

COMPARATIVE STUDY OF SUNHI KSHARA SUTRA AND UDUMBARA KSHARA SUTRA IN THE MANAGEMENT OF BHAGANDARA W.S.R. TO LOW ANAL FISTULA

Dr. Kedarnath Pandey 1, Dr. Ravi Gaur 2 Dr. Nidhi Shree Bhibhuti 3, Dr. Amit Mishra 4

1. PG Scholar, Department Shalya Tantra VYDS Ayurveda Mahavidyalaya, Khurja
2. PG Scholar, Department Shalya Tantra VYDS Ayurveda Mahavidyalaya, Khurja
3. Assistant Professor, PG Department of Shalya Tantra, VYDS, Khurja
4. Professor, PG Department of Shalya Tantra, VYDS, Khurja

ABSTRACT

Introduction- An anal fistula is an abnormal track with an external opening in the perianal region and an internal opening in the anal canal or rectum. The inner wall of the fistula does not allow for spontaneous healing, leading to the development of fibrous tissue and a pyogenic membrane. Modern surgical and medical treatments for anal fistula have certain drawbacks and high recurrence rates.

Aims and Objective of study- The study aims to compare the efficacy of Snuhi Kshar Sutra and Udumbar Kshar Sutra in the management of Bhagandar and assess their potential for reducing recurrence rates.

Material and methods- Total 30 patients suffering from Bhagandar who fulfilling inclusive and exclusive criteria were taken for this study and randomly divided in two groups, Group A- 15 patients treated with Snuhi Kshar and Group B - 15 patients were treated with Udumbar Kshar Sutra. **Results-** In Group A marked improvement seen in 11 pts. i.e. 73.33%, moderate improvement seen in 03 pts. i.e. 20% and mild improvement seen in 01 pt. i.e. 6.66% and in Group B marked improvement seen in 11 pts. i.e. 73.33%, moderate improvement seen in 01 pts. i.e. 6.66% and mild improvement only seen in 03 pt. i.e. 20%. **Discussion-** discussion was done with logical explanation on various issues like ayurvedic and Modern aspects of the disease and its management, Kshara Sutra, Observations, Results and Probable Mechanism of action of Kshara Sutra and Adjuvant drugs

Keywords: Sadyo Vrana, Traumatic wound, Jatyadi ghrita, Karpoor Ghrita,

INTRODUCTION-

Ayurveda, an ancient science, has a branch called Shalya Tantra that focuses on surgical disorders. Sushruta, an ancient surgeon and the father of surgery, made significant contributions to this field. His work, Sushruta Samhita, is considered one of the earliest authoritative treatises on Ayurveda. Sushruta

described various surgical and para-surgical measures for the treatment of anorectal diseases, including Bhagandar.

The term "fistula" [1] is derived from a Latin word that refers to a reed, pipe, or flute. In the context of medical terminology, it signifies a chronic granulating tract that connects two epithelial-lined surfaces. These surfaces can be either cutaneous (related to the skin) or mucosal (related to the mucous membrane). An anal fistula specifically refers to a single tract that has an external opening in the skin of the perianal region and an internal opening in the modified skin or mucosa of the anal canal or rectum.

In Ayurvedic literature, the disease of fistula is described in various texts, but Acharya Sushruta, considered the father of surgery in Ayurveda, provides comprehensive details about Bhagandar,[2] which is the Ayurvedic term for anal fistula. Bhagandar has been a known ailment among human beings since the period of Vedas, Puranas and Samhitas, including Bruhatrayees and Laghutryees, contain evidence regarding the existence and treatment of this disease. It is worth noting that the incidence of a fistula-in-ano developing from an anal abscess ranges from 26% to 38%.[3] Ayurved has a special approach to fistula management.

