



**Review Article**

**TREATMENT OF TRANS-SPHINCTERIC FISTULA-IN-ANO WITH COMBINED THERAPY OF LASER AND KSHARA SUTRA**

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**ABSTRACT**

Fistula-in-ano is most infectious disease among all the ano-rectal disorders since ancient times. Over the past few decades, various techniques are being evaluated in terms to prevent its recurrence and complications; it is still a challenging surgical disease. The sign and symptoms of fistula in ano resembles with *Bhagandar* described in Ayurvedic classics. *Kshara sutra* therapy (medicated thread) practiced in Ayurveda, since ancient time for the management of *Naadi Vrana* and *Bhagandar*. *Kshara sutra* therapy has revolutionized the treatment of fistula-in-ano, as it treats the main culprit of fistula that is cryptoglandular origin but the drawback of *Kshara sutra* therapy are as it takes more number of hospital visits, long anxiety period and discomfort. In present time LASER therapy is used in various medical surgery and also in proctology like in fistula as FiLaC, DLPL etc. Diode LASER 980nm (Radial Fibre) burns unhealthy granulation tissues in 360° manner with less or minimal pain, LASER act as photo evaporation effect and leads to the shrinkage of the fistula tract. But if we do LASER in internal opening of fistula it provides a bare area for microbes and creates a chance to re-infects the crypts and anal glands, which further leads recurrent fistula formation. Therefore a novel technique for sphincter preserving surgery proposed as combined therapy of *Kshara sutra* ligation for main culprit that is cryptoglandular infection as SMAK (Sub Mucosal Application of *Kshara Sutra*) and LASER, shrink the remaining fistula tract instantly.

**INTRODUCTION**

Fistula in ano is an abnormal communication between two epithelial surfaces and the tract is usually lined by unhealthy granulation tissues. The main cause known for fistula-in-ano is cryptoglandular infection of anal crypts<sup>[1]</sup>. Mostly perianal abscesses and fistula in ano indicates the acute and chronic condition of same disease process of infective origin. From the anal abscess the incidence of fistula ranges from 26 to 38%. Prevalence of fistula-in-ano is still an uncertain thing. A study showed that the prevalence rate of fistula-in-ano is 8.6 cases per 100,000 populations.

This disease is four times more common in males as compared to females and the mean age of affected population is about 38.3 years<sup>[2]</sup>. Though the disease is not life threatening but it produces inconvenience in routine life due to discomfort and uneasiness *Acharya Sushrut* counted *Bhagandar* among the eight diseases which are difficult to cure<sup>[3]</sup>. At first it presents as *Pidika* around the *Guda* and when it bursts out, it is called *Bhagandar*<sup>[4]</sup>. There are more than hundred treatment modalities available for the management of fistula-in-ano. Modern surgical management includes fistulotomy, fistulectomy, seton placing, Ligation of Intersphincteric Fistula Tract (LIFT), fibrin glues, advancement flaps, and expanded adipose derived stem cells (ASCs)<sup>[5]</sup>. *Acharya Sushrut* also described different therapeutic measures for the management *Bhagandar* as in terms of various oral medications, local applications, surgical procedures and para-surgical intervention. Presently *Kshara sutra* therapy is found most approaching and attractive treatment modality among para-surgical procedures

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for fistula in ano<sup>[6]</sup>. *Kshara sutra* prepared by various herbal drugs and caustic material obtained from ash of herbal plants are coated over Barbour's linen thread no. 20. It is standard treatment modality found in surgical practice for the management of fistula-in-ano as the therapy has revolutionized the treatment of fistula-in-ano in terms of reoccurrence and incontinence.<sup>[7]</sup> But with all these benefits, still there are some consequences suffered by practitioners while practicing *Kshara sutra* therapy in relation to patients i.e. it causes discomfort, post surgical anxiety, take long time to return normal activity. In present time LASER therapy is used in various medical surgery and also in proctology like in fistula as FiLaC<sup>[8]</sup>, DLPL etc. LASER act as photoevaporation effect and leads to the seals the fistula tract and LASER (diode Radial Fibre) burns unhealthy granulation tissues in 360° manner. But if we do LASER therapy in internal opening it takes more energy to seal the internal opening which provides a raw area for microbes and may re-infect the crypts and anal glands which further leads recurrent fistula formation. Therefore we proposed as combined therapy of *Kshara sutra* ligation for main culprit that is cryptoglandular infection as SMAK (Sub Mucosal Application of *Kshara sutra*) and LASER (Radial Fibre) shrink the remaining fistula tract instantly. None of the treatment modalities is complete in the treatment of fistula-in-ano. Hence, the proposed combined therapy is to find out better treatment for management of fistula-in-ano with its all aspects.

