

Suśruta Saṃhitā: A Self-Contained Taxonomy of Surgical Procedures

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Abstract

The *Suśruta Saṃhitā* codifies one of antiquity's most comprehensive surgical systems, derived entirely from empirical observation, anatomical study, and rational clinical reasoning. Despite its significance, global historiography has often subordinated this tradition to external benchmarks, obscuring its internal coherence. This paper systematically reconstructs the procedural framework of ancient Indian surgery without recourse to contested chronological anchors, Puranic mythologisation, or comparative Hellenic references, establishing the operative taxonomy as a fully autonomous, observation-driven clinical science. The study examines the foundational octet of operative manoeuvres—each defined by specific anatomical indications and sequential execution—alongside advanced interventions and the calibrated use of alcoholic decoctions and soporific agents (*Cannabis indica*, *Hyoscyamus niger*, and opium) for procedural comfort. The analysis reveals a rigorous, internally consistent surgical system grounded in mandatory cadaveric dissection, practical training on simulants, and clearly defined peri-operative protocols—a complete therapeutic pipeline from diagnosis to recovery. Its subsequent transmission, evidenced by 8th-century Arabic translations and adoption into Islamic and European medical traditions, attests to its clinical efficacy. This paper concludes that ancient Indian surgery must be recognised on its own terms: as a complete, rational, and enduring system of operative medicine.

Key Words

Suśruta Saṃhitā, Ancient Indian Surgery, Śalya-tantra, Surgical Taxonomy, Ayurveda

1. Introduction & Framing

Diseases and ailments have affected humanity since time immemorial. As Prasad (2004) observes, the response to treat disease has been synonymous with the evolution of organising society. Medicine is as old as humanity itself, and the antiquity of ancient Indian society has been associated with seminal contributions to surgical theory, practice, and ethics.

This contribution, however, has long been overlooked—a reflection, as Prakash (1978) and Veith (1961) note, of Eurocentric historiography that privileged Greco-Roman contributions. The colonial project dismissed indigenous medicine as primitive and unscientific (Prakash, 1978). Yet the British historian Sir William Hunter observed that Indian physicians like Suśruta and Charaka developed systems "long before Hippocrates was born" (Prakash, 1978). Others, including Needham and Browne, praised India's institutionalisation of hospitals and systematic clinical teaching (Prakash, 1978).

The chronology of ancient India has been defined by the Aryan Invasion Theory, increasingly criticised for its racial and colonial bias ("How the Aryan Invasion Myth Was Engineered," 2025). This paper does not engage with this chronological debate. Its purpose is to present the surgical content of the *Suśruta Saṃhitā* on its own medical and empirical terms.

Archaeological evidence from Harappa and Mohenjodaro—including medicinal plants, animal products, minerals, and sanitary drainage—confirms a sophisticated medical culture (Jamanadas, N.D.). Among extant treatises, the *Suśruta Saṃhitā* occupies a singular position. Chari (2003) describes it as the zenith of ancient India's surgical system—a window into a professionalised surgical practice that represented the most advanced tradition of its time.

Suśruta insisted that oral training be balanced by practical efficiency: "He who knows theory only but is not so good in practical work, gets bewildered on being confronted with a patient" (Prakash, 1978, citing *Suśruta Saṃhitā* 1.3.48). This emphasis on clinical competence was underpinned by mandatory training on simulants and cadaveric dissection, regarded as a *sine qua non* (Prakash, 1978). The text reflects the transition from spiritio-religious to rationalist medicine (Rhys-Davids, 1970), grounding procedures in observation and logical inference.

Establishing authorship presents difficulties due to oral transmission, perishable materials, and successive recensions attributed to Nāgārjuna (Chari, 2003; Rhys-Davids, 1970). Nevertheless, the text reflects Samhita-period surgical practice with fidelity (Chari, 2003). The Bower Manuscript (5th century) and translations into Arabic (8th century) and European languages attest to knowledge dissemination (Chari, 2003; Prakash, 1986).

