Kurcha*. A usable description should report the web margin, metacarpal landmarks, chosen surface, and depth. Injury of the first dorsal interosseous or its motor branch may impair index abduction and pinch.^{6,7} Those findings, however, cannot

localize the lesion by themselves because a proximal ulnar nerve injury can produce them as well.

Anatomical Layers in the Foot

In the foot, the route from the first interdigital cleft toward the tarsus passes through the first intermetatarsal region. The tissues encountered depend on the surface. Extensor tendons and the deeper intermetatarsal contents lie dorsally. A plantar interpretation brings the fascia, intrinsic muscles related to the hallux and second toe, flexor structures, and plantar neurovascular branches into consideration.^{4,5} Listing all of these as *Kurcha* would be uninformative unless the proposed boundary and depth are also stated.

The proximal first intermetatarsal space has a clinically relevant arterial relation. In a cadaveric series of 43 feet, investigators recorded the position of the deep plantar branch of dorsalis pedis in relation to the first metatarsal.⁹ The vessel is therefore a plausible occupant of a deep, proximal field. The study does not show that the artery defines *Kurcha*. A distal web-space mark and a proximal mark near the metatarsal bases refer to different anatomical neighbourhoods.

Muscle function provides a separate line of interpretation. Measurements made during walking and running show that intrinsic foot muscles help regulate compression and recoil of the longitudinal arch.¹⁰ Pain or injury affecting muscle, nerve, tendon, or supporting fascia in this region could alter movement. That possibility is consistent with the classical functional description, but it neither assigns *bhramana* and *vepana* to one lesion nor verifies the reported prognosis.

Table 1 Regional anatomy to assess in proposed *Kurcha* locations

Anatomic field	Structures requiring assessment	Question for validation
Proximal first web and first intermetacarpal field	Web tissues; first dorsal interosseous; adductor pollicis; deep ulnar motor branches; radial artery and local branches.	Do examiners mark the same surface area and depth, and which injured layer best explains loss of function?
First intermetatarsal field with possible plantar extension	Dorsal intermetatarsal tissues; plantar fascia; intrinsic hallux muscles; flexor tissues; plantar neurovascular branches; proximal deep plantar artery.	Does the classical field occupy one surface or several planes, and is localization reproducible across participants?

Evidence and Anatomical Interpretation

Existing papers do not agree on a single correlate. Patiya and Jadoun discuss several possible anatomical relationships; Adhikary and colleagues report observations from a selected cadaveric specimen; and Maithani and Vats relate foot *Marma* to regional anatomy.³⁻⁵ Together, these papers identify candidates for testing. They do not establish a boundary with reproducible coordinates, a consistent depth, or an injury pattern tied prospectively to the classical signs.

The most defensible model is a volume of tissue rather than a point. Starting at *Kshipra*, a four-*angula* field could span more than one plane. The *Snayu* classification directs attention to structures that bind or transmit force, and *Vaikalyakara* describes the functional importance of injury. Neither term requires *Kurcha* to be identical to the first dorsal interosseous, a specific plantar tendon, one artery, or one nerve.

Clinical Examination and Teaching

An injury in either first web region still requires a standard clinical assessment. In the hand, examination should document thumb and index movement, pinch strength, skin sensation, perfusion, wound depth, and possible tendon or arterial damage. In the foot, the record should include toe movement, sensation, distal circulation, wound depth, and weight-bearing when it is safe to test. A *Marma* label may alert the examiner to a compact functional region, but it does not replace examination or imaging.

For teaching, students can locate *Kshipra* first and then draw the possible *Kurcha* field independently on the dorsal and palmar or plantar aspects. Their marks can be compared with an atlas, ultrasound, and cadaveric material. Variation between markings is a result worth recording because no accepted boundary exists. A classroom outline must not be presented as a proven safe zone for injection or surgery.

Framework for Anatomical Validation

Localization should be tested before investigators search for a defining structure. Examiners using the same translation could mark *Kshipra* and outline *Kurcha* independently on both hands and feet. The protocol should record each participant's *angula* measure and the distance from the centre and borders of the mark to the heads and bases of the first two metacarpals or metatarsals. Centre distances and percentage overlap would show whether the proposed site is reproducible.