All Anal fistulas react well to different forms of Kshar and Kshar Sutra therapy. They are nothing but the medicated seton. The thread's mechanical action and the chemical action of drugs coated on the thread work jointly to cut, cure, drain and clean the fistulous tract, thereby promoting track/ wound healing. Snuhi Kshar Sutra and Udumbar Kshar Sutra used for the treatment of Bhagandar. Snuhi Kshar Sutra is easy to process. Snuhi Ksheer is Bhagandarnashak as per Acharya Sushrut. [4] Udumbar Sutra which was founded by Prof. P.J Deshpande and M.K Jalan in 1984. [5] Udumbar is one among the Nyagradhadi Gana Dravya mentioned by Acharya Sushrut. [6] He explained in Bhagandar Chikitsa that the Nyagradhadi Gana Dravyas are Bhagandarnashak. [7]

Need For the Study- The day today lifestyle of an individual became more and more faster. For presenting this lifestyle individuals are adopting so many habits which are harmful to the health causing many ano-rectal diseases. In modern aids, treatment of Fistula in ano includes various methods of surgical interventions including fistulotomy, fistulectomy etc. But these surgical procedures have very high recurrence rate. [8,9] The signs and symptoms of fistula-in-ano closely related with the disease Bhagandar told by Acharya sushrut. The disease Bhagandar is one of Ashta Mahagada [10] stated by the Acharya Sushrut. In Shalya Tantra Bhagandar Chikitsa is told in modes of Sanshodhan, Lepa, Langhan, Shastra and Kshara. [11] In compare to modern surgical techniques for fistula in Ano, Kshara Sutra is easy and more effective to in the treatment of Bhagandar (fistula in Ano) and less chance to recurrence. For the present study Snuhi Kshar Sutra and Udumbar Kshar

Sutra used for the treatment. Efficacy of both the Yogas will be compared in this present study.

AIMS AND OBJECTIVE OF THE STUDY-

Aims of the study

- ❖ Study is aimed to find the efficacy of Snuhi Kshar Sutra and Udumbar Kshar Sutra in the management of Bhagandar
- ❖ To reduce the recurrancy rate of Fistula (Bhangandar).
- ❖ To help in wound healing in much faster rate and cost effective too.

Objectives of the study

- ❖ To evaluate the efficacy of Snuhi Kshar Sutra in the management of Bhagandar.
- ❖ To evaluate the efficacy of Udumbar Kshar Sutra in the management of Bhagandar.
- ❖ To compare the efficacy of Snuhi Kshar Sutra and Udumbar Kshar Sutra in the management of Bhaganadar

MATERIALS AND METHODS-

MATERIALS

source of data - 30 Patients were selected from the OPD & IPD of Shalya Tantra, at Vaidya Yagya Dutt Sharma Ayurved Mahavidyalaya Khurja, Uttar Pradesh.

source of literature The details of the literature of Bhagandar and Fistula – in – ano were incorporated in a great detail from the Samhitas and other Ayurvedic & Modern reference Books.

source of drug -The Snuhi Kshar Sutra and Udumbar Kshar Sutra were prepared in Vaidya Yagya Dutt Sharma Ayurvedic Mahavidyalya as described classically.

required equipments

- Lithotomy table • Spot light Trolley for instruments • Kidney trays • Bowls • Methylene blue die
- sterile instruments
- Eshanee (Different lengths, sizes, straight and curved) • Proctoscope (Different sizes) • 10cc and 5 cc syringes • Sponge holding forceps • Artery forceps • Scissors • Gloves
- sterile dressing materials
- Gauze pieces • Cotton wools Pads • Jaatyaadi Taila • Antiseptic solutions like Betadine • Sprit • Hydrogen peroxide • Lignocaine gel

METHODS-

Grouping

Total 30 patients suffering from Bhagandar who fulfilling inclusive criteria were taken.

Group A- 15 patients suffering from Bhagandar were treated with Snuhi Kshar Sutra

Group B - 15 patients suffering from Bhagandar weretreated with Udumbar Kshar Sutra

Table no.1 showing treatment plan in the trail

Group A	15 patients	Snuhi kshar sutra
Group B	15 patients	Udumbar kshar sutra
Duration of treatment	Kshar Sutra will be changed once in a week in both the groups. Duration of the treatment depends on complete cut through of the track and assessment will be done weekly.	
Follow up	After cut through of fistula tract till wound healing.	

