

A COMPARATIVE, ANALYTICAL AND CLINICAL STUDY ON THREE TYPES OF KSHARSUTRA IN ARSHA ROGA

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ABSTRACT

In modern era ano-rectal diseases are prevalent worldwide. It may occur at any age but more common in the age group between 30 to 65 years. Both genders are equally susceptible to ano-rectal disorders. *Arsha* (Haemorrhoids) is a very common ano-rectal disease affecting half of world population by the age of 50 and out of these half of the patients are suffering from bleeding piles (Raktarsha). The present paper is based on the study carried out in M. M. M. Govt. Ayurvedic College and hospital. In this research three types of *ksharsutra* threads were formulated for the non surgical treatment of hemorrhoids. Pharmaceutical preparation of three batches of clinically tested and standardized *ksharsutra* have been considered along with the analysis of the raw material used. The standardized *ksharsutra* threads were applied on 30 patients of *Arsha roga*. These 30 patients were classified in three groups. Patients in group 1 were treated with *ksharsutra* made of *Haridra*, *Apamarg kshara* and *Arka ksheera*. Patients in group 2 were treated with the *ksharsutra* made of *Rasanjana*, *Apamarg kshara* and *Arka ksheera*, while patients in group 3 were treated with *ksharsutra* made of *Hartala*, *Apamarg kshara* and *Arka ksheera*. The paper reports the clinical findings and comparative analysis of the results observed in patients with symptoms of fullness of rectum, pain and bleeding by using different threads.

Keywords: *Arsha* (piles or hemorrhoids), *Ksharasutra* (medicated thread), *Arsha chedana* (pilectomy)

INTRODUCTION

Arsha is named as a disease which kills the patient like an enemy¹. According to Acharya Charaka *Arsha roga* is originated due to vitiation of *mamsa dhatu*². *Raktarsha* is one of the six types of *arsha*³. Hemorrhoids arise from congestion of the internal or external venous plexuses around the anal canal. They are extremely common in adults⁴. Symptomatic hemorrhoids affect more than one million individuals in the Western world per year⁵. It is estimated that approximately 50% to 85% of the world's population will be affected by hemorrhoids at some time in their life. However,

only a small number seek medical treatment. Hemorrhoids are common in economically developed communities but nowadays the numbers of cases increasing in India too because of massive change in Indian diet and life style. The disease *Arsha* is a well recognized *mahagada* in texts and considered as most common disorder among all ano-rectal disorders. Acharya Susruta has mentioned fourfold line of treatment for *Arsha roga* i.e. *bheshaja* (oral therapy), *kshara* (*kshara patana* and *kshara sutra* application), *agni karma* (cauterization) and *shastra karma*

(surgical removal)⁶. Among these four, *kshara sutra* has been considered a measure having less complications and Sushruta has advised to apply *kshara sutra* in weak, feeble, fearful, and difficult to treat patients. In today's scenario these indications are very common. Therefore ksharasutra is a better intervention in treating *arsha roga*. The Preparation of *ksharsutra* has undergone many changes and has passed through various stages before it reached the present standards of manufacturing. It is essential to know the difference between the methods of preparation of *ksharsutra* mentioned in *Chakradatta*⁷ and in other texts. So addition of new drugs in preparation of *ksharsutra* is important. In this research *Arka Ksheera* and *Apamarg Kshara* are same in every thread and healing material taken in every type of thread is different like *Haridra*, *Rasanjana*, and *Hartala*.

MATERIALS AND METHODS:

Arka ksheer bhavit three types of *ksharsutra* were prepared in the Pharmacy of M. M. M. Govt. Ayurvedic College Udaipur (Raj.) and patients of M. M. M. Govt. Ayurvedic Hospital (Udaipur) were treated with the application of three types of these *Kshara sutra* as per International conference of Harmonization-Good Clinical Practices Guidelines (ICH-GCP).

INCLUSION CRITERIA

1. Subjects of age group between 20-60 years.
2. Subjects presenting with classical subjective and objective features of *Raktaarshas*.
3. Bleeding Hemorrhoids of grade II, III and grade IV.

