

# Comparative analysis of Parikartika and Anal Fissure: unraveling diagnostic, therapeutic, and surgical dimensions

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## Author contributions

Dr Sandeep Kumar Upadhyay collected, conceived carried out and drafted the manuscript. Dr Shreya Soni reviewed the data and helped in drafting the manuscript. Dr Sheetal Asutkar completely analysed, reviewed the article critically. All the 3 authors read and approved the final manuscript and are responsible for this article.

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## Abbreviations

LIS, Lateral submucous internal sphincterotomy; GTN, Glyceryl trinitrate; RCT, randomized clinical trials; BT, Botulinum toxin; D.R.E., Digital rectal examination; OPIS, Open posterior internal sphincterotomy.

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## Abstract

**Background:** Agnimandya, the underlying cause of anorectal disorders, of which Parikartika is the most well-known, is brought on by lifestyles characterized by sedentary behavior, elevated stress, poor nutrition, and sleep habits. The illness known as Parikartika, with signs and symptoms like fissure-in-ano in modern sources, is characterized by kartanvat Vedana (cutting pain) over the anal region. Acute fissure-in-ano is treated with analgesics, stool softeners, and soothing creams. Treatment options for hazy chronic fissures include anal dilatation, sphincterotomy, fissurectomy, and anal advancement flap. In addition to using laxatives and substances that promote wound healing (vranaropaka), the concepts of management of Parikartika in Ayurveda are more heavily weighted towards enhancing the nature, character, and consistency of stool and stabilizing the digestive functions Parikartika is mentioned in Ayurvedic texts as a complication of many Ayurvedic procedures, such as Vamana, Virechana, and Basti, as well as a complication of some disorders, such as Arsh, Atisar, and Grahani. **Aim and objective:** This article aims to comprehensively review the literature, diagnostic, and therapeutic aspects of Parikartika, with its correlation to Fissure in ano, and compare the clinical outcomes of the treatment modalities with supporting references, consolidating all pertinent information on the subject. **Material & method:** Collection from Samhita's, commentaries, exploring medical websites, Ayurvedic journals related to the topic of Parikartika and fissure in ano, systematic record of the collected literature and a summary of each item. Organize the collected materials, reference and citation are the material and method followed here. **Discussion & conclusion:** This is an extensive literature review on Parikartika in Ayurveda, exploring its contemporary association with Fissure in Ano. The research offers insights that can inform the evaluation and treatment of this condition, considering both conservative and surgical approaches, thereby enhancing clinical management strategies.

**Keywords:** Anorectal; botulinum toxin; Anal fissure; anal spasm; sentinel tag; Gudaparikartika; sphincterotomy

## Introduction

There are no direct allusions to Parikartika in the Vedic literature, which is said to be a very painful ailment in the anal area. Another anorectal disorder mentioned in the Vedas is arshas. Parikartika is described as an accompanying symptom of Arshas in Ayurvedic scriptures [1]. Arsha [2] (Vatika and Kaphaja prodromal symptoms and characteristics) an abnormal internal sphincter puts the patient at risk for developing a hemorrhoid and a fissure [3]. It is therefore difficult to infer that they were aware of such a painful medical condition, namely Parikartika, but it is also questionable whether they would have failed to mention it under a different category. Due to changing lifestyles, such as sedentary behavior, increased stress, poor nutritional habits, and irregular sleep and eating patterns, many lifestyle disorders are on the rise at present time. Agnimandya, the underlying cause of anorectal disorders, is brought on by this [4]. The treatment of Parikartika and its explanation is covered in great depth in the classics. All writers of Ayurveda, including Bruhatrayi and later authors, have cited Parikartika. Gudapradesh (anal area), the home of Sadyapranahar marma, is a site for the disease known as parikartika [5] and requires vigilant care. It might appear as an individual disease or as Vamanavirechana Vypada, Basti Karma vypada, and Upadrava of Atisara, Arsha, Grahani, and Udavart [6]. According to Acharya Sushruta, the pathophysiology of the condition is as follows: Pitta and Vata become vitiated if an individual is weak, has Mrudukoshta (mild digestive strength), Mandagni (deficient appetite), and consumes more food that has the attributes of Ruksha (dry), Ushana (hot), Lavana (salty), etc [7]. The condition known as Parikartika, with symptoms comparable to Fissure in ano in contemporary sources, causes kartanvat Vedana (cutting pain) over the anal region. A tear in the anoderm distal to the dentate line is referred to as a fissure in ano [8]. An anal fissure is a longitudinal break in the distal anal canal's anoderm that runs from the anal verge proximally to the dentate line but not beyond it. The pathophysiology of the anal fissure is thought to be connected to injury brought on by difficult stoma passage or recurrent diarrhea. A tear in the anoderm causes the internal anal sphincter to spasm, which causes pain, more noticeable tearing, and reduced blood flow to the anoderm. This vicious cycle of discomfort, muscle spasms, and ischemia results in a wound that doesn't heal properly and widens into a chronic fissure. An anal fissure is substantially more common posteriorly (90%) than anteriorly (only 10%) [9].

