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“PURVA KARMA AND PASHCHAT KARMA: SUSHRUTA’S PERIOPERATIVE CARE COMPARED WITH ENHANCED RECOVERY AFTER SURGERY”**Tushar Tapadiya¹****AFFILIATIONS:**

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ABSTRACT

Background: Modern surgery has shown that outcomes depend not only on the operation itself but also on how patients are prepared and cared for before and after it. Enhanced Recovery After Surgery (ERAS) programmes bundle evidence-based perioperative measures to reduce complications and length of stay. Sushruta divided surgical care into three stages, Purva Karma (preoperative), Pradhana Karma (operative) and Pashchat Karma (postoperative), with detailed instructions for each. **Objective:** To review Sushruta’s principles of perioperative care and compare them with the components and evidence of modern ERAS and surgical safety practice. **Methods:** Narrative and comparative review of Sushruta Samhita and of guidelines, meta-analyses and landmark studies on ERAS, preoperative fasting, infection prevention and surgical safety. **Results:** Sushruta’s Purva Karma includes assessment of the patient, preparation of instruments and materials, choice of auspicious and suitable timing, appropriate diet before surgery, and psychological preparation. His Pashchat Karma includes wound care, protection from infection by fumigation, diet, rest, avoidance of exertion, monitoring for complications and gradual return to activity. Several elements correspond to modern principles, such as patient optimisation, team preparation, infection prevention, nutrition, analgesia and early mobilisation. Other classical recommendations, such as prolonged rest, differ from ERAS, which emphasises early mobilisation and feeding. ERAS programmes reduce complications and length of stay in randomised trials. **Conclusion:** Sushruta’s perioperative framework anticipates the modern view of surgery as a continuum of care. Ayurvedic surgical practice can integrate classical principles with evidence-based ERAS elements, while updating recommendations that conflict with current evidence. **KEYWORDS:** Purva Karma; Pashchat Karma; perioperative care; Enhanced Recovery After Surgery; ERAS; surgical safety; Sushruta; Shalya Tantra

INTRODUCTION

For most of the history of modern surgery, attention focused on the technical aspects of operations. Over the last three decades, it has become clear that the physiological stress of surgery, prolonged fasting, fluid overload, uncontrolled pain, immobility and delayed feeding all contribute to complications and slow recovery. Kehlet's work on multimodal approaches to perioperative care led to the development of fast-track and ERAS programmes^[1-3]. With an estimated 300 million operations performed worldwide each year, improvements in perioperative care have very large public health impact^[4]. These programmes bundle measures across the preoperative, intraoperative and postoperative periods and have been shown to reduce complications and length of hospital stay^[2,5]. Sushruta, writing in ancient India, described surgery as a three-stage process: Purva Karma (preoperative measures), Pradhana Karma (the main operation) and Pashchat Karma (postoperative measures)^[6]. His instructions covered patient assessment, preparation, diet, psychological support, wound care, infection prevention and rehabilitation. This review compares Sushruta's perioperative principles with modern ERAS and surgical safety practice.

METHODS

The primary source was Sushruta Samhita, Sutra Sthana 5 (Agropaharaniya), 17 (Amapakvaishaniya) and 19 (Vranitopasaniya), with relevant passages from Chikitsa Sthana^[6]. Modern literature was identified through PubMed and Google Scholar using enhanced recovery after surgery, perioperative care, preoperative fasting, surgical site infection, surgical safety checklist and early feeding. This is a narrative and comparative review.

SUSHRUTA'S THREE STAGES OF SURGERY

Purva Karma (preoperative care)

Sushruta's preoperative measures include^[6]:

- **Assessment of the patient:** examination of the disease, the patient's strength, age, constitution and mental state, and identification of conditions that make surgery risky or contraindicated.
- **Preparation of materials (Agropaharaniya):** collecting all necessary instruments, sharp and blunt, Kshara, fire, needles, threads, bandages, cotton, honey, ghee, oils, decoctions, water, and

attendants, before beginning the operation.

- **Timing:** choosing a suitable time, with consideration of season and the patient's condition.
- **Diet:** giving a light meal before surgery in most cases, while specifying that the patient should fast before certain operations, such as those on the abdomen, mouth and in Mudhagarbha (obstructed labour), and before procedures with risk of vomiting or aspiration.
- **Psychological preparation:** reassuring the patient, invoking blessings and creating an atmosphere of confidence.
- **Attendants:** ensuring that strong and reliable assistants are available to hold the patient and help during the operation.

Pradhana Karma (operative care)

Sushruta describes positioning, the direction and depth of incisions, the avoidance of vital structures (Marma, vessels, ligaments, joints), haemostasis and appropriate wound closure^[6]. He advises rapid, skilful surgery to minimise pain, since anaesthesia in the modern sense was not available, though wine was sometimes given before surgery.

