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MANAGEMENT OF SECOND AND THIRD DEGREE HAEMORRHOIDS WITH *KSHARSUTRA* -A PILOT STUDY

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ABSTRACT

Innovations in the field of *Arsha* treatment have centred on modifying the traditional methods to achieve a minimally invasive, less painful procedure and yet with a more sustainable result. *Ksharsutra* ligation in *arsha* is one of the traditional procedures described in *Ayurveda* for the management of *Arsha*. Lifestyle related factors are mainly thought to be cause of increasing prevalence of haemorrhoids (*Arsha*)[1] In modern management Haemorrhoidectomy is most commonly employed technique which is a painful, aggressive and more invasive procedure with less satisfaction and high risk of recurrence. *Aacharya charaka* has advised *ksharkarma* for the management of *Arsha*[2]. *Chakradatta*, the commentator of *Sushrut samhita* also mentioned indication of *ksharsutra* ligation in *arsha*. Keeping these aspects in mind present pilot study was conducted in Dept. of Shalyatantra, Shri Ayurveda College, Nagpur to find the clinical efficacy of *ksharsutra* in the management of *Arsha*. **Methodology**: Total 15 patients diagnosed as *Arsha* were subjected for this study. *Kshara sutra* was ligated in *Arsha (*second and third degree haemorrhoid) as per the standard protocol and follow up was taken weekly upto 3 weeks to access the efficacy of the treatment. **Results***:* This study revealed significant result of the *kshara sutra* ligation in *Arsha* in terms of reduction of pain, per rectal bleeding, haemorrhoidal mass and mucous discharge. **Conclusion**: It can be concluded that *ksharsutra* ligation is an effective, less invasive, less expensive and better option for the management of *Arsha*.

KEYWORDS: *Arsha*, *ksharsutra* ligation, *Ayurveda*, Haemorrhoids, Haemorrhoidectomy.

INTRODUCTION

The disease *Arsha* has become very common in modern world due to current lifestyle, sedentary habits and unwholesome diet. *Arsha* is one amongst the 8 grave diseases mentioned by *Sushruta* under the banner *Ashta mahagada*.[3] It is a disease which tortures the patient or which gives the patient trouble/pain, just like an enemy.[4] According to *Charaka, Arsha* is a *Adhimamsa vikara* caused due to vitiation of *mamsa dhatu* leading to *sirashaithilya* (loss of venous tension).[5]

Arsha can be correlated with Haemorrhoids in modern sciences as per the features and description mentioned in *Ayurveda*. Haemorrhoids are one of the common ano rectal condition faced by the human worldwide. It was previously supposed that this disease is common in economically developed communities but nowadays the numbers of cases are rapidly increasing among Indian people too because of altered dietary habits and life style.

The true prevalence in the general population is still not well understood, partially because many patients feel embarrassed and hesitate to tell the problem to the doctor and do not seek medical advice. Haemorrhoids occur in almost every person; gradually become large and cause problems in only 4% of general population and prevalence peaks in people at the age of 50 years.[6] Males are more susceptible to develop haemorrhoids as compared to female and the ratio is 2:1 respectively.[7]

Haemorrhoids are abnormal swelling or enlargement of the anal vascular cushions which are positioned at the 3, 7, and 11 o'clock with the patient in lithotomy position. When these cushions become abnormally enlarged, they can cause symptoms and become pathological, called haemorrhoids. Thus, Haemorrhoids are defined as the dilated veins within the anal canal in sub epithelial region formed by radicals of the superior, middle and inferior rectal veins.[8] It is the abnormal dilatation and distortion of the vascular channel, together with destructive changes in the supporting connective tissue within the anal cushion.[9] It is an inflammatory reaction[10] and vascular hyperplasia.[11,12]

