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Effect of *Nirgundi-Kanchnaar Kshar Sutra* and *Bilva Patra Malhara* in the Management of *Bhagandara* w.s.r. to *Fistula-in-Ano*

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ABSTRACT

Bhagandara (Fistula-in-ano) is one of the most common ano-rectal disease in field of *Shalya Tantra*. It is very difficult to manage due to its multifold variation of presentation. After modern surgery, serious post-operative complications like recurrent sepsis, fecal incontinence and high recurrence rate is a matter of great concern. Nowadays, management of *Bhagandara* with '***Kshar Sutra* therapy**' which is well accepted and without any complication has gained popularity for its minimal invasive approach and complete cure of disease. It is the need of the time to do further researches to get more efficient *Kshar Sutra*. In the present research "***Effect of Nirgundi-Kanchnaar Kshar Sutra and Bilva Patra Malhara in the management of Bhagandara w.s.r. to Fistula-in-ano.***" has been evaluated. **Material and Methods:** Forty patients suffering from *Bhagandara* have been applied *Nirgundi-Kanchnaar Kshar Sutra* as per classical method and local application of *Bilva Patra Malhara* was done followed by dressing. All the patients were assessed for change in their subjective as well as objective criteria. **Result:** It was found statistically significant in all parameters.

KEYWORDS

Bhagandara, *Fistula-in-ano*, *Nirgundi-Kanchnaar Kshar Sutra*, *Bilva Patra Malhara*



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INTRODUCTION

The disease *Bhagandara* in which *Bhaga*, *Guda* and *Basti Pradesha* becomes *Vidaarita* (torn) is known as *Bhagandara*¹. In modern times, it is correlated with Fistula-in-Ano. Fistula-in-ano is derived from a Latin word a reed, a pipe, or flute. It is an abnormal communication between two epithelial-line surfaces. It usually results by anorectal abscess, which burst spontaneously or opened inadequately. *Bhagandara* (Fistula-in-ano) is a very common ano-rectal disease, progressively increasing in the society due to sedentary life style, irregular and inappropriate diet. *Bhagandara* is one such grave disease, and therefore it has been included in *Ashta Mahagada*² by *Sushruta*. *Ashta Mahagada* includes eight dreadful diseases which are very difficult to manage. Today many procedures are used by modern surgeons to manage *Bhagandara* (Fistula-in-ano), but in spite of the best possible efforts, the recurrence rate is very high i.e., 20-30%³, which is a big challenge in front of the medical world. But in *Ayurveda* a full-fledged management of *Bhagandara* by the *Kshar Sutra* therapy has been mentioned since thousands of year's ago⁴. *Kshar Sutra* placed in the fistulous tract is capable of dissolving the tough fibrous tissue and

unhealthy granulation tissue. *Kshar Sutra* therapy is practiced and used since long time with great success and negligible recurrence. It's gradual and sustained chemical action not only removes the debris from the Fistulous tract but also helps in encouraging fresh healthy granulation, thereby inducing a long awaited healing pattern in the depth of tissue⁵. So, in present modern era there is a great need to work on Fistula-in-ano. In fact, whole medical community seems to find a ray of hope in *Ayurveda*.

NEED FOR STUDY

Acharya Sushruta has mentioned many drugs from which *Kshar* can be prepared⁶. No research work has been carried out in combination of *Nirgundi Patra Swaras* with *Kanchnaar Kshar* and *Bilva Patra Malahara* to evaluate its effect in the management of *Bhagandara*. The standard *Snuhi Apamarg Kshar Sutra* is prepared by repeated 21 coatings of *Snuhi Ksheer*, *Apamarg kshar* and *Haridra Churna*⁷. But *Snuhi Ksheer* is not available throughout the year and a particular session is indicated for its collection⁸. During and after application of *Snuhi Apamarg Kshar Sutra* many patients do complain of moderate to severe burning type of pain. Considering the above problems, there is need to find out such drug



which is easily available throughout the year, is less irritant but equally effective.

