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Case Report

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# A SINGLE CASE STUDY OF PILONIDAL SINUS MANAGED BY CHEDANA KARMA (WIDE EXCISION) WITH AYURVEDIC POSTOPERATIVE CARE

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## ABSTRACT

**Background:** Pilonidal sinus is a chronic inflammatory condition of the sacrococcygeal region, characterised by a sinus tract containing hair tufts. In modern surgery, wide excision (open technique) remains the gold standard, yet postoperative wound healing is frequently prolonged, painful and complicated by secondary infection.[1] Ayurveda describes a comparable entity under *Nadi Vrana* (sinus wound) and offers a rich pharmacopoeia of wound-healing agents that may complement conventional surgical management. **Case Presentation:** A 34-year-old male presented with a recurrent midline pit and purulent discharge in the natal cleft of 14 months' duration. He was diagnosed with sacrococcygeal pilonidal sinus (Nadi Vrana / Nadi Shotha) and underwent Chedana Karma (wide excision under local anaesthesia). Postoperatively, wound care was carried out with Ayurvedic formulations including Jatyadi Taila.[2] dressing, Panchavalkala Kashaya irrigation, oral Triphala Guggulu, and dietary regulation (Pathya-Apathya). **Outcome:** Complete wound healing was achieved by the 42nd postoperative day without secondary infection, wound dehiscence, or recurrence at 6-month follow-up. Pain scores (VAS) reduced significantly by Day 7, and the patient resumed normal activities by Day 21. **Conclusion:** Chedana Karma combined with Ayurvedic postoperative wound care may provide an effective and cost-efficient integrative management strategy for pilonidal sinus, reducing healing time, pain, and recurrence. Further prospective clinical trials with larger sample sizes are warranted.[3]

**KEYWORDS:** Pilonidal sinus; Chedana Karma; Nadi Vrana; Jatyadi Taila; Panchavalkala Kashaya; wide excision; Ayurvedic wound care; Shalya Tantra; integrative surgery.

## 1. INTRODUCTION

Pilonidal sinus disease (PNS) is a chronic acquired inflammatory condition predominantly affecting the sacrococcygeal region[4] of young adults, with a reported incidence of 26 per 100,000 persons per year and a striking male predominance (male-to-female ratio approximately 3:1). The condition is characterised by the formation of a midline pit or sinus tract in the natal cleft, often containing loose hair shafts, which serves as a nidus for recurrent infection and abscess formation.

The aetiopathogenesis of pilonidal sinus remains debated. The most widely accepted theory proposes that loose hairs penetrate the skin under friction and suction forces generated by gluteal movement, initiating a foreign-body granulomatous reaction followed by sinus tract formation. Predisposing factors include hirsutism, obesity, prolonged sedentary posture (classically described as a "jeep disease" among military drivers), local trauma, and poor natal cleft hygiene.

Ayurveda, the classical Indian system of medicine, describes a clinical entity closely analogous to pilonidal

sinus under the nomenclature of Nadi Vrana (sinus wound) in the Shalya Tantra (surgical science) tradition. Sushruta Samhita, the foundational Ayurvedic surgical text, delineates Nadi Vrana as a tubular wound tract (nadi = tube; vrana = wound) associated with vitiation of Vata and Kapha Doshas, characterised by discharge, pain, and chronicity. The Ayurvedic pharmacopoeia offers an extensive armamentarium of wound-healing (Vranaropana) agents with documented antimicrobial, anti-inflammatory, and tissue-regenerative properties.

This case report describes the successful integrative management of a young male patient with sacrococcygeal pilonidal sinus through Chedana Karma (wide excision) combined with a structured Ayurvedic postoperative protocol, with the aim of providing a clinical model for integrative surgical practice.

## 2. CASE PRESENTATION

### 2.1 Patient Information and Chief Complaint

A 34-year-old male presented to the Shalya Tantra outpatient department with complaints of a painful swelling in the natal cleft region with intermittent purulent discharge of 14 months' duration. The patient reported four episodes of acute exacerbation requiring incision and drainage at a peripheral facility over the preceding year, with incomplete resolution between episodes. He also noted progressive restriction of sitting posture due to pain.

### 2.2 History

The patient denied any history of perineal or perianal fistula, inflammatory bowel disease, or prior anorectal surgery. He was a non-smoker, did not consume alcohol, and had no known drug allergies. Occupation involved prolonged sitting (6–8 hours daily). His body mass index (BMI) was 28.4 kg/m² (overweight) and he was noted to be significantly hirsute in the sacrococcygeal region. Family history was non-contributory.

