

EFFICACY OF KSHARASUTRA MADE FROM PAPAYA AND SNUHI LATEX IN THE TREATMENT OF FISTULA IN ANO

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ABSTRACT: *Fistula in ano is treated conventionally, by using the surgical techniques like fistulectomy or fistulotomy. In this practice of surgery there are many complications like delayed healing and stenosis or incontinence. The period of convalescence is also long. But after the advent of 'Kshara Sutra' for the treatment of fistula in ano, the complications are reduced to negligible level. It has become a boon to the patients of fistula in ano. But still the quest is continuing to improve the efficacy of kshara sutra, to make it more acceptable, of late kshara sutra is being prepared in different ways of changing materials used for preparation, One such modification of kshara sutra is preparing it by the use of latex expressed from the tender fruit of papaya. The advantages of this thread are low corrosiveness, less pain and speed cutting besides easy availability.*

INTRODUCTION

Deshpande et al.¹ proved that the *Kshara sutra* treatment is a safe, effective, ambulatory and unhazardous method of treatment in fistula-in-ano. A multi centric study carried by ICMR⁴ also confirmed that the method is very much effective and free from recurrence. However, the study also revealed that the time required for the treatment is essentially more than the conventional surgery. It is also found that the pain factor is more in the *Kshara sutra* surgery over the fistula-in-ano.

Therefore, a quest is continuing to overcome certain disadvantages found with *Kshara sutra*. We have also reported in our earlier study⁶ that the latex expressed from tender papaya can be very well used to prepare the *Kshara sutra* which is having very good effect of fistula-in-ano by reducing the pain with the usual advantages of *Kshara sutra*, therefore, a comparative study was carried out to compare the effect of *Kshara sutra* made of latex of Papaya and latex of snuhi.

MATERIALS AND METHODS

The *Kshara sutra* was prepared in the usual way with the use of a specially prepared *Kshara sutra* cabinet under strict aseptic precautions. 20 No cotton threads used for preparation of threads of both types. 10 times smearing is given of the whole mixture of latex turmeric powder and tankan kshara, the ingredients were latex of papaya (*Carica papaya*) latex of snuhi (*Euphorbia neriifolia*) and tankana bhasma (borax).

Clinical Plan

The patients were selected at random from among those attending the OP Department of S.V. Ayurvedic College Hospital. The patients were allotted the type of *Kshara sutra* alternatively to evolve the uniform comparison. The types of fistulae were also distributed at random but the patients were informed only that they were under clinical trial without telling them the group. Thus S group was comprising the patients who

underwent treatment with snuhi Kshara sutra P Group were treated with papaya latex Kshara sutra. The first application was done under strict aseptic precautions under local anaesthesia.

The thread was changed at weekly intervals in both groups. Throughout the period a uniform regimen of medicines, management was prescribed. *Triphala*, *Kwatha* was recommended twice a day for sitzbath (Avagaha Sweda).

The particulars of patients and the progress of treatment were recorded in the specially designed folder card. A card of registration issued to the patient. The patients were instructed to follow the strict regimen during treatment the patients were advised to come for change of thread regularly and change of thread was considered depending on the condition of Kshara sutra in situ. Usually on 5th day or 7th day it was changed. After cutting the tract every fortnight for 2 months

and after that at an interval of one month the patients were followed-up. A long-term follow-up of upto 4 years is underway.

RESULTS AND DISCUSSION

The trial was conducted in the aforesaid procedure. Total of 22 patients in S group and 23 patients in P group were studied. They were supplied with registration cards and were made aware of the trial being conducted.

1. Age and Sex distribution

All the age group patients from 16 years of age onwards were considered for the trial. The female cases on the whole were less than the male patients in both the groups. The maximum number of patients were in the age group of 21-30 and total number of female cases were only 8 out of which 5 were in S group and 3 were in 'P' group.

Table 1

Age groups	S Group		P Group		Total
	Male	Female	Male	Female	
16-20	2	1	2	0	5
21-30	6	3	5	1	14
31-40	4	1	7	0	12
41-50	3	1	4	2	10
51-60	2	0	2	0	4
Total	17	5	20	3	45

2. Type of Fistula

All the varieties of fistulae according to Ayurveda were considered except the *Shata Ponaka* variety where multiple tracts will be present. As far as anatomical types are concerned, the submucous or subcutaneous, low anal, high anal and anorectal varieties

are considered in both groups. It is evident from the tables, that the *Parisravi* type, fistula were maximum in number in both groups and the low anal variety of anatomical classification were maximum (16) in both the groups.

Table 2

No.	Type	S Group	P Group	Total
1	Ustragreevi (Pittaja)	7	7	14
2	Parisravi (khaphaja)	12	13	25
3	Shambukavartaka (tridoshas)	1	1	2
4	Unmargi (kshataya)	2	2	4
	Total	22	23	45

Table 3

No.	Anatomical Type	S Group	P Group	Total
1	Submucous/subcutaneous	4	4	8
2	Low anal	8	8	16
3	High anal	7	7	14
4	Anorectal	3	4	7
	Total	22	23	45

3. Chronicity of the fistulae

The chronicity of the fistulae was also observed in this trial. The fistulae were chronic and were present at least for one year or more in 30 cases. Among them few

(18) have undergone operations previously. The rest of the cases were having the complaint for the first time (Table 4).