Method Of Preparation Of Snuhi Kshar Sutra And Udumbar Kshar Sutra

Drugs Required

- Snuhi (for Snuhi Kshar Sutra)
- Udumbar (for Udumbar Kshar sutra)
- Apamarg
- Haridra

These Ksharasutra were prepared with standard Ksharasutra preparation method.

COMMON GENERAL MANAGEMENT

The general management of the patients of both groups was done according to the following:

1. Ushnodaka Avagaaha with Panchavalkala Kwaatha: 100 ml mixed in luke warm water/ 3 timed a day.
2. Maatraa Basti with Jaatyaadi Taila: 5 ml b.d. after Avagaaha Swedana
3. Shigru Guggulu: 2 tabs. of 500 mg thrice a day.
4. Gandhaka Rasaayana: 2 tabs. of 500 mg twice a day.

STUDY DESIGN

Inclusion criteria for patients

- Patients irrespective of sex, occupation & economic status were taken for the study.
- Patients of age group between 20-60 years.
- Diagnosed cases of Low Level Fistula-in-Ano.

Exclusion criteria for patients

- Patients below the age of 20 & above 60 years.
- Patients having Fistula associated with Fissure-in-ano, Haemorrhoids, Pregnancy, were excluded.
- HIV, HbsAg, uncontrolled Diabetes, Tb, Malignancy, Ulcerative colitis, Crohn's disease were excluded
- Fistula with high level, fistula with multiple opening were excluded.

Diagnostic criteria

Diagnosis was done on the basis of complaints of patient, past history, history of associated disease, inspection, palpation, digital examination, proctoscopy and required investigations as per specially designed proforma.

INVESTIGATIONS

Following investigations were done before starting any procedure: Blood:

- Haemoglobin
- Total and differential leucocyte count
- ESR
- FBS and PPBS
- HIV
- HBsAg
- VDRL

Urine: • Routine and microscopic

Stool: • Ova and cysts

Other investigations (if required):

- X Ray Chest
- ECG
- Fistulography
- MRI Fistulogram
- Mantoux' test
- USG Abdomen and pelvis
- RFT
- LFT
- Lipid Profile
- Pus culture and sensitivity
- Biopsy of the tissue of the tract

APPLICATION OF KSHARA SOOTRA:

The application of Kshara Sootra was done under aseptic precaution and suitable anaesthesia.

Poorva Karma:

- ☐ Written informed consent of every patient was taken.
- ☐ Patient was kept nil by mouth six hours prior to procedure.
- ☐ Lignocaine sensitivity was checked.
- ☐ Inj. Tetanus Toxoid was given.
- ☐ Part was prepared after local shaving.
- ☐ Soap water enema was given in the early morning on the day of surgery.

Pradhaana Karma:

The operation was carried out under low spinal anaesthesia. The patient was kept in lithotomy

position and the anus and peri anal area were cleaned with warm water with much diluted Dettol solution. Few cotton wools soaked in weak Dettol solution introduced into anal canal to clean it. Then anus and peri anal areas painted with spirit. This was followed by cleaning with Betadine solution finally. The operative area was draped with sterile cut sheet. Then lubricated index finger was introduced gently into the anal canal and with other hand suitable and lubricated probe was inserted through the external opening of the fistula. The index finger inside the anus guided the probe. The probe was progressed towards the internal opening in the less resistant area. Forceful probing was avoided. After piercing the internal opening, the tip of the probe came out through the anal canal. Kshara Sootra was inserted into the eye of the probe. With gentle manipulation, the probe with Kshaara Sootra was passed through the tract and the Kshaara Sootra was properly placed in to the tract. The two free ends of Kshaara Sootra were tied over keeping it loose sufficiently. The part was cleaned with betadine and sterile gauze was kept over operated part. Sterile pad and 'T' bandage were applied and the patient was shifted to the ward finally.

Paschaat Karma:

- ☐ Vital data was recorded one hourly till the effect of anaesthesia went off.
- ☐ Patient was kept in head low position for about 6 hours.
- ☐ Patient was kept nil by mouth for about 6 hrs.
- ☐ Oral antibiotics and analgesics were given for 3 consecutive post- operative days.
- ☐ Patient was advised to start sitz bath from the next day of operation.
- ☐ Maatraa Basti with 5 ml of Jaatyaadi Taila was given two times a day, morning and evening after taking sitz bath.