AIMS AND OBJECTIVES

- To evaluate the “*Effect of Nirgundi-Kanchnaar Kshar Sutra* in the management of *Bhagandara*”.
- To observe the rate of cutting and healing.
- To decrease the intensity of pain, burning sensation and itching so that the patient can do his daily routine work comfortably.

MATERIALS AND METHODS

The present clinical trial is designed as a single blind randomized study over 40 patients suffering from *Bhagandara*. All the patients have been applied *Nirgundi-Kanchnaar Kshar Sutra* as per classical method and local application of *Bilva Patra Malhara* was done followed by dressing. *Kshar Sutra* was changed weekly till the complete cutting of the track was achieved.

ETHICAL COMMITTEE APPROVAL NUMBER UAU/R/C/IEC/2016-17/2

Preparation of *Nirgundi-Kanchnaar Kshar Sutra*:

The surgical linen thread no.20 was autoclaved and mounted on the hangers. *Nirgundi Patra Swarasa* was prepared from

fresh leaves by crushing in *Kharala*. After that, thread was coated one time properly with a piece of folded gauze dipped in *Nirgundi Patra Swaras*, then the hanger were placed in *Kshar Sutra* cabinet for drying. The second smearing was given on next day only when the previous coating was dried. The thread was smeared 11 times in the same manner. The threads were placed in the *Kshar Sutra* cabinet for drying after each smearing. Twelveth coating was done with *Kanchnaar Kshar* along with *Nirgundi Patra Swaras* with the help of sterile gauze pieces. The thread was coated 7 times (*Kanchnaar Kshar* along with *Nirgundi Patra Swaras*) in this way, only when the previous coating got completely dried. The last 3 coatings were done with *Nirgundi Patra Swarasa* and *Haridra* powder. This was done in the same way as the previous coating was done, but *Kshar* is replaced by *Haridra* powder. After finishing total 21 coatings on the linen thread, *Kshara Sutra* was packed in Borosilicate glass tube and stored in ultra violet chamber.

Preparation of *Bilva Patra Malahara* :

Contents of *Bilva Patra Malahara* :

<i>Bilva Patra Kashaya</i>	50 gm ,
Bee wax	8 gm,
Glycerine	10 gm
Olive oil	10 gm



Palm oil 10 gm

Vit.-E 2 gm

Emulsifiers 10 gm

Grapefruit seed (*Citrus paradisi*, Rutaceae) for preservative, *Bilva Patra*, water, Bee wax, Glycerine, Olive oil, Palm oil, Vit.-E Capsule, Emulsifiers. Large pan, two big bowl, jug, stick thermometer to measure temperature, stick blender, etc.

Methods⁹:

1. Preparation of aqueous extract of *Bilva Patra* was performed by water bath method. For this, 100 grams of *Bilva Patra* was taken in 800 ml of water in a pan. After that warm water was taken in another pan in which the previous pan was immersed (which contain Bilva-Patra) under controlled temperature (below boiling limit) till it becomes 1/16. Till it was left approximately 50 ml.

2. After that heating of palm oil, Olive oil, emulsifier i.e.10 ml each was started, simultaneously the bee wax 8 gm in quantity was warmed and mixed with oil when melt completely.

3. The component was stirred regularly with the spatula to distribute the heat and the stick thermometer was used to measure the temperature. The temperature before mixing the oil and aqueous base for making stable emulsion was maintained (80⁰ C for the

aqueous extract of *Bilva Patra* and Glycerine, and 70⁰ C for the rest oil base materials).

4. When the aqueous and oil components got required temperature and wax was melted properly, mixed together by removing both jugs out of the baths and away from the heating elements. After that pouring of the water component into the oil was done. By a hand-held Bamix type stick blender it was made like an emulsion.

5. It was done for 1-2 minutes to allow the emulsion to form properly. Blending air into the liquid was avoided, for this blender head was kept well under in the liquid and continue pulsing was done.

6. Quickly the mixture was cooled around 55⁰ C by placing the jug in the cold-water bath as we stirred the emulsion.

7. Remaining ingredients i.e. Vit.-E capsules (opened), Grapefruit seed powder was added, at this time constant stirring was done. Any set cream from the sides and bottom of the jug was removed. A little gentle water bath heat was used if required.

