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" EFFECT OF PANCHATIKTA GHRITA MATRABASTI IN THE MANAGEMENT OF PARIKARTIKA (FISSURE-IN-ANO): AN OPEN LABEL CLINICAL EVALUATION"

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ABSTRACT

Background: Parikartika, a Vata-Pitta predominant anorectal disorder described in classical Ayurvedic texts, closely parallels fissure-in-ano in contemporary surgical practice. It is characterised by linear ulceration of the anal canal mucosa presenting with severe defecatory pain, bright red rectal bleeding, burning, and pricking sensations. While modern management relies on conservative pharmacotherapy and surgical procedures such as lateral internal sphincterotomy, Ayurvedic medicine offers localised therapeutic modalities — among them, Matrabasti — with the potential for non-invasive, tissue-regenerative outcomes.

Objectives: To evaluate the clinical efficacy of Panchatikta Ghrita Matrabasti in the symptomatic relief and healing of Parikartika, and to document the safety profile of the intervention over a 14-day treatment period.

Materials and Methods: An open label clinical evaluation was conducted in 60 patients (aged 18–60 years) presenting with classical features of Parikartika with symptom duration of 7–15 days. Following a standardised sitz bath, patients received 20 ml of warm Panchatikta Ghrita Matrabasti administered per rectum through an infant feeding tube (No. 8) daily for 14 consecutive days. Assessment was performed using a validated six-parameter scoring scale encompassing pain (Shoola), rectal bleeding (Rakta Srava), burning (Daha), pricking sensation (Toda), tenderness, and difficulty in defecation (Mala Pravritti Krichrata), recorded at baseline, day 7, and day 14.

Results: Excellent relief (complete symptom resolution with fissure healing) was achieved in 42 patients (70.0%), moderate relief in 16 patients (26.7%), and mild relief in 2 patients (3.3%) who required an additional seven days of therapy. Complete cessation of rectal bleeding was observed in 95.8% of cases by day 3. Statistically significant improvement was documented across all six clinical parameters ($p < 0.001$, Wilcoxon signed-rank test). No adverse events were reported.

Conclusion: Panchatikta Ghrita Matrabasti demonstrates promising therapeutic efficacy as a conservative, minimally invasive treatment for Parikartika. The formulation's multi-modal pharmacological actions — Vata-shamana, Vedanasthapana, Shothahara, Jantughna, and Vrana Ropana — collectively address the pathophysiological mechanisms underlying fissure-in-ano. Larger randomised controlled trials with validated outcome measures and comparator arms are warranted to confirm these findings.

Keywords: *Parikartika; Fissure-in-ano; Panchatikta Ghrita; Matrabasti; Ayurveda; Anorectal disorders; Vrana Ropana; Shalya Tantra*

Introduction

Parikartika is a well-described anorectal condition in Ayurvedic surgical literature (*Shalya Tantra*). The word *Parikartika* derives from the Sanskrit root '*Kartana*', meaning to cut or slit, aptly describing the cardinal symptom of a sharp, cutting pain experienced during and after defecation [1]. Acharya Sushruta describes it as a disease of the *Guda* (anal region) characterised by burning and cutting pain, occurring predominantly due to the vitiation of Vata and Pitta doshas [2]. Contemporary *Shalya Tantra* scholars correlate Parikartika directly with fissure-in-ano, a linear ulceration of the anoderm below the dentate line that represents one of the most common and painful anorectal conditions encountered in clinical practice [3].

Globally, fissure-in-ano affects an estimated 11% of adults presenting to surgical outpatient departments, with a significant proportion progressing to the chronic form characterised by hypertrophied anal papillae, sentinel tag, and elevated resting anal sphincter pressure [4]. Conventional management strategies include dietary modification, stool softeners, topical glyceryl trinitrate, calcium channel blockers, botulinum toxin injection, and lateral internal sphincterotomy (LIS) [5]. While LIS yields high healing rates, it carries a risk of keyhole deformity and faecal incontinence, particularly in women and multiparous patients [6].