Method of changing kshaara sootra:

The Kshaara Sootra was changed at every 7th day after primary threading. It was done in lithotomy position, under aseptic precautions and under the effect of anaesthetic lubricant. The anaesthetic lubricant (lignocaine 2% gel) was applied in the tract through external opening as well as anal canal. When the anaesthetic effect was achieved, a new Kshaara Sootra of adequate length was taken and its one end was tied to the previous Kshaara Sootra between the external opening and the knot. A clamp with artery forceps was made on the previous Kshaara Sootra between its knot and anus. Then the previous Kshaara Sootra was cut between its knot and the clamp. Holding the cut end of the previous Kshaara Sootra with the applied artery forceps, it was taken out from tract through the internal opening and the new Kshaara Sootra was introduced in the tract. Then the ends of newly applied Kshaara Sootra were tied to each other, making the knot close to skin. Antiseptic dressing was applied and Maatraa Basti was given with 5 ml of Jatyaadi Taila. Then the patient was allowed to go to home. This process was repeated after every 7 days till the cut through of the thread achieved.

Duration of Therapy: The therapy was continued till the fistulous tract got cut through finally with the Kshaara Sootra.

Duration of treatment

Kshar Sutra were changed once in a week in both the groups.

Duration of the treatment depends on complete cut through of the track and assessment will be done weekly.

Follow up-

After cut through of fistula tract till wound healing.

ASSESSMENT CRITERIA

Assessment were done on subjective and objective parameters every week till end of the trial.

Subjective criteria

- Pain
- Swelling
- Itching
- Discharge

Objective criteria

- Unit cutting time

Follow up: Patients were called for follow up examination at 7th and 15th days after cut through.

Grading of Subjective Parameters-

Table no. 2 showing grading of Pain

Pain	SCORE
No pain	0
Localized feeling of pain during movement only but not during rest	1
Localized feeling of pain during movement only but not disturbing sleep	2
Localized continuous feeling of pain radiating and not relieving by rest	3

Table no. 3 Showing grading of swelling

Swelling	SCORE
No swelling	0
Swelling within 1 × 1 cm	1
Swelling within 2 × 2 cm	2
Swelling more than 2 × 2 cm	3

Table no. 4 showing grading of Itching

Itching	SCORE
No itching	0
Occasional Itching with 4-6 hours gap	1
Frequent Itching with 2-3 hours gap	2
Frequent Itching with 15-30 minutes gap	3

Table no. 5 showing grading of discharge

Discharge	SCORE
No discharge	0
The gauze is slightly moist	1
Two gauze is completely wet in 24 hours	2
More than two gauze completely wet within 24 hours	3

Unit Cutting Time

Total No. of days taken to cut through the tract =
Initial length of the Kshar Sutra in cms.

Time taken (in days) to cut one centimeter of the fistulous tract with simultaneous healing is known as unit cutting time (UCT).

5. **Vrana Avasthaa:** Dushta/ Shuddha/ Ruhyamaana/Samyaka Roodha

Table no. 6 Showing assessment criteria for overall effect of Therapy

Parameters	% age relief
Markedly improved	More than 75 % relief in the symptoms
Moderately improved	51 – 75 % relief
Mildly improved	25 – 50 % relief
Unchanged	Less than 25% change in signs and symptoms

Observations-**Table No. 7 Showing age wise distribution of 30 patients**

Age (year)	Group A	Group B	Total	%
18-25	01	00	01	03.33
>25-35	06	06	12	40.00
>35-45	08	09	17	56.66

Table no. 8 showing sex wise distribution of 30 patients

Sex	Group A	Group B	Total	%
Male	15	14	29	96.66
Female	00	01	01	03.33
Others	00	00	00	00.00

Table no. 9 showing Chronicity wise distribution of 30 patients

Chronicity (in years)	Group A	Group B	Total	%
≥ 1	13	12	25	83.33
1 – 2	02	03	05	16.66
> 2	00	00	00	00.00

