

CLINICAL EVALUATION OF TOPICAL ASHWATHA (*FICUS RELIGIOSA* LINN.) OINTMENT IN THE MANAGEMENT OF *PARIKARTIKA* (ACUTE FISSURE-IN-ANO): A SINGLE CLINICAL CASE REPORT

Dr. Anuja Nana Pagar^{1*}, Dr. Ramesh Vanaji Ahire², Dr. Aparna Abhay Raut³

¹PG Scholar, Shalya Tantra Department, Shree Saptshrungi Ayurved Mahavidyalay and Hospital, Nashik.

²Professor and Guide in Shalya Tantra Department, Shree Saptshrungi Ayurved Mahavidyalay and Hospital, Nashik.

³Professor and HOD of Shalya Tantra Department, Shree Saptshrungi Ayurved Mahavidyalay and Hospital, Nashik.

Article Received on 03 August 2026,
Article Revised on 24 August 2026,
Article Published on 01 Sept. 2026,

<https://doi.org/10.5281/zenodo.22160866>

*Corresponding Author

Dr Anuja Nana Pagar

PG Scholar, Shalya Tantra
Department, Shree Saptshrungi
Ayurved Mahavidyalay and
Hospital, Nashik.



How to cite this Article: Dr. Anuja Nana Pagar^{1*}, Dr. Ramesh Vanaji Ahire², Dr. Aparna Abhay Raut³. (2026). Clinical Evaluation of topical Ashwatha (*Ficus Religiosa* Linn.) Ointment in the Management of Parikartika (Acute Fissure-in-Ano): a Single Clinical Case Report. World Journal of Pharmaceutical Research, 15(17), 1153-1165.

This work is licensed under Creative Commons Attribution 4.0 International license.

ABSTRACT

Background: *Parikartika* (Acute Fissure-in-Ano) is a distressing anorectal disorder characterized by severe cutting pain (*Parikartanavat Vedana*), intense burning sensation (*Daha*), fresh rectal bleeding (*Rakta Srava*), and persistent internal anal sphincter spasm. Modern conservative treatments such as topical nitrates often induce dose-limiting headaches, while surgical internal sphincterotomy carries a long-term risk of fecal or flatus incontinence. In classical Ayurvedic literature, **Vrinda Madhava** (*Aagantu Vranadhikar* 21/21) explicitly endorses dried bark preparations of **Ashwatha** (*Ficus religiosa* Linn.) for wound cleansing (*Vranashodhaka*) and wound healing (*Vranaropaka*). **Case Presentation:** A 54-year-old female patient presented to the Shalyatantra Outpatient Department with complaints of severe cutting pain and burning sensation during and after defecation, fresh blood streaks on stool, perianal itching, and constipation lasting for 15 to 20 days. Clinical examination in the left lateral position revealed a

distinct, hyper-tender acute linear mucosal tear (*Kshata/Vrana*) in the anoderm at the 6 o'clock position accompanied by severe reflex sphincter spasm. **Intervention:** The patient was treated with local external application of Ashwatha Ointment (emulsion base containing *Ashwatha Kwatha* and *Ashwatha Churna*) applied over the fissure bed twice daily (BD) post-defecation for a duration of 15 consecutive days, along with dietary fiber modification. **Outcome:** Clinical evaluations at Day 0, Day 5, Day 10, and Day 15 demonstrated rapid, step-wise recovery. Defecatory pain (VAS score) dropped from 6 to 1, burning pain dropped from Grade 2 to 0 (complete resolution), bleeding ceased completely by Day 5, and sphincter spasm resolved from Grade 2 to Grade 0. Objective anal dilator tolerance expanded from Size 0 (non-tolerated) to Medium Size 4. Overall symptom relief was calculated at **84.62%**, achieving complete clinical cure without any adverse drug reactions or systemic side effects. **Conclusion:** Topical application of *Ashwatha Ointment* provides a safe, non-invasive, highly effective, and continence-preserving Ayurvedic treatment for acute fissure-in-ano, breaking the neuro-ischemic pain-spasm cycle effectively.

KEYWORDS: *Parikartika*, Acute Fissure-in-Ano, *Ashwatha Ointment*, *Ficus religiosa* Linn., Internal Anal Sphincter Spasm, *Vrinda Madhava*, *Shalyatantra*.

