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Review Article

SEEVANA KARMA: SUSHRUTA'S ANCIENT ART OF SUTURING - A CRITICAL REVIEW WITH CONTEMPORARY SURGICAL CORRELATION

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ABSTRACT

Ayurveda, one of the oldest documented systems of healing, accords a distinct place to Shalya Tantra (surgical science) as the foremost of its eight branches. Acharya Sushruta, regarded as the father of surgery, systematised eight fundamental surgical procedures the *Ashtavidha Shastra Karma* of which *Seevana Karma* (suturing) is the culminating step. Described chiefly in the twenty-fifth chapter of *Sutrasthana* of the Sushruta Samhita, *Seevana Karma* is elaborated with remarkable precision: its indications, contraindications, suturing materials *(Seevana Sutra),* needles *(Seevana Suchi),* the pre-, during and post-suturing protocol, and four distinct suturing patterns, *Vellitaka, Gophanika, Tunnasevani* and *Rujugranthi*. This review revisits the original Sanskrit verses relating to *Seevana Karma*, translates and interprets them, and correlates each classical concept with its corresponding technique in contemporary surgery, such as continuous, blanket (lock-stitch), subcuticular and interrupted sutures. The striking congruence between a description composed over two millennia ago and present-day suturing principles underscores the empirical rigour of ancient Indian surgical thought and its continuing relevance to modern surgical education and research.

INTRODUCTION

Shalya Tantra, the branch of Ayurveda dealing with surgical intervention, is traditionally regarded as the foremost among the eight clinical specialities (*Ashtanga Ayurveda*). [1] Acharya *Sushruta*, its principal exponent, devoted the twenty-fifth chapter of *Sutrasthana*, the *Ashtavidha Shastra Karmiya Adhyaya*, to eight elementary surgical operations: *Chedana* (excision), *Bhedana* (incision), *Lekhana* (scarification), *Vedhana* (puncturing), *Eshana* (probing), *Aharana* (extraction), *Visravana* (drainage) and *Seevana* (suturing).[2] *Seevana* occupies the culminating position among these eight procedures, since it is generally the concluding step once a wound has already been cut, incised, scraped or explored by one of the preceding seven *Karmas*.[2,3] Parallel references to *Seevana Karma* also occur in the *Charaka Samhita (Chikitsa Sthana*, chapter 25) and the *Ashtanga Sangraha* (chapter 38), confirming that suturing was well established across the classical *Brihat-trayi* texts of Ayurveda*. Seevana Karma* may be defined as the apposition and mechanical union of divided or bifurcated tissue by means of a needle (*Suchi*) and a suturing thread (*Sutra*), so as to hold the wound edges together until natural healing restores tissue continuity.[4,5] *Sushruta* places great emphasis on hands-on proficiency: in the *Yogyasutreeya Adhyaya* of *Sutrasthana,* he insists that a student who has completed theoretical study *(Shastra Jnana*) must first be rendered *Yogya* technically competent through supervised practice, initially performing procedures such as *Chedana* and *Seevana* upon inert models (a firmly woven, fine cloth, *Sukshma Ghana Vastra*, and soft leather or hide, (*Mridu Charma*) before ever attempting them on a living patient.[6] This graded, simulation-based approach to surgical training

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anticipates, by many centuries, the modern principle of skills laboratories preceding operative practice.

MATERIALS AND METHODS

This is a conceptual and literary review. The primary source consulted is the *Sushruta Samhita, Sutrasthana,* chapter 25 (*Ashtavidha Shastra Karmiya Adhyaya*), along with the commentary of *Dalhana (Nibandhasangraha*). Sanskrit verses relevant to *Seevana Karma* were identified, transliterated and rendered into English by the author for the purposes of this review. Standard textbooks of modern surgery were consulted for correlating classical descriptions with present-day suturing principles. The relevant conceptual points were further cross-checked against an earlier published review on the same subject for completeness of coverage.

Seevana Karma: Concept and Indications [7]

Sushruta enumerates the conditions in which suturing is the surgical procedure of choice- collectively termed *Sivya Roga*, immediately after describing the diseases requiring drainage (*Visravana)*:

सीव्या मेदःसमुत्थाश्च भिन्नाः सुलिखिता गदाः सद्योव्रणाश्च ये चैव चल सन्धिव्यपाश्रिताः ||१६||

Conditions of adipose origin- such as lipomatous swellings- that have already been excised or thoroughly scraped are indicated for suturing, as are *Sadyovrana* (fresh, traumatic wounds) and lesions situated over mobile joints. Read alongside the modern surgical literature, this is a remarkably concise statement of the standard indications for primary wound closure: clean surgical wounds after excisional procedures, fresh traumatic lacerations, and wounds overlying joints where movement would otherwise widen the defect. Contemporary texts add that suturing aids haemostasis, guards against contamination, approximates tissue for primary healing, limits post-operative pain from exposed structures such as bone, and helps control or retract skin flaps, refinements of the same underlying principles *Sushruta* articulated: bringing divided tissue into apposition so that healing can proceed undisturbed.