8. At 44⁰C or showing signs of thickening (i.e. starting to set, usually around 42⁰C) poured into uncapped jars. It was ready for use. Attention needed as the cream set quickly for this a little hot water bath heat is required to finish the pouring.



METHOD OF LIGATION OF NIRGUNDI KANCHNAAR KSHAR SUTRA:

First of all, written informed consent was taken from every diagnosed patient. Then patient was kept in proper lithotomy position and perianal region was cleaned with antiseptic lotions and draped. Patient was reassured and with gloved finger 2% xylocaine jelly was gently applied at external opening as well as into the anal canal. Then a probe was passed through the external opening of fistulous track. The tip of the probe was gently forwarded along the path of least resistance and was guided by the finger in anal canal to reach into the lumen of anal canal through the internal opening and its tip was finally directed to come out of anal orifice. Then a suitable length of Plain surgical linen thread no.20 was taken and threaded into the eye of probe. Thereafter the probe was gently taken out through the anal orifice, to leave the thread behind in the fistulous track. The two ends of the thread were then ligated together outside the anal canal. This procedure is called primary threading.

Then *Nirgundi- Kanchnaar Kshar Sutra* was changed weekly under aseptic precautions with the help of local application of Xylocaine 2% jelly. *Bilva Patra Malhara*

was applied locally followed by dressing. Measurement of the previous length of *Kshar Sutra* was recorded in the folder proforma every week. Patient was advised to take rest for 5-10 min after *Kshar Sutra* ligation and then allowed to go back for his routine work. This procedure was repeated every week until ‘cut through’ of the *Kshar Sutra* automatically. This method of changing the *Kshar Sutra* is known as **Rail-road technique**¹⁰.

INCLUSION CRITERIA:

- Clinical signs and symptoms of all types of *Bhagandara*; fresh cases as well as previously operated*. (*They were operated elsewhere by any other surgeon)
- Any age group of either sex.
- *Bhagandara* of all type with *Parikartika* (Fistula-in-ano with Fissure-in-ano)
- *Bhagandara* with *Niyantrita Madhumeha* (Fistula-in-ano with controlled Diabetes mellitus)
- *Bhagandara* with Haemorrhoid

EXCLUSION CRITERIA :

- HIV, HCV and HBsAg positive patients.
- Secondary Fistula due to -
 - Ulcerative colitis
 - Crohn’s disease
 - Tuberculosis



-Carcinoma of rectum

ASSESSMENT CRITERIA

1. SUBJECTIVE PARAMETERS

- Pain
- Burning sensation
- Itching
- Discharge
- Inflammation

Signs & symptoms found were graded on the basis of scoring system prepared by **Paul O. Madson & Peter.**

These are as follows-

- No symptom 0
- Mild symptoms +
- Moderate symptoms ++
- Severe symptoms +++
- Very severe symptoms with marked disturbance in daily routine of the patient +++++

2. OBJECTIVE PARAMETERS

Unit Cutting Time = Total No. of days taken to cut through the track days/cm.

Initial length of the Kshar Sutra in cm.

Time taken (in days) to cut one centimetre of the Fistulous track with simultaneous healing is known as unit cutting time (UCT).

DURATION OF THE TREATMENT:

All the cases were treated till the *Nirgundi Kanchnaar Kshar Sutra* gets 'cut through' the track completely.

FOLLOW-UP PERIOD:

Follow up was done weekly once for one month, then monthly once for two months after the completion of treatment. For each follow-up visit, the patients were examined for any recurrence of disease or any other complication.

INVESTIGATIONS:

Following investigations were done before starting any procedure:

Blood : CBC, Blood Sugar fasting and Post Prandial, HIV, HBsAg, HCV

Urine : Routine and microscopic

Stool : Ova and cyst

OTHER INVESTIGATIONS (IF REQUIRED) :

- LFT
- KFT
- Lipid profile
- Mantoux test
- ECG
- X Ray Chest P.A. view
- Pus culture and sensitivity
- Fistulogram
- Biopsy of the tissue of the track
- USG Abdomen and pelvis

OBSERVATION AND RESULTS

- In this study of 40 patients of *Bhagandara*, the youngest patient was of 19 years and oldest patient was of 75 years.