1. INTRODUCTION

Anorectal disorders represent a significant proportion of modern gastrointestinal morbidity, driven largely by Westernized dietary habits, low insoluble fiber intake, sedentary desk-bound occupations, and chronic stress. An acute anal fissure (fissure-in-ano) is an oval or longitudinal ulcerated tear in the specialized squamous epithelium lining the distal anal canal, known as the anoderm.^[1] Extending distal to the dentate line to the anal verge, this lesion is exquisitely sensitive because the anoderm possesses an extraordinarily dense somatic sensory nerve supply derived from the inferior rectal branches of the pudendal nerve.^[2]

Even a minute mechanical laceration caused by passing hard, desiccated stool triggers intense somatic pain during defecation. This pain initiates a reflex involuntary contraction and persistent hypertonicity of the Internal Anal Sphincter (IAS), raising resting intra-anal pressure above 100 mmHg. Elevated resting pressure compresses intramural capillary branches of the inferior rectal arteries passing through the sphincter muscle, inducing localized microvascular ischemia at the posterior commissure. Deprived of adequate blood flow, mucosal granulation and re-epithelialization are halted, creating a self-perpetuating

In classical Ayurvedic literature, this entity corresponds to ***Parikartika***. Derived from the Sanskrit root "*Kartana*" (to cut, slice, or saw), *Parikartika* describes an agonizing, cutting-type pain (*Parikartanavat Vedana*) localized within the anal orifice (*Guda*).^[5] Acharya Sushruta described *Parikartika* primarily as an iatrogenic complication (*Vyapada*) of improper purgation (*Virechana*) or enema administration (*Basti*) in emaciated individuals with weak digestive fire (*Manda Agni*) and dry bowel habits (*Ruksha Koshtha*) (*Sushruta Samhita Chikitsasthana 34/16*):^[6]

[illegible]

Current modern medical management aims for "chemical sphincterotomy" using topical nitrates (0.2% Glyceryl Trinitrate) or Calcium Channel Blockers (2% Diltiazem). However, systemic nitrate absorption causes severe, throbbing headaches in 20%–30% of patients, leading to high non-compliance and treatment discontinuation.^[8] Systemic NSAIDs induce gastric mucosal erosion without relieving sphincter hypertonicity. Furthermore, medical management carries a high recurrence rate approaching 50%. Surgical intervention—such as Lateral Internal Sphincterotomy (LIS)—permanently divides internal sphincter muscle fibers, carrying an irreversible risk of flatus incontinence (10%–30%) or fecal incontinence (3%–10%).^[9]

To overcome these limitations, **Ashwatha** (*Ficus religiosa* Linn., Family: Moraceae) was selected based on the classical authority of **Vrinda Madhava** (*Aagantu Vranadhikar* 21/21), which advocates dried bark extracts for wound cleansing (*Vranashodhaka*) and wound

[illegible]

2. NEED OF THE CASE REPORT

3. CASE PRESENTATION

- **Patient ID:** Pt_02
- **OPD Registration No.:** 000349
- **Age:** 54 Years
- **Sex:** Female
- **Marital Status:** Married
- **Occupation:** Housewife (Home Maker)
- **Socioeconomic Status:** Middle Class
- **Habitat / Residence:** Madhuban Colony, Nashik, Maharashtra, India
- **Date of Enrollment:** 12/12/2025
- **Treatment Allocation:** Group A (*Ashwatha Ointment*)

Table 1: Chief Complaints and Duration at Baseline.

Sr. No.	Chief Complaint (<i>Vartaman Vyadhi Vishesh</i>)	Severity / Status	Duration
1	Kartanavat Vedana (Cutting pain during & post defecation)	Severe (VAS 6/10)	15–20 Days
2	Daha (Burning pain in anal canal post defecation)	Moderate (Grade 2)	15–20 Days
3	Rakta Srava (Fresh bright red blood streak on stool)	Mild (Grade 1)	15–20 Days
4	Sphincter Spasm (Anal muscle tightness & exam resistance)	Severe (Grade 2)	15–20 Days
5	Kandu (Perianal itching)	Moderate (Grade 2)	15–20 Days
6	Koshtha Baddhata (Hard stool & constipation)	Present	8 Months

3.3 History of Present Illness

The patient was reportedly healthy 8 months ago, after which she gradually developed irregular bowel habits, hard stool passage, and chronic constipation. Approximately 20 days prior to presentation, following the passage of an unusually hard, dry fecal mass, she experienced a sudden, sharp, tearing sensation in the anal region. This was immediately followed by severe cutting pain during defecation that persisted for 2 to 3 hours post-defecation as a dull burning ache. She noticed fresh blood streaks on the side of hard stools, accompanied by perianal itching and severe fear of defecation (*Defecation Phobia*). She attempted self-medication with over-the-counter laxatives with minimal relief and subsequently presented to the Shalyatantra OPD for specialized Ayurvedic management.