EXCLUSION CRITERIA

1. Subjects less than 20 years and more than 60 years of age.
2. Subjects suffering from systemic disorder like Diabetes, Tuberculosis, IHD, CHD, HIV, HbSAG etc.
3. Subjects suffering from Hemorrhoid with Ulcerative Colitis, Liver disorders and other chronic diseases and bleeding disorders.

4. Subjects suffering from Fissure, Fistula in ano and CA Rectum.

ASSESSMENT CRITERIA

Following the approval of the Ethical Committee of M. M. M. Govt. Ayurvedic College Udaipur (Raj.) the study was conducted on 30 adult patients in three groups with grade II, III and grade IV. Findings in each case were recorded over a follow-up of four weeks (postoperative days 1, 3, 7, 15 and 30).

SUBJECTIVE PARAMETERS

For this study scoring grading method from 0 to 3 was used.

[Good relief-3, Moderate relief-2, Mild relief-1, No relief-0]

Three symptoms were mainly selected for assessment:

1. Fullness of rectum,
2. Pain,
3. Bleeding per rectum

OBJECTIVE PARAMETERS:

ON PROCTOSCOPY: Number of internal hemorrhoid, Size of hemorrhoid, Position of hemorrhoid mass.

BLOOD INVESTIGATIONS: CBC, CT, BT, RBS, ESR, HIV, Hb.

PREPARATION OF KSHARSUTRA

With the fresh latex of *calotropis procera* (*Arka ksheera*), the thread is coated manually first with the latex eleven times, followed by seven alternate coatings of latex and *Apamarg kshara* (a specially prepared alkaline powder known from *Achyranthes aspera* Linn), dried at 50 degree centigrade in specially designed cabinet. In the final phase, three alternate coating of latex & turmeric powder are given and thread is dried. The threads thus prepared are given a single fold enveloped in a polythene sachet which is sealed and packed in a glass tube along with a silica bag as the desiccant. This is the procedure to prepare *ksharsutra* A, B and C. In the preparation of *ksharsutra* in place of *Haridra*, *Rasanjana* and *Hartala* are used respectively.

Material used in preparation of ksharasutra A:

Sr. No.	Materials used	Quantity
1.	Barber linen thread	30m
2.	<i>Arka Ksheera</i>	420ml
3.	<i>Apamarga Kshara</i>	56gm
4.	<i>Haridra</i>	20gm

Table 1.1: Showing Materials used in preparation of *Haridra* bhavit ksharsutra**Material used in preparation of Ksharasutra B:**

Sr. No.	Materials used	Quantity
1.	Barber linen thread	30m
2.	<i>Arka Ksheera</i>	420ml
3.	<i>Apamarga Kshara</i>	56gm
4.	<i>Rasanjana</i>	20gm

Table 1.2: Showing Materials used in preparation of *Rasanjan* bhavit ksharsutra**Material used in preparation of ksharasutra C:**

Sr. No.	Materials used	Quantity
1.	Barber linen thread	30m
2.	<i>Arka Ksheera</i>	420ml
3.	<i>Apamarga Kshara</i>	56gm
4.	<i>Hartala</i>	30gm

Table 1.3: Showing Materials used in preparation of *Hartala* bhavit ksharsutra**STANDARDIZATION OF KSHARSUTRA**

Hemorrhoids are considered most important among all ano-rectal abnormalities and are prevalent all over the world. In Ayurvedic practice fistula-in-ano, tumors etc. are treated without surgery employing *ksharsutra* described by ancient Indian surgeon *Sushruta* in his famous treatise *Sushruta Samhita*. The technique involves insertion of a specially prepared alkaline medicated thread (*ksharsutra*) coated with herbal products into the fistulas track. *Acharaya* Chakrapani mentioned *ksharsutra* application in *Arsha roga* in his fa-

mous treatise *Chakradutta*. Generation of adequate data for implementation of *ksharsutra* manufacturing technology in the pharmaceutical industry was considered necessary and therefore detailed protocols with simple methods of analysis were evolved and employed for standardization of the *Ksharsutra* and the raw material used for the preparation of the thread. The various reports of standardization of three types of *Ksharsutra* are shown as per standardization done in Oasis Test House Limited, Jaipur, Rajasthan.