Veith (1961) observes that Indian surgery is *sui generis*. Thorwald (1963) notes Greek medicine produced nothing comparable. Neuburger (1910) and Royle (1837) document Greek adoption of Indian medicaments. Indian medicine influenced Arabic medicine, with Indian physicians appointed in Baghdad (Prakash, 1978; Chari, 2003), and Chinese texts derived from Indian sources (Bagchi, 1951). Hunter observed that European

medicine until the 17th century was based on Latin versions of Arabic translations (Prakash, 1978; Flack, 1943; Gordon, 1949).

This paper reconstructs the procedural framework of the *Suśruta Saṃhitā*—examining the octet classification (*Chedya*, *Bhedya*, *Lekhya*, *Vedhya*, *Esya*, *Aharya*, *Visravaya*, *Sivya*) and advanced interventions including rhinoplasty, lithotomy, and cataract couching, alongside pharmacological adjuncts (Prakash, 1978; Mukhopadhyaya, 1913). It aims to demonstrate a fully autonomous, empirically derived surgical science requiring no external validation.

2. Foundational Principles of Surgical Practice

The *Suśruta Saṃhitā* rests on principles distinguishing it as a rational, observation-driven science.

2.1 Surgery as *Śalya-tantra*

Surgery constituted one of eight Ayurvedic branches—*Śalya-tantra*, the science of removing foreign bodies (Prasad, 2004; Pattenshetty, 2001). The text proclaims surgery the most ancient and honoured branch, capable of immediate cure (Prakash, 1986). *Śalya* originally referred to arrowhead extraction but expanded to include incisions, excisions, suturing, and reconstructive procedures (Prakash, 1978; Mukhopadhyaya, 1913).

2.2 Empirical and Rationalist Foundation

The text embodies the transition from magico-religious to rationalist medicine (Rhys-Davids, 1970; Veith, 1961). Its systematic approach—classification, identification of causes (*nidāna*), and prescription based on clinical signs—derived from direct observation (Prakash, 1978; Chari, 2003). Knowledge was acquired through perception (*pratyakṣa*), inference (*anumāna*), and authoritative testimony (*āptopadeśa*) (Prakash, 1986).

2.3 Centrality of Anatomical Knowledge

The text mandates cadaveric dissection to understand organs, vessels, muscles, and bones (Prakash, 1978)—a principle anticipating Renaissance anatomical teaching (Chari, 2003; Chakravorty, 1965). The *Śārīrasthāna* provides detailed descriptions of foetal development and anatomical structures (Prakash, 1986).

2.4 Pedagogical Framework

The text insists that "he who knows theory only... gets bewildered" (Prakash, 1978). Students practised on vegetable tissues, leather, and models before operating on patients (Prakash, 1978; Mukhopadhyaya, 1913; Chakravorty, 1965). Instruments were required to be "capable of cutting a hair in two" (Mukhopadhyaya, 1913).

2.5 Ethical Governance

The system was governed by *Vaidya-vritti*—physician's duties including compassion, confidentiality, and patient welfare (Chakravorty, 1965; Chari, 2003).

Five principles underpin the system: (1) surgery as a distinct branch; (2) empirical and rationalist grounding; (3) mandatory anatomical knowledge; (4) graded practical training; (5) ethical governance (Prasad, 2004; Pattenshetty, 2001; Rhys-Davids, 1970; Veith, 1961; Prakash, 1978; Chari, 2003; Chakravorty, 1965).

3. The Octet Classification of Operative Manoeuvres

At the heart of the system lies a taxonomic framework classifying all operations into eight categories (Prakash, 1978; Mukhopadhyaya, 1913).

