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Botulinum Toxin Injection And Kshara Karma In The Treatment Of Chronic Fissure In Ano: An Evidence Based Review

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Abstract: In Ayurveda classics, *Parikartika* resembles with fissure-in-ano having cutting and burning pain at *Guda* (anal region) which is mentioned as a sequel of some diseases or as a complication of some *Panchakarma* procedures. *Acharya Sushruta* defined the *Kshara* as the substance possessing *Ksharana* (localized cleansing properties) and *Kshanan* (debridement) properties. He advocated *Kshara karma* for the purification (*Shodhana*) of sore of a long standing ulcer which is of an indurated character. On this principle *Kshara* is used for purification (*Shodhana*) and local debridement of fibrotic tissue seen in chronic fissure[1]. Chronic anal fissure causes severe pain largely due to persistent internal sphincter spasm, creating a cycle that prevents healing. Lateral internal sphincterotomy heals 85–95% of cases but carries a 3–30% risk of deformity or incontinence due to permanent sphincter weakening. Botulinum toxin (BTX-A) offers a reversible "chemical sphincterotomy" lasting 8–12 weeks, allowing fissure healing with success rates up to 85% and without long-term continence issues [2].

KEYWORDS: Parikartika, Kshara karma, Botulinum toxin, Ayurveda, Modern, Fissure in Ano.

I. INTRODUCTION

Anal fissure is a common disorder which affects all age groups with an equal incidence in both sexes. An anal fissure is an elongated ulcer in the long axis of lower anal canal, it may be acute or chronic. Most surgeons define a fissure as chronic when it persists beyond six weeks and healing with conservative treatment seems unlikely.The chronic anal fissure presents thickened edges with usually visible, internal anal sphincter fibers at the fissure base. It may also be associated with an external skin tag (the sentinel pile) at the lower end of the fissure and/or a present papilla at the upper end of a fissure (hypertrophied anal papilla). These features of fissure chronicity are attributed to chronic infection and are caused by development of fibrotic connective tissue3.

Chronic anal fissure leads to intense anal pain that significantly affects quality of life, and although its exact cause is not completely understood, persistent internal sphincter spasm is recognized as a key feature in its pathogenesis. This spasm, together with pain and prolonged non-healing, forms a self-perpetuating cycle that maintains the condition. Lateral internal sphincterotomy remains highly effective, with healing rates of 85–95%, but its permanent weakening of the sphincter may result in deformity or continence disturbances in 3–30% of patients. To overcome these drawbacks, botulinum toxin type-A (BTX-A) injection into the internal sphincter has been widely studied, showing healing rates close to 85% and outcomes comparable to surgical treatment. As a reversible chemical sphincterotomy lasting 8–12 weeks, BTX-A provides adequate time for fissure healing without the risk of permanent incontinence. It is simple to perform in an outpatient setting and is associated with minimal, usually temporary, local adverse effects. When compared with

nitroglycerin ointment, BTX-A has demonstrated superior healing in chronic fissures, restricting the primary use of nitroglycerin to acute cases rather than chronic disease[4].

AIMS AND OBJECTIVES

- To evaluate and compare the clinical role of botulinum toxin injection and *kshara karma* in the management of chronic fissure in ano.
- To review the therapeutic principles and mechanisms of action of botulinum toxin and *kshara karma* in chronic fissure in ano.

METHODS AND METHODOLOGY

This review was conducted through a comprehensive analysis of classical *Ayurvedic* texts, Contemporary Medical Journals, Relevant original articles, web etc.

PATHOPHYSIOLOGY[5]

Modern view

A fissure in ano is a tear in the anoderm distal to the dentate line. The pathophysiology of anal fissure is thought to be related to trauma from either the passage of hard stool or prolonged diarrhea.

A tear in the anoderm

↓

Spasm of the internal anal sphincter

↓

Pain, increased tearing and decreased blood supply to the anoderm
This cycle of pain, spasm and ischemia contributes

↓

Development of poorly healing wound

↓

Chronic fissure

Ayurvedic view

- In *Ayurveda* classics, *Parikartika* resembles with fissure-in-ano having cutting and burning pain at *Guda* (anal region). Ancient authors mentioned it as one of the complication in the *Virechanakarma*(purgation therapy) and *Vastikarma* (enema therapy) or as a sequel of another disease like fever, diarrhoea & hyperemesis etc[6]
- Constipation/altered bowel habit leads to passing of more hard stool/frequent stool causes trauma to the mucous membrane and associated skin, causing acute tear at mucocutaneous junction of anal canal. Due to tear and passage of hard stool, there is severe pain during and after defecation with burning sensation. In the chronic type when tear of mucocutaneous junction repeats many time regularly and body consistently tends to repair of the tear, so healed portion converted into unhealthy fibrous tissue known as fissure bed in chronic fissures[7].