Maximum patients i.e., 55% patients were found in the age group of 31-40 years and minimum 2.5% patients were in the age group of 61-70 and >71 years.

➤ In analysis 10% female patient were found during study and rest 90% were male.

➤ In relation to religion, 34 patients (85%) were found of Hindu religion, 5 patients (12.5%) of Muslim religion, whereas in others, 1 patient (2.5%) was belong to Sikh religion.

➤ In analysis 2 patients (i.e.5%) were found unmarried during study and rest 38 (i.e. 95%) married persons.

➤ In analysis of habitat out of the 40 cases of *Bhagandara*, 30% patients were reported from rural area, while 70% patients were belonging to the urban area.

➤ Analysis of socio-economic status of 40 cases of *Bhagandara* showed that the majority of the patients i.e. 37.5% belonged to middle and followed by higher and poor class i.e. 35% and 15% respectively, whereas 12.5% patients were from lower middle section of the society.

➤ Occupational status revealed that maximum 50% patients were serviceman and followed by Labour, housewife, businessman and student i.e. 20%, 12.5%, 10% and 5% respectively, minimum 2.5% were retired.

➤ Analysis of nature of work of 40 cases of *Bhagandara* showed that the majority of the patients 17 (42.5%) belonged to sedentary life style, 12 (30%) patients were found moderate and 11 (27.5%) patients were strenuous worker.

➤ Analysis of diet, 30% patients were consuming vegetarian diet whereas, 70% patients were on mixed diet.

➤ The maximum numbers of patients were found with *Krura Koshtha* 60%, 32.5% with *Madhyam Koshtha*, and 7.5% patients were reported of *Mridu Koshtha*.

➤ In the present study nature of bowel habits were broadly classified into 4 groups. The maximum numbers i.e. 24 patients (60%) were found with constipation, 3 patients (7.5%) have mucous discharge with feces, 11 patients (27.5%) with normal bowel habit were found and 2 patients (5%) with diarrhoea bowel habit.

➤ In analysis 30% patients were addicted by the habit of smoking, 42.5% patients were found non- addicted to any of these habits, 22.5 % patients were alcoholic and 5% patients were tobacco chewing.

➤ In this present study only 2 patient (5%) was found with family history of *Bhagandara*, rest 38 patient (95%) had no family history.



➤ This study revealed that 45% patients belonged to *Vata-Kaphaj Prakriti*, 37.5% patients were of *Pitta-Kaphaja Prakriti* and 17.5% patients belonged to *Vata-Pittaja Prakriti*.

➤ Out of 40 cases, maximum numbers of patients i.e. 62.5% were reported under *Parisravi Bhagandara*, 15% were of *Shataponaka*, 7.5% each of *Shambukavarta*, *Ushtra-greeva* and *Unmargi Bhagandara*.

➤ During diagnosis of 40 patients of Fistula-in-ano, the maximum Low anal i.e. 26 (65% patients), 11 patients (27.5%) were observed under High anal type, 9 patients (i.e. 22.5%) patients) under Sub-cutaneous and none case found in Pelvi – rectal, and sub- mucous group.

➤ Out of 40 patients, it was observed that 72.5% patients were afflicted from less than 1 year. 17.5% patients were suffering from 1-2 years of duration and 10% patients were suffering from more than 2 years.

➤ Out of 40 cases, 20% patients were reported having associated diseases. Among those 20% all patients were suffering from Hypertension only, none patients were found suffering from Diabetes mellitus, Tuberculosis, Ulcerative colitis.

➤ In analysis 8 patients (20%) were found with haemorrhoids, 2 patients (5%) were found with fissure & sentinel tag and

30 patients (75%) having no associated lesion.

➤ 10 out of 40 cases i.e. 25% patients were reported as operated cases and rest of 30 cases i.e. 75% patients were non-operated previously.

➤ 10 Recurrent operated cases (25% patients) were further analyzed operated elsewhere. Among all recurrent cases, 80% patients had undergone the operation only once, 20% patients were operated more than one times.