3.1 The Eight Categories

i. **Chedya – Incising:** Making linear or curved incisions to access deeper structures or drain collections. Instruments included *mandalagram* and *karapatram* (Prakash, 1978; Mukhopadhyaya, 1913).

ii. **Bhedya – Excising:** removal of diseased tissue, tumours, cysts, and fistulous tracts using instruments including *vrddhipatram*, *nakhasatram*, *mudrikā*, and *utpalapatram* (Prakash, 1978; Mukhopadhyaya, 1913).

iii. **Lekhya – Scarification:** Superficial abrasions for evacuating collections or promoting healing (Prakash, 1978; Mukhopadhyaya, 1913).

iv. **Vedhya – Puncturing:** Controlled openings to evacuate fluid, pus, or gas using instruments including *kuthārikā*, *ara*, *vrīhimukham*, and *vetasapatram* (Prakash, 1978; Mukhopadhyaya, 1913).

v. **Esya – Probing:** Exploration of sinus tracts or foreign bodies using the blunt probe *eṣaṇī* (Prakash, 1978; Mukhopadhyaya, 1913).

vi. **Aharya – Extraction:** Removal of foreign objects, calculi, or sequestra using *badisa* and *danta-śanku* (Prakash, 1978; Mukhopadhyaya, 1913).

vii. **Visravya – Evacuating Fluids:** Drainage of pus, ascites, or effusions using tubular *Nadī* instruments (Prakash, 1978; Mukhopadhyaya, 1913).

viii. **Sivya – Suturing:** Approximation of wound edges using three needle types (round, trihedral, semi-circular) and organic ligatures (cotton, hemp, horsehair, leather, sinew, goat gut) (Prakash, 1978; Mukhopadhyaya, 1913; Chari, 2003).

3.2 Clinical Logic and Instruments

Each category was associated with specific anatomical indications (Prakash, 1978; Chari, 2003). Blunt instruments (*Yantra*) served extraction and probing; sharp instruments (*Asatra*) served incising and excising (Mukhopadhyaya, 1913). The surgeon's hands were the most important instrument (Mukhopadhyaya, 1913).

3.3 Pedagogical Function

The classification enabled students to organise knowledge and develop a conceptual map of surgical practice (Chari, 2003; Chakravorty, 1965).

The octet classification—*Chedya*, *Bhedya*, *Lekhya*, *Vedhya*, *Esya*, *Aharya*, *Visravya*, *Sivya*—represents a systematic taxonomy grounded in anatomy, linked to instruments, and integrated into pedagogy (Prakash, 1978; Mukhopadhyaya, 1913; Chari, 2003).

4. Advanced Specialised Procedures

The *Suśruta Saṃhitā* documents advanced interventions demonstrating technical proficiency and deep anatomical understanding (Prakash, 1978; Chari, 2003).

4.1 Rhinoplasty and Otoplasty

Reconstruction of the nose and ears—developed in response to penal amputations—involved pedicled flaps from the cheek or forehead, with detailed instructions for dimensions and suturing (Prakash, 1978; Rana & Arora, 2002). These techniques, later adopted as the "Indian method," testify to clinical efficacy (Veith, 1961; Thorwald, 1963).

4.2 Lithotomy

Removal of vesical calculi using probes and extractors through perineal or suprapubic approaches, with emphasis on pre-operative assessment and post-operative care (Prakash, 1978; Mukhopadhyaya, 1913). The procedure remained unchanged in Europe until the 19th century (Veith, 1961; Thorwald, 1963).

4.3 Cataract Couching

Displacement of the opaque lens using a specialised needle, with detailed instructions for puncture location and manipulation (Prakash, 1978; Mukhopadhyaya, 1913). The procedure remained standard until modern extraction techniques (Veith, 1961; Thorwald, 1963).

4.4 Hernia Repair, Fistula Management, and Haemorrhoid Excision

The text addresses hernia reduction and repair, probing and excision of fistula-in-ano, and haemorrhoid excision with attention to sphincter preservation (Prakash, 1978; Mukhopadhyaya, 1913; Chari, 2003).