## Aim & objective

To comprehensively review the literature, diagnostic, and therapeutic aspects of Parikartika, with its correlation to Fissure in ano, and compare the clinical outcomes of the treatment modalities with supporting references, consolidating all pertinent information on the subject.

## Material and method

This article provides a detailed review of the Ayurvedic literature of *Parikartika* and its correlation in Modern with diagnostic, therapeutic, and surgical options for anal fissures that are currently available. Also, it specifies comparisons of one treatment over the other.

## Ayurvedic concept of parikartika

### Nirukti

The word "Pari" a prefix, denotes "all over," "whole," "every entity," or "every aspect." "Kartika" originates from the verb "krita," which means to cut. Thus, the entire meaning of the word "Parikartika" is "to cut circumferentially" or "to cut all the way around." This ailment causes the sufferer to feel as though their guda is being sliced with scissors.

## Classical review

When describing Parikartika as an adverse effect of Vamana and Virechana, Acharya Charak noted severe pain in the ano as one of the symptoms. The primary symptom of Parikartika, a sharp, cutting, and burning sensation in the Guda, was reported by Acharya Sushruta in the chapter of Vamana Virechana Vyaapada. Furthermore, he continued, there is a sort of slicing pain in the penis, umbilical area, and bladder neck. The predominant doshas that cause pain are Vata and Pitta, and the characteristics are cutting and burning sensation in ano, appropriately. Dushta Vrana in Guda, which manifests as a longitudinally formed ulcer in the anal area, is one of the symptoms of Parikartika. Because the clinical symptoms of fissure in the most recent surgical text are the same, the description of Parikartika symptoms in Sushruta Samhita is entirely accurate. Similar indications and symptoms were mentioned by Charaka and Sushruta as well as by Vagbhata [10].

### Nidana

According to Acharya Sushruta, the causes of Parikartika can be separated into three categories.

**Nija Hetu.** Vata dosha leads to vedana i.e. pain which is the foremost symptom of Parikartika, hence all the factors contributing to vitiation of Vata dosha contribute to nidana of Parikartika [11].

**Exogenous factor (Agantuj Hetu).** The trauma at Guda that resulted in Parikartika may have been caused by iatrogenic complications such as harsh and thick Basti Netra during the procedure of Basti or Virechana [12].

**Nidanarthakari Roga.** (Parikartika as Complication of Panchkarma procedures) When Mrudu Kostha and Mandagni patients receive Vamana and Virechana along with Teekshna, Ushna, and Pittaprapokap medications, Pitta and Vata Prakopa results in Parikartika as an Atiyoga of Virechana [13]. Basti with Big, Rough Netra, with teekshna, ushna, lavana drugs with heavy doses leads to ulcers in Guda contributes to Parikartika [14, 15]. According to a passage Charaka cited, that administering a potent medication to an atisnigdha, gurukosthee, or extremely frail, Mridu kosthee patient in Samavastha will result in Parikartika and excruciating pain in the ano. The 76 problems of Basti that Sharangadhar also listed include Parikartika [16]. As was already mentioned, Parikartika is not classified in Ayurveda as a distinct disease entity; rather, it has been described as a symptom present in other illnesses or as an adverse reaction to specific procedures. Parikartika is observed as associated symptoms in many diseases as a symptom or a form of Upadrava: Jwara [17].

Vataja Grahani [18].

Vataja Pakwatisara [19].

Pureeshavrodhajanya Udavarta [20].

Kaphaja Arsha [21].

Prodromal symptom of Arsha [22].

Malavritta Vata [23].