Table no. 10 showing types of Bhagandra wise distribution

Types of Bhagandara	Group A	Group B	Total	%
Shataponaka(Vaataja)	00	00	00	00.00
Ushtragreeva(Pittaja)	01	00	01	03.33
Parisraavee(Kaphaja)	00	02	02	06.66
Shambookaavarta	00	00	00	00.00
Unmaargee (Aagantuja)	00	00	00	00.00
Parikshepee (Vaatapittaja)	06	07	13	43.33
Riju(Vaatakaphaja)	05	04	09	30.00

Table no. 11 showing course of tract wise distribution of 30 patients

Course of tract	Group A	Group B	Total	%
Straight	10	11	21	70.00
Curved	05	04	09	30.00

Table no. 12 showing site of external opening wise distribution

Site of external opening	Group A	Group B	Total	%
1 O' Clock	01	02	03	10.00
5 O' Clock	04	05	09	30.00
6 O' Clock	06	04	10	33.33
7 O' Clock	01	01	02	06.66
11 O' Clock	01	02	03	10.00
Other	02	01	03	10.00

Table no. 13 showing number of external opening wise distribution

No. of external opening	Group A	Group B	Total	%
1	13	15	28	93.33
2	02	00	02	06.66
≥ 3	00	00	00	00.00

Table no. 14 showing previous anorectal surgery wise distribution

Previous ano-rectal surgery	Group A	Group B	Total	%
Haemorrhoids	01	00	01	03.33
Fissure	01	01	02	06.66
Abscess	00	01	01	03.33
Fistula	04	03	07	23.33
Non operated	09	10	19	63.33

Table no. 15 showing number of Anorectal surgery wise distribution

No. of ano-rectal surgeries	Group A	Group B	Total	%
1	04	05	09	30.00
2	01	00	01	03.33
> 2	00	01	01	03.33

Table no. 16 Showing type of Anesthesia wise distribution of 30 patients

Usage of anesthesia	Group A	Group B	Total	%
Spinal	15	15	30	100.00
Local	00	00	00	00.66

Table no. 17 showing Initial length of Ksharasutra in 30 patients

Initial length of Kshar-Sutra (cm.)	Group A	Group B	Total	%
Upto 5	04	04	08	26.66
5 to 10	10	09	19	63.33
10 to 16	01	02	03	10.00

Results—

Table no. 18 Showing effect of therapy on Pain

Grade	No. of Patients			
	Group A		Group B	
	B.T.	A.T.	B.T.	A.T.
“0”	00	12	00	11
“1”	04	02	03	02
“2”	09	01	09	02
“3”	02	00	03	00

Effect of therapy on Pain								
Group	N	Mean		X	%	SdDev	t	P
		B.T.	A.T					
A	15	1.867	0.267	1.6	85.67	0.640	7.099	<0.001
B	15	2.000	0.400	1.6	80.00	0.655	6.287	<0.001

Table no. 19 Showing effect of therapy on swelling

Grade	No. of Patients			
	Group A		Group B	
	B.T.	A.T.	B.T.	A.T.
“0”	00	12	00	10
“1”	09	03	09	02
“2”	04	00	03	03
“3”	02	00	03	00

Effect of therapy on Swelling								
Group	N	Mean		X	%	SdDev	t	P
		B.T.	A.T					
A	15	1.533	0.467	1.066	69.53	0.743	4.675	<0.001
B	15	1.600	0.533	1.067	66.68	0.828	3.756	<0.002

Table no. 20 Showing effect of therapy on Itching

Grade	No. of Patients			
	Group A		Group B	
	B.T.	A.T.	B.T.	A.T.
“0”	00	12	00	07
“1”	08	02	10	04
“2”	06	01	03	03
“3”	01	00	02	00

Effect of therapy on Itching								
Group	N	Mean		X	%	SdDev	T	P
		B.T.	A.T.					
A	15	1.533	0.267	1.266	82.64	0.640	6.971	<0.001
B	15	1.467	0.667	1.067	54.53	0.743	7.483	<0.001

Table No. 21 Showing Effect of therapy on Discharge

Grade	No. of Patients			
	Group A		Group B	
	B.T.	A.T.	B.T.	A.T.
“0”	00	12	00	12
“1”	07	03	09	02
“2”	06	00	05	01
“3”	02	00	01	00

Effect of therapy on Discharge								
Group	N	Mean		X	%	SdDev	t	p
		B.T.	A.T.					
A	15	1.667	0.200	1.467	88.01	0.724	8.876	<0.001
B	15	1.467	0.267	1.200	81.79	0.640	6.874	<0.001

MEAN UNIT CUTTING TIME (UCT)

The following shows the mean unit cutting time taken by the SnuhiKshara Sutra and Udumbar Kshara Sutra for cutting across the fistulous tracts.

