

Clinical Research

Comparative clinical evaluation of *Kshara Sutra* ligation and hemorrhoidectomy in *Arsha* (hemorrhoids)Meva Lal Gupta¹, S. K. Gupta², Chaturbhuja Bhuyan³¹M.S.(Ayu.) Speciality: Shalya Tantra, ²Associate Professor, ³Ex.Head, Department of Shalya Tantra, Institute for Post Graduate Teaching and Research in Ayurveda, Gujarat Ayurved University, Jamnagar, Gujarat, India

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Abstract

Arsha (hemorrhoids) is engorgement of the hemorrhoidal venous plexus, characterized by bleeding per rectum, constipation, pain, prolapse and discharge. It is manifested due to improper diet, prolonged standing and faulty habits of defecation causing derangement of *tridosha*, mainly *vata dosha*. Vitiating *dosha* localizes in *guda vali*, *pradhana dhamani* and *mandhara kala* and vitiates *twak*, *mansa*, *meda* and *rakta*, resulting in the *annavaha sroto dushti*. Modern management of *arsha* needs, mainly, a surgical approach, i.e. hemorrhoidectomy, wherein the result was found to be less satisfactory. In this regard, to determine a solution for satisfactory cure, the *kshara sutra* ligation method in *arsha* was studied in comparison with hemorrhoidectomy. *Kshara sutra* ligation in *arsha* was employed in 35 patients, and 26 patients were dealt with hemorrhoidectomy. The study revealed a better result of the *kshara sutra* ligation-treated group in comparison with hemorrhoidectomy. The observations revealed that maximum advantages like minimum hospital stay, no bleeding during or after operation, no post-operative anal stenosis, a low cost-effective and more acceptable to different categories of people, etc. were recorded in the *kshara sutra*-treated group. Statistically, *kshara sutra* ligation for *arsha* was found to be highly significant and effective management. No adverse effects were noted during the follow-up period.

Key words: *Arsha*, hemorrhoidectomy, hemorrhoids, *kshara sutra* ligation

Introduction

Ayurveda has immense potential to solve many challenging and unresolved problems of the medical world. *Shalya Chikitsa* is one of the most important branches of *ayurveda*, which has its own originality with authenticity, contributing to the modern surgical technology of today.

Sushruta Samhita is the only available text in surgical practice, and it has been opined that there are many diseases that are difficult to manage by conservative treatment alone. Among them, *arsha* (hemorrhoids) is one such grave disease, for which it has been included in *ashta mahagada*^[1] by *Sushruta*, showing the gravity of this disease. The present westernized lifestyle is adding to the prevalent rate of this disease. The incidence of this disease is showing augmentation with advancing age. At least 50% of the people over the age of 50 years have some degree of symptoms related to hemorrhoids.

Hemorrhoids are dealt rationally under the concept of *arsha*.

However, it includes some other fleshy masses like polyp, warts, etc. In *Sushruta Samhita*, the whole treatment is covered under four categories of treatment,^[2] i.e. *Bheshaj Chikitsa* (palliative treatment), *Kshara Karma* (potential cauterization agent therapy), *Agnikarma* (direct cauterization agent therapy) and *Shastra Karma* (operation by sharp instrument).

As far as the modern modalities are concerned, the conservative treatment of piles consists of use of laxative and high-residual diet. But, not more than 80% of the hemorrhoidal symptoms can usually be controlled by non-excision techniques.^[3] Other methods of treatments like sclerotherapy, rubber band ligation, infrared photocoagulation, laser therapy, Lord's dilatation, cryosurgery, hemorrhoidectomy,^[4] hemorrhoidal artery ligation under Doppler/ultrasonography and stapled hemorrhoidectomy, etc. are in practice. Despite a range of treatment modalities, the options are limited in concern with their effectiveness. There still exist controversies and lack of agreement on the treatment strategies.

Keeping in view authenticity, *shalya chikitsa*, i.e. parasurgery, has been selected. Under the heading of parasurgery, the *kshara karma* procedure, interpreted as "Potential Cauterization Application Therapy," is the specific field taken in the present research work. Under *kshara karma*,^[5] the *kshara sutra*^[6] treatment is found to be suitable and acceptable as compared with the prevalent methods in modern medical science.