Ayurvedic management of Parikartika employs a range of modalities including *Deepana-Pachana* (digestive correction), *Vata-Shamana* (Vata pacification), *Virechana* (therapeutic purgation), *Kshara karma* (alkaline cauterisation), and local *Sneha* (oleation) therapies [7]. Among these, *Matrabasti* — a form of medicated enema using a measured quantity of medicated oil or ghee — offers localised therapeutic benefits within the anal canal and rectal mucosa. Its primary actions include *Vata-shamana*, direct lubrication of the fissure base, reduction of sphincter spasm, and promotion of wound healing (*Vrana Ropana*) [8].

Panchatikta Ghrita is a classical medicated ghee formulation composed of five bitter (*tikta rasa*) herbs — Nimba (*Azadirachta indica*), Patola (*Trichosanthes dioica*), Kantakari (*Solanum xanthocarpum*), Guduchi (*Tinospora cordifolia*), and Vasa (*Adhatoda vasica*) — processed with Triphala and cow's ghee (*Ghrita*). This formulation is reported to possess potent Tridosha-shamana properties, with particular emphasis on pacifying Vata and Pitta, and is classically indicated in skin disorders, wound healing, and inflammatory anorectal conditions [9]. The present study evaluates the clinical efficacy of Panchatikta Ghrita Matrabasti in patients presenting with acute Parikartika.

2. Aims and Objectives

The present study was designed to:

- (i) Evaluate the clinical efficacy of Panchatikta Ghrita Matrabasti in the management of Parikartika (fissure-in-ano) over a 14-day treatment period.
- (ii) Assess the degree of symptom relief across six clinical parameters — pain, rectal bleeding, burning, pricking sensation, tenderness, and difficulty in defecation — before and after intervention.
- (iii) Document the safety profile and any adverse events associated with the procedure.
- (iv) Explore the therapeutic rationale of Panchatikta Ghrita Matrabasti through the lens of classical Ayurvedic pharmacology and contemporary biomedical understanding.

3. Materials and Methods

3.1 Study Design and Setting

An open label, single-arm, prospective clinical evaluation was conducted at the Anorectal Outpatient Department, Orthopedic Hospital, Mumbai, Maharashtra, India. The study was conducted in conformity with the ICMR National Ethical Guidelines for Biomedical and Health Research Involving Human Participants (2017) and the Declaration of Helsinki (revised 2013).

3.2 Participants

A total of 60 patients satisfying the inclusion criteria were enrolled using purposive sampling. Inclusion and exclusion criteria are detailed in Table 1. All patients provided written informed consent prior

to enrolment. A complete anorectal examination including inspection, digital rectal examination, and proctoscopy was performed at baseline.

Table 1: Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Patients aged 18–60 years of either sex	Presence of severe systemic disease (diabetes mellitus, hypertension, cardiac conditions)
Classical signs and symptoms of Parikartika as per Ayurvedic texts	Perianal abscess or active anorectal infection
Duration of symptoms between 7 and 15 days	Profuse or uncontrolled bleeding per rectum
Willingness to provide written informed consent	Infected fissure bed with purulent discharge
	Thrombosed hemorrhoids
	Congenital anorectal anomalies
	Pregnant or lactating women
	History of previous anorectal surgery

3.3 Intervention

Each patient received Panchatikta Ghrita Matrabasti once daily for 14 consecutive days. The standard procedure was as follows:

(a) **Preparatory sitz bath:** The patient soaked the perianal region in warm water (38–40°C) for 10 minutes prior to each basti administration to promote local vasodilation, relax the external anal sphincter, and cleanse the perianal area.

(b) **Drug preparation:** Panchatikta Ghrita was prepared as per the classical reference (*Ashtanga Hridayam, Chikitsa Sthana*) and procured from a licensed Ayurvedic pharmaceutical manufacturer (GMP certified; batch No. [XXXX]). Twenty millilitres of the ghee were warmed to approximately 37°C (body temperature) in a sterile container immediately prior to administration.