### 2.3 Clinical Examination

**General Examination:** The patient was well-built and well-nourished. Vitals were stable. No pallor, icterus, lymphadenopathy, or oedema was detected.

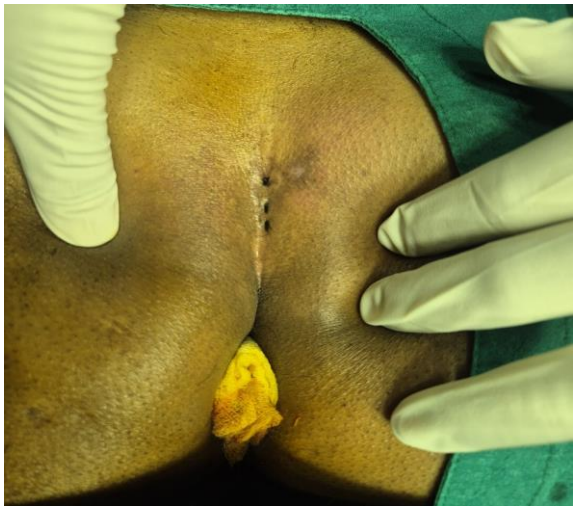

**Fig 1:- Pre-operative.**

Examination in prone position revealed a midline pit at the level of the S3 vertebra, approximately 4 cm above the anal verge, with surrounding indurated skin and erythema over an area of 3 × 2 cm. A secondary opening was identified 1 cm below to the midline and tertiary opening below 1 cm to the midline, with seropurulent discharge on gentle pressure. Gentle probing demonstrated a sinus tract of approximately 3.5 cm depth communicating medially with the midline pit. No communication with the anal canal was identified. Regional lymphadenopathy was absent.

### 2.4 Investigations

**Table 1: Preoperative investigation findings.**

| Investigation | Result / Finding |
|---|---|
| **Haemoglobin** | 13.8 g/dL (within normal limits) |
| **Total Leucocyte Count** | 10,200 cells/mm³ (mild leukocytosis) |
| **Differential Leucocyte Count** | Neutrophils 72%, Lymphocytes 22%, Eosinophils 4%, Monocytes 2% |
| **Erythrocyte Sedimentation Rate** | 22 mm/1st hour (mildly elevated) |
| **Random Blood Sugar** | 98 mg/dL (normal) |
| **Serum HIV I & II** | Non-reactive |
| **HBsAg / Anti-HCV** | Non-reactive |
| **Urine Routine & Microscopy** | Within normal limits |
| **Proctoscopy** | No communication with anal canal; internal opening not detected |

**2.5 Ayurvedic Assessment (Ashtavidha Pariksha)**
**Rogi Pariksha (Patient Examination)**
Prakriti (constitution): Vata-Kapha predominant.
Vikruti (current state): Vata-Kapha vitiation with secondary Pitta involvement.
Agni (digestive fire): Vishama (irregular).
Sara (tissue quality): Madhyama (moderate).
Satva (mental constitution): Madhyama.
Satmya (adaptability): Krichhrasatmya (poorly adapted).
Ahara Shakti (digestive capacity): Avara (reduced).
*Nadi Pariksha (*Pulse diagnosis*): Vata-Kapha dominance with intermittent Pitta surges, consistent with chronic suppurative sinus.*

**Roga Pariksha (Disease Examination)**: The condition was classified as Nadi Vrana (Sushruta Samhita, Nidanasthana) with Kapha-Vata predominance evidenced by the chronic, tubular, discharging sinus with thick purulent material (Kapha-Pitta), hair contents (Vata-Kapha),(5) surrounding induration (Kapha) and intermittent pain (Vata). The chronicity (Chirakari) and recurrence pattern (Punarbhava) further supported deep Dosha involvement.

**3. Surgical Management: Chedana Karma (Wide Excision)**
**3.1 Anaesthesia and Positioning**
The patient was placed in the prone position under Local anesthesia with 5 ml Xylocaine. A pillow was placed beneath the pelvis to elevate the gluteal region and improve natal cleft exposure. Gluteal skin folds were retracted laterally with adhesive tape.