3.4 Past History

- **Medical History:** History of chronic constipation for 8 months. No history of Diabetes Mellitus, Hypertension, Tuberculosis, or Asthma.
- **Surgical History:** No prior anorectal or abdominal surgeries.
- **Allergy History:** No known drug or food allergies.

3.5 Personal History

- **Appetite (*Kshuddha*):** *Samyakpravartan* (Normal/Appetizing)
- **Bowel Habits (*Mala*):** *Shushka Mala*, hard constipated stool, once daily with straining
- **Micturition (*Mutra*):** 4 – 5 times/day, normal, clear
- **Sleep (*Nidra*):** Disturbed due to post-defecation anal ache
- **Diet (*Aahar*):** Non-Vegetarian, mixed spicy diet, low dietary fiber intake
- **Fluid Intake:** Inadequate (1.0 – 1.5 Liters/day)
- **Addictions (*Vyasan*):** Tea (2–3 cups/day). No tobacco or alcohol habits.
- **Physical Activity:** Sedentary household activities

3.6 Family History

No family history of anorectal malignancies, inflammatory bowel disease, or severe bleeding disorders.

3.7 Menstrual / Obstetric History

- **Menopause:** Post-menopausal for 4 years.
- **Obstetric History:** $P_2L_2A_0D_0$ (Two full-term normal vaginal deliveries, no obstetric perineal tears).

3.8 Ayurvedic Examination (*Rogi & Roga Pariksha*)

A. Ashtavidha Pariksha

1. **Nadi (Pulse):** 88 beats/min, Pitta-Vata Vahini, regular
2. **Mala (Stool):** Shushka, Baddha, hard pellet-like consistency
3. **Mutra (Urine):** Samyak, clear straw-colored
4. **Jivha (Tongue):** Samyak, slightly Saama at posterior third
5. **Shabda (Speech):** Normal, clear
6. **Sparsha (Skin/Touch):** Anushna-Sheeta, dry
7. **Druk (Eyes):** Normal, no pallor/icterus
8. **Aakriti (Build):** Madhyama (Average body frame)

B. Dashavidha Pariksha

1. **Prakruti:** Vata-Kaphaj (with Pitta Anubandha)
2. **Vikriti:** Vata-Pitta Pradhana
3. **Sara:** Mamsa & Rakta Sara (Madhyama)
4. **Samhanana:** Madhyama (Moderate compact body build)
5. **Pramana:** Height: 155 cm, Weight: 56 kg
6. **Satmya:** Sarva Rasa Satmya
7. **Satva:** Madhyama (Moderate mental strength)
8. **Ahara Shakti:** Madhyama Abhyavaharana & Jarana Shakti
9. **Vyayama Shakti:** Madhyama
10. **Vaya:** Madhyama Vayas (54 Years)

C. Doshik & Srotas Assessment

- **Prime Dosh:** Apana Vayu (Vitiated/Pratiloma) & Pachaka/Bhrajaka Pitta
- **Dushya:** Rakta, Mamsa, Twak
- **Srotas Involved:** Annavaha, Purishvaha, and Raktavaha Srotas
- **Srotodushti Type:** Sanga (obstruction to fecal/gas transit) & Vimarga Gamana
- **Agni Status:** Manda Agni leading to Koshtha Baddhata
- **Koshtha:** Krura Koshtha

- **Adhithana:** *Guda Marga* (*Gudoustha / Samvarani Vali*)

3.9 General Physical Examination

- **General Appearance:** Conscious, oriented, anxious due to acute pain
- **Pulse Rate:** 88 beats/minute
- **Blood Pressure:** 150/80 mmHg
- **Respiratory Rate:** 18 breaths/minute
- **Body Temperature:** Afebrile (98.4°F)
- **Weight / BMI:** 56 kg / 23.3 kg/m² (Normal)
- **Systemic Pallor / Icterus / Edema:** Absent