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Hence, in the present research work, the efficacy of the *kshara sutra* ligation (K.S.L.) method and hemorrhoidectomy procedure in *arsha* were studied clinically and results were presented statistically.

Aims and objectives

- To study the clinical comparative effect of *kshara sutra* ligation with hemorrhoidectomy in *arsha* (hemorrhoids).

Materials and Methods

Apamarga *kshara sutra*

It is a standard *kshara sutra* used in this study. It contains 20 number barbour surgical linen thread, *snuhi* latex, *apamarga kshara* and turmeric powder. *Kshara sutras* were prepared under the standard guidelines given by I.C.M.R. in the *Shalya Tantra* Department, I.P.G.T. and R.A., Jamnagar, Gujarat.

Selection of patients

Patient, fulfilling the clinical criteria made for the diagnosis of hemorrhoids were randomly selected irrespective of their sex, religion, occupation, etc. from the OPD and IPD sections of the Department of *Shalya Chikitsa*, I.P.G.T. and R.A. Hospital, G.A.U., Jamnagar, Gujarat.

Inclusion criteria

Patients with age ranging from 10 to 80 years, having internal piles of 2nd, 3rd and 4th degree, were included in this study.

Exclusion criteria

Patients were excluded from study if they had pregnancy, Carcinoma rectum, hepatitis, heart diseases, 1st degree piles, tuberculosis, leprosy, inflamed piles, rectal prolapse, thrombosed piles, piles with fistula in ano and piles with ulcerative colitis.

Grouping

Group A: *Kshara sutra* ligation group.

Group B: Hemorrhoidectomy group.

Criteria of assessment

All the signs and symptoms were assigned a score depending on their severity to assess the effect of the procedure objectively. The following grading pattern was adopted for the scoring [Table1].

Methodology

Kshara Sutra ligation

Pre-operative

After taking written consent for operation, perianal hair was shaved and the part was painted with antiseptic solution 1 day earlier. The patient was kept nil orally for at least 6 h before the procedure. Soap water enema was given on the night prior to and 2 h prior to the procedure. Inj. tetanus toxoid (0.5 ml), I/M was given and xylocain sensitivity test was performed in each patient. On the night prior to the operation, the patient was given a light diet and, afterwards, kept nil orally.

Table 1: Criteria of assessment

Grade	Bleeding P/R*	Pain P/R	Constipation	Discharge P/R
0	No bleeding	Painless condition	Regular bowel evacuation	No discharge
1	Dropping	Dull pain and no requirement of medicine	Hard stool, once a day	Dropping
2	Syringing	Pain requires oral medication	Hard stool, after 2 days	Staining
3	Streaming	Unbearable pain, requires injectable drug	Hard stool after more than 2 days	Scanty

*P/R = per rectum

Operative procedure

After giving spinal anesthesia, the patient was positioned in lithotomy on the operation table. The part was painted with antiseptic solutions and draped. Positions of piles masses were assessed. Catch hold: The pile mass was held with the help of pile-holding forceps. Transfixation: Each pile mass was transfixed by passing the curved round body needle mounted with *kshara sutra* at its base. Ligation: After transfixation of *kshara sutra*, the pile mass was ligated anteriorly and posteriorly with adequate knots. The ligated and prolapsed pile masses were tried to push inside the rectum. Bleeding per rectum was observed to be nil. Finally, warm water irrigation was carried out followed by "T" bandaging. Then, the patient was shifted to the recovery room.^[7]

Post-operative

Patients were allowed to orally sip liquids after 6–8 h of operation and were gradually shifted to normal diets. Later, patients were advised for *avagaha sweda*^[8] with *sphatikadiyoga* (5 g/sitting) up to at least 10 min with maintenance of equal warm water. Daily dressing with irrigation of warm water and 10 ml *jatayadi taila* as *matra vasti* was given once till removal of all *kshara sutra*-ligated pile masses. After removal of all masses twice-daily application of adequate quantity of *jatyadi ghrita* with insertion of 05 ml *jatyadi taila* per rectum was continued till healing completed.

Hemorrhoidectomy

Pre-operative

Same as in *kshara sutra* ligation cases.

