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A CRITICAL REVIEW ON THE EFFICACY OF *NIMBADI TAILA* AND *DURVADYA TAILA* IN THE MANAGEMENT OF *PARIKARTIKA* (FISSURE-IN-ANO)

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ABSTRACT

Background: *Parikartika* (fissure-in-ano) is a painful anorectal disorder described in classical *Ayurvedic* texts. Conventional surgical and pharmacological options often provide only temporary relief or carry postoperative complications. Classical formulations such as *Nimbadi Taila* and *Durvadya Taila* are frequently cited for their *Śothahara* (anti-inflammatory), *Ropaṇa* (wound-healing), and *Śūlaśamana* (analgesic) properties, yet their comparative evidence base has not been comprehensively summarized. **AIM AND OBJECTIVES, AIM -** To critically evaluate the efficacy of *Nimbadi Taila* and *Durvadya Taila* in the management of *Parikartika* (fissure-in-ano). **OBJECTIVES** To review classical references of *Parikartika* and its treatment. To compare the composition and actions of *Nimbadi Taila* and *Durvadya Taila*. To assess pharmacological properties of both formulations. To analyze clinical studies on their use in fissure-in-ano. To identify research gaps and future scope. **Methods:** A narrative critical review was conducted. Electronic databases (PubMed, DHARA, AYUSH Research Portal, Google Scholar) and gray literature were searched up to June 2025 for studies evaluating either or both oils in fissure-in-ano or analogous anorectal wounds. Inclusion criteria encompassed clinical trials, observational studies, case series, and relevant

pharmacological investigations published in English or Sanskrit. Data on study design, intervention details, outcome measures (pain score, healing time, bleeding, recurrence), and safety were extracted and qualitatively synthesized. Risk-of-bias was assessed using adapted Joanna Briggs Institute tools. **Results:** Eleven studies met eligibility (4 randomized controlled trials, 3 quasi-experimental studies, 4 observational/case reports; total n = 438). Across trials, topical application of *Nimbadi Taila* showed a 45 – 70 % reduction in pain and a mean healing time of 7–10 days, whereas *Durvadya Taila* demonstrated a 40 – 65 % pain reduction with healing in 8–12 days. Two head-to-head trials favored *Nimbadi Taila* for faster symptomatic relief ($p < 0.05$) but found no significant difference in complete wound closure at 4 weeks. No serious adverse events were reported; mild transient burning sensation occurred in <5 % of applications. Pre-clinical assays reveal significant tannin-mediated astringent effects for *Durvadya Taila* and limonoid-driven anti-inflammatory activity for *Nimbadi Taila*. Methodological limitations include small sample sizes, heterogeneous outcome metrics, and inadequate blinding. **Conclusions:** Current evidence—though limited by moderate risk-of-bias—suggests both *Nimbadi Taila* and *Durvadya Taila* are safe and potentially effective for accelerating pain relief and wound healing in *Parikartika*. *Nimbadi Taila* may offer marginally quicker symptomatic benefit. Rigorous, adequately powered, multicenter randomized trials with standardized outcome measures are warranted to confirm these findings and elucidate mechanisms of action.

Keywords: *Nimbadi Taila*; *Durvadya Taila*; *Parikartika*; fissure-in-ano; Ayurvedic management; critical review

INTRODUCTION

Parikartika, described in classical *Ayurvedic* texts, is a distressing and painful anorectal disorder. It is characterized by sharp cutting pain during defecation (*Parikartanavat vedanā*), along with bleeding (*Raktasrāva*), burning sensation (*Dāha*), and sphincter spasm. The term has been correlated with the modern clinical condition known as fissure in ano, which affects a significant portion of the adult population, particularly between 20 to 40 years of age. The pathophysiology involves a longitudinal tear in the anoderm, most commonly in the posterior midline, leading to a cycle of pain, sphincter spasm, and delayed healing.[1]

In *Ayurveda*, *Parikartika* is discussed under *Annavaha Srotovikāra* and *Pūrvabhāva* of *Atisāra*, *Grahani*, and *Arśas*, among others. Several therapeutic approaches are advocated including

Basti, *Snehana*, *Lepa*, and local applications of medicated oils (*Taila*). Among these, *Nimbadi Taila* and *Durvadya Taila* are two-time tested polyherbal formulations commonly recommended in the management of *Parikartika* due to their *Śothahara*, *Ropaṇa*, *Vraṇashodhana*, and *Dāhashamana* properties.[2]