Contraindications for Suturing [8]

Immediately following the indications, *Sushruta* is equally precise about when suturing must be withheld:

न क्षाराग्निविषैर्जुष्टा न च मारुतवाहिनः |
नान्तर्लोहितशल्याश्च तेषु सम्यग्विशोधनम् |१७|

Wounds produced by the action of caustics (*Kshara*), cautery *(Agni)* or poison (*Visha*), those discharging air or gas from within, and those still harbouring blood or an embedded foreign body should not be sutured; such wounds must first be thoroughly cleansed. *Sushruta* then adds a further, closely related caution: [8]

पांशुरोमनखादीनि चलमस्थि भवेच्च यत् ||१८||
अहृतानि यतोऽमूनि पाचयेयुर्भृशं व्रणम् |
रुजश्च विविधाः कुर्युस्तस्मादेतान् विशोधयेत् ||१९||

If sand (*Pamshu*), hair (*Roma*), nail fragments (*Nakha*) or a loose, mobile splinter of bone remain unremoved within a wound, they will provoke suppuration and a variety of pains; such debris must therefore be diligently cleared before the wound is closed.[9] This sequence recognising contamination, debriding foreign material, and only then proceeding to closure mirrors the modern surgical contraindications to primary suturing: gross infection, oedematous or devitalised wound margins, retained foreign bodies, animal bites, deep punctured wounds, involvement of major vessels, nerves or tendons, and wounds beyond the accepted 'golden period' (roughly twelve hours for the trunk and limbs, up to twenty-four hours for the face, according to present-day teaching). What *Sushruta* calls *Vishodhana* thorough cleansing and debridement is functionally identical to modern wound toilet performed before any decision to close a wound primarily.

Seevana Dravya: Materials for Suturing

Seevana Sutra (Suturing Thread) [10]

Having laid down when to suture and when not to, *Sushruta* describes the materials of suturing:

ततो व्रणं समुन्नम्य स्थापयित्वा यथास्थितम् |
सीव्येत् सूक्ष्मेण सूत्रेण वल्केनाश्मन्तकस्य वा ||२०||
शणजक्षौमसूत्राभ्यां स्नाय्वा बालेन वा पुनः |
मूर्वागुडूचीतानैर्वा सीव्येद्वेल्लितकं शनैः ||२१||

The wound, after being gently raised and restored to its natural position, is sutured with a fine thread: the bark-fibre of *Ashmantaka* (*Premna* species), or thread spun from jute (*Shana*) or flax/linen (*Kshouma*), or animal sinew (*Snayu*), or hair (*Bala*), or the fibre of the creepers *Murva* and *Guduchi*. Elsewhere in the *Samhita*, *Sushruta* even describes a biological 'staple' for intestinal wounds in *Chidrodara* (perforation of the gut): large black ants are made to bite across the apposed cut edges with their mandibles, after which their bodies are severed, leaving the jaws locked in place as a natural clip until healing occurs- an early anticipation of the absorbable internal suture and the surgical staple alike. [10]

Classified by present-day criteria, these classical materials fall into natural absorbable and non-absorbable categories, just as suture materials are still classified today:

Table 1: Classical and Modern Suture Materials

Category	Classical (Ayurvedic) Examples	Nearest Modern Equivalent
Absorbable, natural	*Snayu* (sinew), *Bala* (hair), *Murva*/*Guduchi* fibre, ant mandibles (for gut)	Catgut, collagen sutures
Non-absorbable, natural	*Ashmantaka* bark fibre, *Shana* (jute), *Kshouma* (linen/flax)	Silk, linen, cotton
Ideal qualities expected	Freely available, inexpensive, uniform, non-irritant, adequately strong, easy to sterilise.	Same criteria used to evaluate synthetic sutures today.

