

Comparative Clinical Study of Apamarg Kshara Sutra Ligation and Snuhi Kshara Sutra Ligation Band Ligation in Hemorrhoids: A Case Study

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Publication Date: 2026/05/23

Abstract: Ayurveda is one of the oldest systems of medicine that originated in India. It focuses on maintaining health by balancing the three fundamental doshas—Vata, Pitta, and Kapha. This traditional medical system emphasizes both preventive and curative approaches through the use of herbal medicines, proper diet, lifestyle regulation, and surgical interventions. Classical Ayurvedic knowledge is preserved in authoritative texts such as the Charaka Samhita and the Sushruta Samhita.

Sushruta is widely recognized as the Father of Surgery because of his extraordinary contributions to surgical science. In the *Sushruta Samhita*, he described numerous surgical techniques, instruments, and therapeutic procedures for the treatment of various diseases, including hemorrhoids (Arsha). His pioneering work established the foundations of surgical practice in Ayurveda and continues to influence modern surgical concepts.

Hemorrhoids are among the most frequently encountered anorectal disorders in clinical practice. In Ayurvedic management, Kshara Sutra therapy is commonly used for several anorectal diseases due to its minimally invasive nature and effective therapeutic outcomes. The present study was conducted to compare the clinical effectiveness of Apamarg Kshara Sutra ligation and Snuhi Kshara Sutra ligation in the treatment of hemorrhoids.

Two patients diagnosed with internal hemorrhoids were included in the study. The first patient was treated with Apamarg Kshara Sutra ligation, while the second patient underwent Snuhi Kshara Sutra ligation. Clinical evaluation was carried out based on symptoms such as bleeding per rectum, pain, prolapse, discharge, and the size of the pile mass. Patients were followed up for a period of four weeks.

The results indicated that both treatment methods were beneficial in managing hemorrhoids. However, Snuhi Kshara Sutra ligation showed comparatively better improvement in symptoms and lower recurrence rates than Apamarg Kshara Sutra ligation. These findings suggest that Kshara Sutra therapy, particularly Snuhi Kshara Sutra ligation, is a safe and effective treatment option for hemorrhoids.

Keywords: Hemorrhoids, Kshara Sutra, Apamarg Kshara, Snuhi Kshara, Ayurveda, Arsha.

How to Cite: Dr. Anjana Kumari; Dr. Sumit Kumar; Dr. Deepali Sundari Verma (2026) Comparative Clinical Study of Apamarg Kshara Sutra Ligation and Snuhi Kshara Sutra Ligation Band Ligation in Hemorrhoids: A Case Study. *International Journal of Innovative Science and Research Technology*, 11(5), 1241-1246. <https://doi.org/10.38124/ijisrt/26may225>

I. INTRODUCTION

Hemorrhoids are among the most common anorectal disorders encountered in clinical practice, affecting approximately 4% of the global population. The condition is considered more prevalent in humans due to their erect posture, which increases venous pressure in the anorectal region and predisposes individuals to vascular congestion in the anal canal. Anatomically, hemorrhoids are classified

according to their location in relation to the dentate line. Hemorrhoids situated above the dentate line are known as internal hemorrhoids, which originate from endodermal tissue, whereas those located below the dentate line are termed external hemorrhoids, arising from ectodermal tissue.^{1} Internal hemorrhoids are further classified into grades based on the degree of prolapse of the anal canal, while external hemorrhoids may present either as acute thrombosed hemorrhoids or chronic anal skin tags.

अरिवत् प्राणिनो मांसकीलका विशसन्ति यत् । अर्शासि तस्मादुच्यन्ते गुदमार्गनिरोधतः ॥{2}

According to Acharya Vagbhatta, Arsha is described as a Mamsa-kila (fleshy or muscular projection) that troubles the patient like an enemy,{2} From the Ayurvedic perspective, hemorrhoids are described under the disease entity Arsha Roga. The term *Arsha* is derived from the Sanskrit root “*Rish*”, which means “to torment or afflict,” indicating a disease that causes considerable distress and discomfort to the patient. Classical Ayurvedic texts have described Arsha in great detail, highlighting its chronic nature, tendency for recurrence, and the challenges involved in its management.