Depending upon the location, haemorrhoids are classified as Internal haemorrhoids (above the dentate line, covered with mucous membrane), External haemorrhoids (at anal verge, covered with skin), Interno-external (both varieties together).[13] Internal haemorrhoids are again classified into 4 degrees as per extend of prolapse. First degree, haemorrhoids remain within anus and bleed but do not prolapse. Second degree haemorrhoids prolapse through the

anus on straining during defecation but reduce spontaneously. Third degree, haemorrhoids prolapse through anus during defecation, but require digital reduction. Fourth degree haemorrhoids remain persistently prolapsed.[14]

For decades, various treatment modalities have been added in the management of Haemorrhoids, but still the question of the optimal treatment technique remains unanswered. In modern sciences, measures for the management of haemorrhoids include conservative medical management, non-surgical treatments and various surgical techniques. Radical technique like excisional haemorrhoidectomy is inherently more painful and aggressive treatment, but still, it is routinely and frequently accepted treatment modality for Haemorrhoids.

Under the domain of Shalya Tantra in Ayurveda, the procedures are mainly classified as *Shastrakarma* and *Anushashtrakarma. Anushastra* are minimal invasive surgical techniques or *parasurgical* procedures which comprises as *Ksharkarma, Agnikarma* and *Raktamokshan. Anushastrakarma* has its own importance as it can be used in the absence of the surgical instruments, or when surgery cannot be performed, or when patient is unfit to undergo surgery, or when patient is not willing for surgical procedure.

Ayurveda offers a distinct treatment for ano-rectal disorders. *Ayurveda* recommends a variety of comprehensive treatment for the management of *Arsha* ranging from diet and lifestyle changes to parasurgical and surgical procedures. *Acharya Susruta* has mentioned fourfold line of treatment for *Arsha* i.e. *bheshaja* (oral therapy), *kshara* (*kshara patana* and *kshara sutra* application), *agni karma* (cauterization) and *shashtra karma* (surgical removal).[15] Among these, *ksharasutra* has been considered a measure which is minimal invasive having less complications. *Sushruta* has advised *ksharasutra ligation* in weak, feeble, fearful, and difficult to treat patients. In today's scenario these indications are very common. Therefore *ksharasutra* is a better intervention for treating *arsha.*

Application of *ksharsutra* described by *Chakrapani* in his commentary *Chakradatta* in *Arshobhagandhara chikitsa,* also references of *Ksharsutra* are found in *Bhaishajya Ratnawali for* treating *arsha.*[16] *Standard Ksharasutra is* a medicated thread prepared with *Apamarg Kshara which acts by its properties like Chedana* (Excision), *Bhedana* (Incision), *Shodana* (purification), *Lekhana* (scarping) and *Ropana* (healing).[17] Due to these properties, *ksharasutra* ligation at the neck of pile mass helps to shed off the pile mass. Ligating the

pedicle of pile mass reduces the local blood circulation gradually leading to the ischaemic necrosis which ultimately helps to slough out the pile mass.[18]

MATERIALS

Material used for *ksharsutra* preparation were:

Snuhi kshir (Latex of *Euphorbia nerifolia* Linn.),

Apamarga kshar (Ash of Achyranthus *aspera* Linn.),

Turmeric powder (*Curcuma longa* Linn.) and

Surgical Barbour's linen thread size 20 number.[19]

OBJECTIVES

1. To Study the efficacy of *Ksharsutra* ligation for regression of pile mass.
2. To study the efficacy of post-operative pain in *Ksharsutra* ligation.

MATERIAL AND METHODOLOGY

This pilot study was undertaken in dept. of *Shalyatantra* OPD and IPD, Shri Ayurveda College Nagpur. Well diagnosed 15 patients of *Arsha* were selected for the study. *Kshar sutra* was ligated in all patients in second- and third-degree haemorrhoid.

CRITERIA FOR INCLUSION OF PATIENT

1. Patients of age group above 18 years.
2. Patients having internal piles of 2nd and 3rddegree.
3. Patients fit for anesthesia and surgery.
4. Selection will be irrespective of gender, religion, education and socio-economic status.