➤ Out of 40 patients, for maximum cases i.e. 37 cases (92.5%) primary threading was done under local anaesthesia, whereas 03 cases (7.5%) were conducted under spinal anaesthesia.

➤ Analysis of 40 cases were done in terms of number of external fistulous openings. 33 cases (82.5%) were having single external fistulous opening, while 05 cases (12.5%) were having two openings and 02 cases (5%) were having three or more than three openings.

➤ Out of 40 cases external opening was found in upper half in 14 patients (35%) and in 26 patients (65%) it was found in lower half.

➤ The maximum cases i.e. 26 cases (59%) were having initial length of the thread, (changed for the first time) between



5.10 to 10 cm, 12 cases (27.2%) were having initial length in the range of >10 cm and 6 cases (13.6%) in the range of 0 to 5cm.

➤ Maximum number of cases i.e. 22 cases (55%) were recorded having curved tract, 14 cases (35%) were recorded having straight and 4 cases (10%) were noted having horse-shoe shaped tract.

➤ In analysis of Pain, table shows 17 patients (42.5%) were found in grade-4, 18 patient (42.5%) were found in grade-3, 5 patients (12.5%) were found in grade-2, no case found in grade-1, and 0 grade pain before treatment.

➤ 24 cases (60%) were recorded having grade-3, 16 cases (40%) were recorded in grade-2, and whereas no case found in grade-0, 1, 4 before treatment in analysis of symptom Burning sensation.

➤ In analysis maximum number of cases i.e. 21 cases (52.5%) were recorded having grade-3, 11 cases (27.5%) were recorded in grade-2, 8 cases (20%) were recorded in grade-4, and whereas no case found in grade-1, 0 before treatment of symptom Itching.

➤ Maximum number of cases i.e. 19 cases (47.5%) were recorded having grade-3; 12 cases (30%) were recorded in grade-4;

9 cases (22.5%) each were recorded in grade-2 and whereas no case found in grade-1, 0 before treatment in analysis of symptom Discharge.

➤ In analysis of Inflammation before treatment table shows 18 patients (45%) were found in grade-3, 17 patients (42.5%) were found in grade-4, 5 patients (12.5%) were found in grade-2, and no patient recorded in grade-1, 0.

EFFECT OF THERAPY ON SUBJECTIVE PARAMETER:

The signs & symptoms of disease before and after treatment were assessed on the basis of scoring given to them. These clinical observations (pain, burning sensation, itching, discharge, inflammation and Unit Cutting Time) were analyzed and are described here under separate headings as follows-

EFFECT ON 'PAIN' :

The initial mean score of Pain observed was 3, which was brought down to 2 after 1 month, 1 after 2 month, 1 after 3 month and 0 after completion of treatment with 96.2% relief.

The test of significance shows that treatment was significant result at $p < 0.000$.

(Table 1)

**Table 1** Effect on Pain

	Median					Wilcoxon Signed Rank W	P-Value	% Effect	Result
	T	B 1	AT 2	AT 3	AT C				
Pain	3	2	1	1	0	-5.617 ^a	0.00	96.2	Sig

EFFECT ON 'BURNING SENSATION':

The mean score of Burning sensation was 4 before treatment, regressed to 3 after 1 month, 2 after 2 month, 1 after 3 month and

0 after completion of treatment giving 97.2% relief. This result was statistically significant at $p < 0.000$. (**Table 2**)

Table 2 Effect on Burning sensation

	Median					Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT1	AT2	AT3	AT C				
Burning Sensation	4	3	2	1	0	-5.671 ^a	0.000	97.2	Sig

EFFECT ON 'ITCHING':

Subjective parameter Itching found as mean score before treatment was 3.0 which became down to 2.0 after 1 month, 1.0 after 2 month, 0.0 after 3 month and 0 after

completion of treatment giving 99.1% relief. The result shows that treatment was statistically significant at $p < 0.000$. (**Table 3**)

Table 3 Effect on Itching

	Median					Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT1	AT2	AT3	AT C				
Itching	3	2	1	0	0	-5.643 ^a	0.000	99.1	Sig