Operative procedure

The operation that was performed consisted of the following steps:

After giving spinal anesthesia, the patient was kept in a lithotomy position on the operation table. The part was painted with antiseptic solutions and draping was performed with a sterilized cut-sheet. Later on, the positions of various pile masses were assessed. Catch hold: The pile mass was held individually with artery forceps. Incision: A "V"-shaped incision on the perianal skin corresponding to the pile mass was made. Transfixation: Each pile mass was transfixed by passing the curved round body needle mounted with Barbour linen thread

at its bases. Ligation: After transfixation, the pile mass was ligated properly. Excision: One centimeter distal to the ligature, masses were excised and complete hemostasis was achieved. Application of betadine solution dressing and “T” bandage was performed. The patient was shifted to the recovery room.^[9]

Post-operative procedure

Patients were kept nil by mouth till 12 h and were administered suitable I/V fluids for 3 days. Appropriate administration of antibiotics and analgesics was continued for 5-7 days. Patients were advised to take warm water sitz bath three times/day from the 1st post-operative day onwards. Daily dressing was performed with betadine solution till the healing completed.

Observations and Results

Maximum numbers of patients (27.80%) were found from the middle age group (31-40) and from Hindu community (93.44%). Male predominance was found to be higher (96.27%). Occupation wise distribution was maximum having sedentary jobs (42.62%). Maximum patients found to have *Krura Koshtha* (70.49%). Socioeconomically 53.58% were from lower middle class. According to marital status; maximum were married (81.96%). Analysis of dwelling status of patients found that majority of them belonging to urban area. Maximum number of patients (70.49%) having constipated bowel habit [Table 2].

The shape of the pile mass is similar to *Karpasa Phala* in maximum number of patients (26.38%), the character of pile mass is *Snigdha / unctuous* found in maximum number of patients (95.08%). Pain in ano found in 31.15% and discharge

in 6.56% of patients. According to gradation of pile mass; 50.81% of patients having second degree pile mass. Per rectal bleeding in drop wise manner found in 45.90% and irregular per rectal bleeding found in 45.57% of patients. In total; 89.57% of registered patients have primary pile mass and 57.37% patients having normal sphincter tone [Table 3].

Effect of *Kshara Sutra* ligation on clinical features of *Arsha* such as per rectal bleeding, pain in ano and constipation showed highly significant results but no non-significant relief was found in pain in ano [Table 4].

In overall effect of therapy by *Ksharasutra* ligation therapy; 100% of patients got cured. But by hemorrhoidectomy therapy overall effect was seen as 11.54% patients got marked improvement, 30.77% got moderate improvement, 15.38% shown improvement only and maximum number of patients i.e. 42.31% have been reported as unchanged effect [Tables 5 and 6].

On comparison of cardinal symptoms in both groups; there was statistically highly significant decrease in bleeding per rectum, significant decrease in constipation and non significant decrease seen in pain in ano symptom in *Ksharasutra* ligation therapy compared with hemorrhoidectomy therapy [Tables 7-9].

Discussion

Maximum patients were of the middle age group [Table 2] because they were more active, enthusiastic and working hard to earn money for the family without giving much time to maintain personal health regimens, particularly diet. Male predominance was found to be higher in this study, which may be due to reporting of more male patients to the anorectal

Table 2: Personal history-wise distribution of 61 patients of Arsha

Personal history	%	Personal history	%
Age (31-40 years)	27.80	<i>Koshtha (Krura)</i>	70.49
Sex (male)	96.27	Socioeconomic status (lower middle)	53.58
Religion (Hindu)	93.44	Marital status (married)	81.96
Occupation (sedentary job)	42.62	Habitat (urban)	57.37
Dietary habit (improper)	80.43	Constipation	70.49

Table 3: Particulars related to disease

Particulars	%
Similar to <i>Karpasa phala</i>	26.38
<i>Snigdha/unctuous</i>	95.08
Pain	31.15
Discharge	6.56
Second-degree pile mass	50.81
Bleeding in dropping manner	45.90
Irregular bleeding	47.57
Primary piles	89.57
Sphincter tone (normal)	57.37