(c) **Administration:** The patient was positioned in the left lateral (Sims') position. A sterile infant feeding tube No. 8, lubricated with the same Panchatikta Ghrita, was gently inserted 3–4 cm into the anal canal. Twenty millilitres of warm Panchatikta Ghrita was instilled slowly using a 20 ml Luer-slip syringe over 30–60 seconds. The patient was advised to retain the ghee for at least 30 minutes in the left lateral position before resuming normal activity.

(d) **Concomitant care:** All patients were counselled on dietary modifications — increased fibre intake (isapghula husk), adequate hydration (2.5–3 litres/day), avoidance of spicy foods — and were advised against prolonged sitting. No additional Ayurvedic or allopathic anorectal medications were permitted during the study period.

3.4 Assessment of Outcome

Clinical assessment was performed by the principal investigator at three time points: baseline (Day 0), mid-treatment (Day 7), and end of treatment (Day 14). Each of six clinical parameters was scored on a 4-point Likert-type scale (0–3), where 0 indicates absence of the symptom and 3 indicates the most severe grade. Assessment criteria are presented in Table 2. Overall treatment outcomes were categorised as follows: Excellent Relief — complete resolution of all parameters (total score = 0) with confirmed fissure healing on proctoscopic examination; Moderate Relief — >50% reduction in total symptom score with partial fissure healing; Mild Relief — <50% reduction in total score; No Relief — no measurable change.

Table 2: Clinical Assessment Parameters and Grading Criteria

Clinical Parameter	Grading Scale	Description
Pain (Shoola)	0–3	0 = None; 1 = Mild (bearable, no analgesic); 2 = Moderate (requires analgesic); 3 = Severe (incapacitating)

Bleeding per Rectum (Rakta Srava)	0–3	0 = None; 1 = Streak on stool; 2 = Drops after defecation; 3 = Free bleeding
Burning Sensation (Daha)	0–3	0 = None; 1 = Mild occasional; 2 = Moderate persistent; 3 = Severe constant
Pricking Sensation (Toda)	0–3	0 = None; 1 = Occasional; 2 = Frequent; 3 = Continuous
Tenderness on Local Examination	0–3	0 = None; 1 = Mild on deep palpation; 2 = Moderate on light touch; 3 = Severe even at rest
Difficulty in Defecation (Mala Pravritti Krichrata)	0–3	0 = None; 1 = Mild straining; 2 = Significant delay; 3 = Unable to defecate normally

3.5 Statistical Analysis

Data were entered in Microsoft Excel 2019 and analysed using SPSS Version 26.0 (IBM Corp., Armonk, NY, USA). Descriptive statistics are reported as mean $\pm$ standard deviation (SD) for continuous variables and as frequency with percentage for categorical variables. The Wilcoxon signed-rank test (non-parametric) was applied to assess the statistical significance of the difference between pre- and post-treatment symptom scores. A p-value of <0.05 was considered statistically significant.

4. Results

4.1 Demographic Profile

Of the 60 patients enrolled, 34 (56.7%) were male and 26 (43.3%) were female. The mean age was 34.7 ± 9.2 years (range: 18–58 years). The majority of patients ($n = 41$; 68.3%) presented between the ages of 25 and 45 years, consistent with the reported epidemiological peak of fissure-in-ano in the productive adult age group. The mean duration of symptoms at enrolment was 11.4 ± 2.6 days. The most common presenting complaints were pain during defecation (100%), burning sensation (91.7%), pricking sensation (86.7%), and visible rectal bleeding (78.3%).

4.2 Overall Treatment Outcomes

Overall treatment outcomes at Day 14 are summarised in Table 3. Excellent relief was achieved in 42 patients (70.0%), representing complete symptom resolution confirmed by proctoscopic absence of the fissure or full epithelialisation. Moderate relief was noted in 16 patients (26.7%), with a mean total symptom score reduction of 55–70%. Two patients (3.3%) demonstrated mild relief; both received an extended course of 7 additional days, after which they achieved symptom scores consistent with moderate improvement. No patient failed to respond to treatment, and no adverse events were recorded throughout the study period.

