

“Ksharasutra Application in Pilonidal Sinus: A Minimally Invasive Para-Surgical Management”

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ABSTRACT

A 30 year old man presented with pilonidal sinus on MRI reporting along with pain, itching and purulent discharge from sacral region. The objective of this study is to evaluate the efficacy and safety of Ksharasutra therapy in the management of Pilonidal Sinus (Nadi Vrana) with respect to wound healing time, recurrence rate, postoperative complication and patient compliance.

Case Report

A 30 year old man came with complaints of purulent discharge, pain and itching at sacral region in the O.P.D. of Shalya Tantra. After taking detailed history from the patient, he was evaluated for the same and in physical examination I found that there is a long tract of app. 8cm present on the tail bone of patient with multiple external opening. Management was explained to the patient in details and after ensuring him consent was taken for operate and operation was done by ensuring all aseptic condition. After that ksharasutra thread was changed after every seven days for 95 days, total 13 thread was changed in post-op management with sitz bath and medications. Now patient recovered completely from the diseases and yet there is no report of recurrence of the diseases.

Discussion

Pilonidal Sinus, a common condition in the sacrococcygeal region, is characterized by chronic inflammation and recurrent discharging sinus tract, often associated with hair and debris accumulation. Modern surgical treatment like excision with primary closure or flap surgeries are associated with longer hospital stays, high recurrence rates, and postoperative complications like infection, pain delayed healing. In this context, Ksharasutra, an Ayurvedic para-surgical intervention, offers a promising alternative for managing pilonidal sinus effectively.

Conclusion

The study concludes that Ksharasutra therapy is a safe, effective and minimally invasive modality for the management of Pilonidal Sinus (Nadi Vrana). The procedure is associated with low recurrence, minimal complications, faster recovery and better patient compliance.

INTRODUCTION

“Pilonidal sinus” is a chronic inflammatory condition typically located in the sacrococcygeal region, often affecting young adults, particularly males. It presents with a discharging sinus tract, pain, and occasional

abscess formation, which significantly affects the quality of life. The condition is thought to be acquired due to the penetration of loose hairs into the skin, leading to a foreign body reaction and subsequent sinus formation.

In modern medicine, treatment involves surgical excision with primary or secondary closure or flap surgeries. However, these procedures are often associated with a high recurrence rate, delayed wound healing, risk of infection, and prolonged hospitalization. Hence, there is a growing need for a minimally invasive, effective, and patient-friendly treatment alternative.

In Ayurveda, Pilonidal sinus can be correlated with “Nadivrana”, a type of chronic sinus described in classical texts. The “Ksharasutra therapy”, a well-established para-surgical technique mentioned in “Sushruta Samhita”, has shown proven efficacy in managing various sinus conditions including Bhagandara (fistula-in-ano), Nadi Vrana (sinuses), and Arsha (piles). Ksharasutra is a medicated thread prepared using Apāmārga Kshāra, Snuhi (*Euphorbia neriifolia*) latex, and Haridra (*Curcuma longa*). Its triple action—cutting, curettage, and healing—makes it a powerful tool in managing sinus tracts. It promotes controlled chemical cauterization of unhealthy tissue, maintains proper drainage, prevents secondary infection, and induces healthy granulation tissue formation.

This study aims to evaluate the clinical effectiveness of Ksharasutra therapy* in the management of pilonidal sinus, assessing parameters such as healing time, recurrence, and patient outcomes, and to establish it as a viable alternative to surgical intervention in selected cases.

Case Report :

A 30 year old man, non-diabetic, non-smoker, no any systemic diseases yet, presented with complaints of pus discharge, pain and mild swelling and itching in the sacrococcygeal region for the past 3 months. their is no history of trauma, surgery or systemic illness.

Gen. examination :

Name :xyz

Age :30 yrs

Sex: Male

Occupation :software department

Marital status :married

Address: Delhi

Vital signs :

Blood pressure :118/76mm of Hg

Pulse rate :76 beats /min.

Respiratory rate :15/min.

Temperature :98.4F

SpO2:98.9%

Dashvidha Pariksha :

Pariksha	Observation
Prakriti	Vata-Kapha dominant
Vikriti	Kapha-vata vitiation at local site
Sara	Madhyama (medium quality tissues)
Samhanana	Madhyama (moderate physique)
Pramana	Madhyama (moderate body measurements)
Satmya	Shakahari, accustomed to regular meals
Satva	Madhyama (moderate mental strength)
Aahara Shakti	Samyak (good appetite & digestion)
Vyayama Shakti	Madhyama (moderate exercise capacity)
Vaya (Age)	Yuva (Young adult)

Clinical findings :

On examination , it was found that multiple external opening with purulent discharge and surrounding induration present in the natal cleft. Local tenderness and hair tuft were present. On probing, a single tract of approximately 8cm was detected.

MRI findings:

A linear, hypointense sinus tract is noted in the midline sacrococcygeal region, extending from the skin surface of the natal cleft to a depth of approximately 8.0 cm, with minimal lateral branching.