***Seevana Suchi* (Suturing Needle)** [11]

Suchi, the surgical needle, is one among the twenty classical *Shastra* (sharp instruments) described by *Sushruta*. Regarding its dimensions and design for suturing specifically, the text states:

देशेऽल्पमांसे सन्धौ च सूची वृत्ताऽङ्गुलद्वयम् |
आयता त्र्यङ्गुला त्र्यस्रा मांसले चाऽपि पूजिता ||२३||
धनुर्वक्रा हिता मर्मफलकोशोदरोपरि |
इत्येतास्त्रिविधाः सूचीस्तीक्ष्णाग्राः सुसमाहिताः ||२४||
कारयेन्मालतीपुष्पवृन्ताग्रपरिमण्डलाः |
नातिदूरे निकृष्टे वा सूचीं कर्मणि पातयेत् ||२५||

For regions with little muscle bulk and over joints, a round (*Vritta*), cylindrical needle two *Angula* (roughly 3.5–4 cm) in length is prescribed. For broad, fleshy regions, a triangular (*Tryasra*) needle of three *Angula* is considered best. For vital points (*Marma*), the scrotum and the abdominal wall, a bow-shaped, curved (*Dhanurvakra*) needle is recommended. All three varieties are to be sharp-pointed, carefully fashioned, and rounded at the blunt end like the stalk of the *Malati* flower, a vivid image of a smooth, atraumatic finish. *Sushruta* further cautions that punctures must be placed neither too far apart, which invites gaping and pain at the wound margin, nor too close together, which risks tearing the tissue between successive bites, essentially the classical statement of correct suture spacing and bite width, principles still taught verbatim in surgical technique today. [11]

The correlation with the three fundamental modern needle-point geometries is direct and often cited in the Ayurvedic surgical literature:

Table 2: Classical and Modern Surgical Needles

Classical *Suchi*	Description	Modern Needle Correlate
Vritta (round)	Cylindrical, 2 *Angula*, for low-muscle areas and joints	Round-bodied (taper-point) needle
Tryasra (triangular)	Three-edged, 3 *Angula*, for fleshy/broad regions	Cutting-body needle
Dhanurvakra (bow-shaped)	Curved, for vital points, scrotum, abdomen	Reverse-cutting body needle

An ideal needle, whether classical or modern, is expected to be manufactured from a durable, corrosion-resistant material (high-grade steel in current practice), to be as slender as possible without compromising strength, to cause minimal tissue trauma on passage, and to resist bending- criteria *Sushruta* implicitly sets out through his description of the sharp, well-finished *Suchi*.

Procedure of *Seevana Karma*

Sushruta structures the actual performance of any *Shastra Karma*, including *Seevana*, into three conventional phases: *Poorva Karma* (pre-procedure), *Pradhana Karma* (the principal procedure) and *Pashchat Karma* (post-procedure care), a tripartite division that closely parallels the modern surgical framework of pre-operative preparation, the operation itself, and post-operative management.

Poorva Karma [12]

If the wound is soiled with sand, hair, nails or similar debris, these are first removed and the wound is thoroughly cleaned; the wound edges are then gently elevated and restored to their natural anatomical position in preparation for closure, as already indicated in verse 20 above (*Su.Su.* 25/20).

Pradhana Karma* and the four *Seevana Prakara [13]

Once the wound has been cleaned and positioned, suturing proper is carried out using the appropriate *Seevana Sutra* and *Seevana Suchi*. *Sushruta* describes four distinct patterns of suturing, named according to the visual or functional resemblance of the completed stitch line:

सीव्येद्गोफणिकां वाऽपि सीव्येद्वा तुन्नसेवनीम् |
ऋजुग्रन्थिमथो वाऽपि यथायोगमथापि वा ||२२||

Table 3: Classical and Modern Suturing Techniques

Seevana Prakara	Classical Description	Modern Correlate	Typical Use
Vellitaka	Resembling a creeper; a single continuous thread run along the wound length, wrapping the edges, knotted at the end	Simple continuous suture	Skin, subcutaneous tissue, fascia, GI/urinary tract
Gophanika	Shaped like a crow's foot; a continuous suture with the needle passed through the loop of each preceding stitch	Interlocking / blanket (lock-stitch, Ford) suture	Skin, especially where firm apposition is needed
Tunnasevani	Resembles the mending of torn garments; recommended for wounds over the eyelid	Subcuticular suture	Cosmetically sensitive skin closures
Rujugranthi	Knots tied straight, with a defined gap between each stitch	Simple interrupted suture	Skin, fascia, vessels, nerves, GI/urinary tract, high-tension lines such as the linea alba