Table 3: Overall Clinical Outcomes at Day 14 (n = 60)

Outcome Category	Criteria	Number of Patients (n=60)	Percentage (%)
Excellent Relief	Complete resolution of all symptoms; fissure healed on examination	42	70.0
Moderate Relief	Significant improvement ($>50\%$ reduction in symptom score); partial fissure healing	16	26.7
Mild Relief	Partial improvement ($<50\%$ reduction); required extended treatment (additional 7 days)	2	3.3

No Relief	No measurable change in symptoms or fissure appearance	0	0.0
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4.3 Symptom-wise Analysis

Parameter-wise mean pre- and post-treatment scores with statistical significance are presented in Table 5. The most dramatic response was observed in rectal bleeding, which showed a 95.8% mean relief rate with near-complete cessation in the majority of patients by Day 3. Pain, the predominant symptom, showed an 85.8% reduction. Tenderness on proctoscopic examination demonstrated an 87.2% improvement. All six parameters showed statistically highly significant improvement ($p < 0.001$).

Table 5: Symptom-wise Pre- and Post-Treatment Score Comparison (n = 60)

Parameter	Mean Score Before Treatment (SD)	Mean Score After Treatment (SD)	Mean Reduction	% Relief	p-value
Pain (Shoola)	2.68 ± 0.47	0.38 ± 0.49	2.30	85.8	<0.001
Bleeding per Rectum	1.93 ± 0.64	0.08 ± 0.28	1.85	95.8	<0.001
Burning Sensation (Daha)	2.45 ± 0.55	0.42 ± 0.50	2.03	82.9	<0.001
Pricking Sensation (Toda)	2.22 ± 0.61	0.35 ± 0.48	1.87	84.2	<0.001
Tenderness	2.58 ± 0.50	0.33 ± 0.47	2.25	87.2	<0.001
Difficulty in Defecation	2.50 ± 0.51	0.45 ± 0.51	2.05	82.0	<0.001

4.4 recurrence

Patients were followed up at one and six months post-treatment. At the one-month follow-up, 54 of 58 contactable patients (93.1%) remained symptom-free. At the six-month follow-up, three patients (5.2%) reported mild recurrence of pricking sensation and discomfort, which resolved with a repeat 7-day course of Panchatikta Ghrita Matrabasti. No patient required surgical intervention during the follow-up period.

5. Discussion

5.1 Ayurvedic Pathophysiology of Parikartika

Classical Ayurvedic texts attribute Parikartika to the vitiation of Apana Vata (the sub-dosha of Vata governing downward physiological movements) compounded by aggravated Pitta, leading to painful ulceration of the Guda (anorectal region). Acharya Charaka describes the condition in the context of misapplication of *Basti karma*, while Acharya Sushruta elaborates upon it as a distinct Gudaja (anorectal) disease [2,7]. The pathological sequence of Vata-Pitta vitiation results in Ruksha (dryness), Tikshna (sharpness), Daha (burning), and Shoola (pain) — all of which directly correspond to the clinical presentation of fissure-in-ano characterised by mucosal desiccation, elevated internal anal sphincter tone, ischaemia of the posterior commissure, and the resultant cycle of pain–spasm–ischaemia [10].

5.2 Pharmacological Actions of Panchatikta Ghrita Matrabasti

The constituent herbs of Panchatikta Ghrita and their therapeutic actions are detailed in Table 4. Collectively, the formulation acts through five major pharmacological mechanisms relevant to the management of Parikartika:

(i) **Vata-shamana (Vata pacification)**: The Snigdha (unctuous) and Mridu (soft) properties of cow's ghee (Ghrita), mediated biochemically through its high butyrate content, directly counteract the Ruksha (dry) and Khara (rough) qualities of vitiated Vata. Rectal butyrate has established roles in intestinal mucosal integrity, anti-inflammatory signalling via HDAC inhibition, and promotion of mucus secretion [11]. Local

ghee application within the anal canal thus addresses the core Ayurvedic pathogenesis while simultaneously providing physiological lubrication that reduces mechanical trauma during defecation.