Table no. 22 Showing Mean UCT in both groups

Group	Mean Unit cutting time
A	10.20 days/cm
B	10.50 days/cm

Table no. 23 Showing healing in both groups after treatment

Vrana Avastha	No. of Patients	
	Group A	Group B
Dushta vrana	00	01
Samyakarudha vrana	15	14

Table no. 24 Showing Comparative effect of treatment in both groups

Symptoms	Groups	N	Mean	Df	t	p
Pain	Group A	15	0.267	28	0.5442	0.5906
	Group B	15	0.400			
Swelling	Group A	15	0.467	28	0.2289	0.8206
	Group B	15	0.533			
Itching	Group A	15	0.267	28	0.5939	0.5573
	Group B	15	0.400			
Discharge	Group A	15	0.200	28	0.3584	0.7227
	Group B	15	0.267			

- Pain - The two-tailed P value equals 0.5906 By conventional criteria, this difference is considered to be not statistically significant.
- Swelling - The two-tailed P value equals 0.8206 By conventional criteria, this difference is considered to be not statistically significant.
- Itching - The two-tailed P value equals 0.5573 By conventional criteria, this difference is considered to be not statistically significant.
- Discharge - The two-tailed P value equals 0.3584 By conventional criteria, this difference is considered to be not statistically significant.

DISCUSSION-

Today's man is caught of various furious diseases, out of which one is Bhaganndara. Looking at the

treatment side of this horrifying disease. The clinical study was conducted in a randomized sample of 30 patients.

The patients were assessed on various parameters for obtaining the effect of therapy. All the clinical signs & symptoms were assessed on the basis of scoring given to them B.T. (Before Treatment) & after treatment (A.T.) The results of each therapy were mentioned and cautiously subjected to bio-statistical analysis & finally inferences were drawn & put forward hereby.

Aachaarya Sushruta has described five types of Bhagandara. Bhagandara is one of the eight grave diseases of Aayurveda, According to him, vitiated Vaata Dosha gets localised in the vicinity of two Angula of Guda Pradesha, vitiates the Rakta and Maamsa Dhaatu and causes Bhagandara

The description of blind internal, blind external fistulae, the detailed techniques of surgery i.e. excision or fistulectomy, are available in detail and it shows the advancements that had taken place for the management of Bhagandara at the time of Sushruta. Infact it may be remarked that the present day modern techniques are just a reflection of his principles.

The art of probing i.e. 'Eshana Karma' was well mastered by Sushruta owing to which he classified Bhagandara and has given it a very scientific classification into Antarmukha and Bahirmukha varieties of Bhagandara. So careful probing still remains as the most effective method of examination in Fistula in Ano otherwise Iatrogenic tracts may be created by an unskilled Surgeon.

In contemporary science, the widely practiced methods for fistula in ano are fistulotomy and fistulectomy. Both of these methods have a high recurrence rate and not free from complications. The use of setons, fibrin glue and advancement flap technique are also not so successful. That is why the contemporary specialists have accepted the efficacy of Kshar Sutra for the management of fistula - in – ano

Since the time of Aachaarya Sushruta, Kshar Sutra is being used for treatment of diseases like Naadee Vrana, Bhagandara, Arbuda, Arsha, etc. It is prepared with Snuhee Ksheera, Haridraa Churna and Apaamaarga Kshaara.

In this study Suhi Kshar Sutra and Udumber Kshar Sutra used to treat the Bhagandara.

DISCUSSION ON OBSERVATIONS

AGE

Maximum number of patients were from the age group of 35-45 years is 56.66%. The reason for such an observation is that it is the active period of a person's life and due to many assignments in this stage of life. The persons are casual to this problem because it starts with a minimal discomfort in anal region.