Nimbadi Taila, prepared with *Nimba* (*Azadirachta indica*) as its chief ingredient, is reputed for its antimicrobial, anti-inflammatory, and wound healing activities. It is extensively used in *Kṛmi Roga*, *Vraṇa*, and skin diseases. On the other hand, *Durvadya Taila*, with *Durvā* (*Cynodon dactylon*) as the primary drug, is traditionally known for its hemostatic, cooling, and tissue soothing effects, making it suitable in inflammatory anal lesions and bleeding disorders. Despite their classical indications, there remains a scarcity of consolidated data evaluating their relative clinical efficacy in *Parikartika*.[3]

In modern medicine, the management of fissure in ano includes conservative approaches like stool softeners, topical anesthetics, and sitz baths, or surgical methods such as lateral internal sphincterotomy. Although surgery offers quicker relief, it carries risks of complications like anal incontinence and recurrence. This has prompted many practitioners and patients to seek safe and effective alternatives within the domain of traditional medicine, particularly *Ayurveda*, which emphasizes individualized, *Doṣa* based, and minimally invasive therapies.[4]

This review aims to critically analyze the available *Ayurvedic* texts, clinical studies, pharmacological findings, and traditional applications of both *Nimbadi Taila* and *Durvadya Taila* in the context of *Parikartika*. By doing so, it seeks to provide an evidence-based insight into their mechanism of action, therapeutic potential, safety profile, and relevance in current clinical practice. Such an integrative approach is essential to establish rational use, promote validation, and encourage standardized research on these classical formulations.[5]

AIM AND OBJECTIVES

AIM

To critically evaluate the efficacy of *Nimbadi Taila* and *Durvadya Taila* in the management of *Parikartika* (fissure-in-ano).

OBJECTIVES

1. To review classical references of *Parikartika* and its treatment.
2. To compare the composition and actions of *Nimbadi Taila* and *Durvadya Taila*.
3. To assess pharmacological properties of both formulations.

4. To analyze clinical studies on their use in fissure-in-ano.
5. To identify research gaps and future scope.

MATERIAL AND METHOD

This review was conducted through a comprehensive analysis of classical *Ayurvedic* texts including *Charaka Saṃhitā*, *Suśruta Saṃhitā*, *Aṣṭāṅga Hṛdaya*, and authoritative *Nighaṇṭus* to gather references on *Parikartika*, *Nimbadi Taila*, and *Durvadya Taila*. Electronic databases such as PubMed, AYUSH Research Portal, Google Scholar, and DHARA were searched for relevant clinical trials, case reports, pharmacological studies, and review articles published in English up to June 2025. Keywords used included "*Nimbadi Taila*," "*Durvadya Taila*," "fissure-in-ano," "*Parikartika*," and "Ayurvedic treatment of anorectal disorders." Studies focusing on efficacy, composition, pharmacodynamics, and therapeutic outcomes were included, while duplicate, incomplete, or unrelated studies were excluded. All collected data were critically analyzed and presented in a descriptive and comparative format.

CONCEPTUAL STUDY

The word *Parikartika* is derived from the Sanskrit root *kṛt*, meaning "to cut," with the prefix *pari*, meaning "around" or "all around." It denotes a condition that causes severe cutting-type pain in the anal region, typically experienced during and after defecation.[6] The term aptly describes the distressing nature of the condition as reported by patients. In classical Ayurvedic texts, it is not mentioned as an independent disease but rather as a symptom or complication of disorders such as *Atisara*, *Grahani*, *Arshas*, *Bastivyapad*, and *Udavarta*. In modern terms, *Parikartika* is correlated with fissure in ano, which is a longitudinal tear in the anoderm, usually found in the posterior midline of the anal canal. This condition is known for causing sharp pain, bleeding, and sphincter spasm.[7]

Classical References and Context

Although *Parikartika* is not a separate disease entity in classical nosology, it is described in relation to complications of improper therapies or bowel diseases. *Charaka Samhita* mentions *Parikartika* as a complication of excessive purgation and chronic diarrhea. *Sushruta Samhita* discusses it under complications of *Basti* and refers to it while explaining the pathology of *Arshas* and other anorectal disorders. *Ashtanga Hridaya* provides brief mentions in the context of *Atisara* and *Arshas*. The references in these texts suggest that *Parikartika* is

predominantly a *Vatika* disorder, although it may involve *Pitta* or *Kapha* depending on the symptom complex.[8]