(ii) **Vedanasthapana (analgesic action)**: The Vedanasthapana properties of Patola, Kantakari, and Guduchi are consistent with their documented analgesic mechanisms. Flavonoids and alkaloids in *Trichosanthes dioica* and *Solanum xanthocarpum* inhibit prostaglandin synthesis and modulate nociceptive pathways, reducing the intense defecatory pain that characterises Parikartika [12,13]. The alleviation of pain also interrupts the pain–spasm cycle, secondarily reducing internal anal sphincter hypertonia.

(iii) **Shothahara (anti-inflammatory action)**: Nimba and Patola possess potent Shothahara properties underpinned by demonstrated inhibition of pro-inflammatory cytokines including TNF- α , IL-1 β , and IL-6 [14]. The anti-inflammatory action reduces oedema and hyperaemia of the fissure margins, promoting a favourable milieu for epithelial regeneration.

(iv) **Jantughna (antimicrobial action)**: Nimba's antimicrobial properties are among the best-documented in Ayurvedic phytopharmacology. Its active principles — nimbin, nimbinin, and nimbidin — have demonstrated broad-spectrum antibacterial activity against *Staphylococcus aureus*, *Escherichia coli*, and *Pseudomonas aeruginosa* — organisms commonly implicated in secondary anal fissure infection [15]. By controlling local bacterial load within the fissure bed, Nimba facilitates the transition from an inflammatory to a proliferative phase of wound healing.

(v) **Vrana Ropana (wound healing)**: Triphala, a canonical wound-healing formulation, and Ghrita both possess established Vrana Ropana actions. Triphala's gallic acid, chebulagic acid, and ellagic acid components promote collagen synthesis, fibroblast proliferation, and angiogenesis [16]. Ghrita provides a lipid medium that supports cellular membrane repair and acts as a vehicle (*Anupana*) that facilitates the penetration of active phytochemicals into the mucosal layers of the anal canal — consistent with the known enhancer role of lipid vehicles in transmucosal drug delivery.

Table 4: Ingredients of Panchatikta Ghrita and their Therapeutic Actions

Ingredient (Sanskrit)	Botanical Common Name /	Part Used	Therapeutic Action (Ayurvedic)	Probable Mechanism (Modern)
Nimba	Azadirachta indica (Neem)	Leaf/Bark	Jantughna (antimicrobial), Vrana Shodhana (wound cleansing), Krimighna	Anti-inflammatory, antibacterial, wound-debridement properties
Patola	Trichosanthes dioica (Pointed Gourd)	Leaf/Fruit	Shothahara (anti-inflammatory), Vedanasthapana (analgesic)	Reduction of oedema and hyperalgesia; antioxidant activity
Kantakari	Solanum xanthocarpum	Whole plant	Vedanasthapana (analgesic), Krimighna (antiparasitic)	Analgesic and immunomodulatory effects; alkaloid-mediated pain relief
Guduchi	Tinospora cordifolia (Giloy)	Stem	Rasayana (adaptogenic), Vedanasthapana, Vayasthapana	Immunomodulation, anti-inflammatory, hepatoprotective
Vasa	Adhatoda vasica (Malabar Nut)	Leaf	Vedanahara (analgesic), Shothaghna (anti-oedematous)	Vasicine-mediated bronchodilation and anti-inflammatory action

Triphala	Emblica officinalis + Terminalia chebula + T. bellirica	Fruit	Vrana Ropana (wound healing), Tridosha Shamana	Antioxidant, wound-healing acceleration, astringent action
Ghrita (Cow's Ghee)	Butyrum bovis (Clarified Butter)	—	Snigdha (emollient), Vrana Ropana, Vatahara	Lubrication of anal mucosa, butyrate-mediated mucosal repair, sphincter relaxation

5.3 Role of the Matrabasti Route

Matrabasti differs from Niruha (decoction) basti in that it employs a smaller, fixed dose of oleaginous media (typically 60–120 ml for routine Matrabasti; 20 ml in the present anorectal-targeted protocol) without requiring prior evacuant measures. The rectal and anal mucosa, richly vascularised and possessing thin epithelial barriers with extensive lymphatic drainage, facilitate rapid local absorption of lipophilic constituents. The Matrabasti route thus achieves targeted tissue concentrations of Panchatikta Ghrita's bioactive constituents within the anal canal without the systemic absorption profile and hepatic first-pass metabolism associated with oral administration [17]. The consequent localised Vata-shamana, sphincter relaxation, and direct mucosal contact additionally serve the Sthanika Sneha (local oleation) objectives articulated in Shalya Tantra texts.

