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# EFFECT OF *KADALI KSHARA SUTRA* IN THE MANAGEMENT OF *BHAGANDARA* (FISTULA-IN-ANO)

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**ABSTRACT**

Fistula in ano is one of the most common and notorious disease among all ano- rectal disorders. It is recurrent in nature which makes it more and more difficult to treat. It produces inconvenience in routine life. It causes pain and discomfort that creates problem in day to day activities. *Kshara Sutra* has been proved as a big revolution in the treatment of fistula in ano. It is the need of time to do further researches on *Kshara Sutra* to get more efficient *Kshara Sutra*. In the present research work *Kadali Kshara Sutra* was been prepared.40 diagnosed case of fistula in ano were selected from the OPD/IPD of ano rectal unit of *shalya tantra* department of SDM college of ayurveda, Hassan. Total patients were divided in two groups. Group A were treated with standard *Apamarga Kshara Sutra*. Group B were treated with *Kadali Kshara Sutra. Kadali Kshara Sutra* showed less pain and burning sensation and less unit cutting time.

**Keywords:** *Kadali, Kshara Sutra, Bhagandara,* Fistula in ano

## INTRODUCTION

In *Ayurvedic* classics *Bhagandara* is considered as one of the *Ashta Mahagada* i.e. very difficult to cure. *Bhagandara* is one of the commonest diseases which occures in ano-rectal region. Inspite of advances in modern science, its high recurrence is still a matter of concern. *Ayurveda* is well known for the treatment of *Bhagandara* with *Kshara Sutra* application with negligible rate of recurrence. So far there many researches are carried out in different institution.

Eminent surgeons of their time like Louis A. Buie (1931) has reported 67.9% recurrence, Raymond J. Jackman (1944) reported 43%, J.E. Dumphy (1955) reported 85% and W. Rochke (1969) has reported 20% recurrences. These statistical data reveal a fact that the treatment of anal fistula is still far from the success and needs a vital reconsideration[1].

**Need of the Study**

*Sushruta* in *Kshara Paka Vidhi Adhyaya* has mentioned 23 drugs from which *Kshara* can be prepared[2]. Among which *Kadali* is one of the drug and no research work has been carried out to evaluate its effect in the management of *Bhagandara*[3].

The standard *Apamarga Kshara Sutra* is prepared by repeated coatings of *Snuhi Ksheera*, *Apamarga Kshara* and *Haridra choorn*. But *Apamarga* is not available throughout the year. During and after application of *Apamarga Kshara Sutra* some patients do complain of moderate to severe burning type of pain.

Considering the above problems we are in need to find out a drug which is easily available throughout the year and less irritant and equally affected.

*Kadali* has *Madhura Rasa*, *Guru* and *Snigdha Guna*, *Sheeta Veerya*, *Madhura Vipaka* and *PittaVatahar properties*[4]. So it would be lesser irritant and cause minimal pain. So *Kadali* (*Musa paradisiaca* Linn.) *Kshara* is selected in place of *Apamarga Kshara* and this present study aimed to evaluate the effect of *Kadali Kshara Sutra* in the management of *Bhagandara*.

## AIMS AND OBJECTIVE

- To compare the effect of *Kadali Kshara Sutra* and *Apamarga Kshara Sutra* in the management of *Bhagandara.*

## MATERIALS AND METHODS

Groups and Treatment:

40 Patients of *Bhagandara* has been randomly divided into the following two groups:

**Group A: (20 Patients)** The patients of this group were been applied *Apamarga Kshara Sutra* as per Classical method. The *Kshara Sutra* was changed once in a week till a complete cutting of the tract. There after the patients were got followed till complete healing of the track was achieved.

**Group B: (20 Patients)** The patients of this group were been applied *Kadali Kshara Sutra*. The *Kshara Sutra* was changed once in a week till a complete cutting of the tract. There after the patients were got followed till complete healing of the track was achieved.

**Preparation of *Kadali Kshara Sutra:***

The technique of preparation of *Kadali Kshara Sutra* is the same as *Apamargaa Kshara Sutra* standardized by the Department of Shalya Shalakya, IMS, Banaras Hindu University, Varanasi.