3.10 Systemic Examination

- **Cardiovascular System:** S₁, S₂ heard normally, no murmur
- **Respiratory System:** Bilateral vesicular breath sounds clear, no rales/rhonchi
- **Abdomen (P/A):** Soft, non-tender, mild left iliac fossa fullness due to retained feces, no organomegaly
- **Central Nervous System:** Higher functions normal, cranial nerves intact

3.11 Local Anorectal Examination (*Guda Parikshanam*)

Physical Inspection (Left Lateral / Sims' Position)

- **Position of Patient:** Left lateral position with buttocks gently parted using both thumbs.
- **Fissure Location:** A fresh, distinct, longitudinal, superficial linear tear (*Kshata/Vrana*) with clean, soft, pliable margins observed in the anoderm at the **6 o'clock position (posterior midline)**, extending to 3 o'clock margin.
- **Ulcer Characteristics:** Red, clean base covered with fresh granulation tissue. No fibrotic induration, no sentinel skin tag (*Sentinel Pile of Brodie*), and no hypertrophied anal papilla (confirming **Acute Fissure-in-Ano**).
- **Sphincter Spasm:** Marked involuntary constriction and hypertonicity of the anal orifice. Gentle parting of buttocks provoked acute pain and visible sphincteric contraction (**Grade 2 Spasm**).

Digital Rectal Examination (DRE) & Proctoscopy

- **Status at Baseline:** Deferred/contraindicated at Day 0 due to severe pain and Grade 2 sphincter spasm (**Score 2: Neither PR nor Proctoscopy allowed**).

3.12 Laboratory & Diagnostic Investigations

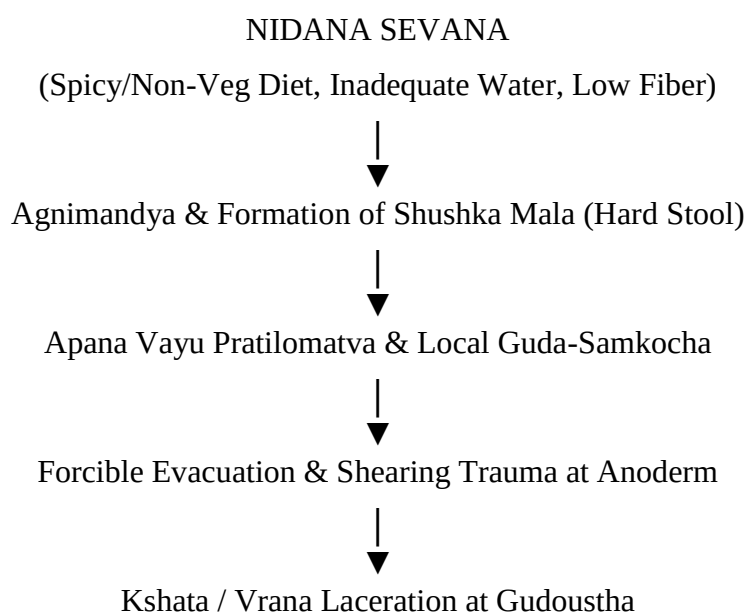
Table 2: Baseline Laboratory Investigations.

Sr. No.	Investigation	Patient Value	Reference Range	Interpretation
1	Hemoglobin (Hb)	12.4 g/dL	12.0–15.0 g/dL	Normal
2	Total Leukocyte Count (TLC)	7,800/ μ L	4,000–11,000/ μ L	Normal (No active sepsis)
3	Random Blood Sugar (RBS)	104 mg/dL	70–140 mg/dL	Normoglycemic
4	Bleeding Time (BT)	2 min 15 sec	2–7 min	Normal Coagulation
5	Clotting Time (CT)	4 min 30 sec	3–8 min	Normal Coagulation
6	HIV I & II Serology	Non-Reactive	Non-Reactive	Non-infectious
7	HBsAg Serology	Non-Reactive	Non-Reactive	Non-infectious

3.13 Diagnostic Assessment

- **Ayurvedic Diagnosis:** *Parikartika* (Acute stage)
- **Modern Diagnosis:** Acute Primary Fissure-in-Ano (Posterior Midline - 6 o'clock position)
- **Diagnostic Reasoning:** The diagnosis was established clinically based on the classical biphasic pain pattern (sharp pain during defecation followed by lingering burning ache), presence of fresh blood streaks on hard stool, visible linear laceration at 6 o'clock position on buttock parting, and Grade 2 sphincter spasm preventing DRE. Absence of fibrotic margins, sentinel tags, or hypertrophied papilla confirmed the acute stage (< 6 weeks duration).