**3.2 Surgical Procedure**
The operative field was prepared with povidone-iodine solution and draped in the standard fashion. The sinus openings were identified and probed. Methylene blue dye was instilled through the secondary opening to delineate the sinus tract and confirm the absence of occult extensions.

Chedana Karma was performed as follows: An elliptical incision was made encompassing the primary pit, secondary opening, and the entire dye-stained tract with a 1 cm margin of healthy tissue on all sides. The elliptical excision extended to the presacral fascia, ensuring complete removal of all sinus epithelium, granulation tissue, hair contents, and surrounding infected tissue. Haemostasis was secured with electrocautery.

The wound was left open for healing by secondary intention (consistent with Ayurvedic Vranaropana philosophy of allowing gradual granulation). The wound dimensions at the end of excision were 4.5 cm (length) × 2.5 cm (width) × 2 cm (depth). Intraoperative blood loss was approximately 30 mL. Duration of surgery: 35 minutes.

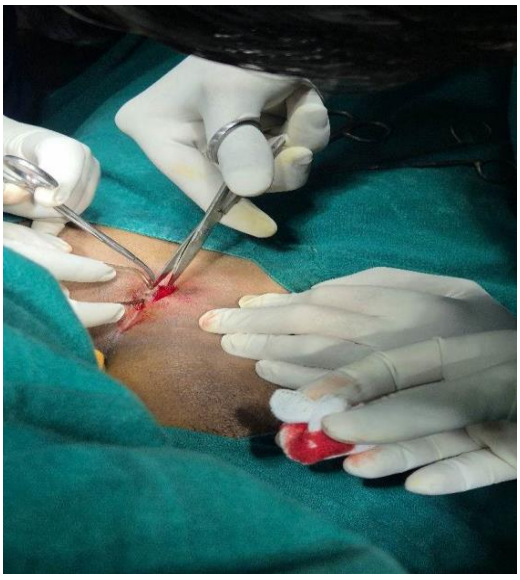

**Fig. 2:- probing of the sinus tract.**

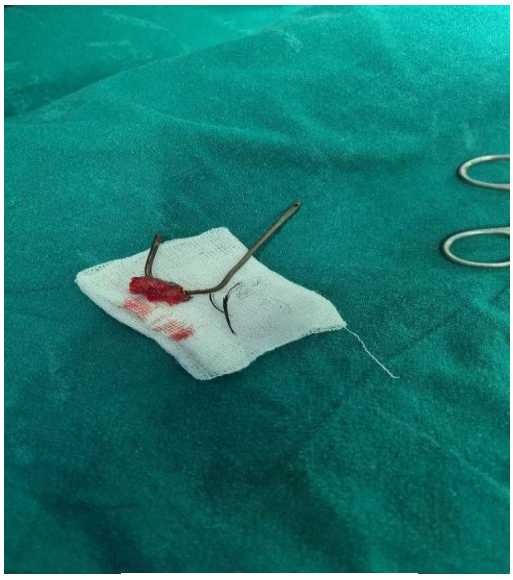

**Fig. 3:- Tract was excised.**

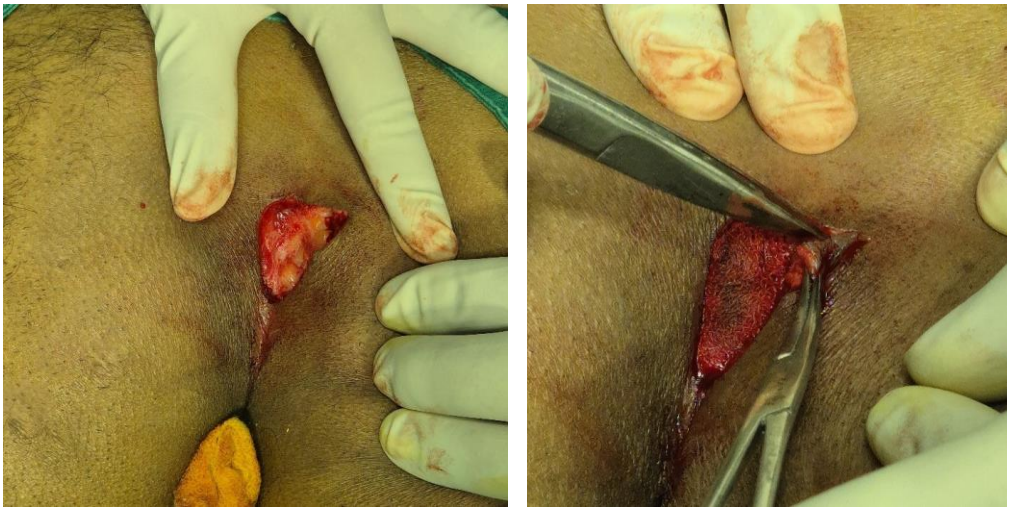

**Fig. 4:- Post op wound.**

**4. Ayurvedic Postoperative Care (Paschatkarma)**

**4.1 Wound Care Protocol**

The postoperative wound care protocol was designed to incorporate established Ayurvedic wound-healing formulations with evidence-based wound care principles. Daily wound care was performed by trained nursing staff under physician supervision.

**Table 2: Ayurvedic postoperative care protocol.**

| Phase | Ayurvedic Intervention | Rationale / Classical Reference |
|---|---|---|
| **Day 1–7 (Shodhana Phase)** | Panchavalkala Kashaya irrigation(6). | *Vrana Shodhana (wound cleansing/debridement); Sushruta Samhita, Chikitsasthana 1/8.* |