The *Kadali Kshara Sutra* were prepared by repeated 21 coatings in which 11 coatings of *Snuhi Ksheera*, 7 coating of *Kadali Kshara* and 3 coatings of *Haridra* (*Curcuma longa*) *choorna*.

For this purpose a surgical linen thread No.20 was spread throughout the lengthwise in the *Kshara Sutra* hangers. Each thread on the hanger was smeared with *Snuhi Ksheera* soaked in gauze piece. Then these wet threaded hangers were placed in *Kshara Sutra* cabinet for drying. Again the same process was repeated daily, till eleven such coatings with *Snuhi* (*Nerifolia euphorbia*) *Ksheera* alone are accomplished.

The twelth coating was done by first smearing the thread with *Snuhi Ksheera* and in wet condition the thread was passed through the *Kadali Kshara*. Then it was placed into the cabinet for drying. This process was repeated daily till seven coatings of *Snuhi Ksheera* and *Kadali Kshara* was achieved.

Finally three coatings were given with *Snuhi Ksheera* and *Haridra choorn* in the same way. Thus the twenty one coatings over the thread were done to prepare *Kadali Kshara Sutra* for use in this study.

**Method of Application of *Kadali Kshara Sutra:***

First the patient was kept in lithotomy position after Anaesthesia and perianal region was cleaned with antiseptic lotions and draped. Later gloved finger was gently been introduced into the rectum. Then a suitable selected probe was passed through the external opening of fistula. The tip of the probe was forwarded along the path of least resistance and was guided by the finger in rectum to reach into the lumen

of anal canal through the internal opening and its tip was finally directed to come out of anal orifice. Then a suitable length of *Kadali Kshara Sutra* was taken and threaded into the eye of probe. Thereafter the probe was pulled out through the anal orifice, to leave the thread behind in the fistulous track. The two ends of the thread were then tied together with a moderate tightness outside the anal canal.

**Assessment criteria**

1. U.C.T. = Total No. of days taken for cut through/Initial length of track in cms=____days/cm
2. Pain
3. Granulation Tissue
4. Discharge

**Duration of the Study:** It was depended on the length of fistulous tract.

**Follow up study:** After cutting of the fistulous tract, the patient was asked to come to the outpatient department weekly once for one month and monthly once for two months.

**Laboratory investigations:**

1. Blood: Hemoglobin%, TC, ESR, DC, HIV, HbsAg
2. Urine for: Physical, Chemical, Microscopic study
3. Pus for: Culture and Sensitivity (if necessary)
4. Radiological: Fistulogram (if necessary), Chest X – ray P/A view (if necessary)
5. Histo-Pathological Examination Biopsy (if necessary)

## OBSERVATION & RESULTS

The study analysis revealed that the incidence of *Bhagandara* is commonly seen in age group of 21-50 years (31 cases – 77.5%) with peak incidence in the age group of 41-50 years (16cases – 40%).

The sex incidence shows that maximum patients were males (34 cases – 85%) and minimum were females (6 cases – 15%).

In relation to religion, 40 cases were analyzed. 38 cases (95%) were hindus, 2 cases (5%) were muslim.

In relation to socio-economic status 19 cases (47.5%) belonged to lower class, whereas 18 cases (45%) belonged to middle class and 3 cases (7.5%) belonged to high socio-economic status.

In relation to the nature of work 18 cases (45%) were of moderate work, 13 patients (33%) were of streneous and 9 cases (22%) were of sedentary work.

In relation to nature of diet more patients were found in non-vegetarian (80%). Maximum incidence of occupational status of this disease was Agriculture (25%). In relation to *prakriti* majority were Vata-pitta patients (62%). According to clinical symptomatology, it was seen that there were maximum 27 cases (67%) reported as *Parisravi Bhagandara*, 13% were *Riju*, and 8% *Arsho Bhagandara*, 10% *Ustragreeva*. No cases were found in *Parikshepi*, *Shambukavarta* and *Unmargi Bhagandara*.

The maximum 65% patients were suffering from transphincteric fistula, 18% intransphincteric fistula, 2% in submucous and 15% in subcutaneous fistula. The maximum number of cases (97%) was reported with duration of illness of less than 1 year, 3% cases were in between 1-2 years.

