

Review Article

Role of Ksharsutra and modern therapies in treatment of Fistula in Ano

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ABSTRACT:

Anorectal fistula are is the most common diseases encountered in adults. A fistula in ano is a tunnel like- pipe like track that would not normally exist, developed in the perennial region, usually having one or more external openings around the anus leading to an internal opening in the mucosa of the anal canal or the rectum. Fistula should be considered the acute and chronic phase of the same anorectal infection. In many cases abscesses are thought to begin as an infection in the anal glands spreading into adjacent spaces and resulting in fistulas. The treatment of a fistula, although surgical in all cases, is more complex due to the possibility of fecal incontinence as a result of sphincterotomy. Primary fistulotomy and cutting setons have the same incidence of fecal incontinence depending on the complexity of the fistula. Chances of partial or complete incontinence of flatus or / and faces (loss of control of passing stool / flatus) are always present in many types of fistula, (especially in fistulae involving the sphincter muscles after the conventional procedure. Fistulectomy, Fistulotomy). However, trading radical surgery for conservative (nonsphincter cutting) procedures such as a draining seton, fibrin sealant, anal fistula plug, endorectal advancement flap, anoplasty, and LIFT (ligation of intersphincteric fistula tract) procedure all result in more recurrence/persistence requiring repeated operations in many cases. The main limitation of treatment of Fistula-in-Ano by conventional surgery is that even after surgical excision of the tract the recurrence rate still remains between 20-30%. Hence this disease even today stands as a challenge in front of the medical world.

In other hand, Ayurveda has a unique way of treating fistula in ano. Simple as well as complex fistulas, high anal fistulas, fistulas with multiple track, recurrent fistulas, chron's fistula, tubercular fistula, all respond well to the Ksharsutra ligation procedure. And the main thing is there is less recurrence and no chances of developing incontinence in Ksharsutra ligation method. Anal fistula is termed as "Bhagandara" in Ayurveda.

KEY WORDS: Fistula, anorectal infection, fistulectomy, fistulotomy, LIFT, ERAF, Ksharsutra, fecal incontinence

INTRODUCTION:

Ayurveda has immense potential to solve many challenging and unresolved problems of the medical world. *Shalya Chikitsa* is one of the most important branches of *ayurveda*, which has its own originality with authenticity, contributing to the modern surgical technology of today.

Sushruta Samhita is the only available text in surgical practice, and it has been opined that there are many diseases that are difficult to manage by conservative treatment alone. Among them, *Bhagandar (fistula)* is

one such grave disease. The present westernized lifestyle is adding to the prevalent rate of this disease. The incidence of this disease is showing augmentation with advancing age.

In *Sushruta Samhita*, the whole treatment is covered under four categories of treatment. i. e. *Bheshaj Chikitsa* (palliative treatment), *Kshara Karma* (potential cauterization agent therapy), *Agnikarma* (direct cauterization agent therapy) and *Shastra Karma* (operation by sharp instrument).

As far as the modern modalities are concerned, the goal of surgical therapy of a fistula is to define the anatomy accurately, Drain local infection, eradicate the fistula tract if possible, prevent recurrence, and preserve sphincter integrity and continence. Surgical management, Fistulotomy, Fistulectomy, Seton technique, Advancement flaps & glues, LIFT procedure.

Despite a range of treatment modalities, the options are limited in concern with their effectiveness. There still exist recurrence and fecal incontinence after these treatments.

Keeping in view authenticity, *shalya chikitsa*, i.e. parasurgery, has been selected. Under the heading of parasurgery, the *kshara karma* procedure, interpreted as "Potential Cauterization Application Therapy," Under *kshara karma*, the *kshara sutra* treatment is found to be suitable and acceptable as compared with the prevalent methods in modern medical science.

Hence, in this paper, the efficacy of the *kshara sutra* ligation (K.S.L.) method and modern methods, procedure in *treatment of fistula* were studied and presented.

Anal Fistula (Fistula in Ano)

What is an anal fistula?

A fistula in ano is a tunnel like - pipe like track, developed in the perineal region, usually having one or more external openings around the anus leading to an internal opening in the mucosa of the anal canal or the rectum.

Anal fistula is termed "Bhagandara" in Ayurveda. In Ayurveda fistulas, like other diseases have been classified according to the vitiation of one per more of the three doshas i.e. the vata, the Pitta & the kapha.