4.5 Amputation, Tracheostomy, and Catheterisation

Vedic antecedents document amputation with prostheses (Prasad, 2004). The *Suśruta Saṃhitā* provides systematic guidance on amputation technique, bone sawing, and vessel ligation (Prakash, 1978). Tracheostomy for airway obstruction and catheterisation using tubular instruments are documented (Prakash, 1978; Prasad, 2004; Mukhopadhyaya, 1913).

These advanced procedures—rhinoplasty, otoplasty, lithotomy, cataract couching, hernia repair, fistula management, haemorrhoid excision, amputation, tracheostomy, and catheterisation—attest to surgical sophistication (Prakash, 1978; Chari, 2003; Rana & Arora, 2002). Their later adoption by European surgeons testifies to clinical efficacy (Veith, 1961; Thorwald, 1963).

5. Anaesthetic and Peri-Operative Adjuncts

A comprehensive framework of peri-operative care supported surgical procedures (Prakash, 1978; Mukhopadhyaya, 1913).

5.1 Anaesthetic Agents

The text describes thirteen alcoholic decoctions and soporific agents—henbane

(*Hyoscyamus niger*), Indian hemp (*Cannabis indica*), and opium—administered for analgesia and sedation (Prakash, 1978; Mukhopadhyaya, 1913; Chari, 2003). Dosing required balancing comfort against toxicity (Prakash, 1978). Physical restraint supplemented pharmacological sedation (Prakash, 1978; Mukhopadhyaya, 1913).

5.2 Hygiene, Wound Care, and Peri-Operative Protocols

Instrument care involved caustics, alkali, oil, heat, and water, with storage in special boxes (Mukhopadhyaya, 1913; Prakash, 1978). Instruments were required to be "capable of cutting a hair in two" (Mukhopadhyaya, 1913). Wound hygiene included cleaning, medicated dressings, and infection monitoring (Prakash, 1978; Chari, 2003). Pre-operative assessment, operative technique, and post-operative management—including pain control, bleeding prevention, diet, and activity—were clearly defined (Prakash, 1978; Chakravorty, 1965; Chari, 2003).

The framework—alcoholic decoctions, soporific agents, physical restraint, instrument sterilisation, wound hygiene, and comprehensive protocols—constitutes a complete system of patient care anticipating modern peri-operative principles (Prakash, 1978; Mukhopadhyaya, 1913; Chari, 2003; Veith, 1961; Thorwald, 1963).

6. Ethical Governance and the Physician's Duty

Surgical practice was governed by a robust ethical framework—*Vaidya-vritti* (physician's duties) (Chakravorty, 1965; Chari, 2003).

6.1 The Physician's Duties

The physician must be compassionate, dedicated, skilled, honest, and confidential (Chakravorty, 1965; Chari, 2003). The text cautions against exploitation and emphasises treating all patients with dignity (Chakravorty, 1965).

6.2 The Surgeon's Special Responsibilities

The surgeon must exercise sound clinical judgment, prioritise patient safety, maintain professional standards, and acknowledge limits of knowledge (Prakash, 1978; Mukhopadhyaya, 1913; Chakravorty, 1965; Chari, 2003).

6.3 The Patient-Physician Relationship

The text emphasises informed consent, patient education, and respect for autonomy (Chakravorty, 1965; Chari, 2003).

The ethical framework—compassion, skill, honesty, confidentiality, patient safety, informed consent—anticipates modern medical ethics (Chakravorty, 1965; Chari, 2003; Veith, 1961).

7. Outward Migration and Global Reception

The *Suśruta Samhitā* influenced medical traditions of neighbouring civilisations (Prakash, 1978; Chari, 2003).

7.1 Transmission to the Islamic World

The *Suśruta Samhitā* was translated into Arabic in the 8th century as *Kitab-Shaw Shoon-a-Hindi* and *Kitab-i-Susrud* (Chari, 2003). Indian physicians served in Baghdad

(Prakash, 1978). Rhazes, Serapion, and Avicenna incorporated Indian techniques (Prakash, 1978; Chari, 2003). Avicenna's *Canon* references what "the Indians say" (Prakash, 1978; Chari, 2003).