The incidence of associated disease like Diabetes, Hypertension were found in 25% cases. Among this Hypertension and Diabetes both were 7.5%, and 10% hypertension and 2.5% diabetes.

Analysis of patients in relation to associated lesions (23%) showed that 10%

cases were piles, 10% patients were having anal fissure and sentinel tag, 3% cases suffered with abscess. Out of 40 cases, maximum 39 (97.5%) were having single external openings and 1(2.5%) were of three external openings. On probing in the present, 29 cases (72.5%) were of complete track, 5 cases (13%) were Radial fistulas, 4 cases (10%) curved fistula and 2 cases (10%) were Blind internal.

Table 1: Average Unit cutting time in days/cm in Control and Treated Groups

| Group | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|
| A | 20 | 8.1460 | 1.34409 | .30055 |
| B | 20 | 7.9420 | 1.16769 | .26110 |

Table 2: Showing the effect on Pain in Both Groups

| Group | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|
| A | 20 | 1.5535 | .37896 | .08474 |
| B | 20 | 1.0415 | .34024 | .07608 |

Table 3: Showing the effect of Granulation tissue in therapy groups

| Group | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|
| A | 20 | .0950 | .30345 | .06785 |
| B | 20 | .0550 | .24597 | .05500 |

Table 4: Status showing the effect on Discharge in therapy groups

| Group | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|
| A | 20 | .3470 | .28514 | .06376 |
| B | 20 | .1495 | .18161 | .04061 |

Table 5: Status showing the effect on Size of the wound in therapy groups

| Group | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|
| A | 20 | 1.5720 | .47222 | .10559 |
| B | 20 | 1.5020 | .44879 | .10035 |

## DISCUSSION

Clinical findings like pain, local inflammatory changes, discharge, etc. were observed during primary and successive application of medicated thread in control and treated groups. The severity of pain and local inflammatory conditions like edema, induration, granulation tissue, healing time after cut through were analyzed and was less in treated group as compared to control group. The unit cutting time was analyzed on various parameters like age, sex, *parkriti*, type of *Bhagandara*, type of fistula, etc. There are several factors, which modifies the Unit Cutting Time as follows:

1) U.C.T. is less in submucosal, subcutaneous and low anal fistulas.
2) U.C.T. is high in cases of previous operated fistula, high rectal fistula, fistula with abscess and transsphincteric fistula.
3) Presence of infection and inflammation delays the unit cutting time.

The pH of drugs of Standard *Apamarga Kshara Sutra* and *Kadali Kshara Sutra* A and B were compared. The *Apamarga Kshara Sutra* is alkaline and its pH is 9.72 Where as in *Kadali Kshara Sutra* it is alkaline with pH of 9.63. So the U.C.T.

is 8.14 days/cm in control group compared to 7.94 days/cm in treated group.

*Kadali* has *Madhura rasa*, *Guru* and *Snigdha guna*, *Sheeta veerya*, *Madhura vipaka* and *Pitta-vatahara properties*. So in treated group there were less pain and burning sensation found in comparison to control group and after cut through the wound healing was faster in the treated group (1-2 weeks) compared to (2-3 weeks) in control group.

*Kadali* is a very common drug, which is available in all parts of the country. Since it is a tree so adequate amount of *Kshara* is obtained by a single plant. On contrary, *Apamarga* plant requirement is more and it is a seasonal plant.

The mode of action of *Kshara Sutra* therapy in the management of *Bhagandara* is as follows:

1. By application by *Kadali Kshara Sutra* it does cutting (by tying) layer by layer and there is continuous drainage of fistulous track which helps in healing.
2. The medicaments which are used to prepare the thread will dissolute the fistulous tissue of the track (Debridement by the *Ksharana* process) and *Kadali* stimulate the healthy granulation tissue for healing.
3. *Kshara Sutra*-in-situ encourages healing by new granulation tissue formation from the base.
4. Important factor is it maintains continuous aseptic condition of the track.
5. It not only cut the tissue, but also does continuous drainage of the wound, which enables to lay the track open.

## CONCLUSION

*Kadali Kshara Sutra* can be considered as a better alternative in place of *Apamarga Kshara Sutra* because it has more acceptability, easily available, reduction in UCT, less burning sensation and better wound healing property after cut through.

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