A Review Article - Fundamental of Kshar Sutra in Shalya Tantra
As Indicated in Ayurveda

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ABSTRACT
Kshar sutra has shown miraculous results in anorectal disorders, and it is now a precious gem in the crown of Shalya Tantra. I It is a safe, certain, and cost-effective method of treating fistula in ano, haemorrhoids, and other sinus diseases. Though Sushruta, Charak, and Vagbhata described the therapy in Ayurveda. This technique is widely used in our country and in a few other countries.

KEYWORDS: Kshar sutra, Anal rectal, Shalya Tantra, Fistula, Haemorrhoids, Ayurveda, Sushruta.

I. INTRODUCTION
According to shabdakalpadruma, the word Kshara derives from the root Kshara, which means to melt away or perish. Kshara Sutra is a caustic thread that destroys or cleans devitalized tissue and disintegrates the skin or other tissues.[1]

Acharya Sushruta first mentioned Kshararsutra in the treatment of Nadi Vrana (sinus), Bhagandara (fistula in ano), arbuda[2] (Benign tumor) etc.but does not emphasis upon its preparation. Chakrapani Dutta was the first person to mention the method of preparation with its indication in Bhagandara (fistula in ano) and arsha[3] (hemorrhoid). He described method of preparation as smearing a thread repeatedly in latex of Snuhi (Euphorbia neriifolia) and Haridra (tumeric) powder.[4] After Chakrapani Dutta almost all the later author described same method of preparation of kshara sutra. But because of complexity of preparation and inadequate method of procedure of application, it lost its popularity among Ayurvedic surgeons. Rasatarangini which was published later to Chakradutta a better kshara sutra preparation was introduced. The credit of standardization and development for practical use mainly goes to Prof. P.J. Deshpande.[5]

Properties of kshara: Kshara is considered superior to all surgical and Para surgical measures[6], because they perform the work of incision, puncture, and scarification to relieve derangements of the Tridosha[7] and uniformly affect the diseased part to which they are applied. As per Sushruta, kshara possess the following qualities, Tridoshaghna – because of different types of drugs it can pacify all the humours, Saumyata – owing to their white color, Dahan – owing to its burning nature, Pachana– because of its digestive capability, Darana– since many drugs of agneya nature enters into their composition, Katuka – because of its pungent taste, Ushna – because of its heat producing nature, Tikshna – because of its irritant nature, Vilayana – because of its liquefaction property, Shodhana – because of its cleansing property, Ropana – improves granulation (healing), Shoshana – absorption, Stambhana – arresting or stopping nature, Lekhana – scraping property, Krimighna – because of its antimicrobial action, Sterility[8] – if used in excess, It normalizes Aama, Kapha, visha, medo dhatu and also cures kushtha when given in proper doses. In addition to that Acharya Charak attributed two more properties – Laghu & Bhedana. [9] Vagbhatta said that kshara acts by extracting all the toxins from the site and cures the disease totally.[10]

Kshara preparation as per Sushruta Samhita:[11]

The following precautions must be taken during the kshara preparation process.a) Kaala-Sharad kala (October-November) b) Location- a hilly area nearby After performing devotional preparation (mangalacharana) with a healthy muskhaka plant and its root, it is cut into small pieces and boiled until it is completely converted into ash.
Material used Thread: Ideal thread for the preparation of kshara sutra should possess a sufficient strength to hold the 21 coatings of all the ingredients throughout the therapy. Different studies were carried out in this regard by subjecting the different kinds of threads to gradually increasing tension on a tensiometer till a point reached when the thread just broke. It was noted after these experiments that surgical linen no.20 retains its strength throughout the processing and had maximum tensile strength, i.e. 5.0 kg.\cite{12} Therefore, non-absorbable natural linen thread no. 20 is chosen as an ideal thread for kshara sutra preparation. Kshara (Alkali or caustic agent): kshara used for kshara sutra preparation should be fine, dry & white powder, which can’t be obtained from the Madhya and Tikshna varieties of kshara. Chemically, maximum hygroscopic & caustic action is seen in Mridu variety of pratisarniya kshara (mentioned by Sushruta in Kshara Paka vidhi). Addition of different substances to increase its potency i.e. shankha nabhi, danti etc. really increases its irritability & reduces its alkalinity (pH >9.0).\cite{13} So, mridu variety of kshara is considered suitable for making of kshara sutra. Further studies have been carried out using different types of kshara and Apamarga kshara is found to be most effective.