Table 4: Effect of Kshara Sutra ligation on clinical feature of Arsha: n = 35

Symptoms	BT	AT	MD	%	±SD	±SE	't'	'P'
Bleeding per rectum	1.542	0	1.542	100	0.8520	0.144	10.71	<0.001
Pain in ano	0.846	0	0.314	100	0.471	0.079	3.94	<0.001
Constipation	0.857	0	0.8571	100	0.7333	0.123	6.914	<0.001

Table 5: Effect of hemorrhoidectomy on the clinical features of Arsha: n = 26

Symptoms	BT	AT	MD	%	±SD	±SE	't'	'P'
Bleeding per rectum	1.807	1.423	0.384	21	0.571	0.111	3.43	<0.01
Pain in ano	1.0	0.192	0.115	11.53	0.325	0.063	1.81	>0.5
Constipation	0.807	0.481	0.346	42.8	0.485	0.095	3.62	<0.01

Table 6: Effect of therapy in *Kshara Sutra* ligation Group A and hemorrhoidectomy Group B

Total effect	Group A		Group B	
	No. of patients	%	No. of patients	%
Cured	35	100	0	0
Marked improved	0	0	3	11.54
Moderate improved	0	0	8	30.77
Improved	0	0	4	15.38
Unchanged	0	0	11	42.31

Table 7: Comparative effect of treatment on cardinal symptoms in both groups

Symptoms	N	Group A mean \pm SEM	Group B mean \pm SEM	t	%	P
Bleeding per rectum	58	1.543 \pm 0.144	0.385 \pm 0.112	5.996	\uparrow 75	<0.001
Pain in ano	57	0.314 \pm 0.079	0.115 \pm 0.063	1.848	\uparrow 63	>0.05
Constipation	43	0.857 \pm 0.124	0.346 \pm 0.097	3.08	\uparrow 60	<0.01

Table 8: Average time taken for removal of the KSL mass in group-A and group-B

Removal of pile mass	Group A (no. of days)	Group B (no. of days)
Average days	3.2	14.3

clinic (A.R.C). It was observed that female patients did not agree for operation easily due to dependency on others and more family commitments. The people from the lower middle class were found to be more prone to this disease due to their unawareness regarding the food and disease. Excessive smoking and tobacco consumption may be the one cause for producing loss of appetite thus leading to improper digestion and constipation, which is the main cause of *arsha*.

The nature of work plays an important role in the formation of *arsha*. The people with sedentary jobs are more susceptible for this disease because the type of work lead to improper digestion, resulting in improper bowel clearance and always creates pressure on the anal region by sitting for a long time in one posture. Jobs that require standing for long periods also create pressure on the hemorrhoidal veins and lead to the formation of *arsha*. In the *krura koshtha* patient, evacuation of *mala* is always difficult, and this leads to accumulation of fecal matter in the rectum, which in turn creates pressure on the valveless rectal veins and, ultimately, manifests as *arsha*. Maximum incidences of *karpasaphala* and *kadamba* shapes of pile masses indicate the predominance of *vata dosha*. Maximum pile masses had a *snigdha* (glossy) character, which suggested the predominance of *kapha dosha*. Syringing and streaming types of bleeding per rectum showed greater engorgement of the hemorrhoidal plexus, referring to *pitta dosha*.

Probable mode of action

As per the analytical study, linen thread supports the strength of ligation while the *snuhi* latex acts as a binding agent, having almost all the *apamarga kshara* properties intact, which in fact liberates many fold of medicament having surgical actions like incision, excision debridement, scrapping and medical action like hemostatic, antiseptic, healing, etc., which act simultaneously to cure the *arsha*. According to research work, it is viewed that seven coatings of *apamarga kshara* on *kshara sutra* cauterize the

Table 9: Size-wise removal of pile masses in both groups

Size (inch)	GroupA (no. of days)	Grou -B (no. of days)
<1/2	2.4	12
<1	3.6	13.7
>1	5.1	15.6

tissue of the ligated masses indirectly by its *ksharana guna*^[10] (corrosive properties). The action of turmeric powder provides the effect of bactericidal action with healing properties. All these three drugs do not contradict each other in their actions but rather support them by equal and desirable effects. *Apamarga kshara sutra* has the ability to perform incision with excision slowly by virtue of its control chemical cauterizing action. This has a controlled chemical cauterizing action on living tissue for destruction of the pile mass without producing any other injury if ligated by skilled persons.