Each of these four *Seevana Prakara* maps closely onto a technique that remains a mainstay of surgical practice. *Vellitaka* and its modern equivalent, the simple continuous suture, offer speed and suture economy along with a fluid-tight seal, though tension is harder to adjust locally and the whole line can fail if a single knot slips. *Gophanika*, corresponding to the interlocking or blanket suture, gives superior apposition compared with a plain continuous line but is correspondingly more laborious to remove. *Tunnasevani* anticipates the subcuticular suture: passed horizontally through the dermis with alternating bites and no external suture material visible, it is a lower-strength closure suited to areas of minimal tension and cosmetic importance, exactly as *Sushruta's* placement of this technique over the eyelid suggests. *Rujugranthi*, the interrupted pattern, allows tension to be adjusted stitch by stitch and provides a secure closure well suited to areas of higher mechanical stress, matching its continued use today for structures such as the linea alba.[14]

Beyond these four named patterns, later surgical elaboration in Ayurveda-oriented literature has also drawn parallels between classical descriptions and other inverting and specialised patterns used for hollow viscera (such as Cushing, Connell, Lambert, Halsted, Parker-Kerr and purse-string sutures for the stomach, bladder and uterus) and for intestinal anastomosis (the modified Gambee suture), reflecting the same underlying logic of controlling mucosal eversion and achieving a secure, leak-proof closure in tubular organs. [15]

Pashchat Karma [16]

Post-suturing care is likewise specified in detail:

अथ क्षौमपिचुच्छन्नं सुस्यूतं प्रतिसारयेत् |
प्रियङ्ग्वञ्जनयष्ट्याह्वरोध्रचूर्णैः समन्ततः ||२७||
शल्लकीफलचूर्णैर्वा क्षौमध्यामेन वा पुनः |
ततो व्रणं यथायोगं बद्ध्वाऽऽचारिकमादिशेत् ||२८||

The freshly sutured wound is covered with a soft pledget of linen (*Kshouma Pichu*) and dusted around its margins with fine powders of *Priyangu, Anjana*, *Yashtimadhu* (liquorice) and *Rodhra*, or alternatively with powdered fruit of *Shallaki*, or the ash of linen cloth. The wound is then bandaged appropriately, and the patient is instructed in the prescribed post-operative regimen, *Pathya-Apathya*, the dos and don'ts of diet and activity that support healing. This sequence anticipates the modern principles of dressing, protection and structured aftercare, including patient counselling on activity restriction, which remain central to safe wound management.

Suture Removal and Complications: Contemporary Correlation

While *Sushruta's* own text concentrates on placement rather than removal, the broader classical framework of *Shastra Karma Vyapat* (surgical complications) enumerated in the same chapter, inadequate, excessive, oblique or self-inflicted incision has an analogue in the modern classification of suture failure: breakage, cutting-out through tissue, knot slippage, premature suture extrusion, resorption that outpaces wound strength, and removal that is either premature or delayed. Complications recognised in current practice, such as a stitch abscess, hypertrophic scar or stitch mark, and dermoid cyst formation at

suture sites, correspond conceptually to the suppuration and pain (*Ruja*) that *Sushruta* warns will follow careless technique or retained foreign material. The shared principle across both systems is that meticulous asepsis, gentle tissue handling, correctly chosen material, and properly timed removal determine the ultimate outcome of any sutured wound. [17]

DISCUSSION

The description of *Seevana Karma* in the *Sushruta Samhita* is notable less for isolated technical details than for the coherence of its overall framework: clear indications and contraindications, a rational classification of materials by site and tissue type, a needle typology matched to anatomical region, a named set of suturing patterns each suited to a particular clinical need, and a defined pre- and post-procedural protocol. Nearly every element of this framework, the choice between absorbable and non-absorbable material, the matching of needle geometry to tissue density, and the four fundamental suturing patterns, continues to be taught in modern surgical curricula, even though the materials themselves have naturally been superseded by synthetic and metallic alternatives. This continuity is strong evidence that *Sushruta*'s surgical reasoning was built on careful clinical observation rather than speculation, and it lends weight to the view, echoed in the existing Ayurvedic surgical literature on this subject, that *Shalya Tantra* represents an empirically grounded surgical tradition rather than a purely theoretical one.

At the same time, certain classical materials described for *Seevana Sutra*- plant-fibre threads of *Murva, Guduchi, Shana* and *Kshouma,* and animal-derived *Snayu*, remain largely unexplored by modern tensile-strength and biocompatibility testing. Given the current clinical and research interest in biodegradable, low-cost and eco-friendly suture materials, a systematic re-evaluation of these classical fibres, using standardised mechanical and microbiological testing, represents a promising avenue for translational research bridging Ayurveda and contemporary surgical science.

