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Comparative Clinical Study of *Agnikarma* and Partial Lateral Sphincterotomy in the Management of Chronic Fissure-in-Ano: A Prospective Analysis of 50 Patients

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ABSTRACT

Introduction: Chronic fissure-in-ano is a common proctological condition associated with significant pain and discomfort. While Partial Lateral Internal Sphincterotomy (PLIS) is considered the gold standard, *Agnikarma*, a traditional Ayurvedic cauterization technique, offers a less invasive alternative.

Objectives: To compare the clinical efficacy, safety, and patient satisfaction between *Agnikarma* and PLIS in managing chronic Fissure-in-Ano.

Methods: A prospective, comparative study was conducted on 50 patients diagnosed with chronic fissure-in-ano. Patients were randomly assigned to two groups: Group A (n=25) underwent *Agnikarma*; Group B (n=25) underwent PLIS. Outcomes were assessed based on pain relief (VAS score), healing time, recurrence, complications, and patient satisfaction over a 3-month follow-up period.

Results: *Agnikarma* provided faster pain relief and healing (mean healing time: 12.9 days) compared to PLIS (mean: 18.6 days). Pain scores on Day 7 were significantly lower in the *Agnikarma* group (2) compared to the PLIS group (3). Recurrence was higher in PLIS (12%) than *Agnikarma* (4%). Complications were minor and comparable in both groups. Patient satisfaction scores were slightly higher in *Agnikarma* (8.1 vs. 8.6). *Agnikarma* was significantly more cost-effective.

Conclusion: While PLIS remains the preferred surgical option due to quicker recovery and disadvantages like higher recurrence, *Agnikarma* demonstrates promising results as a minimally invasive and cost-effective alternative for selected patients.

Keywords: *Agnikarma, Partial Lateral Sphincterotomy, Chronic Fissure-in-Ano.*

1. INTRODUCTION

Chronic fissure-in-ano is a common proctological condition characterized by a persistent tear in the anoderm, often located posteriorly. It typically causes significant discomfort, especially during bowel movements, and may be associated with bleeding and spasm of the anal sphincter. If left untreated, chronic fissures can result in chronic pain, incontinence, and a substantial impact on the patient's quality of life. [i] The condition is often refractory to conservative treatment, making surgical intervention a common approach for managing chronic fissures.

The standard surgical treatment for chronic Fissure-in-Ano is Partial Lateral Internal Sphincterotomy (PLIS), which aims to reduce internal anal sphincter spasm by making a controlled incision. This approach facilitates healing by relieving the high resting pressure in the anal canal. While effective, PLIS carries potential risks, including incontinence and other complications such as bleeding [ii]. Despite these risks, PLIS remains the gold standard for fissure management due to its fast recovery times and high success rates.

In response to the limitations of surgical options, traditional *Ayurvedic* treatments have gained attention, particularly *Agnikarma*. *Agnikarma* involves the application of heat to the affected tissue to promote healing, reduce pain, and alleviate sphincter spasm. The treatment is non-invasive and is effective in managing various proctological conditions, including

chronic anal fissures. [iii] *Agnikarma* is considered a safer, less invasive alternative to surgery and can be performed on an outpatient basis, which may be particularly appealing in resource-limited settings or for patients seeking to avoid surgical intervention. [iv]

Given that both PLIS and *Agnikarma* have demonstrated positive outcomes in clinical practice, there is a need for a detailed comparison of their efficacy, safety, and patient satisfaction. This study aims to evaluate these factors in patients with chronic Fissure-in-Ano, providing valuable insights into which treatment might offer the best balance of outcomes, recovery time, and cost-effectiveness.

Materials and Methods:

Study Design: Prospective comparative clinical study

Sample Size: 50 patients (25 in each group)

Inclusion Criteria:

Diagnosed chronic fissure-in-Ano (>6 weeks)

Age 18–60 years

No prior anal surgery

Patients suffering from chronic anal fissure with or without sentinel pile.

Exclusion Criteria:

Acute fissures

Associated anorectal disorders (abscess, fistula)

Immunocompromised patients.

Patients having other systemic pathology (TB, DM, HIV, HBsAg, etc).

Intervention:

Group A (Agnikarma): Thermal cauterization using electro cautery applied to the fissure bed under local Anaesthesia. Followed by local wound care and Ayurvedic oral medications.

Group B (PLIS): Partial Lateral sphincterotomy performed under local Anaesthesia. Standard post-operative care followed and Ayurvedic oral medications.