Diagnosis :

Based on clinical examination and MRI reports, the case was diagnosed as Pilonidal Sinus. In Ayurvedic terms , it was correlated with “Nadivraha”.

Therapeutic Intervention :

Pre-operative :

Patient was admitted in the ward in the early morning by maintaining N.P.O. 4 HRS before operate, written consent was taken , xylocaine sensitivity test was done , as bowel of the patient is satisfactorily clear so enema not given, part preparation was done . All vitals were checked and stable and now patient is shifted to O.T. for procedure.

Operative :

By maintain all aseptic measures, cleaning and draping of the patient was done 2ml xylocaine 2% with adrenaline solution diluted with 3ml of N.S. was given at the operative site of patient. Wait for 1min for anaesthetic effect of the drug and after 1min. the tract was explored using a malleable probe. After confirming the complete tract Apamarg Ksharasutra was inserted through the sinus and tied at both ends.



On the day of procedure



On 92th day of post-op

Post-operative :

The patient was advised to follow proper local hygiene, sitz bath, with syringing of 2ml jatyadi tail every night after taking sitz bath at night .oral medication includes tan. Triphala guggulu 2BD for 1mnth. The Ksharasutra was changed weekly .

Assessment criteria :

Objective Criteria :

Parameter	Method of Assessment	Scoring/Observation
Pain	Visual Analog Scale (VAS) 0–10	0 = No pain, 10 = Severe pain
Discharge	Observation of quantity and type	None / Serous / Purulent / Blood-stained
Swelling/Induration	Palpation and measurement	Present / Absent (Size in cm if present)

Tenderness	Graded response on palpation	Absent / Mild / Moderate / Severe
Tract Length	Measured using probe at each visit	In cm (Measured weekly)
Wound Healing Time	Days from Ksharasutra application to complete healing	Recorded in days
Recurrence	Clinical follow-up after 3–6 months	Present / Absent

Ayurvedic Parameters

Ayurvedic Parameter	Assessment Basis	Observation
Vrana Shuddhi (Wound cleansing)	Absence of slough, discharge, foul smell	Achieved / Not achieved
Ropana (Healing progress)	Healthy granulation tissue, epithelialization	Satisfactory / Delayed
Vedana (Pain)	Based on Ayurvedic observation (e.g., Daha, Toda)	Nirvedana / Alpavedana / Tivra Vedana
Srava (Discharge)	Quantity and quality per classical description	Visra / Picchila / Raktasrava

Functional Parameters

Parameter	Assessment Method	Observation
Return to Routine Activities	Days post-procedure	Number of days taken
Hospital Stay	Recorded duration (usually nil)	OPD-based / Admitted (days)
Need for Analgesics/Antibiotics	Duration used	Days or total doses used

Patient-Reported Outcomes

Parameter	Tool	Observation
Patient Satisfaction	Feedback scale (1–5 or Excellent/Good/Fair/Poor)	Subjective
Ease of Procedure Tolerance	Interview / questionnaire	Easy / Moderate / Difficult
Cosmetic Outcome	Patient feedback and photo comparison	Acceptable / Scar present / Hypertrophic scar

Duration of treatment :

The tract healed completely in 95 days /13 weeks . No sign of infection , pain or discomfort were noted during treatment.

Outcomes and followup:

Wound Healing :complete healing observed in 95 days.

Complications:None reported.

Recurrence : No recurrence observed during last 6month followup.

Patient feed back :minimal pain, can continue his routine on the 3rd day of operate and patient have more than 5hours sitting work at their work place ,fully satisfied.

RESULT

Parameter	Before Treatment	After Treatment
1. Pain (VAS Score 0–10)	7 (moderate to severe)	0 (no pain)
2. Discharge	Purulent, moderate	Absent
3. Swelling/Induration	Present, 3 × 2 cm	Absent
4. Tenderness	Present (moderate)	Absent
5. Tract Length (measured)	8cm (on probing)	Healed completely
6. Wound Healing Status	Not initiated	Complete healing in 13weeks
7. Recurrence	Not applicable	None during 6-month follow-up
8. <u>Vrana Shuddhi</u> (wound cleansing)	<u>Sloughy</u> with foul smell	healthy granulation tissue
9. <u>Ropana</u> (Healing progress)	Delayed	Satisfactory epithelialization
10. <u>Vedana</u> (Ayurvedic pain)	<u>Tivra</u> (severe pain)	<u>Nirvedana</u> (no pain)
11. <u> Srava</u> (Discharge - Ayurveda)	<u>Visra, Picchila</u>	<u>Nirsrava</u> (no discharge)
12. Return to Routine Activity	Restricted due to pain	Returned by 3 rd day
13. Hospital Stay	Not admitted (OPD case)	Continued as OPD
14. Analgesic Use	During procedure	Not required post 2 week
15. Patient Satisfaction	Not satisfied	Fully satisfied
16. Cosmetic Outcome	Sinus opening with discharge	Healed scar, cosmetically acceptable

DISCUSSION

The results of this study demonstrate that Ksharasutra effectively promotes simultaneous cutting, drainage, debridement, and healing of the sinus tract. The alkali content (Kshara) causes controlled cauterization of unhealthy tissue, while the latex of Snuhi and Haridra provide anti-inflammatory and antibacterial actions, enhancing wound healing. Weekly thread changes maintained steady progression of tract cutting and healing.

