

SUSRUTA'S PAIN MANAGEMENT TECHNIQUES IN POSTOPERATIVE CARE – A MODERN CLINICAL PERSPECTIVE

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ABSTRACT

Pain management remains a cornerstone of postoperative care, directly influencing recovery outcomes and quality of life. Ancient Ayurvedic texts, particularly the Sushruta Samhita, provide detailed insights into surgical practices and pain management strategies that remain clinically relevant today. Sushruta emphasized both Shodhana (elimination) and Shamana (palliative) measures to alleviate postoperative pain. His techniques included the use of herbal formulations (e.g., Haridra, Yashtimadhu, and Ghrita-based preparations) with analgesic, anti-inflammatory, and wound-healing properties. Additionally, Sushruta recommended snehana (oleation), swedana (sudation), lepa (medicated pastes), and dhara (therapeutic pouring) for local pain relief, along with dietary and lifestyle modifications to support tissue repair.

From a modern perspective, many of these interventions align with current multimodal pain management approaches, such as topical applications, systemic analgesics, physiotherapy, and adjuvant therapies. For example, turmeric (Haridra) demonstrates COX-2 inhibitory and anti-inflammatory effects comparable to NSAIDs, while ghee-based formulations aid in reducing oxidative stress and promoting wound healing. The holistic approach advocated by Sushruta—addressing not only the pain but also the underlying tissue recovery and psychosomatic factors—mirrors current enhanced recovery protocols.

This review highlights how Sushruta's postoperative pain management techniques provide a scientific foundation for integrative approaches, bridging traditional Ayurvedic wisdom with modern clinical practice. Re-examining these principles can contribute to safer, cost-effective, and patient-centered postoperative care.

Keywords: Pain Management, Post Operative Care, Wound.

1. INTRODUCTION

1. Pain Management through Shamana & Shodhan

Sushruta emphasizes that postoperative pain (*Śūla*) is predominantly caused by aggravated Vata Dosha following surgical trauma, tissue injury, and blood loss. To counter this, he prescribes Snehana (oleation) and Swedana (sudation/fomentation) as primary measures of pain management. *Snehana* with medicated oils and ghee not only pacifies *Vata* but also lubricates tissues, reduces stiffness, and facilitates wound healing¹. *Swedana*, through mild fomentation with warm decoctions or poultices, further alleviates pain, swelling, and local congestion by softening tissues and improving circulation². These therapies together provide local analgesia, reduce muscle spasm, and accelerate recovery, functioning similarly to modern physiotherapeutic heat applications. Contemporary research validates that external oleation and fomentation with herbal formulations possess anti-inflammatory and analgesic effects⁽³⁾, thereby supporting Sushruta's integrative approach to postoperative pain relief.

2. Vran Upachaya

In *Sushruta Samhita*, wound care (*Vrana Upacāra*) emphasizes not only debridement and dressing but also measures to reduce pain, inflammation, and infection. Among the recommended formulations, **Pañcavalkala Kwātha**—a decoction prepared from the barks of *Vata* (*Ficus benghalensis*), *Udumbara* (*Ficus racemosa*), *Aśvattha* (*Ficus religiosa*), *Plakṣa* (*Ficus lacor*), and *Pariṣa/Aragvadha* (*Ficus infectoria*)—is widely indicated for wound cleansing⁽⁴⁾. Its properties include **Kaṣaya Rasa** (astringency), **Stambhana** (styptic), **Śodhana** (cleansing), and **Ropāṇa** (healing), which make it particularly effective in alleviating wound-associated pain and swelling. The decoction acts by reducing local microbial load, drying excess discharge, contracting tissues, and soothing inflamed margins, thereby indirectly minimizing pain perception.

From a modern perspective, *Pañcavalkala Kwātha* possesses **anti-inflammatory, antibacterial, and antioxidant activity**⁵ comparable to antiseptic wound washes used in postoperative care. Clinical studies have shown that local application of *Pañcavalkala* decoction promotes faster granulation, reduces pain, and minimizes secondary infection in surgical wounds and ulcers⁶. Thus, Sushruta's recommendation of wound irrigation with *Pañcavalkala Kwātha* can be viewed as an **Ayurvedic equivalent of sterile wound lavage**, integrating pain relief with tissue healing.

3. Ahara Regimen in Postoperative Care – Classical Perspective

Sushruta has given a step-wise approach to postoperative diet, depending on the digestive strength (*Agni Bala*) and stage of wound healing. The diet progresses gradually from liquid to solid forms, ensuring that the weakened *Agni* of a postoperative patient is not overburdened.

1. Immediate Postoperative Phase – Manda (thin rice gruel)⁷

1. Sushruta prescribes *Manda*, a light, easily digestible thin gruel, in the immediate postoperative phase. It is watery, unctuous, and provides minimal strain on digestion while supplying hydration.
2. Role in pain management: Helps relieve thirst, prevents constipation, and pacifies *Vata Doṣa* aggravated by surgical trauma. As *Vata* is the main factor of pain, its pacification directly contributes to analgesia.