3.14 Samprapti (Ayurvedic Pathogenesis)





DOSHA SAMURCHANA

- Apana Vayu: Kartana Vedana (Cutting Pain) & Spasm
- Pitta-Rakta: Daha (Burning) & Rakta Srava (Bleeding)
- Kapha Kshaya: Kandu (Perianal Itching)



PARIKARTIKA (Acute Fissure-in-Ano)

3.15 Treatment Plan

Table 3: Treatment Protocol Administered.

Medication/ Intervention	Dosage Form	Dose	Route	Frequ ency	Durati on	Therapeutic Purpose
Ashwatha Ointment	Emulsified Ointment	Q.S. (1–2 g)	Local Applicati on (LA)	BD	15 Days	Vranaropana, Vranashod hana, Dahaprashamana, Bio-shield nerve insulation
Warm Sitz Bath	Thermothe rapy	Perineal immersion	External	BD	15 Days	Somatovisceral reflex IAS relaxation, local hygiene
Dietary Fiber & Fluid	Pathya Ahara	2.5–3.0 L Water + Fiber	Oral	Daily	15 Days	Soften stool, prevent mechanical shearing

Formulation Recipe of Ashwatha Ointment

Prepared as an oil-in-water emulsion containing Ashwatha Kwatha (500 ml), Ashwatha Churna (100 g), Stearic Acid (20 g), Emulsifying Wax (30 g), Disodium EDTA (2 g), and Sodium Methylparaben preservative (Q.S.).

3.16 Follow-Up and Outcome Assessment

Table 4: Sequential Clinical Progress Across Follow-Up Visits.

Parameter / Metric	Baseline (D_0)	Day 5 (D_5)	Day 10 (D_{10})	Day 15 (D_{15})	Outcome / Status
Defecatory Pain (VAS 0–10)	6	4	2	1	83.33% Pain Relief
Burning Pain (Daha 0–3)	2 (Moderate)	1 (Mild)	0 (Absent)	0 (Absent)	100.00% Resolution
Bleeding (Rakta Srava 0–3)	1 (Mild streak)	0 (Absent)	0 (Absent)	0 (Absent)	100.00% Cessation
Perianal Itching (Kandu 0–3)	2 (Intermittent)	1 (Occasional)	0 (Absent)	0 (Absent)	100.00% Resolution

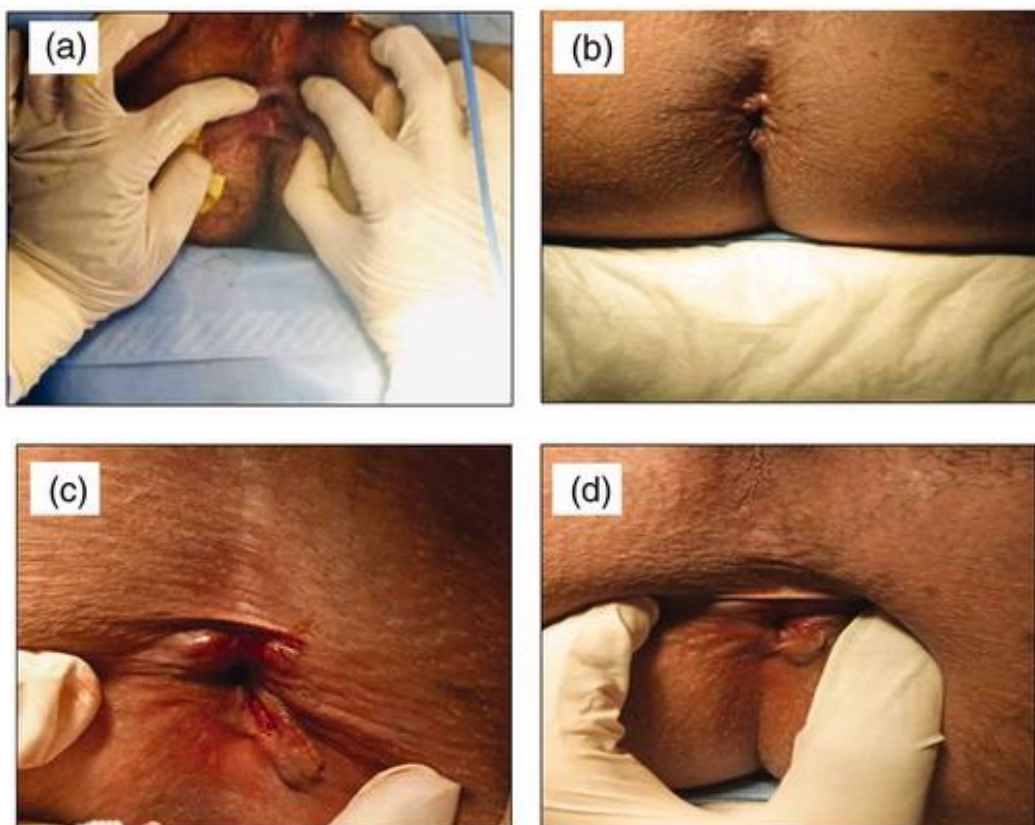
Sphincter Spasm (0–2)	2 (No DRE)	1 (PR allowed)	0 (Procto ok)	0 (Fully relaxed)	100.00% Resolution
Anal Dilator Size (Size 2–6)	Size 0 (Non-tolerated)	Size 0	Size 3 (Small)	Size 4 (Medium)	Full Dilator Tolerance
Total Severity Score	13	7	2	2	84.62% Total Relief