Vyanavritta Apana Vayu [24].

### Samprapti

The pathophysiology of each disease has been brilliantly elucidated by Acharya Sushruta in the form of Shatkriya Kala. Sanchay, Prakop, Prasara, Sthan Sanshray, Vyakti, and Bheda are among them. Vata is the primary Dosha that is vitiated in Parikartika. Twak, Rakta, and Mansa are Dushya.

There are 3 different *samprapti* for the above condition:

1. When *vyana vayu* obstructs the Apana vayu Parikartika occurs with Udavarta. Dushti of Purishavaha strotas takes place, then purisha gets blocked leading to vitiation of natural Apana vayu. Moreover, when Vata localizes in Twak as a result of the pathophysiology, it becomes rough and tends to break. As the illness worsens, vitiated Vayu becomes localized in Rakta, and an ulcer forms. After that, it becomes localized in Mamsa, causing painful knotty swelling or tags [25]. Although Vayu predominates, it is connected with Pitta according to Acharya Sushruta and Kapha as per Acharya Kasyapa

[26] (Figure 1).

2. The development of disease is also significantly influenced by Agni dysfunction. Due to Vamana-Virechan, Vasti Vyapada, or other diseases, the person has impaired Agni and is susceptible to Parikartika [27].

3. Due to Agantuja Nidana, in which a wound forms in the early stages before the Doshas become positioned in the Vrana and cause additional symptoms. When the wound is created concurrently, the Dosha becomes vitiated, which ultimately results in Parikartika.

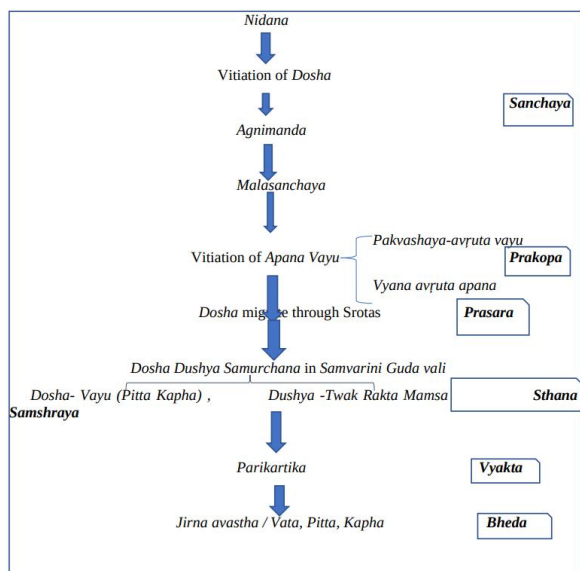


Figure 1 Samprapti of Parikartika

**Sadhyasadhya:**

It is simple and quick to treat Parikartika, which affects the outermost layer of the Twak (anal skin). It can therefore be treated with Sukhasadhyas. If it penetrates Rakta, Mansa deeply, it requires wound management. The mending of Vrana will take longer to be healed if Madhumeha, Kustha, Vishodusti, and Soshha are involved. Parikartika is regarded as Yapya if it is connected to Sanniruddha Guda [28].

**Chikitsa:**

Internal drugs and topical treatments are the Ayurvedic therapeutic options for Parikartika. The surgical care of Parikartika is not described in any of the classics. Internal drugs are less successful than external therapies like Anuvasana Basti (medicated oil enema), Picha Basti (decoction enema), Lepa (the use of pastes made by combining herb powder with liquids (milk, water, etc.) to make pharmaceutical absorption easier, it is typically applied in the opposite direction of the hair follicle), and Pichu Dharana (Gauze soaked into medicated ghruta /oil application into affected site according to Dosha predominance).

As a side effect of some diseases & Sansodhana chikitsa, Parikartika is addressed.

Kashyap mentioned that it is managed by dosha involvement. None of the Samhitas mention surgical care, proving that Parikartika can be treated effectively with only conservative measures. Samprapti Vighatana, or lessening the influence of the Vyadhi Ghatakas, is the general aim of treatment, i.e.

1. In general, the goal of treatment is to lessen the strength of the Vyadhi Ghatakas. The vitiating of Vayu (Apana Vayu) caused by Purishavega Avarodha results in Vibandha and Parikartika. So, the cycle needs to be broken.

2. In Parikartika, Arsha, Atisara, and Grahani, Mandagni occurs. So, maintaining the Agni in a balanced state is required.