2. Early Recovery Phase – Peya (slightly thicker gruel)⁸

- Once digestion improves, *Peya*, a slightly thicker preparation of rice gruel, is advised. It nourishes tissues while maintaining lightness.
- Role in pain management: Provides sustained energy, prevents flatulence, and maintains gut motility, reducing postoperative abdominal cramps.

3. Intermediate Phase – Vilepi (semi-solid gruel) & Yūṣa (legume soups)⁹

- *Vilepi* is thicker and more nourishing, while *Yūṣa* (mung dal soup) adds protein to aid wound healing.
- Role in pain management: Strengthens the body, replenishes lost energy, and reduces generalized weakness and fatigue that often aggravate pain perception.

4. Late Recovery Phase – Normal diet (Rasa, Mamsa-rasa, Ghṛta, Dugdha)¹⁰

- Gradually, the patient is shifted to normal diet, including *Mamsa-rasa* (meat soup), milk, and ghee preparations for tissue repair.
- Role in pain management: These *Balya* (strength-promoting) foods support *Dhatu Pūraṇa* (tissue replenishment), improve immunity, and provide a soothing, analgesic effect by nourishing the nervous system.

Mechanism of Pain Relief through Ahara (Ayurvedic View)

- **Vata Shamana** : Since postoperative pain is primarily due to aggravated *Vata*, unctuous, warm, and soft foods counteract *Vata*. *Ghṛta*, *Dugdha*, *Mamsa-rasa* are considered *Vata-hara*.
- **Agni Deepana**: Post-surgical digestion often becomes weak (*Mandāgni*), leading to *Āma* formation which can aggravate pain and inflammation. Light diets like *Manda* and *Peya* kindle digestion.
- **Dhatu Pūraṇa**: Protein-rich and nourishing foods like *Mamsa-rasa* and *Yūṣa* help in rebuilding tissues, reducing pain associated with wound healing.
- **Manasa Anukulata**: Comfort foods like warm milk and ghee have a calming effect on the mind, reducing the psychological perception of pain (*Manasika Shoola*).

Modern Clinical Perspective^{11 12}

Modern nutrition research supports Sushruta 's staged dietary approach:

1. **Immediate Postoperative Diet**: Modern guidelines recommend clear liquids immediately after surgery to avoid ileus and reduce strain on digestion, similar to *Manda*.
2. **Gradual Progression to Semi-Solids**: Diet is slowly advanced to semi-solid and soft foods once bowel sounds return. This parallels Sushruta 's progression from *Manda* → *Peya* → *Vilepi* → *Yūṣa*.
3. **Nutrient-Rich Recovery Diet**: Protein-rich foods (legumes, milk, meat soups) are essential for collagen synthesis and wound repair. Omega-3 fatty acids (found in ghee) reduce inflammation and pain.
4. **Psychological Comfort**: Warm, easily digestible foods reduce stress and anxiety, indirectly alleviating pain perception, aligning with modern psycho-nutritional theories.

The congruence between *Sushruta Samhita* and modern clinical guidelines reflects the timeless wisdom of Ayurveda. Sushruta 's structured dietary regimen emphasizes:

- Pacifying *Vata* to control pain,
- Maintaining *Agni* to prevent complications, and
- Providing progressive nourishment to aid tissue healing.

In contrast to pharmacological pain management, diet-based approaches are safer, sustainable, and devoid of side effects. While modern medicine often focuses on analgesics, Ayurveda's holistic approach integrates diet, lifestyle, and supportive therapies (like *Snehana*, *Svedana*, *Parisheka*) as part of comprehensive pain management. The role of

Ahara regimen in postoperative pain management, as described in *Sushruta Samhita*, is highly relevant even today. By prescribing a stepwise dietary plan—*Manda, Peya, Vilepi, Yūṣa, Mamsa-rasa*—Sushruta ensured smooth digestion, nourishment, and pacification of *Vata Doṣa*, the root cause of pain. Modern clinical nutrition validates this wisdom, emphasizing that a carefully tailored postoperative diet reduces pain, enhances wound healing, and accelerates recovery. Thus, Sushruta's dietary principles serve as a bridge between classical surgical wisdom and modern pain management strategies.

4. Psychological Care in Postoperative Period – Classical Guidelines

Sushruta gives importance to the role of physician and attendants in maintaining a patient's mental stability after surgery:

1. Reassurance and Positive Suggestion (*Shabda Prabhava*)

- Gentle, encouraging, and compassionate words reduce fear and instill confidence.
- This is equivalent to modern therapeutic communication, which is proven to reduce anxiety and pain perception.