Pashchat Karma (postoperative care)

Sushruta's postoperative measures include^[6]:

- **Immediate care:** sprinkling cold water on the patient's face to revive him, pressing around the wound to relieve pain, fumigating the wound with aromatic and antimicrobial substances, and applying honey, ghee and herbal pastes before bandaging.
- **Protection (Rakshavidhana):** keeping the patient in a clean, well-ventilated room protected from wind, dust and insects; fumigating the room with mustard, neem and other substances; and recitation of protective verses.
- **Diet:** light, warm, wholesome food, avoiding heavy, sour, salty and spicy foods.
- **Activity and rest:** avoidance of exertion, sexual activity, daytime sleep, anger and grief, and gradual return to normal activity.
- **Dressing changes:** wounds inspected and dressed regularly, with removal of sutures and bandages at the appropriate time.
- **Monitoring for complications:** recognition of infection, bleeding, excessive pain and delayed healing, with corresponding management.

MODERN ERAS

Table 1: Core elements of Enhanced Recovery After Surgery (ERAS)

Phase	Key elements
Preoperative	Patient education and counselling; optimisation of medical conditions; avoidance of prolonged fasting (clear fluids up to 2 hours before anaesthesia); carbohydrate loading; avoidance of routine bowel preparation in some operations; thromboprophylaxis; antibiotic prophylaxis
Intraoperative	Minimally invasive techniques; avoidance of fluid overload; maintenance of normothermia; short-acting anaesthetics; regional analgesia; avoidance of routine drains and tubes
Postoperative	Multimodal opioid-sparing analgesia; early oral feeding; early mobilisation; early removal of catheters; prevention of nausea and vomiting; audit of outcomes

Evidence

Meta-analyses of randomised trials in colorectal surgery have shown that ERAS programmes reduce overall complications and length of hospital stay without increasing readmissions^[5]. Early enteral feeding after gastrointestinal surgery was associated with fewer complications than keeping patients nil by mouth^[8]. Modern fasting guidelines allow clear fluids up to two hours and light meals up to six hours before elective anaesthesia in healthy

patients^[9].

Surgical safety and infection prevention

The WHO Surgical Safety Checklist, which includes confirmation of patient identity, procedure, site, instruments and sterility, reduced complications and mortality in a multinational study^[10]. WHO recommendations on the prevention of surgical site infection include bathing, appropriate hair removal, antibiotic prophylaxis timing and skin preparation^[11].

Comparison

Table 2: Comparison of Sushruta's perioperative care with modern practice

Domain	Sushruta	Modern practice	Agreement
Patient assessment and optimisation	Assess strength, constitution, mental state; identify contraindications ^[6]	Preoperative assessment, optimisation of comorbidities ^[2]	Strong
Preparation of team and equipment	Agropaharaniya: gather all instruments and materials beforehand ^[6]	Surgical safety checklist; instrument counts ^[10]	Strong
Psychological preparation	Reassurance, confidence ^[6]	Patient education and counselling ^[2]	Strong
Preoperative diet	Light meal before most surgery; fasting before abdominal and oral surgery ^[6]	Short fasting; carbohydrate loading ^[2,9]	Partial (both avoid unnecessary prolonged fasting)
Infection prevention	Fumigation, clean environment, honey and herbal dressings ^[6]	Asepsis, antibiotic prophylaxis, skin preparation ^[11]	Conceptual agreement; methods differ
Analgesia	Pressure around wound, rapid surgery, wine; soothing applications ^[6]	Multimodal opioid-sparing analgesia ^[2]	Conceptual
Postoperative diet	Light, wholesome food ^[6]	Early oral feeding ^[8]	Partial
Activity	Rest, avoidance of exertion, gradual return ^[6]	Early mobilisation ^[2]	Differs in emphasis

Domain	Sushruta	Modern practice	Agreement
Monitoring for complications	Signs of infection, bleeding and poor healing ^[6]	Structured monitoring and audit ^[2]	Strong

Areas of agreement

The strongest agreement lies in Sushruta's emphasis on thorough preparation, team readiness and patient assessment before surgery. His instruction to gather all instruments and materials before beginning (Agropaharaniya) closely parallels the "sign in" and "time out" stages of the WHO checklist. His emphasis on reassuring the patient corresponds to preoperative education, a core ERAS element; a Cochrane review found that psychological preparation before surgery may improve postoperative pain, behavioural recovery and negative affect^[12]. His attention to environmental cleanliness and wound protection reflects an empirical understanding of infection prevention.