1) Acharya Charaka placed a specific emphasis on Ama [29].

2) Sama Dosha: a) Langhana b) Pachana c) Rooksha Ushna Laghu Bhojan.

3. Amajirna Anubandha (Vrddha Vagbhata's Nirama condition) -

usage of Kshara, Amla, Madhu, and Acharya Charaka also mentioned Brimhana and Madhura Drava in malnourished patients.

4. In the case of a Vata predominance, the patient should take the following drug [30]. Sarpi which has been treated with Dadima Rasa, Pushpa Kasis, Kshara, or Lavana.

Food and drink made of sour curd, Dadima (pomegranate) skin Devadaru and Tila paste, with warm water.

Asvattha, Udumbara, Plaksa, and Kadamba were added to boiling milk.

5. Acharya Charaka in the Jwara Chikitsa further remarked that a Jwarita individual has a probability of experiencing Parikartika. He ought to eat red rice Peya made from a decoction of Vrakshamla, Badar, Pithivana, and Kantkari with unripe fruit of Bela's cortical powder.

6. In Garbhini Chikitsa different types of Yusha are advised by Acharya Kashyap as per dosh involvement [31]. Vatika parikartika-Bruhathi, Bilwa, Anantamoola, Paittika Parikartika-Madhuyaṣṭhi, Hanspadi, Dhaniyā, Madhu, etc. Kaphaja Parikartikā-Kateri, Gokshura, Pippali and Lavana.

**Diet in Parikartika:**

In Sama condition, Langhana- Deepana and Ruksha, Ushna, Laghu diet Madhura and Brihaniya diet, is advised in thin & lean patients.

In severe Vata Prakopa condition, Ghrit with Daadimarasa should be given.

Tila Kalka and Devdaaru with Ushnodaka is beneficial in every Parikartika patient.

Udumbaar, Ashvattha, Plaksha and Kadamba Siddha milk [32].

**Local procedures**

The treatment aims to relieve (Table 1) sphincter spasms, heal fissure wounds, soothe the anal canal, and alleviate the excruciating pain and the accompanying bleeding, burning, and sensation.

**Concept of Fissure in Ano**

**Definition:**

An anal fissure is an ulcer-like longitudinal tear in the squamous epithelium of the anal canal, which extends from the anal verge cephalad sometimes up to the level of the dentate line [38].

**Description:**

Fissure is classified as Acute and chronic based on chronicity. An acute Fissure in ano is a severe sphincter spasm without edema and inflammation. A deep canoe-shaped ulcer with thick edematous edges is a chronic fissure in ano. A hypertrophied papilla was found at the ulcer's upper end. A skin tag called "sentinel pile" is present at the bottom end of the ulcer, and an internal sphincter spasm is always present. The type of condition determines treatment for Fissure-in-ano. Analgesics, stool softener, and soothing ointment treat acute fissure-in-ano [39]. Anal dilatation, sphincterotomy, fissurectomy, and anal advancement flap are used to treat chronic fissures, which are hazy. Still, the side effects of these operations, including recurrence, incontinence, and pruritus, are even more painful than the illness itself.

**Pictorial representation of fissure in ano.** The different stages & appearance of Fissure in ano i.e acute, chronic, fissure bed ulcer, infection induced fistula, cryptitis etc has been explained in (Figure 2) containing 8 pictures.

Description of (Figure 2) A-Acute fissure in ano at 6 & 12'0 clock position with active bleeding. B-Chronic fissure in ano with Fissure bed ulcer at 6'0'clock position. C-Long standing chronic fissure with edematous infected sentinel tag associated with fistular formation into the sentinel tag. The external opening at the tag is easily visible. D-Chronic fissure associated with Protruded anal papilla E- Sentinel tags in a chronic fissure at the anal region. F-Inflamed multiple tags with Pruritis associated with chronic fissure G-Cryptitis, multiple tags,