3.17 Timeline

Table 5: Chronological Timeline of Clinical Events.

Date / Time	Clinical Event	Intervention Assessment /	Outcome
22/11/2025	Onset of severe pain & bleeding	Self-medication with OTC laxatives	Temporary minor stool softening; pain persisted
12/12/2025 (D₀)	OPD Enrollment & Screening	Baseline CRF, Local Exam, <i>Ashwatha Ointment</i> BD initiated	VAS 6/10, Grade 2 Spasm, Size 0 Dilator
17/12/2025 (D₅)	First Follow-Up Visit	Clinical evaluation	VAS 4/10, Bleeding ceased (100%), Grade 1 Spasm
22/12/2025 (D₁₀)	Second Follow-Up Visit	Clinical evaluation & Dilator testing	VAS 2/10, <i>Daha</i> & <i>Kandu</i> resolved (100%), Size 3 Dilator ok
27/12/2025 (D₁₅)	Final Outcome Visit	Primary endpoint evaluation	VAS 1/10, Spasm 0, Size 4 Dilator ok, 84.62% Relief (Cured)

Clinical Photographs





4. DISCUSSION

4.1 Disease Perspective

Acute fissure-in-ano (*Parikartika*) is driven by the pain-spasm-ischemia vicious cycle. Passage of hard stool lacerates the somatically innervated anoderm, triggering reflex hypertonicity of the internal anal sphincter (IAS). Elevated resting pressure compresses intramural inferior rectal capillaries, creating local ischemia that prevents wound healing.

4.2 Diagnostic Correlation

The clinical findings in patient Pt_02 perfectly correlated with classical descriptions of *Parikartika* in *Sushruta Samhita Chikitsasthana 34/16* ("*Gudayam Parikartanavat Vedana...*"). The absence of fibrotic skin tags or hypertrophied papillae confirmed the acute, reversible nature of the lesion.

4.3 Treatment Rationale (*Ashwatha Ointment*)

The rapid recovery observed in Pt_02 is explained through integrated Ayurvedic and biomedical pharmacodynamics:

- 1. Protective Bio-Shield Action:** Emulsified wax and stearic acid in the ointment base form a semi-occlusive protective film over the raw anoderm bed. This barrier insulates exposed somatic sensory nerve endings of the inferior rectal nerve (a branch of the pudendal nerve) from coming into direct contact with acidic fecal streams and digestive enzymes during defecation, stopping sharp pain instantly.
- 2. Hemostatic & Healing Action (*Raktastambhana & Vranaropana*):** Active condensed **tannins** in *Ashwatha* precipitate surface proteins on injured mucosal capillaries, forming a local fibrin-tannate clot that stopped bleeding completely by Day 5.