5.4 Comparison with Existing Literature

Several previous Ayurvedic studies have evaluated local basti preparations in Parikartika, predominantly using Jatyadi Taila or Tila Taila as the medium. Sharma et al. (2019) reported 72% symptom improvement with Jatyadi Taila basti over 21 days [18]. Patel and Mehta (2021) demonstrated comparable outcomes with Triphala Ghrita Matrabasti [19]. The present study's 70% excellent relief rate at 14 days compares favourably with these findings, and the 14-day treatment duration represents a potentially shorter therapeutic window. The Panchatikta formulation's additional Jantughna property may confer an advantage in cases with early secondary contamination of the fissure bed. Direct head-to-head comparisons with standard topical glyceryl trinitrate (GTN 0.2%) therapy, which yields approximately 50–60% healing rates [20], suggest that Panchatikta Ghrita Matrabasti may represent a competitive non-surgical option warranting formal comparative evaluation.

6. Conclusion

Panchatikta Ghrita Matrabasti demonstrates statistically significant and clinically meaningful therapeutic efficacy in the management of Parikartika (fissure-in-ano). The intervention achieves excellent relief in 70% of patients within 14 days through its integrated Vata-shamana, Vedanasthapana, Shothahara, Jantughna, and Vrana Ropana mechanisms. The procedure is safe, well-tolerated, non-invasive, and feasible in an outpatient setting. Importantly, it addresses the core pathophysiological cycle of pain, sphincter spasm, and mucosal ischaemia that perpetuates fissure chronification, without the incontinence risk associated with lateral internal sphincterotomy.

These findings support the integration of Panchatikta Ghrita Matrabasti into the conservative management algorithm for acute fissure-in-ano within Ayurvedic and integrative anorectal practice. Larger, prospective, randomised controlled trials with blinded assessment, validated patient-reported outcome measures, and active comparator arms — including topical glyceryl trinitrate, calcium channel blockers, and botulinum toxin — are strongly recommended to establish this modality's place in evidence-based Shalya Tantra practice.

7. Limitations

The present study acknowledges several limitations that qualify the interpretation of its findings. First, the open label, single-arm observational design precludes causal inference and introduces performance and observer bias. Second, the absence of a control or comparator arm makes it impossible to attribute outcomes exclusively to the intervention rather than natural disease resolution over 14 days, dietary modifications, or placebo effect. Third, formal statistical analysis employing standard pre-registration and validated outcome

instruments was not conducted; future studies should employ CONSORT-compliant design with validated tools such as the Visual Analogue Scale for pain and standardised proctoscopic scoring systems. Fourth, the study population was confined to acute fissures (symptom duration 7–15 days); whether these findings are generalisable to chronic fissure-in-ano with fibrous base and hypertrophied papillae requires separate investigation. Finally, the sample size of 60 patients, while adequate for a pilot clinical evaluation, is insufficient to power subgroup analyses by gender, symptom severity, or fissure location.

8. Future Scope

Future research directions include: (i) a multi-centre, double-blind, randomised controlled trial comparing Panchatikta Ghrita Matrabasti against 0.2% glyceryl trinitrate ointment as standard of care; (ii) pharmacokinetic studies examining rectal mucosal absorption of Panchatikta Ghrita's key constituents and their tissue bioavailability; (iii) evaluation of the formulation in chronic fissure-in-ano with histopathological assessment of epithelialisation and fibroblast activity before and after treatment; (iv) patient-reported outcome studies capturing quality of life (using the SF-36 or Fissure-specific Quality of Life tools) alongside clinical measures; and (v) assessment of the formulation's role as an adjunct to Ksharakarma procedures in complex or recurrent anorectal disease.

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