#### Inclusion Criteria

- Only trans-sphincteric fistula will be entertained.
- Patient of *Bhagandar* those medically fit for surgery irrespective of sex, occupation and religion will be included randomly.
- Age of patient 20-60 years will be included.
- Simple anal fistula with palpable induration.

#### Exclusion Criteria

- High anal fistula
- Branched trans-sphincteric fistula
- Supralelevator fistula
- Subcutaneous fistula
- Fistula other than trans sphincteric fistula
- Fistula other than ano rectal region
- Tuberculosis
- Osteomyelitis
- Chronic or Acute Ulcerative colitis
- Crohn's disease
- Any malignancy
- Venereal disease, HIV and HBsAg positive cases
- Pregnancy
- Rectal prolapsed
- Complex fistula

#### Material and Method of Application

**Materials:** *Guggulu* base *Apamarg Kshara sutra*, Diode LASER radial fibre 980nm.

In this combined therapy we identify trans sphincteric fistula in ano, take 3-5ml betadine solution pushed into external opening which comes out directly from internal opening. A malleable probe is passed from external opening to the internal opening, curettage and cleaning the tract with hydrogen peroxide then an incision is made over probe near internal sphincter at the level of submucosa and *Kshara sutra* placed as SMAK (Sub Mucosal Application of *Kshara sutra*) technique and rest of the tract sealed with Diode LASER (Radial Fiber) 980nm at the rate of 100 jules per cm. Patient advised hot sitz bath and proper cleaning of wound with sterile gauze.



**Figure 1: Incision for SMAK (Sub Mucosal Application of *Kshara Sutra*)**



**Figure 2: Laser Energy Given By Diode Laser Radial Fibre 980nm in Rest of The Tract**



**Figure 3: After Completing Combined Therapy**

#### DISCUSSION

Fistula in ano is still difficult to manage due to the high incidence of recurrences and failures reported with most recent surgical procedures. Deciding what procedure to use can be a challenge since the potential for sphincter damage must be taken into consideration. There are several traditional procedures that are most effective in treating anal fistulas like *Kshara sutra* therapy, *Kshara Pichu*, *Kshara Varti*, *Jatyadi Tail* application etc, but these have their

own pros and cons. Cutting setons are often associated with rather high success rates but also unacceptably high incontinence rates<sup>[9]</sup>. Fistulotomy is usually associated with high healing rates but may cause severe faecal incontinence especially in high fistulas. In addition, the alteration of anatomy due to postoperative scars and fibrosis must not be underestimated<sup>[10-12]</sup>.

Therefore, sphincter preserving fistula management is very often the first choice for most surgeons. This interest in a minimally invasive approach also reflects patient preference.

In conventional *Kshara sutra* therapy *Kshara sutra* apply from external opening to the internal opening which provide graded cutting and healing but it takes long time to treat and also long term anxiety, feeling of uneasiness and discomfort during treatment. although it is most successful treatment while treating the main culprit that is cryptoglandular infection for fistula in ano without any complication related to incontinence.

In present scenario LASER treatment is the demand of many medical fields and also used in proctological surgeries like fistula in ano, fissure in ano and haemorrhoid as well with good success rate. According to Parks Classification 40% cases of fistula in ano are trans-sphincteric

Fistulae which are major number of patients. So if we use LASER diode radial fibre Diode LASER 980nm (Radial Fibre) burns unhealthy granulation tissues in 360° manner with less or minimal pain, LASER also have photoevaporation effects. with these property trans sphincteric fistula get good result as it shrink the fistula tract instantly but if do LASER energy on internal opening it leave raw area in internal opening which further gives a chance of re-infection and may lead recurrent fistula in ano.

Hence, this combined therapy is proposed for best quality treatment in anal fistula specially trans sphincteric fistula in ano by combining *Kshara sutra* and LASER therapy. LASER therapy done from external opening upto submucosal level and *Kshara sutra* application done as SMAK (Sub Mucosal Application of *Kshara sutra*).

## CONCLUSION

There are major no of patients having trans sphincteric fistula in ano that is 40% of fistulae are trans sphincteric as mentioned in Parks classification and it needs more sphincter saving procedure. Our aim

is to care and treat the tract by LASER and care of internal gland area by *Kshara sutra* application for this if we do combine the *Kshara sutra* and LASER it gives best result as minimum pain with minimum scar, save the sphincter- to reduce the chance of incontinence. Patient early return to the normal activity, reduce healing time of wound, reduce the raw wound size to reduce long term anxiety and discomfort.

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