2. Companionship and Emotional Support

- The presence of trusted relatives, attendants, or caregivers reassures the patient. Sushruta advised attendants to be *sama-jātiya, priya, and anukampaka* (similar, affectionate, and sympathetic).

- Today, family-centered care in hospitals aligns with this approach.

3. Achara Rasayana (Code of Conduct for Mental Stability)

- Maintaining a cheerful mind, avoidance of anger, fear, grief, and stress.
- Encouraging practices like truthfulness, compassion, meditation, and spiritual thoughts are all Achara Rasayana principles for enhancing psychological well-being.

4. Satvavajaya Cikitsā (Mind-Control Therapy)

- Defined as “withdrawing the mind from harmful objects,” Satvavajaya includes methods like concentration, self-restraint, meditation, and developing positive mental states.
- Applied in postoperative care, it reduces fear, anxiety, and stress, thereby lowering pain sensitivity.

5. Mano-prasādana Upāyas (Mind-pleasing Measures)

- Exposure to pleasant music, fragrance, soft touch, and calm environment.
- These align with today's evidence-based “music therapy” and “aromatherapy” for pain reduction.

Modern Psychological Interventions in Postoperative Pain Management

Current pain science emphasizes the biopsychosocial model, where psychological care is considered as important as pharmacological interventions. Key strategies include:

1. Preoperative Counseling and Education

- Preparing patients by explaining the procedure, expected recovery, and pain control measures reduces fear and improves coping mechanisms.
- This directly resonates with Sushruta's emphasis on reassuring and educating the patient.

2. Therapeutic Communication

- Active listening, empathy, and reassurance reduce anxiety.
- Nurses and physicians are trained to communicate in a supportive manner, similar to *Śabda Prabhava* described in Ayurveda.

3. Cognitive-Behavioral Therapy (CBT)

- Helps patients reframe negative thoughts about pain, reducing catastrophization and improving pain tolerance.
- Equivalent to *Satvavajaya Cikitsā* (mental discipline) in Ayurveda.

4. Relaxation Techniques

- Meditation, mindfulness, guided imagery, deep breathing, and yoga calm the nervous system, lower stress hormones, and reduce pain perception.
- Ayurveda recommends *Dhyāna* and *Prāṇāyāma* as part of Satvavajaya, which modern science validates as effective for postoperative stress and pain.

5. Environmental Modifications

- Quiet, well-lit, clean surroundings with family presence support emotional healing.
- This reflects Sushruta's instruction for providing pleasant surroundings (*mano-anukūla deśa*).

6. Music and Distraction Therapy

- Studies show that music reduces postoperative pain and opioid requirements.
- Sushruta's reference to *śravana* (listening to pleasing sounds) mirrors this intervention.

Mechanism of Psychological Care in Pain Relief

- **Neurochemical Modulation:** Positive emotions, meditation, and reassurance stimulate release of endorphins and serotonin, which act as natural painkillers.
- **Reduction of Stress Hormones:** Psychological care lowers cortisol and adrenaline, which otherwise heighten pain sensitivity.
- **Improved Sleep and Recovery:** Calmness and reassurance reduce insomnia, promoting tissue repair and lowering pain perception.
- **Mind-Body Integration:** By addressing both mental and physical planes, Ayurveda's approach ensures holistic pain relief.

2. CONCLUSION

1. **Shamana and Shodhana measures:** Sushruta prescribes *Snehana* (oleation) and *Swedana* (fomentation) therapies for alleviating *Vata*-induced pain. Application of medicated oils such as *Taila* and *Ghṛita* directly on the wound or as massage reduces local inflammation and provides analgesia (Sushruta Samhita, Cikitsāsthāna 1/49–54).
2. **Herbal formulations:** Pain-relieving herbal preparations like *Jatyādi Taila*, *Yashtimadhu Ghṛita*, and decoctions of *Panchavalkala* are recommended for both wound dressing and systemic pain reduction.
3. **Ahara (dietary regimen):** Easily digestible, unctuous, and nourishing foods are prescribed to pacify *Vata* and promote faster healing. Spicy, dry, and heavy-to-digest foods are contraindicated (Sushruta Samhita, Sutrasthāna 46/500).
4. **Psychological care:** Sushruta recognizes the role of mental factors in pain. He suggests *Satvavajaya Chikitsā* (counseling, reassurance, and maintaining calm environment) as supportive therapy.

Modern Clinical Perspective

Modern studies correlate Sushruta's measures with current multimodal pain management strategies. Local oil applications and fomentation may be compared with topical analgesics and physiotherapy for postoperative recovery. Herbal formulations show documented anti-inflammatory and analgesic activity (Mishra et al., 2015). Additionally, holistic approaches like diet regulation and counseling align with *enhanced recovery after surgery (ERAS)* protocols in modern medicine.

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- [9] *Sushruta Samhita*, Sootrasthan 46/504–505.
- [10] *Sushruta Samhita*, Sootrasthan 46/506.
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