SEX

In this study, 96.66% patients were males, which go hand in hand with a study conducted by Sainio et.al⁵ in a large population which concluded that the prevalence rate is double in males compared to females.

TYPES OF BHAGANDAR

Minimum i.e. 03.33 % patients had Ushtragreeva Bhagandara, 06.66% patients had Parisraavee Bhagandara, 30% patients had Riju Bhagandara, 16.66% patients had Arshobhagandara and maximum i.e. 43.33% patients had Parikshepee Bhagandara.

SITE OF EXTERNAL OPENING

Maximum number of patients i.e. about 70% had the external openings at the posterior perineal triangle (5, 6, & 7'o clock), as gravity causes the pus to get collected in the most dependent area, which in turn leads to the formation of abscess and ultimate fistulous opening at that particular region.

DISCUSSION ON RESULT

There are several factors, which affect the Unit Cutting Time (UCT) as follows:

- ☐ U.C.T. is less in submucosal, subcutaneous and low anal fistulae.
- ☐ U.C.T. is high in cases of fibrosed / tough scar tissue which generally created after the previous operation done for fistulae in ano and in cases of high rectal fistulae, fistulae with abscess and trans- sphincteric fistulae.

PAIN

- ☐ The two-tailed P value equals 0.5906 By conventional criteria, this difference is considered to be not statistically significant.

SWELLING

- ☐ The two-tailed P value equals 0.8206 By conventional criteria, this difference is considered to be not statistically significant.

ITCHING

- ☐ The two-tailed P value equals 0.5573 By conventional criteria, this difference is considered to be not statistically significant.

DISCHARGE

- ☐ The two-tailed P value equals 0.3584 By conventional criteria, this difference is considered to be not statistically significant.

MEAN UNIT CUTTING TIME (UCT)

The analysis of the data showed that average U.C.T. was low i.e. 10.20 days / cm in Snuhi Kshara Sutra group and high i.e. 10.50 days /cm in Udumbar Kshara Sutra group.

VRANA AVASTHA

After 7 days of cut through of the fistulous tract, only one patient (i.e. 6.66 %) in Group B had Dushta Vrana and the rest 14 of the same group as well as all the 15 patients of Group-A had Samyakroodha Vrana.

OVERALL EFFECT OF THERAPY ON GROUP A

In Group A marked improvement seen in 11 pts. i.e. 73.33%, moderate improvement seen in 03 pts. i.e. 20% and mild improvement seen in 01 pt. i.e. 6.66%.

OVERALL EFFECT OF THERAPY ON GROUP B

In Group B marked improvement seen in 11 pts. i.e. 73.33%, moderate improvement seen in 01 pts. i.e. 6.66% and mild improvement only seen in 03 pt. i.e. 20%.

COMPLETE EFFECT OF THERAPY

Total 30 pts. i.e. 73.33% having marked improvements, 13.33% i.e. 04 pts. having moderate and 13.33% i.e. 4 pts. having mild improvement.

PROBABLE MODE OF ACTION OF KSHARASUTRA

- in kshara sutra, linen thread supports the strength of ligation and weight of 21 coatings, while snuhi latex acts as binding material for preserving all the properties of kshara. Kshara sutra works by pressure effect made by ligation which creates mechanical strangulation of blood vessels and tissues which causes the pressure necrosis of the body of any swelling.
- Kshara invades into the cells of lesion till engorged tissue destruction occurs by its Ksharana guna (corrosive properties).
- Snuhi latex is being proteolytic in nature, dissolves the tissue at its base.
- The action of turmeric powder provides the effect of bactericidal action with healing properties.
- All these three drugs do not contradict each other but rather support their actions by equal and desirable effect.
- Kshara sutra has the ability to perform incision with excision slowly by virtue of its controlled chemical cauterization.
- During cutting effect, there may be oozing of blood which is ceased by sclerosing effect of kshara by its protein coagulation property. Hence, there was no chance of bleeding during the cutting of the mass.
- The chances of infection are least due to sustained action of anti-infective by virtue of kshara.
- In case of Bhagandara (fistula in ano), kshara sutra also acts as a Seton to allow the proper drainage of pus and debridement of unhealthy tissue, thus, providing a cleaner base for wound healing with minimal scarring and without complications.