ANALYSIS OF KSHARA SUTRA:

Physico-chemical Analysis	<i>Haridra</i> coated <i>Ksharsutra</i> A	<i>Rasanjan</i> coated <i>Ksharsutra</i> B	<i>Hartal</i> coated <i>Ksharsutra</i> C
Color of ksharsutra	Orange	Brown	Yellow
Minimum breaking load (kg)	5.36	5.40	5.43
Length (cm)	203.00	204.00	204.00
Diameter average(mm)	1.20	0.95	1.1
Weight of coating material	0.0244	0.0278	0.0285

in(gm/cm)			
Weight of coating material(%w/w)	28.420	27.420	38.129
Ph of 5.0%w/v solution	9.90	9.99	9.80
Loss on drying (%w/w)	8.512	8.909	7.103
Sodium content as Na(%w/w)	0.145	0.264	0.135
Potassium content as k (%w/w)	3.352	3.929	3.164
Curcumim (%w/w)	0.052	-	-
Turmeric powder (%w/w)	4.10	-	-
Berberine (%w/w)	-	0.021	-
Arsenic sulphide(%w/w)	-	-	60.05

Table 1.4: Showing Physio-Chemical analysis of three types of *kshara sutra*

CLINICAL APPLICATIONS

Arsha is most common surgical condition of ano-rectal region. Various researches and modes have been continuously adopted to treat patients suffering from this disease. Patients diagnosed with piles after investigations were subjected to *ksharsutra* treatment and all the patients were classified into three groups and are successfully treated with three types of *ksharsutra*. The standardized *ksharsutra* threads were applied on 30 patients of *Arsha roga* diagnosed and treated in Govt. Ayurvedic College & hospital and Motti Chowta Govt. Ayurvedic hospital of Udaipur. These 30 patients are classified into three groups and patients in 1st group were treated with *ksharsutra* made of *Haridra*, *Apamarg kshara* and *Arka ksheera*. Patients in group 2nd were treated with the *ksharsutra* made of *Rasanjana*, *Apamarg kshara* and *Arka*

ksheera while patients in 3rd group are treated with *ksharsutra* made of *Hartala*, *Apamarg kshara* and *Arka ksheera*.

OBSERVATIONS AND ANALYSIS OF THE CLINICAL APPLICATIONS

Thirty patients between age group 20 yrs to 60 yrs were selected during this study. Mostly female (20) and (10), male fresh cases 04 (<1year), and 26 chronic cases (>01 years) with inadequate treatment were treated during this study. To assess the progress of *Arsha* cutting and healing process of wound which comprises of a number of factors like reduction in the amount of exudates, reduction in pain, presence of granulation tissue, under granulation or over granulation tissue along with these the main symptoms aimed to reduce are fullness of rectum, pain and bleeding. The results are shown below

S. No	Sign/symptom	Before Op. pts No.	After op. pts No.	Improvement%
1	Bleeding P/R	08	2	75
2	Pain During Defecation	08	2	75
3	Anal irritation	07	0	100
4	Constipation	10	3	70
5	Prolapsed Hemorrhoids	10	0	100

Table 1.5: Showing improvement of S/S of *Arsha* patients in Group A

S. No	Sign/symptom	Before Op. pts No.	After op. pts No.	Improvement%
1	Bleeding P/R	09	1	88.90
2	Pain During Defecation	10	1	90.00
3	Anal irritation	06	1	83,40
4	Constipation	08	2	75.00
5	Prolapsed Hemorrhoids	10	0	100

Table 1.6: Showing improvement of S/S of *Arsha* patients in Group B

S. No	Sign/symptom	Before Op. pts No.	After op. pts No.	Improvement%
1	Bleeding P/R	07	4	42.86
2	PainDuring Defecation	09	5	44.45
3	Anal irritation	07	2	71.43
4	Constipation	09	1	88.89
5	Prolapsed Hemorrhoids	10	0	100

Table 1.7: Showing improvement of S/S of *Arsha* patients in Group C

DAYS	GROUP A	GROUP B	GROUP C
1 st Day	-	-	-
2 nd Day	-	-	-
3 rd Day	-	-	1
4 th Day	-	1	2
5 th Day	1	3	5
6 th Day	3	4	2
7 th Day	4	2	-
8 th Day	2	-	-
9 th Day	-	-	-
10 th Day	-	-	-