According to *Acharya Charaka* and *Acharya Madhava*, the principal *Dushyas* (affected tissues) involved in the pathogenesis of Arsha include “Twak (skin), Mamsa (muscle), and Meda (adipose tissue)”.{3} Ayurveda also classifies Arsha among the Maharogas (major diseases) because of its persistent nature and the difficulty associated with its treatment.{4} The disease manifests in the Gudabhaga (anal region), which is considered a vital anatomical site (*Marma*), thereby emphasizing the clinical significance of this condition. If neglected or improperly managed, Arsha may lead to complications such as excessive bleeding, thrombosis, fibrosis, strangulation, suppuration, and portal pyaemia, which further complicate the disease process.

The classical Ayurvedic texts describe four principal therapeutic modalities for the management of Arsha: “Bhaisaja Chikitsa (medical therapy), Kshara Karma (alkaline cauterization), Agni Karma (thermal cauterization), and Shastra Karma (surgical intervention).{5} A concept that was also supported by Acharya Madhava in his classical writings.{6} These descriptions highlight the pathological growths that obstruct the anal canal and lead to symptoms such as pain, bleeding, itching, mucous discharge, and prolapse.

In contemporary medical science, hemorrhoids are understood as dilated vascular cushions within the anal canal. The disease commonly presents with symptoms such as bleeding per rectum, prolapse of pile mass, pain, pruritus ani, and mucous discharge. The prevalence of hemorrhoids has increased significantly in recent decades due to lifestyle factors such as sedentary habits, irregular dietary patterns, low fiber intake, chronic constipation, obesity, prolonged sitting, and excessive straining during defecation.

Modern surgical management of hemorrhoids includes various procedures such as sclerotherapy, infrared coagulation, photocoagulation, rubber band ligation, laser therapy, Lord’s anal dilatation, conventional hemorrhoidectomy, and stapled hemorrhoidectomy. Although these procedures are widely practiced, they may be associated with higher cost, postoperative discomfort, and chances of recurrence. Therefore, there is a continuous search for effective, economical, and minimally invasive treatment modalities.

Ayurveda offers several therapeutic approaches for the management of anorectal disorders, among which Kshara Karma and Kshara Sutra therapy have gained considerable importance. The concept of Kshara therapy has been described in classical Ayurvedic literature, particularly in the Sushruta Samhita, where Acharya Sushruta (circa 800 BC) emphasized the importance of Kshara Karma in the management of various surgical and parasurgical conditions.{7} Kshara Sutra is a specialized parasurgical procedure in which a medicated thread coated with alkaline herbal substances is used to ligate and gradually excise the diseased tissue.

Although the basic concept of Kshara therapy is described in ancient texts, the modern standardized form of Kshara Sutra therapy was developed through extensive research by *Dr. P. S. Shankaran* and later scientifically established by *Prof. P. J. Deshpandey* in the Department of Shalya Tantra at Banaras Hindu University. Subsequent contributions by eminent scholars such as *Prof. K. R. Sharma*, *Prof. G. C. Prasad*, and *Prof. S. N. Pathak* further refined the technique and expanded its clinical applications.{8} Due to its effectiveness and minimal recurrence rate, Kshara Sutra therapy has now gained global recognition and is considered a gold standard treatment for certain anorectal disorders, particularly fistula-in-ano and hemorrhoids.{9} The Indian Council of Medical Research (ICMR) has also validated the clinical efficacy of this therapeutic approach.{10}

The therapeutic action of Kshara Sutra is attributed to its alkaline, caustic, and antimicrobial properties, which cause controlled chemical cauterization and necrosis of the diseased tissue, followed by healing through fibrosis. This process leads to gradual excision of the pile mass while minimizing bleeding and promoting wound healing.