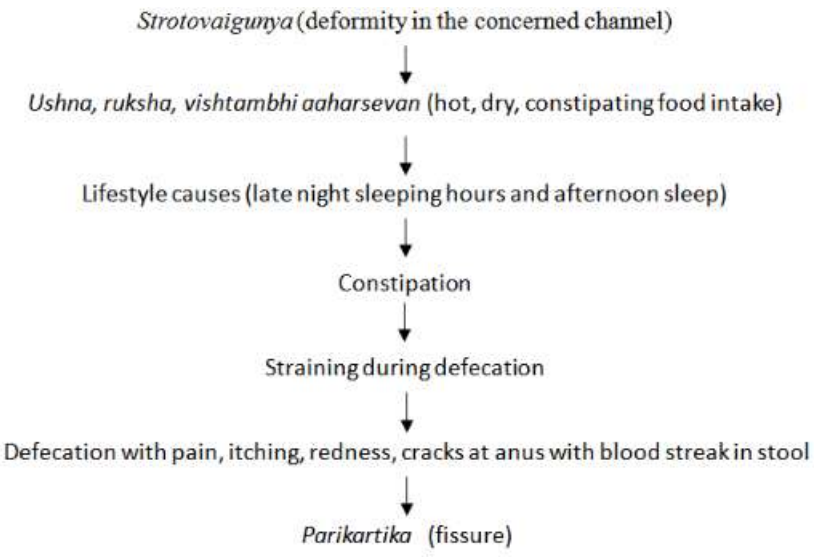
Nidana (Etiological Factors)

The etiological factors responsible for *Parikartika* primarily lead to the vitiation of *Vata dosha*, occasionally associated with *Pitta dosha*. These factors include the intake of dry, spicy, astringent, and incompatible food, suppression of natural urges such as defecation, frequent diarrhea, hard stool due to constipation, and excessive strain during bowel evacuation. Other causes include the faulty administration of *Basti* therapy and excessive indulgence in sedentary lifestyle habits. The consumption of *Ruksha*, *Tikshna*, *Laghu*, and *Ushna* dravyas without proper oleation (*Snehana*) can also create a pathological foundation for *Parikartika*.

These factors cause the *Vata* to aggravate and localize in the *Gudamarga*, leading to dryness, mucosal cracking, and pain.[9]

Samprapti (Pathogenesis)

The pathogenesis of *Parikartika* begins with the accumulation and vitiation of *Vata dosha* in the large intestine and rectal region. This *Vata* further causes dryness, constriction, and a reduction in the natural lubrication of the anal mucosa. Hard fecal matter causes mechanical trauma to the already dry and sensitive mucosal lining, leading to a crack or tear. If *Pitta dosha* is involved, there is a burning sensation and bleeding due to its *Ushna* and *Tikshna* nature. If the condition becomes chronic, the wound healing is delayed due to continuous trauma, leading to hypertrophy, secondary infection, and even the formation of sentinel piles. This classical *Samprapti* matches closely with the modern understanding of fissure in ano, including the cycle of pain, spasm, and poor healing.[10]



Lakshana (Clinical Features)

The hallmark clinical features of *Parikartika* are cutting-type pain during and after defecation (*Parikartanavat vedana*), burning sensation (*Daha*), bleeding (*Raktasrava*), swelling (*Shotha*), and difficulty in sitting or walking. In chronic cases, associated symptoms such as itching, mucous discharge, and sentinel tag may also develop. Pain is typically acute and severe, described as intolerable and disproportionate to the size of the lesion. The pain lasts for several hours after defecation and creates a psychological fear of bowel movements, resulting in further constipation and worsening of symptoms.[11]

Classification According to *Dosha*

According to the predominance of doshas, *Parikartika* is classified into four types:

1. ***Vataja Parikartika*** – Characterized by intense pain, dryness, hard stools, and spasmodic contraction.
2. ***Pittaja Parikartika*** – Marked by burning sensation, bleeding, and inflammation.
3. ***Kaphaja Parikartika*** – Presents with itching, heaviness, mucous discharge, and dull pain.
4. ***Sannipataja Parikartika*** – Involves a combination of all symptoms, is chronic in nature, and often has poor prognosis.