In this case, complete healing was achieved within 13 weeks with no postoperative complications or recurrence during the 6-month follow-up. The procedure required no hospitalization or anesthesia, and the patient was able to continue daily activities with minimal discomfort. These outcomes are consistent with other clinical studies that affirm the high success rate and low recurrence of Ksharasutra therapy in similar cases. The Ayurvedic principle of Shodhana (cleansing) and Ropana (healing) was successfully applied, and the treatment reflected a balance of traditional knowledge and modern clinical application. Ksharasutra therapy addresses the root pathology of pilonidal sinus without extensive tissue damage or surgical burden on the patient.

Like other operative management here in this case patient come back to their routine work on the very 3rd of post-op period.in first 2 weeks discharge on sitz bath is thick and patient have slight pain on sitting because patient continue{ sitting}their work of more than 5 hrs in their office but after that patient feels slight pain on the time of thread change after 5min . he got relief after applying lignocaine jelly 2%over that site .This healing time may become short if patient have not so much sitting work but patient fully satisfied because

according to patient pain was minimum and his work was not suffered due to this procedure..Now wound is completely healed and yet no recurrence was noted since last 6mnth.of follow-up.

Role of Triphala guggule and Jatyadi taila :

Triphala Guggulu is a classical Ayurvedic formulation known for its anti-inflammatory, antimicrobial, wound-healing, and detoxifying properties. It plays a supportive and adjunctive role in the management of pilonidal sinus (Nadivrana), especially when used alongside Ksharasutra therapy or in the post-procedure healing phase.

Pharmacological Actions Relevant to Pilonidal Sinus:

Ingredient	Key Properties	Relevance to Pilonidal Sinus
Triphala (<i>Haritaki, Bibhitaki, Amalaki</i>)	Tridosha balancing, anti-inflammatory, antioxidant, wound-healing	Helps reduce local inflammation and promotes tissue regeneration
Guggulu (<i>Commiphora mukul</i>)	Lekhana (scraping), Shothahara (anti-inflammatory), Ropana (wound healing), antimicrobial	Aids in draining pus, reducing fibrosis, and accelerating healing of the sinus tract
Pippali (<i>Piper longum</i>)	Deepana-Pachana (digestive stimulant), bioenhancer	Improves bioavailability and supports gut detox during infection
Shuddha Guggulu	Rasayana (rejuvenative), analgesic	Reduces chronic inflammation and pain

Dose: 1–2 tablets (500 mg each), twice daily after meals with lukewarm water or as directed by an Ayurvedic physician. In this study, I have advised 2tab. BD for 1month with lukewarm water.

Duration: Usually continued for 4–6 weeks, especially during or after Ksharasutra therapy.

Adjuvants: Can be combined with local application of Jatyadi Taila, Triphala Kashaya dhavana, or Sitz bath with Panchavalkala decoction.

Jatyadi Taila, a classical Ayurvedic medicated oil, is widely used for Vrana Ropana (wound healing). In the management of Pilonidal Sinus (Nadivrana), syringing with Jatyadi Taila plays an important local therapeutic role, particularly in promoting cleansing, disinfection, granulation tissue formation, and faster healing.

Composition and Actions of Jatyadi Taila:

Ingredient	Key Properties	Action in Pilonidal Sinus
Jati (<i>Jasminum officinale</i>)	Vrana ropaka, anti-inflammatory	Promotes wound healing and reduces local inflammation
Neem (<i>Azadirachta indica</i>)	Antibacterial, anti-purulent	Prevents infection and supports tract disinfection
Haridra (<i>Curcuma longa</i>)	Antiseptic, antioxidant	Aids in granulation and prevents oxidative damage
Tila Taila (Sesame oil)	Snehana, deep tissue penetration	Acts as the base oil to carry the herbs deep into tissues
Manjistha, Daruharidra, Patoladi dravyas	Anti-inflammatory, blood purifier	Support faster tissue regeneration and Shodhana (cleansing)

CONCLUSION

This case report demonstrates that Ksharasutra therapy, a classical Ayurvedic para-surgical procedure, is a safe, effective, and minimally invasive modality for the management of Pilonidal Sinus (Nadivrana). The treatment led to complete healing within 13 weeks, with no complications or recurrence during the 6-month follow-up period.

The use of supportive therapies like Triphala Guggulu and syringing with Jatyadi Taila further enhanced wound healing, reduced inflammation, and promoted early recovery. The procedure was performed entirely on an OPD basis, ensuring patient convenience, minimal disruption to daily life, and cost-effectiveness.

This case supports the integration of Ayurvedic approaches like Ksharasutra in the management of chronic sinus conditions and highlights their potential as viable alternatives to conventional surgical methods, especially in recurrent or uncomplicated cases of pilonidal sinus.

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