**Table 1 Local procedures**

Sr.no.	Procedure	Description	Effect
1	Matra basti	It acts as a retention enema of approximately 72 ml and helps in the easy voiding of stools; Vatanulomana cures the disease caused by aggravated Vata. Spasms are alleviated, and discomfort is reduced when Matrabasti with local Snehana is administered.	It softens stools, lubricates the anal canal, and makes evacuation easier [33].
2	Tailapoorana	In this procedure, per rectal administration of 15-20 ml oil having Vranaropana property).	It will reduce the spasm of the sphincter muscles by the pain subsides, and the ulcer of the fissure heals [29].
3	Taila / Ghrita Pichu	Keeping the medicated gauze over the fissure wound creates a layer of protection. Prevents friction.	It soothes the anal canal, relieves pain by releasing sphincter tone, and cleans the wound, thus helping heal ulcer [35].
4	Avgaha Sweda (hot fomentation-sitz bath)	Sitting in the hot/warm tub following every bowel movement for 15-20minutes.	It temporarily reduces the internal sphincter's spasm and relieves pain. It aids in healing fissure wounds as well. Fissures can be effectively treated using sitz baths. It requires 10 to 15 minutes to get it done [36].
5	Kshara Sutra application [37]	Ligation of Kshara sutra to sentinel pile masses.	By this themselves they may fall within few days.
6	Kshara Lepa [37]	Lepa of Apamarga Pratisaraneeya kshara for 100 matrakala, and then applying Lemon juice over the same site is done over the (Chronic fissure-in-ano) ulcer surface.	By scraping action of Kshara, reduces the excess fibrous tissue present over the ulcer surface, and the ulcer heals & sphincter relaxation co-occurs.
7	Agnikarma [37]	Sushruta advised therapeutic heat burn balances the local Vata and Kapha Doshas to provide pain relief instantly and without causing any negative side effects.	By doing Agnikarma treatment has provided significant relief & no recurrence. The sentinel piles' excision is done by Agnikarma, i.e., by electro-thermal cautery.



**Figure 2 Pictorial representation of different stages & appearance of Fissure in ano**

protruded anal papilla. H- Canoe-shaped fissure bed ulcer associated with huge anal papilla clamped with artery forceps.

### Principle symptoms

**Acute fissure in Ano.** The main symptoms in adults are anal pain, bright red bleeding, perianal swelling, and occasionally mucous discharge. During defecation, the pain is sharp and agonizing, often overwhelming and lasting an hour or more. A dull ache is usually experienced for 3–4 hours after defecation. It may stop abruptly, and the sufferer will be comfortable until the next bowel activity. Remissions can last a few days or weeks. Instead of going through the agony of excretion, the patient tends to get constipated. Bleeding is only minor in amount and is bright red. Profuse blood loss is rare.

**Chronic fissure in Ano.** Swelling and discharge are characteristic of chronic Fissures, which may be complicated by pruritis ani and perianal excoriation. Discharge may indicate an intersphincteric abscess or a fissure fistula. Inflammation causes a sentinel tag on the distal aspect of chronic fissures. It has inflamed indurated edges and a base of scar tissue or the lower border of the internal sphincter muscle. The ulcer is canoe-shaped, and a skin tag on the inferior extremity is generally oedematous. Because it protects the Fissure, this tag is referred to as a sentinel pile. There may be spasms of the internal sphincter's involuntary musculature. This muscle becomes organically constricted by infiltration of fibrous tissue in long-term situations. Infection is prevalent and can be severe, leading to the formation of an abscess. A cutaneous fistula may follow.

### Diagnostic Aspects of Fissure in ano:

In most patients, it is possible to diagnose anal Fissures by inspection alone. The patient is usually anxious and may be in pain. Patients are naturally fearful of having a rectal examination, and the perianal skin is usually puckered by spasms of the internal and external anal sphincters and tightly held buttocks.

**Inspection.** Despite excessive sphincter activity, it is usually possible to notice a skin tag along with a small amount of blood or discharge on the perineum. Gentle traction on the lateral margins of the perineum nearly always reveals a fissure below the dentate line. Sometimes perianal dermatitis (fungal dermatitis) also presents near the anal verge, which causes itching to the patient. In this condition, it is necessary to treat dermatitis along with Fissures.

**Palpation.** This is performed only after inspection to go through any associated pathology in the anal canal. Digital rectal examination (D.R.E.) is to be done by introducing properly lubricated index finger and thumb remains outside to palpate pathology around the anal verge. Intense spasms of the sphincters and an irregular, painful depression near the anal margin are usually prominent features of acute Fissure. A fissure bed with indurated edges is present in the chronic Fissure, which sometimes associates with hypertrophied anal papilla. Subcutaneous abscess, submucosal abscess, and intersphincteric abscess associated with chronic Fissure are sometimes noticed by digital rectal examination.