Table 4

No.	Type	S Group	P Group	Total
1	1 year to 2 years	6	7	13
2	2 years to 3 years	4	5	9
3	3 years to 4 years	3	2	5
4	4 years and above	1	2	3
	Total	14	16	30

4. pH Values

The pH value of both the Kshara Sutures was estimated. The Kshara sutures which were prepared in 3 batches each were estimated for pH value. The individual ingredients' pH was also estimated by glass electrode pH meter with digital display. The

pH value of the thread prepared from papaya latex is less than that of prepared from snuhi latex. The difference is at most 1.4. The pH of the kshara suture was measured by measuring the pH value of the mixture of ingredients to be smeared on the thread.

Table 5

No.	Name of the ingredient	pH value
1	Snuhi Ksheera	5.6
2	Haridra	6.2
3	Tankan Kshara	7.4
4	Papaya Ksheera	6.8
5	Snuhi Kshara sutra mixture	8.7
6	Papaya Kshara mixture	7.3

5. Unit cutting time

a) Length of fistula: Since the measurement of unit cutting time depends on the initial length of fistula, it is very important to measure it. Deshpande et al., have reported that the length of Kshara sutra initially applied will correspond to the length of the fistula though it indicates

the total circumference of the tract. Therefore, for all practical purposes, this length is considered as initial length of fistula. The initial lengths of fistulae were varied from 3.5cm to 16cm (Table 6).

Table 6

S. No	Type	S Group (in average)				P Group (in average)			
1	Submucous/subcutaneous	4	4.0	15.00	3.75	4	4.2	12.75	2.97
2	Low anal	8	5.4	30.95	5.73	8	5.6	28.14	5.02
3	High anal	7	6.1	28.80	5.33	7	6.1	27.90	4.57
4	Anorectal	3	9.0	36.70	4.07	4	9.1	31.95	3.51
	Average UCT				4.72				4.017

b) UCT: The unit cutting time is the product of division of the total days required for the treatment by the initial length of the fistula.

The formula is

$$\text{UCT} = \frac{\text{Total Number of Days}}{\text{Initial length of fistula}} \quad (\text{in days})$$

The UCT was estimated in each group and each variety of the fistulae with the help of the above formula. The length of fistula was measured by the measurement of the thread required initially while replacing it with the second thread in each case. As per table 5, it is evident that UCT has come down

significantly in the P group in all varieties of fistulae and on total assessment. The difference between the both groups is 0.7025 days.

6. Pain

The pain is an essential component in Kshara sutra treatment. It may range from simple pain to the degree of excruciating pain. But however, the subjective assessment could be done only in duration of pain. There is a significant difference of pain duration in trial groups. The papaya latex group reported pain for less duration than the snuhi group.

The patients were asked to report the pain during the treatment when they were attending the OPDs for daily dressing. When the patient reports that he has no pain that day was noted and it was considered as the pain relief day (PRD). This was the pain

assessment was done after each change of thread. The table 6 shows the average pain relief day in each variety of fistulae in each group. There is significant reduction in PRD in Papaya latex group.

Table 7

Sl. No	Type of fistula	Average pain relief (days)	
		S Group	P Group
1	Submucous/subcutaneous	4.0	3.5
2	Low anal	4.5	3.0
3	High anal	5.0	4.0
4	Anorectal	5.0	3.0
	Total Average	4.65	3.375

7. Follow –up of the patients

Follow-up of the patients was done for checking up to the recurrence rate and other complications. In this study, the recurrence was not found in any variety of cases in each group. After the follow-up for 2 years at the bimonthly interval also the complications like incontinence and anal stricture was also not reported in any case.

snuhi the eyes are to be protected from spillage. The latex of snuhi after collection clots and become useless if carried from a distance place, therefore it is to be collected in the mornings. On the contrary the tender papaya fruits can be procured very easily even from the kitchen gardens.

CONCLUSIONS

Kshara sutras prepared from both the latexes have worked well over the patients of fistula-in-ano. The Kshara sutra prepared from papaya latex was for a superior type when compared to the one prepared from snuhi latex. In addition, there are several other advantages with Kshara sutras the prepared with papaya latex.

1. Papaya Kshara Sutra is easy to prepare because of the abundant availability of fruit.
2. The collection of latex is easy and unhazardous whereas, while working with

3. The pH value of the Papaya kshara sutra was less than the pH value of snuhi Kshara Sutra.
4. The UCT time has come down considerably in Papaya latex group than the snuhi group. Therefore, the treatment is faster in the Papaya group.
5. The pain factor is also considerably low in Papaya group. The PRD has reduced in this group.
6. The usual advantages of Kshara sutra therapy in fistula-in-ano like non recurrence and non stricture or

incontinence formation in anal region were consistent in both the groups.

7. The papaya Kshara sutra is therefore, recommended and preferred to Snuhi Kshara sutra.

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