| **Day 1–42 (Ropana Phase)** | Jatyadi Taila dressing (oil-based formulation)(2) | *Vrana Ropana (wound healing), Vedana Shamana (analgesic), antimicrobial. Promotes granulation tissue formation and epithelialisation. Ashtanga Hridayam, Chikitsasthana 25.* |
| **Day 1–42 (Systemic)** | Triphala Guggulu 2 tablets (500 mg each) TDS with warm water | *Systemic Vrana Shodhana and Ropana; anti-inflammatory (Guggulu).* |
| **Day 1–14 (Systemic)** | Gandhaka Rasayana 500 mg BD (7) | *Kushtaghna (skin disease), Krimighna (antimicrobial), Rasayana (tissue rejuvenation).* |

**4.2 Conventional Supportive Measures**

- Diclofenac sodium 100mg SOS (analgesic/anti-inflammatory)
- Regular haemoglobin and inflammatory marker monitoring
- Patient education regarding natal cleft hygiene, hair depilation, and weight management

**Clinical 5Outcome and Follow-up**

**5.1 Timeline of Wound Healing**

**Table 3: Wound healing timeline.**

| Follow-up Day | Wound Dimensions (L×W×D cm) | VAS Pain Score (0–10) | Clinical Observations |
|---|---|---|---|
| **Day 1 (POD 1)** | 4.5 × 2.5 × 2.0 | 7 | Wound clean; moderate soakage; slight perilesional erythema |
| **Day 3** | 4.3 × 2.4 × 1.9 | 6 | Granulation tissue commencing at base; Panchavalkala Kashaya irrigation effective |
| **Day 7** | 4.0 × 2.2 × 1.6 | 4 | Healthy pink granulation tissue; minimal discharge; no signs of secondary infection |

| | | | |
|---|---|---|---|
| **Day 14** | 3.2 × 1.8 × 1.1 | 3 | Epithelialisation from wound margins; Jatyadi Taila dressing well tolerated |
| **Day 21** | 2.5 × 1.4 × 0.7 | 2 | Patient resumed light duties; significant wound contraction; no dehiscence |
| **Day 28** | 1.8 × 0.9 × 0.4 | 1 | Wound granulating well; no hair regrowth in wound bed |
| **Day 35** | 1.0 × 0.5 × 0.2 | 1 | Near-complete epithelialisation; wound flush with skin surface |
| **Day 42** | Healed (scar) | 0 | Complete healing; thin, soft, pliable scar; patient asymptomatic |
| **6-Month FU** | Healed (scar) | 0 | No recurrence; scar soft and non-tender; natal cleft hygiene maintained |