BOTULINUM TOXIN THERAPY

Pharmacological action

Botulinum toxin causes temporary muscle paralysis by preventing acetylcholine release from presynaptic nerve terminals . Injection of botulinum toxin is used in some centers as an alternative to surgical sphincterotomy for chronic fissure . Although there are few long term complications from the use of botulinum toxin[8].

PROCEDURE

The procedure is performed under local anaesthesia in an out patient setting .A total dose of 20-40 units is injected into the internal anal sphincter , typically divided between two sites adjacent to the fissure. The patient is discharged on the same day.

Clinical benefits

- Rapid relief from sphincter related pain
- No surgical incision
- Minimal hospitalization
- Reversible effect

Limitations

- Temporary duration of action
- Higher recurrence compared to surgery
- Cost constraints
- Requirement for trained personnel

Adverse effects

Temporary incontinence to flatus , mild local discomfort ,and hematoma formation may occur but are generally self-limiting[9] .

***KSHARA KARMA* THERAPY**

- *Acharya Sushruta* defined the *Kshara* as the substance possessing *Ksharana* (localized cleansing properties) and *Kshanan* (debridement) properties. He advocated *Ksharakarma* for the *Shodhana* (purification) of a long standing ulcer which is having the features like induration, raised margins and is marked by itching .
- On this principle *Kshara* is used for *Shodhana* (purification) and *Lekhana* (debridement) of unhealthy tissue seen on the bed of chronic fissure which ultimately reduces the pain by controlling induration and inflammation.

  Procedure: Fissure is isolated and visualized properly by introducing a lubricated slit proctoscope in lithotomy position. Then approximately 500 mg. of A *kshara* is to be taken on cotton swab wrapped on carried mosquito forceps is applied on fissure bed and to be kept for 100 seconds. Later the site should be washed thoroughly with lemon juice[10].

Advantages

- Cost effective and accessible
- Minimal blood loss
- Can be performed in an out patient setting
- Useful in chronic fissures

Limitations and risk

Excessive application can lead to temporary burning sensations , edema, or delayed healing.when performed by trained professionals, major complications are rare.

Comparative effectiveness

FEATURE	BOTULINUM TOXIN [11]	KSHARA KARMA [12]
Therapeutic principle	Chemical sphincter relaxation	Chemical debridement and cauterization
Primary target	Functional sphincter spasm	Fibrotic fissure tissue
Invasiveness	Minimally invasive injection	Local controlled cauterization
Cost	High	Affordable [13]
Recurrence	Moderate (temporary)	Low (removes fibrosis)
Healing mechanism	Improves blood flow and reduce spasm	Debrides unhealthy tissue and promotes regeneration [14]

DISCUSSION

Botulinum toxin therapy primarily corrects the physiological component of chronic fissure-in-ano by reducing internal sphincter spasm, improving blood flow, and providing rapid pain relief. It is most effective in early or moderately chronic fissures where structural changes are minimal. In contrast, *Kshara Karma* addresses the pathological alterations seen in long-standing fissures such as fibrosis, indurated edges, and sentinel pile formation through controlled chemical debridement and stimulation of healthy tissue regeneration. Clinical practice indicates that selecting treatment based on individual disease characteristics yields better outcomes. Early fissures respond well to botulinum toxin, while chronic, fibrotic fissures show superior improvement with *Kshara Karma*. Integrating either therapy with dietary changes and bowel habit regulation further enhances healing and reduces recurrence.

CONCLUSION

Both Botulinum toxin injection and *Kshara Karma* serve as effective minimally invasive interventions for managing Chronic fissure-in-ano. Botulinum toxin is particularly advantageous in cases dominated by sphincter spasm or early chronicity, where relaxation of the internal sphincter promotes rapid symptom relief and healing. Conversely, *Kshara Karma* is more suitable for long-standing fissures characterized by fibrosis or poor tissue viability, as its cauterizing and debriding action facilitates regeneration of healthy tissue. Selecting the modality according to the chronicity of the fissure and the condition of the local tissues allows for more precise management and improves overall treatment outcomes.

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