The Ksharsutra treatment was probably first advised per this type of fistula named Parikshepi Bhagandara by Sushruta.

How does it occur?

Causes-

The majority of anal fistulae result from infection of the anal gland, which arise from the anal crypts and penetrate into and often through the internal sphincter muscles. The infected gland is commonly in the midline and in 80% of anal fistulae the internal

opening will be found in the midline posteriorly.

The infection may be caused by spread of bacteria that normally exist in the rectum.

It may occur as a result of:

- In a few cases there is a previous history of ano-rectal abscess.
- Sometimes a fissure in ano/ anal fissure gets infected & the infection travels down to form a track or a fistula.
- Ulcerative colitis, a disease associated with ongoing breakdown of tissues that causes a sore in the lining of the colon
- Diverticulitis, inflammation of harmless growths in the wall of the intestines
- Crohn's disease, a chronic inflammation of the intestines
- Tuberculosis
- Gonorrhea
- Cancer of the large intestine.

What are the symptoms?

Symptoms of anal fistula may include:

1. A patient of fistula in ano often suffers from a recurrent, small or large boil/boils/abscess surrounding the anus, accompanied with pain, discomfort & pus/blood discharge.
2. The symptoms subside when the boil / abscess burst spontaneously causing some more discharge for a couple of days.
3. The boil / abscess "heals up" temporarily but almost always reappears after some times.

Itching, discharge of watery pus, irritation of tissue around the anus, discomfort & pain these are the main symptoms of the fistula in ano

How is it diagnosed?

- **Anoscopy/Proctoscopy:** A procedure in which the doctor inserts an instrument called an anoscope into the rectum to inspect the anus and lower part of the rectum
- **Probing examination:** A procedure in which the surgeon insert an instrument called anal probe it to the external fistulous opening to internal fistulous opening.
- **Sigmoidoscopy:** A procedure in which a doctor uses a flexible or rigid scope to inspect the lower part of the intestine for inflammation and/or disease

- A biopsy to evaluate for inflammation or cancer.
- Lower gastrointestinal (gi) series, a procedure that uses a special fluid to show the intestines better on x-ray
- A lower gi series requires a clean, clear GI tract. The doctor will prescribe a special diet, including plenty of water, for the day before the procedure.
- In addition, you may be given an enema the morning of the procedure.

Modes of treatments:

The goal of surgical therapy of a fistula is to define the anatomy accurately, find out the infected anal gland, drain local infection, eradicate the fistula tract if possible, prevent recurrence, and preserve sphincter integrity and continence.

Goodsall's rule is still a very reliable guide for identification of the internal opening of the fistula, unless the anatomy has been distorted with previous operations and scar.

- **Fistulotomy:** Lay open fistula tract, make incision over entire length of fistula using probe as guide intersphincteric fistula & trans-sphincteric fistulae involving less than 30% of the voluntary musculature. Avoided for anteriorly placed fistulae in women,
- **A staged fistulotomy:** Seton passed across the fistula & left in place with tie, Fistula granulates & heals from above to close completely.
- **Fistulectomy:** Involves coring out of the fistula by diathermy cautery better for fistula that cross level of sphincters and the presence of secondary extensions.
- **Setons:** Non-absorbable, nondegenerative and comfortable. Silk or linen ligature m/c intersphincteric fistula. Kept for 3 months replaced by rail road tecq. loose setons: no tension, no intent to cut the tissue. - for recurrent, post operative fistulas. Uses of loose setons. - For long-term palliation to avoid septic and painful exacerbations by effective drainage - before 'advanced' techniques (fistulectomy, advancement flap, cutting seton) - staged fistulotomy - preserve the external sphincter in trans-sphincteric fistulae.

Using a **cutting seton**,

- **Tight or cutting setons:** Placed with the intention of cutting through the enclosed muscle.

Used if the fistula is in a high position and it passes through a significant portion of the sphincter muscle high fistula eradication rates a/w fistulotomy. Minimising sphincter dysfunction due to least scar formation. Cheese wiring through ice -such that the divided muscles do not spring apart. Site of the fistula track is replaced by a thin line of fibrosis as it is brought down.