Various herbal substances are used in the preparation of Kshara Sutra. Among them, Apamarg Kshara, obtained from *Achyranthes aspera*, and Snuhi latex, derived from *Euphorbia neriifolia*, are widely used ingredients. Apamarg Kshara possesses strong alkaline and cauterizing properties that help in the destruction of unhealthy tissue and reduction of the pile mass. Snuhi latex acts as a binding agent and contributes to the therapeutic action by enhancing cauterization and facilitating healing. These ingredients collectively improve the efficacy of the medicated thread by promoting controlled tissue destruction, reducing bleeding, and accelerating wound healing.

Despite the simplicity and effectiveness of Kshara Sutra therapy, certain patients may still experience postoperative discomfort or recurrence, depending on the type of medicated thread used. Therefore, comparative evaluation of different types of Kshara Sutra preparations becomes necessary to determine the most effective therapeutic option.

Considering the increasing prevalence of hemorrhoids and the availability of multiple treatment modalities in both modern medicine and Ayurveda, it is essential to evaluate

the clinical effectiveness of different parasurgical techniques. Hence, the present study has been undertaken to compare the therapeutic efficacy of *Apamarg Kshara Sutra ligation* and *Snuhi Kshara Sutra ligation* in the management of Arsha (hemorrhoids). The study aims to assess various clinical parameters such as reduction in bleeding, pain, prolapse of pile mass, duration of healing, postoperative complications, and recurrence rate.

Through this comparative clinical evaluation, the study seeks to generate scientific evidence regarding the effectiveness of these treatment modalities and contribute to the development of safe, economical, and minimally invasive management strategies for hemorrhoids within the framework of Ayurvedic surgery.

II. MATERIALS AND METHODS

In the present study, two types of Kshara Sutra—Snuhi Kshara Sutra and Apamarga Kshara Sutra—were prepared and clinically evaluated in patients suffering from Hemorrhoids (Arsha Roga). Two patients were enrolled from the Shalya Outpatient Department (OPD) and Inpatient Department (IPD) of GACH, Patna. Patients of both genders suffering from Arsha (hemorrhoids) were randomly selected after obtaining written informed consent. Both selected cases were diagnosed with internal hemorrhoids.

➤ Inclusion Criteria

- Patients diagnosed with internal pile masses (Grade II and Grade III).
- Patients unwilling to undergo surgical treatment.
- Patients were included irrespective of age, sex, chronicity, Prakriti, and type of disease.

➤ Exclusion Criteria

- Patients with anemia (Hb < 9 g%).
- Malnourished patients.
- Patients with bleeding disorders.
- Patients with uncontrolled diabetes mellitus.
- Patients with tuberculosis.
- Pregnant women.
- Patients with malignancy suspected on biopsy.
- HIV-positive patients.
- HBsAg-positive patients.

III. PREPARATION OF TWO DIFFERENT TYPES OF KSHARA SUTRA

➤ Snuhi Kshara Sutra Preparation

The Barbour surgical linen thread No. 20 was stretched along the length and breadth of a specially designed hanger, which was then mounted on a hanger stand. Each thread was smeared with Snuhi Ksheera (latex of *Euphorbia neriifolia*) using a clean gauze piece soaked in the latex. After coating, the hanger was placed inside a drying cabinet to allow the threads to dry properly. The same procedure was repeated on the following day. In this

manner, eleven coatings of Snuhi Ksheera alone were applied. For the 12th coating, the thread was first smeared with Snuhi latex and then passed through a heap of finely powdered Apamarga Kshara prepared from *Achyranthes aspera*. After coating with Kshara, the hanger was gently shaken to remove excess powder. The hanger was then placed again in the cabinet for drying. This procedure was repeated until seven coatings of Snuhi Ksheera and Kshara were completed. Thus, the total number of coatings reached eighteen. The remaining three coatings were applied by smearing the thread with Snuhi latex and rolling it in finely powdered Haridra (turmeric) obtained from *Curcuma longa*. In this way, a total of twenty-one coatings were applied to each thread. After completing all coatings, the threads were cut from the hanger into pieces measuring approximately 30–31 cm in length and sealed in sterile glass tubes for clinical use.

