

COMPARATIVE EFFICACY OF AYURVEDIC KSHARASUTRA THERAPY AND
CONVENTIONAL SURGICAL TECHNIQUES IN THE MANAGEMENT OF PILONIDAL
SINUS: A META-ANALYSISDr. Manoj D. C.*¹, Dr. Shailaja S. V.²¹Ph.D Scholar, Department of Shalya Tantra, Sri Kalabyraveshwaraswamy Ayurvedic Medical College, Hospital & Research centre, Bengaluru, Karnataka, India.²Professor & HOD, Department of Shalya Tantra, Sri Kalabyraveshwaraswamy Ayurvedic Medical College, Hospital & Research centre, Bengaluru, Karnataka, India.

Article Received on: 11/10/2025

Article Revised on: 31/10/2025

Article Published on: 01/11/2025

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<https://doi.org/10.5281/zenodo.17539877>



How to cite this Article: Dr. Manoj D. C.*, Dr. Shailaja S. V. (2025). Comparative Efficacy Of Ayurvedic Ksharasutra Therapy And Conventional Surgical Techniques In The Management Of Pilonidal Sinus: A Meta-Analysis. International Journal of Modern Pharmaceutical Research, 09(11), 62-64.

ABSTRACT

Background: Pilonidal sinus disease (PSD) is a common debilitating condition predominantly affecting young males. While conventional surgery remains the mainstay, recurrence and wound complications persist. Ayurveda describes a minimally invasive parasurgical technique—Ksharasutra—that has shown promising outcomes. This study aims to conduct a meta-analysis comparing Ayurvedic and conventional treatments for PSD. **Methods:** Seven peer-reviewed articles (3 Ayurvedic case series, 1 case report, 2 clinical trials on conventional surgeries, and 1 large-scale meta-analysis) were analyzed. Key parameters assessed included healing time, recurrence rate, complications, and patient comfort. **Results:** Ayurvedic Ksharasutra treatment demonstrated a mean healing time of 4–5 weeks with no recurrence reported in follow-ups ranging from 3 months to 20.4 months. Surgical interventions (n=89,583 in pooled data) showed varying recurrence: Karydakis/Bascom procedures (0.2% at 12 months) outperformed midline closures (up to 67.9% at 240 months). Healing time post-excision averaged 65–68 days. Hydrocolloid dressings improved comfort but didn't reduce healing time. **Conclusion:** Ksharasutra therapy offers an effective, low-cost, minimally invasive treatment for uncomplicated PSD with negligible recurrence and faster healing. While modern flap surgeries remain superior in complex cases, Ksharasutra should be considered a first-line approach in select patients.

KEYWORDS: Pilonidal sinus, Ksharasutra, Nadi Vrana, recurrence, meta-analysis, surgical flaps, Ayurveda.

INTRODUCTION

Pilonidal sinus disease (PSD) is a chronic suppurative condition that typically affects the sacrococcygeal region in young adult males. Characterized by hair-filled tracts, PSD may present as abscesses, discharging sinuses, or chronic wounds. The incidence ranges from 26–48 per 100,000 individuals, with a male preponderance.^[5,7]

Conventional treatments include sinus excision with healing by secondary intention, primary closure, and advanced flap techniques (e.g., Karydakis, Bascom, Limberg). Although flap surgeries offer lower recurrence, they are invasive, expensive, and not always accessible.

In Ayurvedic texts, PSD is correlated with *Nadi Vrana*, a tract-based wound pathology caused by foreign bodies like hair. *Ksharasutra*, a medicated seton prepared with herbal alkalis, offers simultaneous cutting, debridement,

and healing.^[4] This study seeks to compare these modalities comprehensively.

MATERIALS AND METHODS

A total of seven articles were included:

- Four Ayurvedic studies (case reports/series) on *Ksharasutra*^[1,2,3,4]
- One randomized trial on hydrocolloid dressings^[3]
- One surgical review^[5]
- One global meta-analysis including 89,583 patients^[6]