Table 1.8: Showing cutting time of ligated piles

RANGE OF CUTTING

GROUP (A) 5-8 DAYS, GROUP (B) 4-7 DAYS, GROUP (C) 3-6 DAYS

DAYS	GROUP A	GROUP B	G GROUP C
1st Day	-	-	-
2 nd Day	-	-	-
3 rd Day	-	-	-
4 th Day	-	-	-
5 th Day	-	-	-
6 th Day	-	-	-
7 th Day	-	-	-
8 th Day	-	-	-
9 th Day	-	-	-
10 th Day	-	1	-
11 th Day	-	1	-
12 th Day	1	4	-
13 th Day	1	2	-
14 th Day	3	2	2
15 th Day	2	-	2
16 th Day	3	-	4
17 th Day	-	-	1
18 th Day	-	-	1
19 th Day	-	-	-
20 th Day	-	-	-

Table 1.9: Complete healing time of wound after cutting of placated piles

Range of Healing

Group (A) 12-16 Days, Group (B) 10-14 Days, Group (C) 14-18 Days

S. No.	SYMP-TOMS	GROUP-A			GROUP-B			GROUP-C		
		't' value	P value	% Relief	't' value	P value	% Relief	't' value	P value	% Relief
1	Fullness Of rectum	17.67	<0.001	90	8.81	<0.001	81.48	8.99	<0.001	75
2	Relief In Bleeding	5.07	<0.001	89.47	5.45	<0.001	95	3.34	<0.01	75
3	Relief in pain	4.31	<0.01	61.5	7.95	<0.001	77.27	13.53	<0.001	75

Table 1.10: Showing summarized results of GROUP (A), GROUP (B) AND GROUP(C)**DISCUSSION**

In the study incidence of *Arsha* had less prevalence in younger age. The service holder patients were more prone due to long sitting & irregular regime. *Vata pittaja prakriti* patients and patients with history of hereditary cases were found more due to congenital weakness in vein wall. It might be as per description of Charaka in *Sahaja arsha*. Patient of *arsha* at 7 o'clock position and of first degree were more in number. *Arsha roga* is the result of *mandagni* (slow digestion) therefore patients should be advised *pathya ahara* and *vihara* along with the treatment to avoid recurrence of the disease. The whole procedure of *ksharsutra* ligation is simple, safe technique with minimum discomfort and requires no prolonged hospitalization. *Arkaksheer bhavit kshar-sutra* acts as a curette for the *arsha* due to its proteolytic and irritant action of the caustics. The chances of recurrence are almost nil and the cutting and healing of the *arsha* (hemorrhoid) is simultaneous. *Rasanjana bhavit ksharsutra* assures great prospects in the Ayurvedic management of *arsha roga*. It showed great effect both in cutting as well as in healing time. Complications are negligible. *Rasanjana* has property to reduce the bleeding in piles and enhances healing after cutting of ligated pile mass. Therefore *Rasanjana bhavit ksharsutra* promises a breakthrough in the Ayurvedic treatment of *arsha roga*. Further researches should be carried out in this direction to promote this very treatment modality. The patients are treated with *Hartal bhavit kshar-sutra* under all aseptic conditions with necessary precautions and patients show fast cutting and remarkable

recovery from the ailing symptoms. The results observed indicate that *Hartal bhavit ksharsutra* is better in curing bleeding per rectum, pain during defecation, anal irritation and fullness of rectum. An important aspect observed during this application is cutting is fast in comparison to other *ksharsutra* and healing is delayed in the cases of *arsha* treated with this *ksharsutra*.

CONCLUSION

The patients were treated with three types of *ksharsutra* under all aseptic conditions and necessary precautions. Patients showed different results in cutting and healing process in three groups. The results observed indicate that *ksharsutra* made of *Rasanjan* is better in curing bleeding and pain complications. Relief in fullness of rectum is best observed with the use of *ksharsutra* coated with *Haridra*. Healing is fast observed in the cases treated with *ksharsutra* made of *Rasanjan* whereas cutting is fast observed in *Hartal* coated *ksharsutra*.

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