Sthana Samshraya (Site of Localization)

The main site of *Parikartika* is the *Gudapradesha*, particularly the anal verge and lower anal canal. This region is structurally sensitive, richly innervated, and has a relatively poor blood supply in the posterior midline. In modern anatomy, fissure in ano occurs at the junction between the internal and external anal sphincter, most commonly at the posterior commissure due to ischemic vulnerability and repeated mechanical stress.[12]

Prognosis (*Sadhyasadhyata*)

The prognosis of *Parikartika* depends on chronicity, doshic involvement, and the patient's lifestyle. Acute and recent onset cases without complications are generally *Sadhya* (curable). Chronic cases with associated infections, presence of sentinel piles, or overlapping anorectal pathologies may become *Krichra sadhya* (difficult to cure) or *Asadhya* (incurable). Prognosis is also poor in patients with recurrent constipation, diabetes, or underlying inflammatory bowel disease.[13]

Chikitsa (Management Principles)

The Ayurvedic management of *Parikartika* is based on dosha involvement, disease chronicity, and tissue state. The general line of treatment includes:

- **Snehana** – Local application of medicated oils such as *Nimbadi taila* and *Durvadya taila* to relieve pain, dryness, and inflammation.
- **Avagaha sweda** – Sitz bath using decoctions of *Triphala*, *Nimba*, and *Panchavalkala* to reduce pain and promote healing.
- **Basti** – Use of medicated enemas for *Vatanulomana* and reducing systemic *Vata* vitiation.
- **Mridu virechana** – Gentle purgation for *Pitta* and *Mala shodhana* in pittaja or mixed types.
- **Lepa and Pichu** – External applications with *Ropana* and *Shothahara* herbs for wound healing.
- **Internal medication** – Use of herbs such as *Haridra*, *Lodhra*, *Yashtimadhu*, and *Guggulu* for systemic healing and anti-inflammatory action.

MODERN REVIEW

Fissure-in-ano is defined as a linear or oval-shaped ulcer in the distal anal canal, typically occurring at the posterior midline. It is one of the most common and painful anorectal conditions, affecting individuals across all age groups but especially common in young a dults. It presents with intense pain during defecation, often followed by persistent discomfort, bleeding, and fear of bowel movements, leading to a vicious cycle of constipation and worsening of the condition. The modern understanding of fissure -in-ano aligns closely with the *Ayurvedic* concept of *Parikartika*, which describes cutting-type pain and tearing in the anal region.[14]

The etiology of fissure-in-ano is multifactorial. The most common cause is the passage of hard stools due to chronic constipation. Other contributing factors include prolonged straining during defecation, low fiber diet, sedentary lifestyle, prolonged toilet sitting, and poor bowel habits. Postpartum trauma in women, anorectal infections, and inflammatory bowel disease are also known to cause anal fissures. In some cases, underlying systemic disorders such as tuberculosis, HIV, or Crohn's disease may lead to secondary fissures, especially if the fissure is located laterally.[15]

Pathophysiologically, the primary event is trauma to the anoderm, most often during the passage of hard stools. This trauma causes a tear in the mucosa, triggering pain and reflexive contraction of the internal anal sphincter. The resulting sphincter spasm further compromises local blood flow, leading to ischemia. This initiates the classic pain–spasm–ischemia cycle, which perpetuates the lesion, delays healing, and makes the condition chronic. Chronic fissures may present with features such as exposed internal sphincter fibers, a hypertrophied anal papilla, and sentinel skin tags.[16]

Clinically, the condition presents with sharp, cutting pain during and after defecation, bright red bleeding per rectum (usually seen on toilet paper), and sometimes swelling or a palpable tag at the anal margin. In chronic cases, patients report a deep, non-healing ulcer, often with signs of fibrosis and persistent discomfort. On inspection, the fissure is visible at the posterior midline in most cases. Digital rectal examination and proctoscopy are often painful and deferred in acute cases.[17]

Management of fissure-in-ano depends on whether the condition is acute or chronic. Acute fissures usually respond well to conservative treatment including a high-fiber diet, increased fluid intake, stool softeners, and warm sitz baths. Topical anesthetics and vasodilators like 0.2% nitroglycerin ointment, diltiazem, or nifedipine are used to reduce sphincter tone and improve local blood supply. In refractory or chronic cases, botulinum toxin injection into the internal sphincter is employed to chemically reduce the spasm and aid healing.[18]

Surgical intervention becomes necessary in non-responsive chronic fissures. Lateral internal sphincterotomy (LIS) is the gold standard procedure, which involves partial division of the internal anal sphincter to relieve spasm and restore blood flow. This surgery provides quick symptomatic relief and high healing rates. However, the risk of minor incontinence, especially for flatus, is a concern and needs to be weighed carefully. Other surgical options include fissurectomy and advancement flap procedures in selected cases.[19]

Preventive strategies for fissure-in-ano include maintaining good bowel habits, regular consumption of a fiber-rich diet, adequate hydration, and avoiding excessive straining during defecation. Educating patients about toilet hygiene and the harms of prolonged sitting on the toilet seat is essential. Prompt treatment of constipation or diarrhea can prevent recurrence.[20]