Outcomes Compared

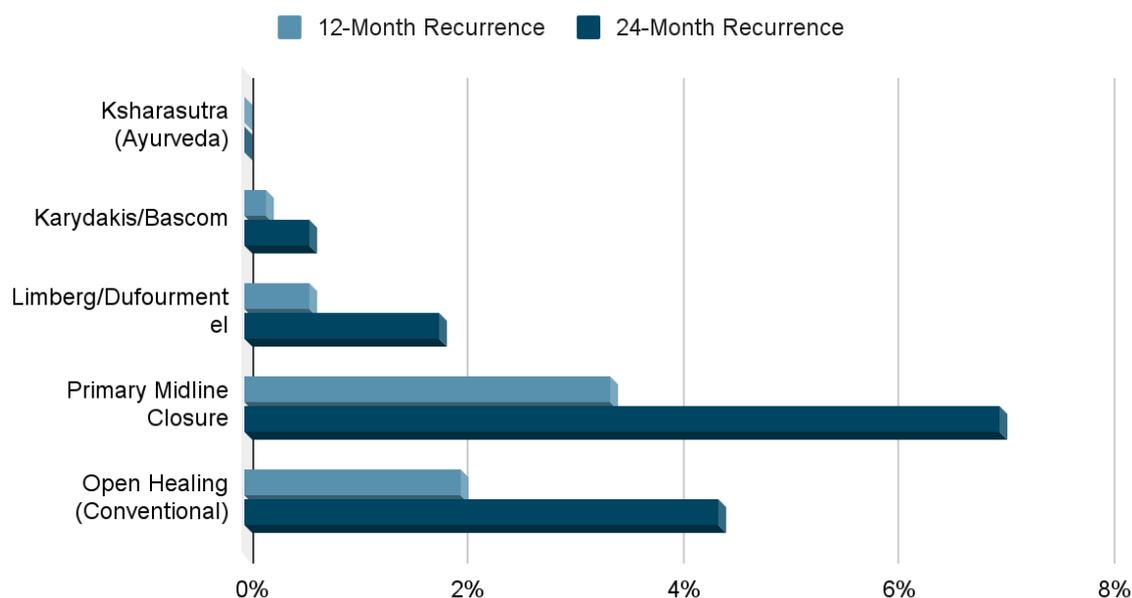
- Healing duration
- Recurrence at 12 and 24 months
- Postoperative complications
- Hospital stay and pain control
- Patient comfort and hospital stay

Data were extracted manually, and findings were compared qualitatively due to heterogeneity in study design.

Table 1: Comparative Summary of Ayurvedic and Conventional Approaches.

Parameter	Ksharasutra Therapy	Conventional Surgery
Sample Size	17 (4 studies)	89,583 (meta-analysis) ^[6]
Healing Time	4–5 weeks ^[1,2,3,4]	8–10 weeks (65–68 days) ^[3]
Recurrence (12 mo)	0% ^[1,2,3,4]	0.2% (Karydakis/Bascom), up to 3.4% ^[6]
Recurrence (24 mo)	0% ^[1,2,3,4]	0.6%–7.0% ^[6]
Recurrence (60 mo+)	Not reported	Up to 67.9% (midline closure) ^[6]
Pain & Comfort	Mild, no antibiotics ^[1,2]	Moderate, varies by technique ^[3]
Hospital Stay	Mostly OPD ^[1,4]	1–3 days average ^[3]
Cost	Low	Moderate to high (flap surgeries)

Points scored



Graph 1: Recurrence Rate by Procedure Type (12 and 24 Month Comparison).

Points scored



Graph 2: Healing Time Comparison.



DISCUSSION

The Ksharasutra method exhibits advantages including minimal invasiveness, cost-effectiveness, and faster healing. Case reports consistently report 100% healing with 0% recurrence in follow-up durations up to 20 months^{1,2,4}. The average unit cutting time aligns with standards used in fistula-in-ano (~1 cm/week).^[4]

Comparatively, the recurrence in midline closures can be alarmingly high over time, even when early outcomes are acceptable.^[6] Flap-based surgeries like Karydakis and Bascom offer the lowest recurrence but demand more surgical expertise and resources.

Hydrocolloid dressings improve comfort but do not reduce healing time.^[3] Ksharasutra avoids surgical morbidity, reduces antibiotic dependency, and is better suited for primary, uncomplicated sinuses.

CONCLUSION

This review confirms that Ayurvedic *Ksharasutra* therapy is a viable first-line treatment for uncomplicated PSD, particularly in resource-limited settings or where surgical morbidity is a concern. For recurrent, complex, or deep sinuses, flap surgeries offer better long-term control.

Further RCTs comparing these modalities directly are warranted to establish evidence-based integration of Ayurveda into mainstream surgical care.

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