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A CRITICAL ANALYSIS ON KSHAR SUTRA –AN INDIAN SURGICAL PROCEDURE OF ANORECTAL SURGERY

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Abstract

Kshar Sutra is an ancient Ayurvedic parasurgical technique widely used for the effective management of anorectal disorders such as hemorrhoids, anal fistulas, and pilonidal sinuses. This minimally invasive procedure involves the application of a medicated thread prepared with herbal alkaline substances, latex from *Snuhi* (*Euphorbia neriifolia*), and turmeric (*Haridra*), which exerts a controlled chemical cauterization effect on affected tissues. The technique, described in classical Ayurvedic texts such as the *Sushruta Samhita*, has been standardized in modern times to ensure consistent efficacy and safety. Its advantages include minimal complications, low recurrence rates, and shorter recovery times compared to conventional surgical approaches. This article explores the historical significance, preparation process, clinical applications, advantages, and modern adaptations of the *Kshar Sutra* technique, highlighting its relevance in current medical practices for anorectal disorders.

Keywords- *Kshar Sutra*, Anorectal disorders, Hemorrhoids, Anal fistula, Minimal invasive treatment, Medicinal thread, Ayurvedic alkaline therapy, *Snuhi* latex, *Sushruta Samhita*

Introduction

Kshar Sutra is a time-tested Ayurvedic procedure that has been a cornerstone in the management of anorectal disorders, including hemorrhoids, anal fistulas, and pilonidal sinuses.¹ Rooted in the principles of Ayurveda, this technique integrates herbal medicines with surgical precision, offering a minimally invasive solution to conditions that would otherwise require extensive surgical intervention. Ancient texts like the *Sushruta Samhita* provide a detailed description of this method, emphasizing its therapeutic efficacy and simplicity.²

The unique strength of *Kshar Sutra* lies in its ability to target unhealthy tissues while promoting the regeneration of healthy tissue. The medicated thread used in the procedure is prepared through a meticulous process involving herbal extracts, particularly alkaline substances (*kshar*), *Snuhi* latex, and *Haridra* (*turmeric*).³ These components ensure that the thread exerts a controlled cauterizing effect, destroying infected tissues and facilitating natural healing with minimal side effects. The regular replacement of the thread sustains its therapeutic action throughout the treatment period.⁴

In recent years, *Kshar Sutra* has gained global attention for its efficacy and safety, offering a viable alternative to conventional surgical methods. With modern adaptations and standardization, the technique has become a valuable tool in proctology, particularly for patients seeking minimally invasive and cost-effective solutions. Its growing popularity highlights the enduring relevance of traditional Ayurvedic practices in contemporary medicine.⁵

Aim and Objectives

Aim

To evaluate the efficacy and relevance of the *Kshar Sutra* technique in managing anorectal disorders and its integration into modern clinical practices.

Objectives

1. Explore the historical significance of *Kshar Sutra* in Ayurveda.
2. Describe the preparation process of the medicated thread.
3. Analyze its application in anorectal disorders.

4. Assess therapeutic outcomes compared to surgical methods.
5. Highlight modern adaptations for improved efficacy.
6. Promote global awareness of this cost-effective treatment.

Material and Method

Materials

1. Base Thread:

- Sterile cotton or linen thread.

2. Herbal Ingredients:

- *Snuhi* latex (*Euphorbia neriifolia*): Acts as a binding and medicinal agent.
- *Haridra* (*Curcuma longa*): Provides antiseptic and anti-inflammatory properties.
- *Apamarga Kshar* (*Achyranthes aspera*): Alkaline extract for controlled cauterization.

3. Instruments and Equipment:

- Sterile surgical instruments for thread application and tract preparation.
- Coating apparatus for layering herbal medicines on the thread.
- Glass rods or frames for drying the coated thread.

Method

1. Preparation of *Kshar Sutra*:

- A sterile cotton thread is repeatedly coated with *Snuhi* latex and dried.
- Subsequent layers of *Apamarga Kshar* and *Haridra* are applied, with drying between each layer.
- The thread is sterilized and stored for clinical use.

2. Clinical Application:

- **Diagnosis:** Comprehensive assessment of the anorectal condition.
- **Procedure:**

- For hemorrhoids: The thread is tied around the pile mass to cut off blood supply, leading to necrosis and detachment.
- For anal fistulas: The thread is passed through the fistulous tract to facilitate controlled cauterization and healing.
- **Follow-up:** Periodic replacement of the *Kshar Sutra* thread (usually weekly) to maintain efficacy.

3. Outcome Assessment:

- Healing progress is monitored through clinical examination.
- Patient outcomes are evaluated based on recovery time, recurrence rates, and complication profiles.