Ksheera (Latex): kshara itself does not have a sticking property. Ksheera, which is used mainly for adhesive purpose, are acidic in nature (pH=9.7) and produces debridement by proteolytic enzymes. Kshara being alkaline in nature overshadows the debridement action of Ksheera, but its sticking property is sustained. Ksheera also potentiates the debridement action of Kshara due to absorption of high concentration of it. Latex of snuhi, papaya, udumbara, Arka, guggulu etc. can be used as binding material for preparation of different types of kshara sutra.

Haridra (Turmeric): kshara has been found to be excessively hygroscopic which catches moisture and becomes useless if left exposed to the atmosphere. Haridra prevent direct contact of Kshara with the atmosphere, so it can be preserved & used for longer period. It also possesses antiseptic & antihistaminic properties too.

Collection of Snuhi Ksheera
Botanical Name :Euphorbia
Family : Euphorbiaceae.
Size of the Plant : 2-3 years old.

Best time for collection: October – April.

Linear cuts are made on the stem and latex is collected in clean bowl. After sufficient amount is collected it is transferred to a glass bottle. Care to be taken so that the pieces of bark and dust will come along with latex. The Latex to be used immediately, avoid clotting.

Preparation of Kshara Ash is prepared by burning the whole plant along with tila nala. The ash is mixed with 4 times water or Gomutra and filtered thoroughly. Boil the filtrate, evaporate the water and dry powder is obtained. Powder should be stored in air tight container.

Equipment Needed
1. Kshara Sutra cabinet with ultraviolet light
2. Autoclaved Petridish (for storage of raw material during application)
3. Glass tubes (for packing of the prepared kshara sutra)

Mechanism of action of Kshara Sutra in Fistula-in-ano
- It helps is cutting, curetting, draining and healing of the fistulous track.
- It destroys and removes unhealthy tissue and promotes healing of the fistulous track due to caustic action.
- Controls infection by the microbicidal action.
- Separation of debris and cleaning the wound.
- Facilitate in drainage of pus in fistulous tract and help in healing.
- Cutting through the tissues and laying the track open.

Advantages of Kshara Sutra Therapy
- Simple and safe parasurgical procedure.
- Cost-effective and ambulatory.
- Minimal recurrence rate.
- Systemic diseases are also undergoing this procedure.
- No surgical complications like incontinence, stenosis and stricture.

Pathya-apathy (Diet and routinely activities) From the very first day of Kshara sutra threading procedure, light diet like Khichri is advised. Patient is also advised to take plenty of fluids, blend diet, green vegetables, salad and seasonal fruits. Patient is further advised to avoid spicy and fried food and not to strain during defecation.
II. DISCUSSION
The Kshar Sutra treatment has no side effects other than a very mild post-procedural pain. The Kshar Sutra therapy is very safe and sure to remove the pile mass, anal fissure, or sinus problem. Patients who choose this Kshar Sutra ayurvedic treatment are much happier and satisfied after getting rid of the extra mass and healing the painful fissure.

III. CONCLUSION
Various types of Kshara as well as binding material, such as Kshara, Guggulu, and so on, are described in our ancient texts; it is mandatory to make Kshara Sutra by combining different types of Kshara and binding material to achieve the most potent combination for the benefit of humanity. The need of the hour is to standardise all Kshara sutra as Apamarga Kshara Sutra and compare the results, benefits, and drawbacks of each group of materials used. The 'Kshara Sutra' has proven to be beneficial to patients. However, the quest to improve the efficacy of kshara sutra and make it more acceptable continues by using different materials for its preparation.

REFERENCES
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