- **The fibrin sealant:** The fistula opening is cannulated with a double-channel catheter from a secondary opening toward the primary opening. The injection of fibrinogen through one arm and thrombin through the other results in the production of a pearly clot at the internal opening. The catheter is then gradually withdrawn through the fistula tract and fibrin sealant is injected continuously until the tract is completely sealed and a similar clot is seen at the external opening. The wound is covered with Vaseline gauze and the patient is followed on a biweekly basis until either the fistula closure occurs or failure is documented beyond 12 weeks.

- **An anal fistula plug (AFP)** Fibrin plug: Plugging the fistula with a device made from an acellular porcine small intestinal submucosal collagen designed to allow growth of fibroblasts.

The fistula plug is positioned from the inside of the anus with suture.

- **Fibrin glue:** Fibrin glue is currently the only non-surgical option for treating fistulae. - The fibrin glue is injected into the fistula to seal the tract. The glue is injected through the opening of the fistula, and the opening is then stitched closed. -long-term results for this treatment method are poor.
- **An endorectal advancement flap (ERAF):** Coring out of the entire track; and closure of the communication with the anal lumen with an adequately vascularised flap consisting of mucosa and internal sphincter, sutured without tension to the anoderm. Success rate is variable. High recurrence rates are directly related to previous attempts to correct the fistula.
- **Ligation of the intersphincteric fistula tract (LIFT)** procedure: Based on secure closure of the internal opening and removal of infected cryptoglandular tissue through the intersphincteric approach. Essential steps - incision at

the intersphincteric groove, identification of the intersphincteric tract, ligation of intersphincteric tract close to the internal opening and removal of intersphincteric tract, scraping out all granulation tissue in the rest of the fistulous tract & suturing of the defect at the external sphincter muscle.

Ayurveda has a unique way of treating fistula in ano. Simple as well as complex fistulas, high anal fistulas, fistulas with multiple track, recurrent fistulas, chronic fistula, tubercular fistula, all respond well to the Ksharsutra ligation procedure.

Charak has mentioned the treatment of Bhagandar in Charak Chikitsa sthana, 12/97.

विरेचनं चैषपाटनं च विशुद्धमार्गस्य च तैलदाह ।

स्यात् क्षारसुत्रेण सुपाचितेन च्छिन्नस्य चास्य व्रणवद्विकृत्सा ॥

च. चि. १२/९७

As he explained,

1. Firstly do Shodhana of malamarga by Virechana Aushadhi.
2. Then find the tract with help of Shalaka.
3. Then do 'Patana' karma.
4. Then Shodhana of Bhagandar tract should be carried out with help of medicines.
5. With Tapta Taila 'Dahan' of that tract should be done.
6. When the tract will become 'Pakva' Ksharsutra will be applied, ksharsutra will do his 'Bhedana' karma and then Samaya Vrana chikitsa, Shodhana - Ropana treatment will be done.

Now we will see in detail...

What is Ksharsutra?

The Ksharsutra is a type of thread / medicated setone prepared by coating and recoating the thread 15 to 21 times with different drugs of plant origin. The mechanical action of the threads and the chemical action of the drugs coated on the thread, to gather do the work of cutting, curetting, draining, and cleaning the fistulous track, thus promoting healing of the track/ wound.

A number of drugs like,

- Apamarg kshar
- Kadali kshar
- Arka kshar
- Nimb kshar
- Snuhi ksheer
- Udumber ksheer
- Papaya ksheer

And natural antibiotic like haridra powder, guggulu, etc are used in the preparation of different kind of Ksharsutra. It takes a number of days to prepare this Ksharsutra since the previous coat has to dry before the next is applied.

Different kinds of Ksharsutra are prepared using different drugs. These Ksharsutra are passed through the track (usually under short anesthesia) and the two ends of the thread are tied forming a loop.

The drugs coated on the thread are continually released throughout the length of the track there by cutting, curetting, draining cleansing and healing the track simultaneously in the track after about eight days the thread loosens because it has cut through some of the tissues and also is now almost bare (with no drugs on it). A new thread is now replaced in the track by a special method.

The changing of the thread is a simple OPD procedure taking about 1 to 2 minutes and requires no anesthesia.

The thread gradually cuts through the tissue. The tissues above the thread heal up. Hence when at last the loop of thread comes out, the track is healed.

Ksharsutra (medicated seton) therapy is practiced in India since times immemorial. Modified and revived by the late Dr. P. J. Deshpande. The Ksharsutra therapy is a unique treatment of Ayurveda gaining popularity globally.

Special types of medicated seton are used in this procedure Found to be effective in any Ano rectal conditions, it has many advantages in the treatment of Anal fistulae.