Areas of difference

Sushruta's recommendations for prolonged rest and restricted activity differ from ERAS, which emphasises early mobilisation to prevent thrombosis, chest infection and muscle loss. His dietary restrictions after surgery are less clear-cut than modern early feeding, although his preference for light, easily digestible food is compatible with gradual resumption of normal diet. Methods of infection control, such as fumigation, predate the germ theory and are not substitutes for modern asepsis and antibiotics.

INTEGRATING CLASSICAL AND MODERN PRINCIPLES IN AYURVEDIC SURGERY

Ayurvedic surgical units performing procedures such as Kshara Sutra, Kshara Karma, Agnikarma,

haemorrhoidectomy and fistula surgery can adopt an integrated perioperative pathway:

Preoperative - Structured assessment including Prakriti, Agni and Sattva alongside medical history, investigations and anaesthetic assessment. - Optimisation of diabetes, hypertension and anaemia. - Patient education about the procedure, expected recovery and self-care. - Avoidance of unnecessary prolonged fasting, following modern fasting guidelines. - Use of the WHO Surgical Safety Checklist.

Intraoperative - Aseptic technique and appropriate antibiotic prophylaxis when indicated. - Gentle tissue handling and haemostasis, as emphasised by Sushruta. - Effective local, regional or general anaesthesia.

Postoperative - Multimodal analgesia, which may include warm sitz baths and soothing applications for anorectal procedures. - Early resumption of light, nourishing diet, consistent with both Sushruta's advice and ERAS. - Early mobilisation as tolerated. - Wound care using evidence-based dressings, with Ayurvedic healing agents as adjuncts where appropriate. - Clear discharge instructions and follow-up, including recognition of complications.

PERIOPERATIVE CARE FOR COMMON AYURVEDIC SURGICAL PROCEDURES

Many Ayurvedic surgical procedures are performed as day-care or short-stay procedures, which makes efficient perioperative pathways especially valuable. The table below suggests how classical and modern principles can be combined for common procedures.

Table 3: Perioperative care for common Ayurvedic surgical procedures

Procedure	Key preoperative steps	Key postoperative steps
Kshara Sutra for fistula-in-ano	Examination and imaging for complex tracts; screening for diabetes, tuberculosis and inflammatory bowel disease; explanation of weekly thread changes	Sitz baths; stool softeners and Triphala; analgesia after thread changes; weekly review and measurement of tract length
Kshara Karma for haemorrhoids	Proctoscopy and grading; exclusion of other causes of bleeding, especially in older adults; correction of anaemia	Sitz baths; stool softening; monitoring for bleeding and stenosis; dietary fibre
Agnikarma	Check for diabetes, neuropathy, vascular disease and skin infection; informed consent about marks and scarring	Aloe vera or honey and ghee dressing; keep area dry for 24 hours; review healing at next session

Procedure	Key preoperative steps	Key postoperative steps
Jalaukavacharana	Haemoglobin; bleeding history and anticoagulant use; arterial assessment for leg ulcers	Absorbent dressing; warning about prolonged oozing; watch for infection; consider antibiotic cover in high-risk patients
Siravyadha	Haemoglobin and blood pressure; exclusion of anaemia, pregnancy, frailty	Monitoring for fainting; hydration; recording of volume removed

For all procedures, standard documentation, a simple safety checklist adapted to the setting, clear discharge instructions and a defined follow-up plan should be routine.

AUDIT AND QUALITY IMPROVEMENT

ERAS programmes emphasise continuous audit of adherence and outcomes, recognising that the benefits depend on how fully the programme is implemented. Ayurvedic surgical units can adopt the same approach by recording key outcomes such as pain scores, complications, length of stay, unplanned return visits, recurrence and patient satisfaction. Regular review of these data would help identify areas for improvement and generate evidence on the safety and effectiveness of Ayurvedic surgical procedures, which is currently limited.

DISCUSSION

Sushruta's division of surgery into Purva Karma, Pradhana Karma and Pashchat Karma reflects a holistic view of surgery that modern medicine has rediscovered through ERAS. Many of his principles, including preparation, patient assessment, psychological support, infection prevention and monitoring, are consistent with modern evidence. Other recommendations, particularly prolonged rest, should be updated in light of evidence that early mobilisation improves recovery.

Ayurvedic surgical units have an opportunity to demonstrate that classical principles can be integrated with modern evidence-based perioperative care. Audit of outcomes, such as pain, complications, length of stay and patient satisfaction, would show the value of such integration and support continuous improvement.

CONCLUSION

Sushruta's perioperative framework, with its emphasis on preparation, patient support, infection prevention and careful aftercare, anticipates the modern concept of surgery as a continuum of care.

Modern ERAS programmes, supported by randomised evidence, add specific measures such as short fasting, multimodal analgesia, early feeding and early mobilisation. An integrated perioperative pathway combining classical wisdom with modern evidence can improve outcomes in Ayurvedic surgical practice.

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