- Snuhi Ksheera (latex) alone – 11 coatings
- Snuhi Ksheera + Kshara – 7 coatings
- Snuhi Ksheera + Haridra (turmeric powder) – 3 coatings

➤ Apamarga Kshara Sutra Preparation

For the preparation of Apamarga Kshara Sutra, Barbour surgical linen thread No. 20 was used. The thread was spread uniformly along the length and breadth of a specially designed hanger and mounted on a hanger stand. Initially, the thread was smeared with Snuhi Ksheera (latex of *Euphorbia neriifolia*) using a sterile gauze piece soaked in the latex. After coating, the hanger containing the threads was placed in a drying cabinet until the coating dried completely. This process was repeated daily until eleven coatings of Snuhi Ksheera alone were completed. For the 12th coating, the thread was first smeared with Snuhi latex and then passed through a heap of finely powdered Apamarga Kshara, which is prepared from *Achyranthes aspera*. After coating with the Kshara powder, the hanger was gently shaken to remove excess powder and then kept in the drying cabinet. This same procedure was continued until seven coatings of Snuhi Ksheera and Apamarga Kshara were completed, making the total number of coatings eighteen. Finally, the last three coatings were applied by smearing the thread with Snuhi latex and rolling it in finely powdered Haridra (turmeric) obtained from *Curcuma longa*. These coatings help provide antiseptic and healing properties. Thus, a total of twenty-one coatings were completed on each thread. After finishing the coatings, the threads were cut into pieces of approximately 30–31 cm length and sealed in sterile glass tubes for clinical use.

- Snuhi Ksheera alone – 11 coatings
- Snuhi Ksheera + Apamarga Kshara – 7 coatings
- Snuhi Ksheera + Haridra (turmeric) – 3 coatings

IV. INVESTIGATIONS

Prior to the procedure, necessary investigations were performed to evaluate the overall health status of the patients.

- Blood tests included Hemoglobin (Hb%), Total Leukocyte Count (TLC), Differential Leukocyte Count (DLC), Erythrocyte Sedimentation Rate (ESR), Fasting Blood Sugar (FBS), Post-Prandial Blood Sugar (PPBS), Clotting Time (CT), Bleeding Time (BT), Blood Urea, and Serum Creatinine.
- Urine examination was conducted for both routine and microscopic analysis. Stool examination was carried out to detect ova, cysts, and occult blood.
- Serological screening for HIV/AIDS and Hepatitis B (HBsAg) was also performed.
- Additional investigations such as Chest X-ray and ECG were done whenever clinically indicated.

V. METHOD OF KSHARA SUTRA APPLICATION

➤ *Pre-operative Procedure*

Before the procedure, written informed consent was obtained from the patient. Bowel preparation was completed on the previous night. The perianal area was properly cleaned and prepared for surgery. Sensitivity testing for Lidocaine (Xylocaine) was carried out to rule out any allergic reaction. Injection Tetanus Toxoid (0.5 ml) was administered intramuscularly as a preventive measure.

➤ *Operative Procedure*

The patient was positioned in the lithotomy position on the operating table. The operative site was sterilized with antiseptic solution and appropriate sterile draping was performed. Local anesthesia was administered using 1% Xylocaine under the guidance of an anesthetist. Once adequate anesthesia was achieved, the location of the hemorrhoidal masses was examined carefully. The pile mass was then grasped with pile-holding forceps and gentle traction was applied to clearly expose the base of the mass along with its associated blood vessels.