CONCLUSION

Seevana Karma, as described by Acharya Sushruta in the twenty-fifth chapter of *Sutrasthana*, is a remarkably complete surgical protocol for wound closure, encompassing precise indications and contraindications, a reasoned choice of suturing material and needle design, four distinct and clinically differentiated suturing techniques, and a defined regimen of pre- and post-operative care. The close correspondence between these ancient descriptions and the principles of modern suturing include continuous, blanket, subcuticular and interrupted techniques among them, affirms both the empirical soundness of classical Ayurvedic surgery and its continuing pedagogical value. Revisiting these original Sanskrit sources, and subjecting the classical suturing materials to modern scientific evaluation, offers a meaningful direction for future research at the interface of Ayurveda and contemporary surgical practice.

REFERENCES

1. Shastri Kaviraj Ambikadutt, Sushruta Samhita. Vol.1, Reprint 2014, Published by Chaukhambha Sanskrit sasthan, Varanasi, Sutrasthana 1/6-7, page no 5**.**
2. Shastri Kaviraj Ambikadutt, Sushruta Samhita. Vol.1, Reprint 2014, Published by Chaukhambha Sanskrit sasthan, Varanasi, Sutrasthan, Chapter 25, page no: 133.
3. Ashtavidha Shastra Karma in Surgical Practice. J Ayurveda Integr Med Sci. Available from: jaims.in.
4. Sharma RK, Dash B. Charaka Samhita. Vol. 4. Varanasi: Chowkhamba Sanskrit Series Office; 2014. Chikitsa Sthana 25. pp. 135–152.
5. Srikantha Murthy KR. Ashtanga Sangraha. Vol. 1. Varanasi: Chaukhambha Orientalia; 2016. Sutrasthana Chapter 38. pp. 282–289.
6. Shastri Kaviraj Ambikadutt, Sushruta Samhita. Vol.1, Reprint 2014, Published by Chaukhambha Sanskrit sasthan, Varanasi, Sutrasthana, Chapter-9, Yogasutriya Adhyaya, Page no. 40.
7. Shastri Kaviraj Ambikadutt, Sushruta Samhita. Vol.1, Reprint 2014, Published by Chaukhambha Sanskrit sasthan, Varanasi, Sutrasthan, Chapter 25/16, page no: 135.
8. Shastri Kaviraj Ambikadutt, Sushruta Samhita. Vol.1, Reprint 2014, Published by Chaukhambha Sanskrit sasthan, Varanasi, Sutrasthan, Chapter 25/17, page no: 135.
9. Shastri Kaviraj Ambikadutt, Sushruta Samhita. Vol.1, Reprint 2014, Published by Chaukhambha Sanskrit sasthan, Varanasi, Sutrasthan, Chapter 25/18, 19, page no: 135.
10. Shastri Kaviraj Ambikadutt, Sushruta Samhita. Vol.1, Reprint 2014, Published by Chaukhambha Sanskrit sasthan, Varanasi, Sutrasthan, Chapter 25/20, 21, page no: 135.
11. Shastri Kaviraj Ambikadutt, Sushruta Samhita. Vol.1, Reprint 2014, Published by Chaukhambha Sanskrit sasthan, Varanasi, Sutrasthan, Chapter 25/23, 24, 25 page no: 135.
12. Shastri Kaviraj Ambikadutt, Sushruta Samhita. Vol.1, Reprint 2014, Published by Chaukhambha

Sanskrit sasthan, Varanasi, Sutrasthan, Chapter 25/19, page no: 134.
13. Shastri Kaviraj Ambikadutt, Sushruta Samhita. Vol.1, Reprint 2014, Published by Chaukhambha Sanskrit sasthan, Varanasi, Sutrasthan, Chapter 25/20, 21, 22, page no: 134.
14. Gandhi MA, Patil BK. Sushruta: The Father of Surgery and Ancient Medical Innovations. Cureus. 2024; 16(9): e70577.
15. Bhat SM. SRB's Manual of Surgery. 4th ed. New Delhi: Jaypee Brothers Medical Publishers; 2013.
16. Shastri Kaviraj Ambikadutt, Sushruta Samhita. Vol.1, Reprint 2014, Published by Chaukhambha Sanskrit sasthan, Varanasi, Sutrasthan, Chapter 25/27, 28, page no: 135.
17. Kencharadder H M, Aradhyamath S, Adithya J V. Sushruta's concept of Seevana Karma – A Review Article. J Ayurveda Integr Med Sci. 2023; 8(7): 103–106. doi:10.21760/jaims.8.7.17

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