**Proctoscopy.** It is usually not done in case of Fissure in ano; if hemorrhoid or other pathology is present, it can be done under local anesthesia.

**Sigmoidoscopy.** Identifying the primary pathology is necessary in case of a secondary Fissure. It is done under general anesthesia to diagnose distal proctitis, colitis, Crohn's disease, tuberculosis, and adenomatous polyps, which can cause secondary Fissure [41].

### Treatment

**Acute fissure.** Hot water sitz bath with or without boric powder, povidone-iodine solution, or water diluted with potassium permanganate. This procedure temporarily reduces the internal sphincter's spasm and relieves discomfort.

Use of adequate analgesics and avoiding prolonged sitting for emptying the bowel is important. Relieve from pain, and prevent further tear to anoderm. A dose of adequate pain relievers half an hour before defecation prevents post-defecation pain.

Ointments with opiates, xylocaine, and cinchocaine to treat pain,

belladonna to treat sphincter spasms, and silver nitrate to speed up healing have become popular. To provide a thorough application over the appropriate region of the fissure, these combinations are applied using the finger or a short rectal probe [42]. Also, the ointment is typically applied on top of an anal dilator, which also helps to reduce sphincter spasms. Pruritus caused by an allergic reaction to the anesthetic drugs and loss of an anal dilator in the rectum are potential side effects of this treatment [42].

Stool Softeners and Diet. It is crucial to soften the stools since they navigate the rectum and anal canal in a painless physiological maneuver when they are soft and shaped. To keep the stools soft, drink plenty of oral fluids. A high-fiber diet and bulk-forming foods, such as isaphgula, green leafy vegetables, and fibrous fruits, can significantly increase the bulk of stool, resulting in a quick and easy act of defecation [43].

**Chronic fissure-in-ano.** If the fissure meets any of the following criteria, it is classified as chronic or complicated [44]:

1. Not reacting to conservative treatment;
2. Having a fibrous anal polyp;
3. Having an external skin tag;
4. Having a hemorrhoid;
5. Showing signs of induration at the edges of the fissure;
6. Having the internal sphincter fibers exposed at the floor of the fissure;
7. Having the base of the fissure infected;
8. An associated fistula in ano with a bridged fissure bed.

It is often observed that a fissure that is compounded by any of the aforementioned features does not heal naturally or respond to conventional therapy [45].

### Conservative Management including Non-Operative Techniques

As per treatment measures, all the procedures come with certain benefits as well as drawbacks (Table 2). Choosing the best procedure out of all assures cure of the symptoms. Various conservative management for fissure in ano includes:

### Operative measures with their advantages and drawbacks

When conservative management fails, there is a chance to get it treated by operative techniques (Table 3) but still it comes with advantages as well as the drawback.

### Discussion

1. As per clinical studies of Ayurvedic management of Fissure
2. Meta analysis of Modern medication
3. Comparison of Medical vs Surgical treatment

When looking towards Ayurvedic conservative management of Parikartika there are various Clinical studies conducted which proved our Classical references. The results of conducted studies are:

1. In a clinical study of Panchguna Tail Pichudharan in the management of Parikartika in 30 patients, the observation of age-related incidence, people between the ages of 18 and 30 were found to have the highest incidence of Parikartika. It is likely because people are more susceptible to developing the disease during their active years of life when they are exposed to a variety of aetiological variables, fast food habits, and lifestyle changes 70% of patients have a diverse diet, which is one of the contributing factors to their condition. People who habitually consumed a non-vegetarian and spicy diet suffered from this disease. The majority of patients in the current study had a history of constipation with hard stool, and some also had irregular bowel habits. It is an illness with a slow start that is more prevalent among constipated people. Rectal mucosa damage is brought on by constipation, which could result in a fissure. The study's findings support the idea that Pichudharan of the Panchguna tail is a successful alternative to surgery for treating Parikartika (fissure-in-ano) [56].