CRITERIA FOR EXCLUSION OF PATIENT

1. Uncontrolled systemic diseases like DM, HTN etc.
2. Carcinoma rectum.
3. Portal Hypertension.
4. Immuno-compromised diseases.
5. 1st degree piles, 4th degree piles, inflamed piles, complete rectal prolapse, Thrombosed piles.

PROCEDURE OF PREPARATION OF *KSHARSUTRA*

The *Ksharasutra* used in this pilot study were prepared in department of *Shalyatantra*, Shri Ayurved College, as per guidelines mentioned by Ayurveda Pharmacopeia of India (API).

The Linen Barbour thread No. 20 is autoclaved and mounted in specially designed frame with hangers. Materials that are used in the preparation of *Ksharsutra* are smeared on the thread in the form of 21 coatings. Mainly three steps are involved in the preparation of *Ksharsutra*.

Firstly 11 coatings of *Snuhi kshir* were smeared on the thread. The frames were kept in *Ksharsutra* cabinet to dry. The second smearing on thread was given when the previous coatings were dried. This step was repeated for eleven times in the same manner in uniform coating. The frames were placed in the cabinet again for drying after each smearing. The second step consist of 7 coatings with *Snuhi kshir* and *Apamarga Kshar*. This step was repeated for seven times only when the previous coating gets completely dried. The final step includes the 3 coatings of *Haridra Churna* with *Snuhi Kshir*. These coatings were done in the same manner as previous coating of *Apamarga Kshar,* and *Haridra powder* was replaced with *Apamarga Kshar*. Then *Ksharsutra* was sterilized by using the Ultra-violet rays in the cabinet. After finishing 21 coatings, threads were dried and sterilized in the *Ksharsutra* cabinet where hot air was blown and were preserved for use.

INVESTIGATION

Complete blood count (CBC), Bleeding time (BT), Clotting time (CT), Urine routine and microscopic, Blood sugar level (Fasting and Post meal/ Random), HIV, HBsAg, SGPT, ECG, X-Ray of chest PA.

PRE-OPERATIVE

Informed written consent for surgery and anaesthesia, Proctoclysis enema at night and next morning 3hrs before surgery, NBM 8 hrs. before procedure, Injection TT 0.5 ml IM stat, Bupivacaine Sensitivity Test, Parts preparation, Physician opinion for Fitness.

Antibiotics Administration: Third Generation antibiotics (Cephalosporin) by Intravenous route 12 hourly.

OPERATIVE PROCEDURE

Under all aseptic precaution and under spinal anaesthesia, lithotomy position was given. Painting and draping were done. The haemorrhoidal masses and their positions identified by a thorough proctoscopic examination. Gentle digital anal stretching of about four finger was done. The main pile mass was hold with pile holding forceps at respective positions and retracted outwards. The pile masses was crushed until it becomes like a thinned-out shape.

Then the pile mass was transfixed and ligated at its pedicle above the pectinate line by round body curved needle loaded with the *Apamarga Ksharsutra*. The base of pile mass was crushed by artery forcep. In case of externo-internal 3rd degree haemorrhoid incision was taken at mucocutaneous junction and then transfixation was done. Haemostasis was ensured. Gauze soaked in lignocaine jelly and betadine were placed inside the anal canal and dressing will be done.

POSTOPERATIVE PROCEDURE

1. NBM for 6 hrs.
2. Light diet was allowed by the evening.
3. *Trifalachoorna* at night will be administered with *koshnajala* i.e. Luke warm water.
4. Sitz bath with warm water was advised from next day.
5. Duration of treatment: Three doses of third generation antibiotics i.e., Cephalosporins by intravenous route 12 hourly were administered at post op period. Follow up treatment: Oral Antibiotics (third generation) was given.

CRITERIA FOR ASSESSMENT

The patients were assessed on the subjective and objective parameter & the relevant data was collected for analysis.

SUBJECTIVE CRITERIA

1. *Raktasrava* (Per Rectal Bleeding)
2. *Shula*(Pain)

OBJECTIVE CRITERIA

3. Degree of pile mass
4. Discharge

Table no. 01: Showing Assessment Criteria.

