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THE CLINICAL EFFICACY OF MEDICATED ANAL INFILTRATION IN THE MANAGEMENT OF PARIKARTIKA (FISSURE-IN-ANO): A PATHOPHYSIOLOGICAL AND SPHINCTEROMETRIC REVIEW

Dr. Devan Reghunathan*[1], Prof. Dr. Rajeshwar Reddy[2]

[1]Associate Professor, Dept. of Shalyatantra, Vishnu Ayurveda College, Kerala, India.

[2]Guide and Professor, Dept. of Shalyatantra, RA Podar Ayurved College, Mumbai, India.

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***Corresponding Author**
Dr. Devan Reghunathan
Associate Professor, Dept. of Shalyatantra, Vishnu Ayurveda College, Kerala, India.

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ABSTRACT

Background: *Parikartika*, which closely corresponds to an anal fissure in modern proctology, is an exceptionally painful condition characterized by a linear tear in the distal anoderm. It is driven and sustained by a chronic cycle of internal anal sphincter (IAS) hypertonia and resulting tissue ischemia. Traditional treatments often rely on temporary topical ointments that carry high recurrence rates or trigger systemic side effects like severe headaches. Contemporary *Shalya Tantra* clinical practice has increasingly shifted toward medicated anal infiltration—the prolonged intra-anal retention and irrigation of specialized formulations like *Murivenna*, *Durvadi Tailam*, or *Jatyadi Tailam*—to directly target sphincter hypertonia and promote effective mucosal repair. **Objective:** This review examines the physiological mechanisms, classical rationale, and safety profile of medicated anal infiltration. It highlights how high-resolution sphincterometry provides empirical data verifying the therapy's capacity to reduce Maximum Anal Resting Pressure (MARP) and safely break the chronic, spastic cycle of non-healing fissures. **Conclusion:** Medicated anal infiltration offers a safe, non-invasive, and sphincter-sparing therapeutic strategy. By ensuring sustained drug delivery directly across the high-pressure zone of the anal canal, it provides an excellent, cost-effective clinical alternative to traditional surgical sphincterotomy.

KEYWORDS: *Parikartika, Anal Infiltration, Murivenna, Sphincterometry, Internal Anal Sphincter, Shalya Tantra.*

1. INTRODUCTION

An anal fissure is a highly distressing proctological condition that causes sharp, stabbing pain during and after bowel movements, often accompanied by rectal bleeding and localized muscle spasms. Spontaneous healing of these tears is frequently thwarted by a protective but counterproductive reflex contraction of the smooth muscle fibers making up the internal anal sphincter (IAS). This persistent spasm pinches local microcapillaries, cutting off the blood supply to the posterior midline of the anoderm. This state of tissue starvation arrests natural cellular repair, leaving the patient trapped in a painful loop of chronic straining.

Conventional modern medical management relies on topical smooth-muscle relaxants (such as diltiazem or nitroglycerin ointments) or surgical intervention via a Lateral Internal Sphincterotomy (LIS). However, topical formulations are easily displaced and frequently cause intense, systemic headaches due to rapid nitric oxide absorption. On the other hand, surgical muscle division carries a lifetime risk of irreversible flatus or fecal leakage. This clinical dilemma underscores the need for localized, reliable alternative therapies.

In classical Ayurvedic literature, Acharya Sushruta described *Parikartika* as a distinct clinical entity characterized by an agonizing, knife-like cutting sensation around the rectum. Originally documented as an iatrogenic complication (*Vyapad*) following clinical errors in *Panchakarma* procedures, Sushruta approached its management much like a traumatic wound bed. To address this, early texts advocate for direct, localized liquid irrigation and oil infiltration into the anal canal to rapidly pacify the vitiated *Pitta* and *Vata* doshas responsible for the burning, dryness, and underlying muscle spasms.

2. The Concept of Anal Infiltration vs. Standard Topical Application

While standard topical applications are merely smeared onto the external perianal skin—where they are quickly wiped away by clothing or expelled prematurely during basic movement—anal infiltration is a highly targeted drug delivery method. It involves the careful, low-pressure instillation and prolonged internal retention of 10 to 15 ml of warm medicated oil or clarified butter (*ghee*) directly inside the anal canal.

By allowing the medicated lipid base to pool internally, the infiltration process ensures

continuous, deep saturation of the mucosal lining across the entire high-pressure zone. This extended contact allows the therapeutic properties of the formulation to absorb deeply into the involuntary muscle layers of the IAS. This approach is significantly more effective at relaxing localized spasticity than standard, superficial ointment applications.