In another clinical study of acute fissure management with local

**Table 2 Various conservative management for fissure in ano**

Treatment	Dose	Advantage	Drawback
1. Botulin Injection	Toxin	The internal sphincter is flaccidly paralyzed for about three months as a result of the toxin's effects on the acetylcholine-releasing parasympathetic peripheral nerve endings and the ganglionic nerve endings, which is long enough for the healing of chronic non-complicated fissure [not associated with sentinel tag, internal haemorrhoids, anal polyps, or post fissure fistula] [46]	Regular use of this medication had been discouraged due to the drug's toxicity, and unintentional injection into nearby tissue resulting in general poisoning, hematoma, and infection [47].
2. Oral Nifedipine [48]	20 mg Nifedipine twice daily	Nifedipine, an L-type calcium channel antagonist, has been used with varying degrees of success in the treatment of achalasia cardia. Effective in releasing spasms of the sphincter helps in healing by increasing blood supply locally.	Nevertheless, it is intended to result in reversible internal anal sphincterolysis. Most of these medications need to be taken 2-3 times per day and have a short half-life of action. Common adverse effects include ankle edema, diminished taste and smell, nausea, diplopia, palpitations, flushing, dizziness, headache, and colicky abdomen pain.
3. Use of Vasodilators Locally	Donors of Nitric oxide i.e. 2% GTN ointment (glyceryl trinitrate or isosorbide dinitrate) applied locally in anoderm, or Topical Diltiazem ointment twice daily for 6 weeks	A major neurotransmitter involved in the relaxing of the internal sphincter is nitric oxide. It has been established that chronic anal fissures have ischemic origins because of inadequate blood flow internal anal sphincter spasm is common, hence chemical sphincterotomy, results in the repair of fissures [49].	Headache is experienced in many cases.
4. Chemical cauterization [49]	Application of silver nitrate or phenol-in-glycerine for 4-8weeks	Repeated procedures can be done till complete healing.	Accidental application to nearby tissues can lead to Infection and hematoma.

**Table 3 Various operative techniques**

Treatment	Advantage	Drawback
1. Lord's anal dilatation (Stretching of anal sphincter) [50]	Recamier first described anal dilatation in 1838. This was one of the most popular and well-liked techniques for treating anal fissures. The procedure's absolute simplicity is what draws people in most. This treatment can be carried out at community hospitals or basic health centers in small towns because absolutely no special equipment is required. By lowering the pressure in the anal canal, anal dilatation aids in the healing of the fissure. It does not harm the external anal sphincter as feared when done carefully and without using excessive force. In skilled hands, incontinence of stools or flatus is infrequently observed.	High risk of fissure persistence
2. Fissurectomy [51]	The anoderm's triangular portion is removed along with the fissure. Anal stretching is typically done before this operation.	Despite the operation's overall effectiveness and dependability, a big and unpleasant exterior wound is left behind that takes a long time to heal [51]
3. Division of internal anal sphincter [52, 53]	To relieve sphincter spasm.	OPIS- The incision heals slowly and frequently resulting in a posterior midline keyhole defect, which may result in recurrent leakage or difficulties in defecation.
a. Open posterior internal sphincterotomy (OPIS)	OPIS- Posterior sphincterotomy is performed by separating the sphincter fibers through the fissure wound.	LIS- requires a long time for the procedure, chances of perianal abscess and fistular formation.
b. Lateral subcutaneous internal sphincterotomy (LIS)	LIS- One of the most popular procedures is it. This is due to the procedure's simplicity, low need for anesthesia, and successful outcomes. The treatment has a long list of potential side effects, but with cautious and skilled hands, these might be successfully managed and the process could be made simple and safe.	

Table 3 Various operative techniques (continue)

Treatment	Advantage	Drawback
4. Surgical and cyrotherapeutical treatment [54]	A lateral anal sphincterotomy under local anaesthesia, followed by fissure curettage using N-protosside cryosound is performed. This method is promoted as being speedier and more efficient.	--
5. Carbon dioxide laser surgery [55]	Localised laser vaporisation of the fissure is involved. Using this laser, the internal sphincter can be incised. Some anal stenosis can be found in long-lasting fissures. Before treating the fissure, it can be utilised to make relieving incisions in the other three quadrants. It is effective when the fissure is linked to pathologies such as sentinel tags, hypertrophied anal papillae, fibrous polyps, post fissure fistula, or internal haemorrhoids that may be treated concurrently while the fissure is being treated.	The main obstacle to the laser unit's widespread adoption appears to be its high price.
6. Lateral subcutaneous internal sphincterotomy and radio frequency surgery [55]	Ellman Dual Frequency 4MHz by Ellman International [Hewlett, NY], which includes tripartite function of cutting, cutting, and coagulation, or pure coagulation, is the radio frequency surgical device that is employed. Radiofrequency surgery can be used to reshape the fibrosed fissure's edges. The entire process is brief and almost bloodless.	No trials are available being new to the field.

application of kasisadi ghrta for 28 days twice a day along with a specific diet helped in the healing of fissure in ano due to shothahara, vednahara, and ropana properties [57].