3. **Anti-inflammatory & Soothing Action (*Shothahara & Dahaprashamana*):** Active **flavonoids** (quercetin, rutin) inhibit COX-2 and 5-LOX inflammatory pathways, while *Sheeta Veerya* (cold potency) neutralized local *Pitta-Ushnata*, resolving burning (*Daha*) and itching (*Kandu*).
4. **Sphincter Relaxation & *Gudamarga Mriduta*:** Bioactive **phytosterols** (β -sitosterol) exert direct smooth muscle relaxant effects on internal sphincter fibers. Combined with local unctuous *Vata-Anulomana* action, IAS spasm resolved completely, permitting physical expansion of anal canal caliber (dilator tolerance increasing from Size 0 to Size 4).

4.4 Comparison with Previous Literature

Unlike conventional topical GTN ointment—which causes severe headaches in 20%–30% of patients due to systemic vasodilation—*Ashwatha Ointment* produced zero headaches or systemic adverse events. Compared to previous trial literature on *Jatyadi* or *Yashtimadhu* oils, the semi-solid emulsion ointment base resisted washing off during sitz baths, maintaining continuous local release of active tannins over the wound.

4.5 Clinical Significance

This case demonstrates that *Ashwatha Ointment* provides a non-invasive, safe, cost-effective, and continence-preserving alternative to surgical sphincterotomy, achieving an **84.62% overall symptom relief and complete clinical cure** within 15 days.

5. CONCLUSION

Topical application of **Ashwatha Ointment** twice daily for 15 days achieved complete resolution of defecatory burning, rectal bleeding, perianal itching, and sphincter spasm in an acute fissure-in-ano patient (Pt_02), along with an **83.33%** reduction in pain and full restoration of anal dilator tolerance. *Ashwatha Ointment* represents a safe, highly effective, non-surgical, and continence-preserving Ayurvedic treatment choice for acute *Parikartika*.

6. STATISTICAL ANALYSIS (SINGLE-CASE QUANTITATIVE METRICS)

- **Baseline Severity Score (D_0):** 13 Points
- **Post-Treatment Score (D_{15}):** 2 Points
- **Relieved Score (Δ):** $13 - 2 = 11$ Points
- **Single-Case Percentage Relief Calculation**

$$\text{Percentage Relief (\%)} = \left(\frac{\text{Baseline Score } (D_0) - \text{Post-Tx Score } (D_{15})}{\text{Baseline Score } (D_0)} \right) \times 100$$

$$\text{Percentage Relief (\%)} = \left(\frac{13 - 2}{13} \right) \times 100 = 84.62\%$$

7. REFERENCES

1. Wienert V, Raulf F, Mlitz H. *Anal Fissure Symptoms, Diagnosis, and Therapies*. Switzerland: Springer International Publishing AG, 2017; 59-67.
2. Standring S, editor. *Gray's Anatomy: The Anatomical Basis of Clinical Practice*. 42nd ed. London: Elsevier, 2020; 1140-58.
3. Sumfest JM, Brown AC, Rozwadowski JV. Histopathology of the internal anal sphincter in chronic anal fissure. *Dis Colon Rectum*, 1989; 32(8): 680-3.
4. Schouten WR, Briel JW, Auwerda JJ. Relationship between anal internal sphincter hypertonia and anal mucosal perfusion. *Dis Colon Rectum*, 1994; 37(7): 664-9.
5. Soman D. *A Concise Text Book of Surgery*. 8th ed. Kolkata: Dr. S. Das., 2014; 966-8.
6. Shastri KA, editor. *Sushruta Samhita of Maharshi Sushruta, Chikitsasthana*. Ch. 34, Ver. 16. Varanasi: Chaukhambha Sanskrit Sansthan, 2016; 187.
7. Shukla V, Tripathi RD, editors. *Charaka Samhita of Acharya Agnivesha, Chikitsasthana*. Ch. 19, Ver. 5. Varanasi: Chaukhambha Sanskrit Pratishthan, 2016; 466.
8. Jensen SL. Treatment of first episodes of acute anal fissure: Prospective randomized study of lignocaine ointment versus hydrocortisone ointment or warm sitz baths plus bran. *Br Med J (Clin Res Ed)*, 1986; 292(6529): 1167-9.
9. Nyam DC, Pemberton JH. Long-term results of lateral internal sphincterotomy for chronic anal fissure with particular reference to incidence of fecal incontinence. *Dis Colon Rectum*, 1999; 42(10): 1306-10.
10. Vrinda V. *Siddhayoga (Vrinda Madhava), Vranadhikar Chapter*. Ver. 21. Pune: Anandashrama Sanskrit Series, 1894; 112.