The mode of action of *kshara sutra* starts immediately after contact with the tissue. *Kshara* invades into the cells of the lesion till the engorged tissue of the mass destruction occurs or up to the removal of the pile masses. During the cutting effect, there may be oozing of blood, which is ceased by the sclerosing effect of the *kshara* by its coagulating property of protein. Hence, there was no chance of bleeding during cutting of the mass. The chance of infection is least due to the sustained action of the antiinfectives of *kshara*. The pressure effect made by the *kshara sutra* ligation creates mechanical strangulation of the blood vessels and tissue, which in fact causes the local necrosis of pile mass and, ultimately, forces falling out of the pile mass during defecation.

Conclusion

Kshara sutra ligation procedure can be conducted at OPD level, takes less time and, if the patient has any associated systemic disorder, then the procedure can still be performed with proper prophylactic measures. It is an ambulatory procedure; no primary and reactionary heamorrhage is caused. It requires less duration for completing the treatment. The patient can perform his/her daily routine work from the next

day after the surgery. Antibiotic and anti-inflammatory drugs requirement are quite less. In the post-operative period, the patient feels less pain because no anal pack is required. After separation of the mass, the wound heals quickly and smoothly. It takes less hospitalization time and there is least possibility of recurrence. All pile masses; both primary as well as secondary can be ligated at one sitting. It needs minimal expenditure and can be performed under local anesthesia. There is no adverse effect during the post-operative period, like anal stenosis/ stricture, incontinence, bowel irregularities, etc. *Kshara sutra* ligation treatment is much more beneficial in comparison with hemorrhoidectomy at maximum point. It can be concluded that kshara sutra ligation is a standard surgical treatment modality in the 2nd, 3rd and 4th degrees of arsha (hemorrhoids), which is a low, cost-effective and affordable treatment for all classes of people in the society.

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हिन्दी सारांश

अर्श चिकित्सा में क्षारसूत्र पद्धति और आधुनिक अर्शाकुरनिर्हरण चिकित्सा का तुलनात्मक अध्ययन

मेवा लाल गुप्ता, एस. के. गुप्ता, चतुर्भूज भुयॉ

अर्श अपने प्रत्यात्म लक्षण जैसे गुदा से रक्त स्राव, विबन्ध आदि लक्षणों से जाना जाता है। यह व्याधि उचित ढंग से भोजन न लेने, ज्यादा समय तक खड़ा रहने और गलत ढंग से बैठकर मलत्याग करने से प्रकट होती है। यह त्रिदोषज व्याधि है, लेकिन मुख्य रूप से इसमें वात दोष की प्रधानता होती है। दोष और दूष्य की असामानता होने से दोष प्रधान धमनी और मांसधराकला को प्राप्त करते हुए गुदवली में स्थित हो कर अर्श उत्पन्न करता है। अर्श आधुनिक विज्ञान में कहे हुए हिमोराएड के समान है। अर्श या हिमोराएड की उचित चिकित्सा शस्त्रकर्म है, जो कि प्रचलित विधि हिमोराएडेक्टोमी से किया जाता है, लेकिन इसका परिणाम सन्तोषजनक नहीं है। अर्श की चिकित्सा के लिए लगातार नई खोज की जा रही हैं। इसी सम्बन्ध में सम्पूर्ण आरोग्य प्रदान करने वाली आयुर्वेद की शल्य चिकित्सा में एक विधि क्षारसूत्र चिकित्सा है। कुल २६ रोगियों में हिमोराएडेक्टोमी और ३५ रोगियों में क्षारसूत्र चिकित्सा का तुलनात्मक अध्ययन किया गया। अध्ययन के परिणाम स्वरूप क्षारसूत्र चिकित्सा कम खर्च वाली तथा सभी वर्ग के लोगों के लिए प्रभावी चिकित्सा पायी गयी है। सांख्यिकी की दृष्टि से भी क्षारसूत्र चिकित्सा अर्श की प्रभावी चिकित्सा सिद्ध हुई है एवं इसका कोई भी प्रतिकूल प्रभाव नहीं देखा गया।