➤ *Transfixation*

The hemorrhoidal mass was transfixed by passing a curved round-bodied needle carrying the Kshara Sutra through its base. Depending on the position of the hemorrhoid, the transfixation was performed either horizontally or vertically, although the horizontal method was generally preferred. A small stab incision was made on the bulging part of the transfixed mass to avoid tissue strangulation. Subsequently, warm water irrigation was performed and the area was dressed with T-bandaging.

➤ *Post-operative Regimen*




After the procedure, patients were advised to take sitz baths with lukewarm water twice daily. Early ambulation was encouraged to maintain normal physical activity. Patients were also instructed to follow a light and easily digestible diet. Supportive or adjuvant medications were prescribed whenever necessary.

➤ *Follow-up of the Patient*

Patients with Hemorrhoids were advised to report to the outpatient department for regular follow-up. Follow-up assessments were scheduled on the 1st, 3rd, 7th, 15th, and 30th day after the Kshara Sutra ligation to monitor healing, improvement in symptoms, and to detect any complications.

VI. ASSESSMENT CRITERIA

Patients suffering from Arsha Roga (Hemorrhoids) were evaluated using both subjective and objective criteria. The assessment parameters included the presence and severity of pain, discharge, bleeding, and the condition of the anal sphincter tone.

ARSHA ROGA (HEMORRHOIDS): CONSOLIDATED CLINICAL ASSESSMENT MATRIX			
Grade	Pain (VAS) 	Discharge & Bleeding (Gauze Measurement 4x4 cm) 	Sphincter Tone (DRESS Criteria) 
0	No pain	No discharge or bleeding	No discernible pressure at anus
1	Mild	Mild: Up to 1 gauze used	Loose
2	Moderate	Moderate: Up to 2 gauze used	Slightly loose
3	Severe	Severe: More than 2 gauze used	Normal IDEAL STATE
4	—	—	Tight
5	—	—	Extremely tight

DRESS Criteria for Sphincter Tone; Gauze usage typically assessed over 24 hours.

Fig 1 Assessment Criteria

VII. OBSERVATION AND RESULTS

The patient showed improvement in signs and symptoms after treatment with Snuhi Kshar Sutra ligation.

Table 1 Improvement in Signs and Symptoms After Treatment with Snuhi Kshar Sutra Ligation

Parameter	Before Treatment	After Treatment (Snuhi)
Pain	Present (Grade 2)	No Pain (Grade 0)
Discharge	Moderate (Grade 2)	No Discharge (Grade 0)
Bleeding	Present (Grade 3)	No Bleeding (Grade 0)
Sphincter Tone	Mild Tight (Grade 4)	Normal (Grade 3)
Healing Time	–	3 weeks

The patient showed improvement in signs and symptoms after treatment with Apamarg Kshar Sutra ligation.

Table 2 Improvement in Signs and Symptoms After Treatment with Apamarg Kshar Sutra Ligation

Parameter	Before Treatment	After Treatment (Apamarg)
Pain	Present (Grade 2)	Reduced (Grade 1)
Discharge	Moderate (Grade 2)	Mild (Grade 1)
Bleeding	Present (Grade 3)	No Bleeding (Grade 0)
Sphincter Tone	Mild Tight (Grade 4)	Normal (Grade 3)
Healing Time	–	4 weeks

The results indicate that both therapies were effective; however, Snuhi Kshara Sutra ligation demonstrated comparatively faster healing and better symptomatic relief.

VIII. DISCUSSION

In *Sushruta Samhita*, Arsha (piles) is described as a disease primarily caused by the vitiation of Tridosha, with predominant involvement of Vata dosha. Vata aggravation disturbs the normal functioning of the Guda (anorectal region) and leads to impairment of Agni and Apana Vayu. As a result, there is improper digestion and accumulation of vitiated doshas in the anorectal region. These vitiated doshas particularly affect the Mamsa (muscle tissue), Rakta (blood), and Medas (fat tissue) dhatus, leading to abnormal growths that manifest as pile masses. Continuous irritation, impaired circulation, and stagnation of blood further aggravate the condition and contribute to symptoms such as pain, bleeding, swelling, and prolapse.