Mode of action of Ksharsutra:

As per the analytical study, linen thread supports the strength of ligation while the *snuhi* latex acts as a binding agent, having almost all the *apamarga kshara* properties intact, which in fact liberates many fold of medicament having surgical actions like incision, excision debridation, scrapping and medical action like hemostatic, antiseptic, healing, etc., which act simultaneously to cure the *Fistula (Bhagandar)*. According to research work, it is viewed that seven coatings of *apamarga kshara* on *kshara sutra* cauterize the tissue of the tract indirectly by its *ksharana guna* (corrosive properties). The action of turmeric powder provides the effect of bactericidal action with healing properties. All these three drugs do not contradict each other in their actions but rather support them by equal and desirable effects.

Apamarga kshara sutra has the ability to perform incision with excision slowly by virtue of its control chemical cauterizing action. This has a controlled chemical cauterizing action on living tissue for cutting of the fistula tract without producing any other injury if ligated by skilled persons.

The mode of action of *kshara sutra* starts immediately after contact with the tissue. During the cutting effect, there may be oozing of blood, which is ceased by the sclerosing effect of the *kshara* by its coagulating property of protein. Hence, there was no chance of bleeding during cutting of the tract. The chance of infection is least due to the sustained action of the anti-infectives of *kshara*.

Kshara sutra works by pressure necrosis, chemical cauterization by kshar (alkali) and sloughing of the tissue of the walls of the fistulous track along with adequate drainage. It leads to an easy debridement of unhealthy tissue and pus etc. and thus providing a cleaner base for the wound healing of the fistulous track. The Kshara-sutra is changed weekly so that an average pace of cutting of about 0.5-0.8 cm/week is maintained along with healing from behind. Finally the whole track is cut through and the fistula gets healed up with minimal scarring and without any other major complication.

- **Weekly change of the sutra:** Ksharasutra applied initially is kept for 7 days after which it is replaced by a fresh Ksharasutra by Rail Road Technique. This procedure is repeated every week till the track completely cut through and if there is any unhealthy granulous tissue, it is scrapped-off during this weekly follow-up to promote a better healing.

Benefits of the ksharsutra ligation procedure over other methods:

The Ksharsutra ligation method is an age old, time tested procedure originally performed by Sushruta (the father of surgery) around 300 ad. The fact that it is still in practice today is a proof in itself of its efficacy.

- The Ksharsutra procedure is performed under short acting anesthesia / local anesthesia and sometimes even without anesthesia.
- If the patient has any associated systemic disorder, then the procedure can still be performed with proper prophylactic measures.
- The procedure usually does not require hospitalization for more than 4 to 5 hours.
- The patient requires minimal bed rest & can resume his / her daily routine within 12 to 24 hours.
- The patient can perform his/her daily routine work from the next day after the surgery.
- Antibiotic and anti-inflammatory drugs requirement are quite less.
- It gives freedom from pain full dressings.
- There is no loss of glutal mussels and hence the

anatomy of the peri anal region is not distorted.

- The procedure lives just a pencil scar at the site.
- The recurrence rate which is usually found to be quite high after other methods is less than 2% after Ksharsutra ligation procedure. This is because the medicines on the thread gradually and continually curate the payogenic membrane and fibrous tissue in the track and thus leave no pus pockets undrained.
- Chances of partial or complete incontinence of flatus or / and faces (loss of control of passing stool / flatus) are always present in many types of fistula, (especially in fistulae involving the sphincter muscles after the conventional procedure. Fistulectomy Fistulotomy).
- There are no chances of developing incontinence in Ksharsutra ligation method.

CONCLUSION:

Fistula is a terrifying disorder, if it is communicating in between two important internal body organs, even verse it can be fatal. Many other diseases can originate due to it and only medicine cannot be solution of it and surgery is converted into must. In modern surgeons employ the surgical procedures which has chances of recurrence and fecal incontinence, on other hand the Kshar sutra does not have any recurrence and fecal incontinence, the Kshar sutra heals the anal fistula from inside without any pain and other complications.

Kshara sutra ligation treatment is much more beneficial in comparison with modern surgeries at maximum point. It can be concluded that *kshara sutra* ligation is a standard surgical treatment for fistula in ano, which is a low, cost-effective, safe and more success full too and affordable treatment for all classes of people in the society.

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