Durva ghruta pichu once in a day daily for 7 days showed satisfactory improvement in the acute fissure with longitudinal tear. Due to an increase in collagen and protein and a decrease in lipid peroxide in granulation tissue, the flavonoid found in Durva aids in the healing process. Guda Parikartika is Vata-pitta Pradhana disease, is mentioned in classical. In terms of anal discomfort, anal bleeding, tenderness, and anal sphincter tone, Durva Ghrta gives better results [58].

Kshar's stambhak guna, which acts as a sclerotic agent, causes it to prevent bleeding. Tridoshaghna, cheedan, bhedhan, shodhana, lekha, stambhana, krimighna, ropana and vilayana qualities are present in kshara karma. Consequently, Kshar Karma's management of the acute state of the ano fissure has produced quite substantial results [59].

Isabgol as a Pathya, together with Yogabhyas and the use of Yastimadhu Siddha Taila Matra Basti, can successfully ease the pain and spasm of the anal sphincters, which is the primary contributing factor for pain in fissure-in-ano is another example of a study conducted in 30 patients [60].

On looking towards a meta-analysis of the treatment of fissure in ano it was stated that Lateral submucous internal sphincterotomy (LIS) is more effective than non-surgical treatments for treating fissures permanently. Calcium channel blockers were more efficacious than Glyceryl trinitrate (GTN) and had a lower risk of headache. Anal incontinence, once considered to be a frequent concern with LIS, was found in this review to have a risk between 3.4 and 4.4% in several subgroups. In the surgical investigations, manual anal stretching was less effective than LIS for treating people with persistent anal fissures. Both open LIS and closed LIS seem to be equally effective for patients who need surgery for anal fissure, with a moderate GRADE quality of evidence [61].

2. On looking forwards towards a comparison of Modern Medical as well as Surgical treatment.

A total of 5 published randomized clinical trials (RCT) evaluating the effectiveness of medicinal therapy against surgical therapy in a large number of patients; four of these studies compare GTN with internal sphincterotomy, and one compares Botulinum toxin (BT) with internal sphincterotomy.

In another study, 24 patients were randomly assigned to receive either internal sphincterotomy or GTN (0.05 mg pill crushed in 10 mL lubricating jelly, three times per day for 4 weeks); healing rates were high in both groups, and neither experienced recurrence or incontinence [62]. Although procedure is quite helpful in treating chronic anal fissure, lateral internal sphincterotomy is linked to major,

long-lasting changes in continence. Because it produces a similar rate of cure with less control impairment, Closed internal sphincterotomy is preferred to Open Internal sphincterotomy [63].

Hence, on looking towards Parikartika, ayurvedic management has its own importance and there are effective results in healing of wound with less recurrence. Whereas Modern methods of treatments have higher recurrence as well as side effects. Moreover it also depends on patient's choice for opting the mode of treatment.

### Conclusion

The etiology and symptoms of Fissure in ano reported in modern surgery are quite similar to those of guda parikartika, even though guda parikartika is not listed as a separate medical entity in Ayurveda. This is because the two systems of medicine have different contexts in which they are used. Both Ayurveda and contemporary surgical texts describe the clinical characteristics of a painful tear in the anal canal with bleeding and burning sensation brought on by dietary factors, anal trauma caused by hard faeces or other causes, and conditions with increased frequency of defecation like diarrhea and colitis. While modern surgery focuses more on relieving the muscular hypertonia of the anal sphincters through both surgical and pharmaceutical means, Ayurveda is more focused on stabilizing the digestive functions and improving the nature, character, and consistency of the stool with no surgical approach, utilizing laxatives and wound-healing medications being defined for guda parikartika. Whereas Modern science offers conservative as well as surgical methods depending on chronicity. This article is a critical review presenting the options available along with various proven case studies that offer a successful response in diagnosing and managing Parikartika.

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