Sr. No.	Assessment parameters	Assessment criteria	Grading
1	**Per Rectal Bleeding**	No bleeding	**0**
		Bleeding during defecation up to 10 drops.	**1**
		Bleeding during defecation 10 to 20 drops	**2**
		Splash in a pan	**3**
2	**Pain**	No pain	**0**
		Mild Pain (Annoying interfering in daily activities) which last for 1 after defaecation.	**1**

		Moderate pain (Interferes significantly with regular activities) which last for 1 to 3 hrs.	**2**
		Severe pain (Disabling unable to perform daily activities) more than 3 hrs.	**3**
3	**Degree of regression of pile mass**	Complete disappearance	**0**
		1st degree piles	**1**
		2nd degree piles	**2**
		3rd degree piles	**3**
4	**Discharge**	Absent	**0**
		Discharge at the time of defaecation	**1**
		Scanty discharge (2 to 3 drops)	**2**
		Profuse discharge (soakage of 1 pad in a day)	**3**

Fig 01: ligation of pile mass with ksharsutra

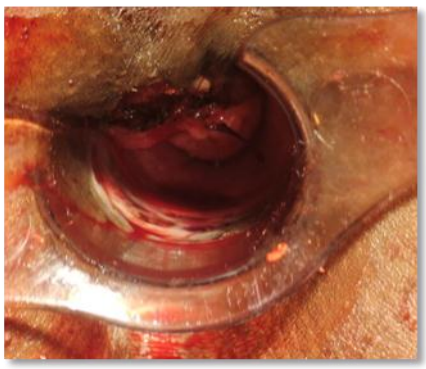

Fig 02: sloughed out pile mass

Fig 03: Follow up on 7th day

Fig 04: Follow up on 14th day

OBSERVATIONS AND RESULTS

Observations are stated below as per the data analysis.

Table No.02: Age and Sex distribution of study population.

Age in years	Male		Female	
	N	%	N	%
21 – 40	6	60.0	1	33.33
41 - 60	4	33.33	1	33.33
61 – 80	2	16.67	1	33.33
Mean Age	51.33 ± 24.54 (22 - 65)		40.16 ± 14.68 (26 - 75)	

Table No.03: Occupation wise distribution.

Occupation	No. of patients	Percentage
Housewife	2	13.33
Farmer	1	6.67
Skilled worker	3	20.0
Unskilled worker	6	40.0
Service	3	20.0

Table No.04: Addiction.

Addiction	No. of patients	Percentage
YES	9	60.0
NO	6	40.0

Table No.05: Comparison of follow up at different time periods.

	Per rectal bleeding	Pain	Regression in pile mass	Discharge
Follow up	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD
BT	2.0 ± 0.65	2.4 ± 0.50	2.0 ±0.75	0.93 ± 0.70
3rd day	1.53 ± 0.83	1.93 ± 0.70	1.60 ± 0.50	0.26 ± 0.45
7th day	0.83 ± 0.67	1.33± 0.61	1.13 ± 0.64	0.13 ± 0.35
14th day	0.40 ± 0.50	1.0 ± 0.53	0.73 ± 0.45	0.13 ± 0.35
21st day	0.20 ± 0.41	0.26 ± 0.45	0.33 ± 0.48	0.06 ± 0.25
F-value	40.84	69.86	46.81	17.01
p-value	<0.0001,HS	<0.0001,HS	<0.0001,HS	<0.0001,HS

Table No. 06: Effect of treatment on study parameters at different follow up period.