High-resolution ultrasound and Doppler could then identify the muscle, tendon, fascia, and vessels beneath each marked field at successive depths. Dissection would confirm deeper relations and structures that imaging cannot show consistently. Hand and foot data should be analysed separately, with body size, sex, side, and anatomical variation reported. This design would test location and

tissue overlap. A separate, ethically approved clinical registry would be needed to examine prognosis after injury.

Limits of the Evidence

The proposed map depends on the Sanskrit edition, the chosen translation of directional terms such as "above," the individual *angula* measure, and the scope given to *snayu*. The modern studies cited here addressed surgical anatomy, vascular course, or biomechanics; none was designed to validate *Kurcha*. No study has yet connected one reproducibly marked location with a characteristic clinical syndrome. Any figure or teaching model based on this review should make that uncertainty explicit.

Conclusion

Classical evidence places *Kurcha* proximal to *Kshipra* in each hand and foot and characterizes it as *Snayu* dominant with a *Vaikalyakara* outcome. At that location, modern anatomy reveals a layered first intermetacarpal or first intermetatarsal field rather than one obvious counterpart. Several muscles, supporting tissues, nerves, and vessels could contribute to dysfunction after injury. Until surface agreement and depth are tested, *Kurcha* should be described as a proposed regional field. Imaging and cadaveric verification can then determine which tissues are consistently included.

References

1. Sushruta. An English translation of the Sushruta Samhita based on original Sanskrit text. Bhishagratna KL, translator. Vol 2. Calcutta: JN Bose; 1911. Sharira Sthana, chapter 6, Pratyeka Marma Nirdesha. Available from: <https://www.wisdomlib.org/hinduism/book/sushruta-samhita-volume-3-sharirasthana/d/doc142885.html>
2. Vagbhata. Ashtanga Hridaya, Sharira Sthana, chapter 4, Marma Vibhaga Sharira, verses 2–9 [Internet]. Pocket Ayurveda. Available from: <https://pocketayurveda.com/marma-vibhaga-sharira-classification-of-vital-spots-ashtanga-sharira-sthana-chapter-4>
3. Patiya A, Jadoun S. An anatomical study of Kurcha Marma and its applied aspects. Int J Trend Sci Res Dev. 2024;8(2):501–504. Available from: <https://www.ijtsrd.com/papers/ijtsrd64699.pdf>
4. Adhikary DD, Dash C, Samal P, Mohanty AC. A critico anatomical study of Kurcha Marma and its significance in Ayurveda. World J Pharm Med Res. 2025;11(3):33–36. Available from: https://www.wjpmr.com/admin/assets/article_issue/132022025/1740652550.pdf
5. Maithani V, Vats S. A comprehensive study of Paadagat Marma with special reference to its Vidha Lakshna. Ayushdhara. 2025;12(2):141–148. doi:10.47070/ayushdhara.v12i2.1825

6. Bilbo JT, Stern PJ. The first dorsal interosseous muscle: an anatomic study. *J Hand Surg Am.* 1986;11(5):748–750. doi:10.1016/S0363-5023(86)80027-2
7. Bini N, Leclercq C. Anatomical study of the deep branch of the ulnar nerve and application to selective neurectomy in the treatment of spasticity of the first web space. *Surg Radiol Anat.* 2020;42(3):253–258. doi:10.1007/s00276-019-02380-y
8. Miletin J, Sukop A, Baca V, Kachlik D. Innominate variant artery in the first web space. *Ann Anat.* 2020;230:151521. doi:10.1016/j.aanat.2020.151521
9. Whelan JH, Lazoritz JP, Kiser C, Vardaxis V. Location of the deep plantar artery: a cadaveric study. *J Am Podiatr Med Assoc.* 2020;110(6):Article_4. doi:10.7547/18-215
10. Kelly LA, Lichtwark G, Cresswell AG. Active regulation of longitudinal arch compression and recoil during walking and running. *J R Soc Interface.* 2015;12(102):20141076. doi:10.1098/rsif.2014.1076