- Internal medication was given throughout the treatment period in both groups:

1) Triphala Guggulu [v] 2 tab BID AF with warm water.

2) *Gandhak Rasayana* [vi] 2 tab BID AF with warm water.

3) *Erandbhrista Haritaki vati* [vii] 3 tab H.S with warm milk.

Sitz bath was given throughout the treatment period in both groups:

1) *Panchvalkal Kwath* [viii] 30 ml BID for sitz bath.

Method of Agnikarma: [ix]

Pre requisites (Purvakarma):

- All equipment kept ready, i.e., Sterile gloves, Disposable syringe 50 ml, Sterile gauze pieces, Hole towel, Inj. Xylocaine 2%, kidney tray, Sponge holding forceps, Betadine liquid, Allies Forceps, Artery Forceps, Xylocaine 2% Gel, Electrocautery, etc.
- Informed written consent was taken.
- Required all blood investigation was done.
- Bowel preparation was done.
- Inj. Xylocaine 2% sensitivity test dose was done.

During Main Procedure (Pradhana Karma):

- Lithotomy position was given to the patient. Septic painting and draping were done.
- Inj. Xylocaine 2% Infiltration was done at the perianal region. Adequeate Anal dilatation was achived. The fissure bed was cauterized with electrocautery. **(Figures 1 & 2)**

- Hemostasis was achieved, and dressing was done.

After Procedure (Pashchat Karma):

- Vitals were monitored hourly.
- Regular sitz bath followed by dressing twice a day.

(Figure.1)

(Figure.2)

Method of PLIS: [x]

Pre requisites (Purvakarma):

- All equipment kept ready, i.e., Sterile gloves, Disposable syringe 50 ml, Sterile gauze pieces, Hole towel, Inj. Xylocaine 2%, kidney tray, Sponge holding forceps, Betadine liquid, Allies Forceps, Artery Forceps, Surgical blade no.11, BP Handle, Xylocaine 2% Gel, etc.
- Informed written consent was taken.
- Required all blood investigation was done.
- Bowel preparation was done.
- Inj. Xylocaine 2% sensitivity test dose was done.

During Main Procedure (Pradhana Karma):

- Lithotomy position was given to the patient. Septic painting and draping were done.
- Inj. Xylocaine 2% Infiltration was done at the perianal region. Adequeate Anal dilatation was achived. A small incision was taken at intersphincteric space with surgical blade no.11 **(Figure.3).** Whitish fiber of the internal sphincter was identified and held with artery forcep. **(Figure.4)** Partial lateral sphincterotomy was done. **(Figure-5,6)**
- Hemostasis was achieved, and dressing was done.

After Procedure (Pashchat Karma):

- Vitals were monitored hourly.
- Regular sitz bath followed by dressing twice a day.

(Figure.3)

(Figure.4)

(Figure.5)

(Figure.6)

Assessment Parameters:

Pain score (Visual Analog Scale - VAS)

Healing time (days to complete epithelialization)

Recurrence rate (within 3 months)

Complications (infection, bleeding, incontinence)

Patient satisfaction (1–10 scale)

2. RESULTS

Table no. 1 Demographic observation

Parameter	**Agnikarma (n=25)**	**PLIS (n=25)**
Mean Age	38.6 years	39.2 years
Gender Male Female	 16 9	 15 10

In the study age between 25 to 50 years 16 male patients were included and 20 to 45 years 9 female patients were included in Agnikarma group & age between 20 to 50 years 15 male patients were included and age between 25 to 50 years 10 female patients were included.