	Comparison	Mean difference	% effect	Z-value	p-value
Per rectal bleeding	BT vs 3rd day	0.46	23.5	2.646	0.0082, HS
	BT vs 7th day	1.2	58.5	3.542	0.0004, HS
	BT vs 14th day	1.6	80	3.482	0.0005, HS
	BT vs 21st day	1.8	90	3.460	0.0005, HS
Pain	BT vs 3rd day	0.46	19.58	2.646	0.0082, HS
	BT vs 7th day	1.06	44.58	3.771	0.0002, HS
	BT vs 14th day	1.4	58.33	3.535	0.0004, HS
	BT vs 21st day	2.13	89.16	3.573	0.0004, HS
Regression in pile mass	BT vs 3rd day	0.40	20	2.449	0.0143, HS
	BT vs 7th day	0.86	43.5	3.413	0.0006, HS
	BT vs 14th day	1.26	63.5	3.480	0.0005, HS
	BT vs 21st day	1.67	83.5	3.493	0.0005, HS
Discharge	BT vs 3rd day	0.67	72.04	3.162	0.0016, HS
	BT vs 7th day	0.80	86.02	3.276	0.0011, HS
	BT vs 14th day	0.80	86.02	3.106	0.0019, HS
	BT vs 21st day	0.86	93.54	3.244	0.0012, HS

(S=Significant, HS= highly significant, NS=Not significant)

As per statistical analysis, it was observed that the incidence rate of second and third degree haemorrhoid was more in 21 – 50 years of age group (60%). Also, males were more prone to

this disease (51.33%). The incidence of occurrence of haemorrhoids was more in patients who were labourers and performing strenuous work. In the present study, assessment was done on 0^{th} 3^{rd} 7^{th} 14^{th} 21^{st} day to find out the efficacy of *Ksharsutra* ligation in pile mass regression and post-operative pain. In this study subjective parameters were Per Rectal Bleeding and Pain**.** Objectives parameters were Degree of regression of pile mass and Discharge. Herein, the regression of haemorrhoidal mass was observed after surgery within 21 days which was statistically highly significant (P<0.0001). Pain was significantly relieved post operatively (P<0.0001) within 21 days of follow up. Haemorrhoidal mass was completely reduced post operatively (P<0.0001) by the end of 21 days also Per rectal bleeding was completely stopped (P<0.0001). There was no discharge post operatively (P<0.0001).

DISCUSSION

- *Ksharsutra* is indicated for ligation of *arsha* in ayurveda which is still relevant in the present era.
- *Ksharsutra* ligation is less invasive method as compared to haemorrhoidectomy with minimal chances of recurrence and complications.
- In the present study male patients were affected more than female patients. As far as age was concerned, the occurrence of haemorrhoids was more common in age group 21-40 years. This was due to compromised life style, work stress and career as well as the changed dietary habits which leads to less fibrous diet and which in turn leads to constipation and finally resulted into hemorrhoids
- *Kshara* in the *ksharsutra* has anti-inflammatory and anti-microbial activity and it causes chemical cauterization of tissue by virtue of its alkaline nature which facilitates cutting and healing.[20]
- *Ksharsutra* being alkaline in nature (pH-10.3) restricts the growth of bacteria at the site of ligation of haemorrhoidal mass.
- This cutting is presumed by local action of *Kshara*, *snuhi* and mechanical pressure of tight *Ksharsutra* knot during initial 1 to 2 days of its application which followed by healing in rest of the 5 to 6 days.
- The reaction of caustics minimized by *Curcuma longa* or turmeric powder and helped for healing.[21] action of turmeric powder provides the effect of bactericidal action with healing properties.

- *Ksharsutra* has combined effect of these three herbal drugs (*Apamarga Kshara*, *Snuhi kshir and* turmeric) and hence proved as a unique drug formulation for the cutting of haemorrhoidal mass as well as healing of wound.
- In this case there was no post-operative hemorrhage and recurrence after *Ksharasutra* ligation.

CONCLUSION

As per the analysis of statistical data, it is concluded that the ancient technique of *ksharsutra* ligation of haemorrhoid mentioned in different ***A****yurveda* literature reduces post operative pain along with reduction in degree of haemorrhoidal mass, per rectal bleeding and discharge. Hence considering overall effects it can be concluded that *ksharsutra* ligation in haemorrhoid proves the better operative procedure. There is no any adverse effect seen with the ligation of haemorrhoidal mass with *ksharsutra* in second and third degree haemorrhoids.

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