EFFECT ON 'INFLAMMATION':

The symptom Inflammation found as mean score of 3.0 before treatment which was regressed to 3 after 1 month, 2 after 2

month, 1 after 3 month and 0 after completion of treatment giving 96.2% relief. This result shows treatment was statistically significant at $p < 0.000$. (**Table 4**)

Table 4 Effect on Inflammation

	Median					Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT1	AT2	AT3	AT C				
Inflammation	3	3	2	1	0	-5.617 ^a	0.000	96.2	Sig



Effect of Therapy on Unit Cutting Time

U.C.T. ACCORDING TO TYPES OF FISTULA-IN-ANO:

In analysis it shows that minimum U.C.T. 6.6 days/cm. in Sub-cutaneous and maximum U.C.T. 8.5 days/cm. was found in High anal Fistula-in-ano.

Mean U.C.T. is 7.8 days/cm. (Table 5)

Table 5 U.C.T. according to types of Fistula-in-ano

Type of fistula-in-ano	U.C.T. (in days / cm.)
Sub-cutaneous	6.6
Low anal	8.2
High anal	8.5
Mean	7.8

U.C.T. ACCORDING TO TYPES OF BHAGANDARA:

The analysis shows that minimum U.C.T. 7.7 day/cm. in *Unmargi Bhagandara* whereas maximum U.C.T. 9.0 days/cm. was found in *Ushtrageev* and *Shambukavarta Bhagandera*.

Mean U.C.T. is 8.3 days/cm. (Table 6)

Table 6 U.C.T. according to types of *Bhagandara*

Type of Bhagandara	U.C.T. (in days / cm.)
<i>Shataponaka Bhagandara</i>	7.9
<i>Ushtrageev Bhagandara</i>	9.0
<i>Parisravi Bhagandara</i>	8.0
<i>Shambukavarta Bhagandara</i>	9.0
<i>Unmargi Bhagandara</i>	7.7
Mean	8.3

U.C.T. ACCORDING TO INITIAL LENGTH OF TRACK:

In analysis it is found that minimum U.C.T. 7.4 days/cm. in group of 0-5 cm. and it was

maximum in group of 5.1-10 cm. i.e. 8.4 days/cm.

Mean U.C.T. is 8.0 days/cm. (Table 7)

Table-7 U.C.T. According to initial length of track

Initial length of track (in cm.)	U.C.T. (in days/cm.)
0 – 5	7.4
5.1 – 10	8.4
>10	8.3
Mean	8.0

U.C.T. ACCORDING TO POSITION OF EXTERNAL OPENING:

In analysis the study shows that minimum U.C.T. (i.e. 7.71 days/cm.) at 1 'O' clock and maximum U.C.T. (i.e. 10.96 days/cm.) was found at 8 'O' clock position.

Mean U.C.T. is 9.02 days/cm. (Table 8)

Table 8 U.C.T. according to position of external opening

Clockwise position	U.C.T. (in days/cm.)
1 'O'Clock	8.1
2 'O'Clock	5.8
3 'O'Clock	8.2
4 'O'Clock	7.6
5 'O'Clock	7.5
6 'O'Clock	8.0
7 'O'Clock	8.6
8 'O'Clock	8.7
9 'O'Clock	8.7
10 'O'Clock	10
11 'O'Clock	8.6
12 'O'Clock	00
Mean	8.2

U.C.T. ACCORDING TO CHRONICITY:

The study shows that minimum U.C.T. was 8.0 days/cm. under the duration of 0-1 years, 8.9 days/cm. in more than 2 year.

Mean U.C.T. is 8.4 days/cm. (Table 9)

**Table 9** U.C.T. according to Chronicity

Chronicity (in years)	U.C.T. (in days/cm.)
0 – 1	8.0
1 – 2	8.4
>2	8.9
Mean	8.4

U.C.T. ACCORDING TO SURGERY:

In analysis U.C.T. was 8.4 days/cm. in operated cases and 8.1 days/cm. in non-operated cases.