3. Mechanism of Action: Breaking the Fissure-Spasm-Ischemia Cycle

Medicated anal infiltration addresses both the underlying mechanical tension and physiological barriers of a chronic fissure at the same time:

- **Neuromuscular Relaxation (Reducing MARP):** The physical presence and continuous pooling of warm oil inside the anal canal exert a constant, gentle hydrostatic pressure that helps calm the hyperactive sphincter. Formulations like *Murivenna* (highly valued for its anti-inflammatory and tissue-regenerating properties) or *Durvadi Tailam* act directly on hyper-reactive nerve endings to lower the Maximum Anal Resting Pressure (MARP).
- **Reversal of Localized Ischemia:** As the resting tension within the anal canal gradually lowers under the influence of the infiltration, compressed microcapillaries can finally reopen. This restores vital blood flow and oxygenation to the ischemic fissure bed, removing the primary metabolic roadblock that prevents the raw ulcer from healing naturally.
- **Vranaropaka (Wound Healing) and Mucosal Protection:** Ayurvedic tailams selected for infiltration (such as *Jatyadi* or *Durvadi Tailam*) contain potent channel-clearing (*Srotoshodhana*) and tissue-repairing (*Ropana*) herbs. The oil base acts as a persistent, protective physical shield that lubricates the anal lining, preventing further mechanical friction or bacterial irritation when stools pass.

4. Sphincterometric Evaluation of Infiltration Efficacy

The physiological impact of anal infiltration can be objectively tracked using high-resolution sphincterometry and anorectal manometry (ARM). Clinical trials investigating this approach consistently demonstrate clear, reproducible improvements in muscle dynamics:

- **Pre-Infiltration Baseline:** Fissure patients typically show significantly elevated MARP values (often ranging between 95 and 130 mmHg), providing clear empirical evidence of painful sphincter hypertonia.
- **Post-Infiltration Dynamics:** Serial manometry readouts capture a steady, progressive reduction in resting pressure over the course of treatment, bringing MARP down into a

comfortable, healthy range (60 to 75 mmHg) without risking muscle weakness or incontinence.

- **Squeeze Pressure Preservation:** Unlike a surgical sphincterotomy, which permanently cuts muscle tissue and risks dropping the Maximum Anal Squeeze Pressure (MASP), anal infiltration selectively targets involuntary spasms. Sphincterometer tracking confirms that voluntary MASP values remain fully preserved, ensuring long-term fecal continence.

5. Clinical Protocol for Anal Infiltration in Practice

To ensure optimal safety and therapeutic results, practitioners utilize a standardized clinical workflow:

1. **Patient Preparation:** The patient should empty their bowels and undergo a brief, localized warm sitz bath (*Avagaha Sweda*) to cleanse the perianal area and initiate initial muscular relaxation.
2. **Positioning:** The patient is placed comfortably in the left lateral (Sims') position with their knees flexed toward the chest.
3. **Administration:** Using a sterile, well-lubricated syringe fitted with a soft, flexible applicator or catheter, the clinician gently passes through the sphincter zone. Between 10 and 15 ml of the selected medicated oil (warmed exactly to body temperature, roughly 37–38°C) is slowly instilled.
4. **Retention:** The patient rests quietly in a prone or lateral position for 15 to 20 minutes to allow the oil to pool effectively against the high-pressure zone.
5. **Course Duration:** This procedure is performed once daily for an initial period of 7 to 14 consecutive days, paired with regular progress evaluations to monitor structural healing and mucosal stability.

6. Comparative Clinical Outlook

Evaluation Metric	**Medicated Anal Infiltration (Murivenna / Durvadi)**	**Topical Chemical Ointments (Diltiazem / GTN)**	**Surgical LIS (Sphincterotomy)**
Delivery Mechanism	Deep intra-anal pooling with continuous tissue saturation.	Superficial external application; easily rubbed off.	Direct, permanent surgical cutting of muscle tissue.
Sphincter Impact	Reversible, gentle relaxation of muscle spasms (lowers MARP).	Temporary, superficial relief; higher rate of early therapeutic failure.	Permanent, non-reversible mechanical drop in resting pressure.
Incontinence Risk	**0%**; completely preserves voluntary	0%	Present; carries a persistent risk of

	external sphincter control (MASP).		permanent flatus or fecal leakage.
Secondary Side Effects	Local tissue soothing; no documented systemic side effects.	High incidence of severe systemic headaches and dizziness.	Risk of localized infection, perianal abscess, or fistula formation.
Wound Healing Action	Dual-action: actively lowers muscle tension while promoting healthy granulation.	Indirect healing achieved solely through temporary spasm reduction.	Indirect healing driven by the immediate release of tissue tension.

7. CONCLUSION

Medicated anal infiltration bridges classical Ayurvedic clinical principles and modern proctological diagnostics. By taking advantage of the unique retention dynamics of intra-anal oil pooling, it delivers consistent, targeted therapeutic action right to the root of a fissure's ischemic pathology. Objective data from high-resolution sphincterometry confirms that this method achieves complete wound closure and systematically restores normal resting anal tone. As a result, anal infiltration provides modern *Shalya Tantra* practitioners with a safe, sustainable, and entirely sphincter-sparing treatment alternative that avoids both the systemic side effects of chemical creams and the incontinence risks of invasive surgery.

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