Among the various treatment modalities described in Ayurveda, Kshara Sutra therapy is considered an effective parasurgical procedure for the management of anorectal disorders including Arsha. This technique is elaborately mentioned in the *Sushruta Samhita* under Kshara Karma and Anushastra Karma. The therapy involves the application of a specially prepared medicated thread coated with herbal alkaline drugs. When this thread is applied or ligated to the pile mass, it produces a combined therapeutic effect through chemical cauterization, mechanical pressure, and antimicrobial action.

The chemical cauterization caused by the alkaline substances present in the Kshara Sutra leads to gradual necrosis and destruction of the diseased tissue. At the same time, the mechanical pressure exerted by the ligature obstructs the blood supply to the pile mass, resulting in its gradual shrinkage and sloughing off. Additionally, the

medicinal coatings on the thread possess antimicrobial and anti-inflammatory properties, which help prevent infection and promote healthy granulation and wound healing. Because of these combined actions, the therapy facilitates controlled excision of the pile mass while minimizing complications such as excessive bleeding or recurrence.

In the preparation of Kshara Sutra, different herbal components are used to enhance its therapeutic efficacy. Apamarg Kshara, derived from *Achyranthes aspera*, is widely used due to its strong alkaline and corrosive properties. It helps in chemical cauterization of the pile mass, promotes sloughing of unhealthy tissue, and aids in reducing the size of the hemorrhoidal swelling. Apamarg Kshara also has Lekhana (scraping) and Shodhana (cleansing) properties, which help remove pathological tissue and maintain a clean wound environment.

Another important component used in the preparation of Kshara Sutra is Snuhi latex, obtained from *Euphorbia neriifolia*. Snuhi latex possesses Tikshna (sharp), Ushna (hot), and Kshara-like properties, which enhance the cauterizing effect of the medicated thread. It acts as a binding medium for the alkaline drugs and also contributes its own irritant and cauterizing actions. These properties help accelerate the destruction of the pathological tissue and facilitate quicker separation of the pile mass. Furthermore, Snuhi latex is believed to stimulate local tissue response, improving circulation and promoting faster healing and tissue regeneration.

In the present study, the *Snuhi Kshara Sutra* demonstrated comparatively better therapeutic outcomes than other formulations. The improved results may be attributed to the stronger cauterizing, penetrating, and healing properties of Snuhi latex in combination with the alkaline effect of Kshara. This synergistic action enhances tissue necrosis of the pile mass while simultaneously

promoting effective wound healing. As a result, there may be faster reduction in pile size, improved symptomatic relief, and quicker recovery in patients treated with Snuhi Kshara Sutra.

Thus, the findings of the present study support the classical Ayurvedic concept that properly prepared Kshara Sutra, especially when combined with potent herbal components like Apamarg Kshara and Snuhi latex, can serve as a safe, effective, and minimally invasive treatment modality for the management of Arsha. The therapy not only removes the diseased tissue but also facilitates natural healing, thereby reducing the chances of recurrence and improving the overall clinical outcome.

IX. CONCLUSION

The present comparative clinical study indicates that both Apamarg Kshara Sutra ligation and Snuhi Kshara Sutra ligation are effective treatment modalities for hemorrhoids (*Arsha*).

➤ *However, Snuhi Kshara Sutra Ligation Demonstrated:*

- Faster healing
- Better reduction in bleeding
- Greater improvement in symptoms

Therefore, Snuhi Kshara Sutra ligation may be considered a safe, effective, and minimally invasive treatment option for the management of hemorrhoids.

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