7.2 Transmission to Europe and China

Latin translations in the 11th–12th centuries became the foundation of European medical education until the 17th century (Prakash, 1978; Flack, 1943; Gordon, 1949). The "Indian method" of rhinoplasty was adopted by European surgeons (Rana & Arora, 2002; Chari, 2003). Indian medical texts influenced China, with a 455 CE text derived from Indian sources (Bagchi, 1951).

Outward migration—evidenced by Arabic translations, incorporation into Islamic medicine, transmission to Europe, and influence on China—attests to clinical efficacy and completeness (Prakash, 1978; Chari, 2003; Bagchi, 1951; Veith, 1961; Thorwald, 1963).

8. Conclusion

The *Suśruta Samhitā* codifies one of antiquity's most comprehensive surgical systems—derived from empirical observation, anatomical study, and rational clinical reasoning (Prakash, 1978; Veith, 1961). This paper has demonstrated that it constitutes a fully autonomous, observation-driven clinical science requiring no external validation (Chari, 2003; Thorwald, 1963).

8.1 Summary of Findings

Five foundational principles underpin the system:

- (1) surgery (*Śalya-tantra*) as a distinct branch (Prasad, 2004; Pattenshetty, 2001);
- (2) empirical and rationalist grounding (Rhys-Davids, 1970; Veith, 1961);
- (3) mandatory anatomical knowledge via dissection (Prakash, 1978; Chari, 2003);
- (4) graded practical training on simulants (Prakash, 1978; Mukhopadhyaya, 1913);
- (5) ethical governance (Chakravorty, 1965; Chari, 2003).

The octet classification—*Chedya*, *Bhedya*, *Lekhya*, *Vedhya*, *Esya*, *Aharya*, *Visravya*, *Sivya*—provides a systematic taxonomy linked to a comprehensive instrumentarium (Prakash, 1978; Mukhopadhyaya, 1913). Advanced procedures—rhinoplasty, lithotomy, cataract couching, hernia repair, fistula management, haemorrhoid excision, amputation, tracheostomy, and catheterisation—represent remarkably advanced surgical knowledge (Prakash, 1978; Chari, 2003; Rana & Arora, 2002). Anaesthetic and peri-operative adjuncts constitute a complete patient care framework (Prakash, 1978; Mukhopadhyaya, 1913; Chari, 2003).

8.2 Significance of Outward Migration

Outward migration—evidenced by Arabic translations, incorporation into Islamic medicine, transmission to Europe, and influence on China—attests to clinical efficacy (Prakash, 1978; Chari, 2003; Bagchi, 1951; Veith, 1961; Thorwald, 1963). This transmission was based on recognition of the system's completeness and effectiveness.

8.3 Enduring Relevance

The fundamental principles hold good today (Flack, 1943; Gordon, 1949). The emphasis on anatomical knowledge, practical training, patient safety, and ethical governance remains relevant (Chari, 2003; Chakravorty, 1965). The *Suśruta Saṃhitā* offers a model of a complete, self-contained surgical system integrating diagnosis, intervention, peri-operative care, and ethics (Prakash, 1978; Veith, 1961).

8.4 Recognition on Its Own Terms

This paper has presented the surgical corpus without external benchmarks, comparative references, or mythological overlays. The *Suśruta Saṃhitā* codifies a fully autonomous, empirically derived surgical science requiring no external validation (Veith, 1961; Chari, 2003). Its significance lies in its intrinsic merit—completeness of system, sophistication of procedures, rigour of training, and integrity of ethics (Chari, 2003; Veith, 1961).

As the authors note, we can draw inspiration from the code of practice and service to humanity exhibited by ancient Indian surgeons (Flack, 1943; Gordon, 1949). This paper concludes that ancient Indian surgery must be recognised on its own terms: as a complete, rational, and enduring system of operative medicine.

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