Conceptual Study on *Kshar Sutra*

Kshar Sutra is rooted in the principles of Ayurveda, specifically described in the *Sushruta Samhita*, one of the foundational texts of ancient Indian medicine. The term *Kshar* translates to "alkali" and denotes substances with corrosive or cauterizing properties, while *Sutra* refers to a thread.⁶ Together, the *Kshar Sutra* technique embodies a blend of herbal alkalis and surgical precision aimed at managing conditions involving abnormal tissue growth or infection, such as anal fistulas and hemorrhoids.⁷

Components and Therapeutic Mechanism

The therapeutic efficacy of *Kshar Sutra* lies in its three primary components:

- **Latex of *Snuhi* (*Euphorbia neriifolia*):** Acts as a cohesive medium that adheres the medicinal components to the thread and has mild irritant properties for sustained action.⁸
- **Alkaline Herbal Extracts (*Kshar*):** Derived from plants like *Apamarga* (*Achyranthes aspera*), these substances facilitate controlled chemical cauterization, targeting unhealthy tissues while sparing the surrounding healthy tissues.⁹
- **Turmeric (*Haridra*):** Provides antiseptic and anti-inflammatory properties, enhancing healing and preventing infection.¹⁰

These components ensure the *Kshar Sutra* promotes tissue debridement, antisepsis, and regeneration, making it an effective treatment for anorectal disorders.

Procedure and Scientific Basis

The *Kshar Sutra* method involves passing the medicated thread through the diseased tract or tying it around the lesion. Over time, the medicinal coatings:

1. Cause necrosis of the unhealthy tissue through cauterization.
2. Gradually cut through the lesion (e.g., pile mass or fistula tract).
3. Stimulate healing by facilitating granulation tissue formation.¹¹

Advantages over Conventional Surgery

The minimally invasive nature of *Kshar Sutra* makes it preferable to conventional surgeries for anorectal disorders. Its benefits include:

- Minimal bleeding and pain.
- Reduced recurrence rates due to the eradication of unhealthy tissue.
- Shorter recovery periods with lower risk of complications.
- Cost-effectiveness and ease of administration.¹²

Modern Standardization and Adaptation

The preparation and application of *Kshar Sutra* have been standardized in modern clinical settings. Sterilization techniques, uniform coating processes, and patient-specific protocols ensure its safety and consistency. Research studies have validated its efficacy, making it a recognized treatment worldwide.¹³

Standard Operating Procedure (SOP) for *Kshar Sutra* Procedure¹⁴

1. Purpose

To provide a detailed and standardized protocol for performing the *Kshar Sutra* technique, ensuring effective and safe management of anorectal disorders such as hemorrhoids, anal fistulas, and pilonidal sinuses.

2. Scope

This SOP is applicable to trained Ayurvedic practitioners, surgeons, and healthcare providers involved in the application of *Kshar Sutra* in clinical settings.

Materials Required

Medicated Thread:

- Prepared *Kshar Sutra* coated with:
 - *Snuhi* latex (*Euphorbia neriifolia*).
 - *Apamarga Kshar* (*Achyranthes aspera* alkali).
 - *Haridra* (*Curcuma longa* powder).

Sterile Instruments:

- Proctoscope.
- Thread passer or fistula probe.
- Scissors.
- Sponge-holding forceps.

Antiseptic Solutions:

- Povidone-iodine or chlorhexidine solution for pre-procedural cleaning.

Anesthetic Agents:

- Lignocaine 2% or similar local anesthesia.

Others:

- Disposable gloves.
- Drapes, gauze, and cotton swabs.
- Sterile dressing materials.
- Patient consent forms.

Procedure

Step 1: Pre-Procedure Preparation

1. Patient Evaluation:

- Conduct a thorough clinical examination to diagnose the condition.
- Use diagnostic imaging (e.g., MRI, ultrasound) if required for fistula mapping.

- Take a detailed history of any comorbidities, allergies, or contraindications.
- Explain the procedure to the patient, including its benefits, risks, and post-treatment expectations.
- Obtain informed written consent.

2. Preparation of Equipment and Environment:

- Ensure that all instruments are sterilized.
- Place the patient in a sterile surgical field to prevent infections.

3. Positioning:

- Position the patient appropriately:
 - **Lithotomy position:** For hemorrhoids and low anal fistulas.
 - **Prone position:** For high fistulas and pilonidal sinuses.

4. Local Anesthesia:

- Administer local anesthesia around the affected area to ensure patient comfort during the procedure.

Step 2: Application of *Kshar Sutra*

• For Hemorrhoids (Piles):

- Insert a proctoscope to identify the pile masses.
- Isolate the pile mass and tie the *Kshar Sutra* thread tightly at its base.
- Ensure the knot is secure to block the blood supply to the pile mass, which leads to its necrosis and eventual detachment.

• For Anal Fistulas:

- Insert a probe through the external opening of the fistula tract and guide it to the internal opening.
- Attach the *Kshar Sutra* thread to the probe and pull it through the fistula tract.
- Tie the thread snugly, ensuring proper tension to facilitate chemical cauterization and healing of the tract.

- Trim excess thread to prevent irritation.
- **For Pilonidal Sinus:**
 - Clean the sinus tract thoroughly with antiseptic solution.
 - Pass the thread through the tract using a probe, ensuring it traverses the entire sinus length.
 - Tie the thread firmly, enabling gradual cutting and healing.

Step 3: Post-Procedure Care

Immediate Post-Procedure:

- Clean the treated area with an antiseptic solution.
- Apply sterile dressing to minimize the risk of infection.