Mean U.C.T. is 8.3 days/cm. (**Table 10**)

Table 10 U.C.T. according to surgery

Surgery	U.C.T. (in days/cm.)
Operated	8.4
Non –operated	8.1
Mean	8.3

U.C.T. ACCORDING TO TRACK OF FISTULA-IN-ANO:**Table 12** Summarized result after completion of treatment

	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Pain	3	0	-5.617 ^a	0.000	96.2	Sig
Burning Sensation	4	0	-5.671 ^a	0.000	97.2	Sig
Itching	3	0	-5.643 ^a	0.000	99.1	Sig
Discharge	3	0	-5.641 ^a	0.000	97.6	Sig
Inflammation	3	0	-5.617 ^a	0.000	96.2	Sig

When data was analysed for percentage relief in parameters; maximum relief was obtained in Itching i.e. 99.1% (p-0.000), followed by Discharge i.e. 97.6% (p-0.000), Burning Sensation i.e. 97.2% (p-0.000), Pain and Inflammation i.e. 96.2% (p-0.000).

DISCUSSION

In this study, 40 patients in single group were treated by *Nirgundi-Kanchnaar Kshar*

• Minimum U.C.T. 8.1 days/cm. in Straight track and maximum U.C.T. 8.3 days/cm. in Curved track whereas in Horse shoe shaped track U.C.T. was found 8.2 days/cm.

• Mean U.C.T. is 8.2 days/cm. (**Table 11**)

Table 11 U.C.T. according to track of Fistula-in-ano

Type of track	U.C.T. (in days/ cm.)
Horse shoe shaped	8.2
Curved	8.3
Straight	8.1
Mean	8.2

SUMMARIZED RESULT AFTER COMPLETION OF TREATMENT

Sutra with adjuvant use of *Bilva Patra Malahara* for dressing after proper examination and investigations. The observations were made on different parameters of study like age group, sex incidence, chronicity of disease, different *Prakriti* of patients, different type of Bhagandara, recurrent case after surgical operations, number of fistulous openings and clock wise position. A special proforma



was prepared to assess the effect of *Nirgundi-Kanchnaar Kshar Sutra*. Total six criteria were analysed statistically to know the effect of *Nirgundi-Kanchnaar Kshar Sutra*. Those were Unit Cutting time (UCT), Pain, Burning sensation, Discharge, Itching and Inflammation. Unit Cutting time was measured in days/cm. Pain, Burning sensation, Discharge, Itching, and Inflammation were measured in 5 grades each, from grade 0 to 4.

- The mean unit cutting time of overall 40 patients is 8.2 days/cm. Presence of infection and inflammation delays the Unit Cutting time.
- U.C.T. was high in cases of fibrosed / tough scar tissue which was generally created after the previous operation done for Fistula-in-ano and in cases of Fistula with big abscess cavity.
- In the cases of recurrent Fistula, U.C.T. was more 8.4 days/cm as the tough scar of the previous operation is likely to offer resistance in the process of cutting and delay the process of healing as well.
- In this study U.C.T. was 8.1 days/cm. in straight tract which was less in compare to Horse-shaped tract having U.C.T. 8.2 days/cm.

- In none of the case no sign and symptom of recurrence or incontinence was ever found out during study period.
- All patients completed treatment of full duration without producing any complications in post-operative follow up period.

OVERALL EFFECTS OF NIRGUNDI-KANCHNAAR KSHAR SUTRA AND BILVA PATRA MALAHARA THERAPY

Total 40 patients completed their treatment and 100% were cured completely. None of the patients presented with recurrence of *Bhagandara* or any side effects of the therapy during study period as well as follow up. No adverse reaction was observed during the course of study and post treatment follow up.

CONCLUSION

Kshar Sutra management for ano rectal disorders has shown miraculous results and now it's a Precious gem in the crown of *Shalya Tantra*. No earlier reference or study regarding utility of *Nirgundi Kanchnaar Kshar Sutra* and *Bilva Patra Malahara* has been noted. Thus, it can be inferred that *Nirgundi Kanchnaar Kshar Sutra* along with *Bilva Patra Malahara* can be safely used for

treating the patients of *Bhagandara* (Fistula-in -ano) successfully.



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