Graph no. 1 Graphical presentation of demographic observation

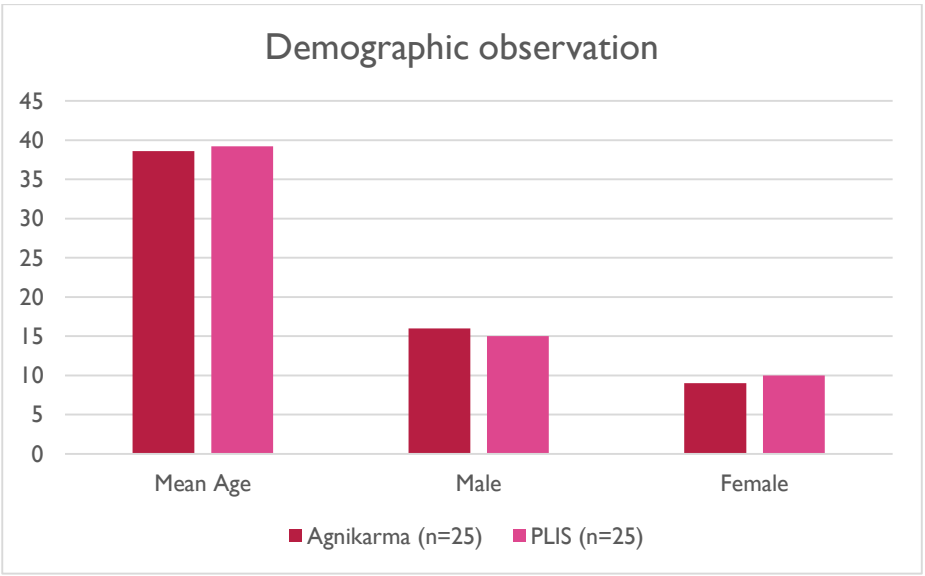

Table no.2 Assessment in both the therapy

Parameter	PLIS (n=25)	Agnikarma (n=25)
Mean VAS Score		
Day1	8	8
Day7	3	2
Day30	1	1
Mean Healing Time (Days)	18.6 ± 3.5	12.9 ± 2.8
Recurrence (within 3 months)	3 (12%)	1 (4%)
Complications	4 (Bleeding, Incontinence)	1 (Minor burns, oedema)
Transient Incontinence	2 (8%)	0
Patient Satisfaction (mean score)	8.1	8.6

In the group treated with PLIS, the VAS Score (day1) is 8 and after (day30) is 1. Healing Time is approximately 19 days. The recurrence was observed in 3 patients. Complications were observed in 4 patients. Transient Incontinence was seen in 2 patients, and patient satisfaction is 8.1.

In the group treated with Agnikarma, the VAS Score (day 1) is 8, and after (day 30), it is 1. Healing Time is approximately 13 days. The recurrence was observed in 1 patient. Complications were observed in 1 patient. Transient Incontinence is not seen, and patient satisfaction is 8.6.

3. DISCUSSION

PLIS demonstrated superior results in terms of pain relief and faster healing, reaffirming its role as a gold-standard treatment. However, *Agnikarma* showed considerable benefits, including minimal invasiveness, reduced cost, and no risk of incontinence. Despite an OPD-based nature and ease of administration, it is a viable option, especially in low-resource settings or in patients avoiding surgery.

Previous studies have shown thermal cauterization to have analgesic and antimicrobial effects, which likely contribute to the outcomes observed with *Agnikarma*. The application of *Agnikarma* causes debridement with local asepsis of fissure bed without causing extensive damage to the anal sphincters promoting formation of healthy granulation tissue with relaxation in the sphincter spasm thus causes healing. *Agnikarma* by thermal cautery is a controlled procedure where the chance of external sphincter damage is less compared to other surgical procedures. Hence, the chances of postoperative flatus or stool incontinence are negligible. After follow up for recurrence of symptoms it can be concluded that the Agnikarma is *Apunarbhava* chikitsa in the management of chronic anal fissure.

The application of partial lateral sphincterotomy relaxation of anal sphincter and may chance of post operative flatus or stool incontinence. After the procedure, the chances of sphincter spasm are less. It can improve the healing process and associated symptoms.

Post-operative care management *Triphala Guggulu* has anti-inflammatory, antimicrobial, and analgesic qualities. [xi] *Gandhak Rasayana*, containing Sulfur along with other herbal ingredients, is known for its antimicrobial properties. Sulfur, a key constituent of *Gandhak Rasayana*, has been historically associated with sulphonamides, known for their antimicrobial properties by inhibiting folic acid metabolism in susceptible bacteria. [xii] *Erand Bhrashta Haritaki"* (a combination of *Haritaki* processed with castor oil) can be used to promote bowel regulation and facilitate healing by softening stools and aiding in easy evacuation, which can help prevent further injury to the anal area. [xiii] *Panchavalkala Kwath*, a formulation of five tree barks, is used in Ayurveda for its wound-healing, anti-inflammatory, and astringent properties, potentially aiding in faster recovery and reducing complications. [xiv]

4. CONCLUSION

PLIS offers faster symptomatic relief and a higher recurrence rate, but *Agnikarma* emerges as a promising treatment with acceptable outcomes and significantly lower cost. Further randomized trials with larger sample sizes and longer follow-ups are warranted to establish its place in standard treatment protocols.

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Conflict of Interest:

None declared.

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