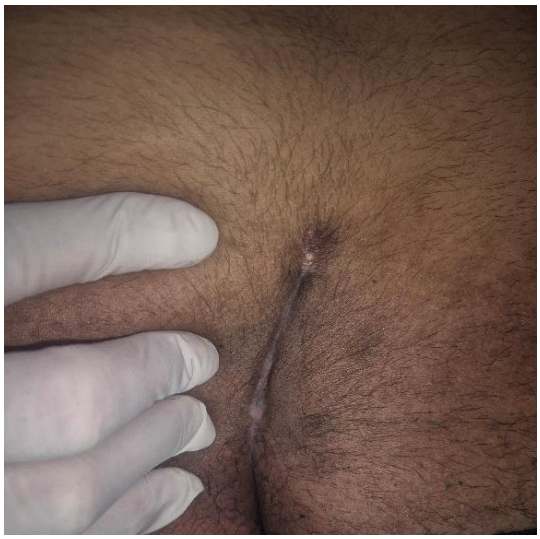

**Fig. 14:-Healed tract after treatment.**

### 5.2 Patient-Reported Outcomes

- Wound infection: None throughout the healing course
- Recurrence: None at 6-month follow-up
- Adverse effects of Ayurvedic formulations: None reported

## 6. DISCUSSION

The conceptual correlation between pilonidal sinus and Nadi Vrana in Ayurveda deserves systematic examination. Sushruta defines Nadi Vrana as a wound that, due to improper or incomplete treatment, develops a narrow sinus tract discharging vitiated Doshas. The features enumerated — tubular tract, chronic discharge, hair content, pain, and recurrence — correspond precisely to the clinical hallmarks of pilonidal sinus. The Ayurvedic categorisation of this condition under Kapha-Vata vitiation aligns with modern understanding: Kapha attributes (heavy, unctuous, cold, stable) correspond to the chronic indurated nature, hair entrapment, and thick discharge; while Vata attributes (mobile, rough, dry) correspond to the sinus tract extension and chronicity.

### 6.2 Evidence for Ayurvedic Wound Care Formulations

The Ayurvedic formulations employed in this case have growing pharmacological and clinical evidence supporting their use in wound management:

Jatyadi Taila contains Jasmine (Jasminum grandiflorum) with documented antimicrobial activity; Neem (Azadirachta indica) possessing broad-spectrum antibacterial and antifungal properties; Turmeric (Curcuma longa) with curcumin demonstrating anti-inflammatory, antioxidant, and wound-healing effects in multiple randomised controlled trials; Liquorice (Glycyrrhiza glabra) with glycyrrhizin mediating epithelialisation; and Manjistha (Rubia cordifolia) with anti-inflammatory and antioxidant phytoconstituents. The lipid base (taila / oil) itself functions as an occlusive dressing, maintaining wound moisture and facilitating autolytic debridement.

Panchavalkala Kashaya, a decoction of five Ficus bark species, has demonstrated significant antimicrobial activity against Staphylococcus aureus, Streptococcus pyogenes, and Pseudomonas aeruginosa in in vitro studies. The high tannin content provides astringent (Kashaya Rasa) properties that reduce wound exudate and promote early haemostasis, while flavonoids and phenolic compounds contribute anti-inflammatory and antioxidant effects.

Triphala Guggulu combines Triphala (Terminalia chebula, T. bellerica, Emblica officinalis) with Commiphora mukul (Guggulu). Triphala regulates bowel function (critical in perianal wound management to prevent wound contamination), while Guggulu provides systemic anti-inflammatory and analgesic effects through Guggulsterone-mediated NF-κB pathway modulation.

### 6.3 Comparison with Conventional Outcomes

The absence of secondary infection in our patient despite an initially MSSA-positive wound swab is noteworthy. The antimicrobial activity of Panchavalkala Kashaya and Jatyadi Taila in the wound milieu, in conjunction with the systemic Gandhaka Rasayana, may have collectively

contributed to infection control without prolonged systemic antibiotic therapy.

## 7. CONCLUSION

This case report documents the successful integrative management of sacrococcygeal pilonidal sinus through Chedana Karma (wide excision) combined with a structured Ayurvedic postoperative wound care protocol. Complete healing was achieved by Day 42, pain scores reduced progressively from 7/10 to 0/10, and no recurrence was observed at 6-month follow-up. The Ayurvedic wound care formulations employed — particularly Jatyadi Taila and Panchavalkala Kashaya — possess pharmacologically plausible mechanisms for wound healing, antimicrobial activity, and inflammation modulation that are consistent with the observed favourable outcome.

The case illustrates the potential of an integrative surgical model that honours the classical Shalya Tantra framework of Chedana Karma for excision while leveraging Ayurvedic Vranaropana pharmacology for postoperative wound care — a model that is patient-centred, cost-efficient, and rooted in evidence-based traditional medicine. Systematic clinical trials are required to validate these findings and establish this approach as a reproducible therapeutic paradigm.

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