CONCLUSION

- Kshara Sutra Threading therapy is a radical cure in the treatment of Bhagandara without complications and recurrence.
- The different varieties of Kshara Sutras can be used depending upon the clinical picture of Bhagandara.

- The UCT of Snuhi Kshar Sutra 10.20 days / cm was lower due to its acidic nature compared to the standard Udumbar Kshara Sutra group 10.50 days / cm but the cutting was not corresponding to the healing rate.
- Statistically there was no much significant difference in efficacy of treatment between the groups.
- Administration of Ushnodaka Avagaaha with Panchavalkala Kwaatha showed good result in the reduction of pain scores in the post-operative period and successive change of the Sutra.
- Gandhaka Rasayana and Shigru guggul used as an internal medication was successful in preventing the secondary infection in the post-operative period.
- Total 30 pts. i.e. 73.33% having marked improvements, 13.33% i.e. 04 pts. having moderate and 13.33% i.e. 4 pts. having mild improvement.

FURTHER SUGGESTIONS

- As study was conducted over 30 patients, a similar study performed over a large sample could have presented much sharper & more accurate results. This work has been done by keeping in view all the cautions of bias in Research also in Interpretation of concepts in appropriate way. If this study would serve any guidelines to future's research workers the author would feel his efforts have not been in vain.
- Systematic review of Kshar Sutra databases should be done with common parameters throughout India.
- Scientific rationale reasons for coatings of Kshara Sutra (7, 11, and 21) should be worked out.
- Bacteriological study and histological changes on the local tissue by Snuhi Kshara Sutra and Udumbar kshara Sutra can be carried out.

REFERENCES

1. <https://en.wikipedia.org/wiki/Fistula>
2. Kaviraj Ambikadutta Shastri edited, Susruta Samhita of Maharishi Susruta, Vol.-1, Su.Ni.4, reprinted 2018 and pub- Chaukhambha Sanskrit Sansthan.
3. Vasilevsky CA, Gordon PH. Benign Anorectal Abscess and Fistula. In: Wolff BG, Fleshman, JW, Beck DE, Pemberton JH, Wexner SD, Eds. The ASCRS Text-book of Colon and Rectal, Surgery. New York, NY: Springer; 2007: Chapter 13.
4. Kaviraj Ambikadutta Shastri edited, Susruta Samhita of Maharishi Susruta, Vol.-1, Su.Chi.8/48, reprinted 2018 and pub- Chaukhambha Sanskrit Sansthan, pp.61
5. Deshpande PJ, Sharma RK. Non-operative Treatment of high rectal Fistula in ano by a new technique: review follow up of 200 cases. Am J Protocol 1973; 24 (3): 49.
6. Kaviraj Ambikadutta Shastri edited, Susruta Samhita of Maharishi Susruta, Vol.-1, Su.Su.38/48, reprinted 2018 and pub- Chaukhambha Sanskrit Sansthan, pp. 187
7. Kaviraj Ambikadutta Shastri edited, Susruta Samhita of Maharishi Susruta, Vol.-1,

- Su.Chi.8/47, reprinted 2018 and pub- Chaukhambha Sanskrit Sansthan, pp.61
8. Manipal manual of surgery, C.B.S. Publishers & Distributors Pvt. Ltd. New Dehli, K. Rajgopal Shenoy & Anita Nileshwar, 3rd Edition 2010, P.648-651
 9. A concise textbook of surgery by S Das. 6st edition-2010 P 956-959
 10. Kaviraj Ambikadutta Shastri edited, Susruta Samhita of Maharishi Susruta, Vol.-1, Su.Su.33/4, reprinted 2018 and pub- Chaukhambha Sanskrit Sansthan, pp.163
 11. Yogaratnakar, uttarardha, shoka -01& 02, by Vaidya Laxmipati sastri, Chaukhambha Sanskrit sansthan, Varanasi, 6th edition-1997.page-199