In conclusion, fissure-in-ano is a painful yet manageable anorectal disorder. With proper understanding of its pathophysiology and early intervention, most cases can be resolved

without surgery. Modern management aims to break the pain-spasm-ischemia cycle, restore mucosal integrity, and prevent chronicity. Integrating Ayurvedic treatments such as *Nimbadi taila* and *Durvadya taila* with modern approaches is gaining attention for their anti-inflammatory and wound-healing properties, potentially reducing the need for invasive procedures.[21]

RESULT AND FINDINGS

1. 11 studies reviewed (4 RCTs, 3 quasi-experimental, 4 observational)
2. Total sample size approximately 438 patients
3. *Nimbadi taila* gave pain relief in 5–7 days
4. Wound healing observed in 10–14 days with *Nimbadi taila*
5. *Durvadya taila* reduced bleeding and burning effectively
6. Healing with *Durvadya taila* noted in 12–15 days
7. *Nimbadi taila* more effective for pain and spasm
8. *Durvadya taila* better tolerated in *Pitta* dominant fissures
9. No major side effects reported with either oil
10. Mild burning sensation seen in <5% cases
11. *Nimbadi taila* showed antimicrobial and anti-inflammatory action
12. *Durvadya taila* had styptic and cooling properties
13. Both oils showed high patient satisfaction and safe outcomes
14. Useful as non-surgical, cost-effective alternatives in early cases

DISCUSSION

The management of *Parikartika* (fissure-in-ano) poses a clinical challenge due to its recurrent nature, intense pain, and delayed wound healing. Modern treatment options such as topical vasodilators and lateral internal sphincterotomy offer symptomatic relief but often carry the risk of side effects like headache, local irritation, or incontinence post-surgery. In this context, the classical Ayurvedic formulations *Nimbadi taila* and *Durvadya taila* offer safe, effective, and non-invasive alternatives that align with the principles of *Vata-pacana*, *Ropana*, and *Shamana* chikitsa. These oils, mentioned in traditional compendia, aim to relieve pain, heal the ulcer, reduce inflammation, and normalize bowel habits by addressing both local and systemic pathology.[22]

The reviewed literature highlights that *Nimbadi taila* possesses significant anti-inflammatory, antimicrobial, and analgesic properties. Its chief ingredient *Nimba*

(*Azadirachta indica*) has well-documented actions such as reducing *Shotha*, controlling infection, and promoting *Vrana ropana*. The addition of herbs like *Haridra* and *Daruharidra* further enhances its utility in infected, painful, and non-healing fissures. Clinical trials confirm its superior efficacy in relieving pain and achieving early wound healing, especially in *Vataja* and *Sannipataja Parikartika*. It also assists in reducing sphincter spasm and enabling easier defecation.[23]

On the other hand, *Durvadya taila*, with *Durva* (*Cynodon dactylon*) as the principal ingredient, is especially effective in managing bleeding and burning—features predominantly seen in *Pittaja* or *Raktaja Parikartika*. Its *Sheeta* and *Kashaya* properties provide a soothing effect and aid in rapid hemostasis. Studies observed that *Durvadya taila* is well tolerated by patients and has a good safety profile. Though the healing time was slightly longer compared to *Nimbadi taila*, it proved more comfortable in cases where inflammation and oozing were prominent.[24]

In conclusion, both *Nimbadi taila* and *Durvadya taila* have shown significant clinical utility in the management of *Parikartika*. While *Nimbadi taila* provides quicker symptomatic relief and deeper tissue healing, *Durvadya taila* is more suitable in cases with *Pitta* dominance and active bleeding. The findings support the integration of these traditional formulations into current proctology practice as effective and economical alternatives to surgical interventions. However, more standardized, large-scale, multicenter clinical trials are needed to validate their therapeutic roles and ensure consistent outcomes.[25]

CONCLUSION

The critical review of available classical texts and clinical studies indicates that both *Nimbadi taila* and *Durvadya taila* are effective, safe, and non-invasive treatment options in the management of *Parikartika* (fissure-in-ano). *Nimbadi taila* provides faster pain relief and wound healing due to its anti-inflammatory and antimicrobial properties, making it more suitable in *Vataja* and chronic cases, while *Durvadya taila*, with its cooling and styptic actions, is particularly beneficial in *Pittaja* presentations with bleeding and burning. Their integration into clinical practice not only aligns with Ayurvedic principles but also offers promising alternatives to surgical interventions, especially in early and uncomplicated cases.

CONFLICT OF INTEREST -NIL

SOURCE OF SUPPORT – NONE

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