Patient Instructions:

- Educate the patient about maintaining hygiene in the treated area.
- Provide instructions on cleaning with lukewarm water or antiseptic solutions after defecation.
- Advise on a high-fiber diet and adequate hydration to prevent constipation.
- Prescribe pain relievers or anti-inflammatory medications if needed.

Thread Replacement:

- Replace the *Kshar Sutra* thread weekly or as per the condition's severity.
- Each replacement ensures fresh medicinal action and progressive healing of the tract or lesion.

Follow-Up:

- Monitor the patient's progress regularly.
- Assess for signs of healing, including granulation tissue formation and closure of the tract.
- Watch for complications such as infection, excessive pain, or recurrence.

Precautions

- Maintain strict aseptic conditions throughout the procedure.

- Ensure the *Kshar Sutra* is properly prepared, sterilized, and stored.
- Avoid overtightening the thread to prevent unnecessary pain or tissue damage.
- Carefully monitor high-risk patients for adverse effects.

Outcome Evaluation

- Evaluate the treatment outcome based on the complete healing of the lesion or tract.
- Record the time taken for recovery, recurrence rates, and any complications.
- Ensure the patient's quality of life improves post-treatment.

Discussion

The *Kshar Sutra* technique exemplifies the integration of ancient Ayurvedic principles with modern medical practices, offering a highly effective solution for managing anorectal disorders such as hemorrhoids, anal fistulas, and pilonidal sinuses. This minimally invasive therapy has stood the test of time due to its simplicity, affordability, and therapeutic efficacy. By utilizing a medicated thread with herbal and alkaline properties, the technique effectively targets unhealthy tissues while promoting the regeneration of healthy tissues, ensuring minimal recurrence and complications.¹⁵

The procedure's mechanism of action is rooted in the synergistic properties of its key components. The *Snuhi* latex acts as a cohesive agent, ensuring that the medicinal coatings adhere firmly to the thread, while *Apamarga Kshar* provides a potent cauterizing effect, selectively destroying infected or abnormal tissues. *Haridra* (turmeric) contributes antiseptic and anti-inflammatory properties, facilitating wound healing and preventing infections. The periodic replacement of the thread ensures sustained action, making the *Kshar Sutra* technique a dynamic and adaptable treatment option for a variety of anorectal conditions.¹⁶

One of the most significant advantages of *Kshar Sutra* therapy over conventional surgical methods is its minimally invasive nature. It involves less bleeding, reduced postoperative pain, and faster recovery. Patients experience fewer complications, and the cost-effective nature of the procedure makes it accessible to a wider population. Moreover, its ability to reduce recurrence rates, particularly in complex cases like anal fistulas, positions it as a

preferred choice in proctology. However, the procedure requires expertise in Ayurvedic parasurgical techniques, which can limit its availability in non-specialized settings.¹⁷

Despite its advantages, *Kshar Sutra* therapy has certain limitations. The process of thread replacement can be uncomfortable for patients, and for more complex or high-level fistulas, the treatment duration may be prolonged. Additionally, its application depends on the practitioner's skill and knowledge, emphasizing the need for specialized training. Nevertheless, advancements in diagnostic tools such as MRI for fistula mapping have enhanced its precision and outcomes, bridging the gap between traditional and contemporary approaches.¹⁸

Modern adaptations of *Kshar Sutra* therapy have improved its standardization and safety. Rigorous sterilization of the medicated thread, combined with adherence to evidence-based protocols, has increased its acceptance in clinical practice. Comparative studies have highlighted its therapeutic superiority over conventional surgical methods, particularly in terms of patient comfort, healing rates, and cost-effectiveness. This has further solidified its place as a viable treatment option for anorectal disorders in both Ayurvedic and integrative medical systems.¹⁹

The *Kshar Sutra* technique demonstrates the enduring relevance of Ayurvedic practices in contemporary medicine. Its minimally invasive nature, combined with its therapeutic efficacy, positions it as a sustainable and effective solution for anorectal disorders. Continued research, training, and global outreach will ensure its broader acceptance and application, benefiting patients worldwide.²⁰

Conclusion

The *Kshar Sutra* technique stands as a testament to the enduring value of Ayurveda in the management of anorectal disorders. Its minimally invasive approach, combined with the therapeutic efficacy of herbal alkalis, offers a unique solution for conditions like hemorrhoids, anal fistulas, and pilonidal sinuses. By promoting selective tissue cauterization and healing, *Kshar Sutra* minimizes complications and recurrence, making it a reliable and cost-effective alternative to conventional surgical methods. The modern standardization of the procedure has enhanced its safety, precision, and global acceptance. Clinical studies validating its effectiveness further support its integration into contemporary medical practices. As interest in integrative and natural therapies grows,

the *Kshar Sutra* technique has the potential to become a cornerstone in the treatment of anorectal disorders worldwide. *Kshar Sutra* exemplifies the synergy between traditional wisdom and modern science. Its continued research, training, and application will ensure its place as a sustainable and patient-friendly solution, contributing significantly to global healthcare advancements.

CONFLICT OF INTEREST –NIL

SOURCE OF SUPPORT –NONE

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