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## Apamarga Ksharasutra In Management of Fistula in- Ano : A Clinical Study

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**Abstract:** Background: The Bhagandara is one among the eight Mahagadas described by Acharya Sushruta. 'Fistula-in-ano is an abnormal hollow tract or cavity that is lined with granulation tissue and that connects a primary opening inside the anal canal. Methods: Patients of either sex or age group between 20 to 60 years. Ksharsutra Treatment is given for the periods of 3 months. In addition, treatment was continued beyond 3 months if not healed but observations will be noted up to 3 months only. Observations and Results : Bhagandar is present mainly in age group 35 to 50 years, Pain during defecation is reduced in significantly in subsequent follow up of Ksharsutra. Ksharsutra treatment was effective in reducing discharge from wound site. Bleeding from wound site was effectively reduced, cutting rate was good and Fistula in ano tract was cut highly significantly. Conclusion: Ksharsutra application is effective in relieving Fistula in-ano.

**Keywords:** Ksharsutra, Bhagandara, Fistula in ano, Bleeding, Mahagadas

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**INTRODUCTION:**

'Fistula-in-ano is a strange empty parcel or pit that is fixed with granulation tissue and that associates an essential opening inside the anal canal to a secondary opening in the perianal skin; secondary tracts may be many and can extend from the same primary opening. [1]. The Bhagandara is one among the eight Mahagadas described by Acharya Sushruta. In Vedic period no clear-cut description is found but the Samhitas and Puranas do have abundant evidences regarding the existence and treatment of this disease. The true prevalence of fistula in ano is unknown. One study showed that the prevalence of fistula in ano is 8.6 cases per 100,000 population. Treatment of fistula-in-ano remains challenging[2]. Surgery is the treatment of choice, with the goals of draining infection, eradicating the fistulous tract, and avoiding persistent or recurrent disease while preserving anal sphincter function[3],[4] but it has its own limitation with higher recurrence rate. Otherwise, application of chemical Seton named "Ksharasutra" (a medicated cotton thread coated with Ayurvedic medicines) is mentioned in the ancient samhitas[5]. Application and follow-up of Ksharasutra are very easy, require lesser hospital stay, lesser pain, have very low rate of difficulties and most importantly cost effective. Current study shows results of 30 cases of fistula in ano treated with Ksharasutra.

**MATERIAL AND METHOD****Selection Of Patients :**

All the patients of fistula in ano who attended O.P.D and I.P.D. of our College and Hospital

and willing for Ayurvedic treatment only, were selected irrespective of sex, occupation duration of complaints etc.

**Inclusion criteria :**

- 1) Patients of either sex or age group between 20 to 60 years
- 2) Patient suffering from fistula in ano with presenting sign and symptoms. e.g. Bloody or foul-smelling drainage (pus) from an opening around the anus, Recurrent anal abscesses, Irritation of the skin around the anus, feve, Pain and swelling around anal region.
- 3) Patients ready to give informed written consent only selected.

**Exclusion criteria :**

- 1) Patients taking other treatment from any pathy for the same problem during clinical trial.
- 2) Pregnant and lactating females and children.
- 3) Serious systemic disease i.e. DM, TB, Syphilis, HIV, Hepatitis B.
- 4) Carcinoma of rectum, proctalgia fugax, chron's disease, internal & external haemorrhoid, fissure & where it is contraindicated

**Treatment of subject:**

Period - 3 months (Ksharasutra every 7th day for 3 months)

Treatment of subject was stopped before 3 months if fistula is healed. In addition, treatment was continued beyond 3 months if not healed but observations will be noted up to 3 months only.

**Procedure of placing Ksharasutra**

A long metallic malleable probe with an eye is introduced through the external opening and attempted to pass the tip of probe through the internal opening. Care is taken not to open false track. The eye of the

**Changing of Ksharasutra**

The thread is changed at weekly interval and slowly tightened. A new Ksharasutra is applied by rail-road technique[6].

**Pathya**

**Criteria of assessing the improvement :**

postoperative pain was evaluated by visual analog scale. The length of old thread was measured to know the length of cutting of fistulous tract. Gradually, the thread cuts out of the tract with a healed wound

**Cutting rate of Ksharsutra** = Length of Ksharsutra in first setting/ No. Of weeks for healing (cm/week)

**Pain As per VAS Score<sup>[7]</sup>**

Pain score	Grade
0	No pain
1-3	Mild pain
4-6	Moderate pain
7-10	Severe pain

**Pain scale**



If the score obtained on the scale reduces by 1, it was considered as 10% improvement.

	Spasm	Bleeding
0	No	Absent
1	Mild	Present
2	Moderate	
3	Severe	

probe is threaded with Ksharasutra and probe is gently removed, so the entire tract is edge through medicated Ksharasutra.

Following which the two ends of the thread will tightly tied using two knots outside the anal canal.

Hot sitz bath twice a day, Advice the patient to keep the local site hygienically clean.

Laxative – Dabur Avipattikar Churna[9] 2 - 6 gm at bed time with lukewarm water.

Dietary control was advice.

**Discharge** <sup>[8]</sup> –

Severe : Changing sanitary pads or cotton pads minimum 2 times a day

Moderate : Changing of pads once a day only

Mild : No requirement of pads

Nil : Area is completely dry

Follow up: every 7<sup>th</sup> day.

**OBSERVATION AND RESULTS**

**Follow ups of Patient**

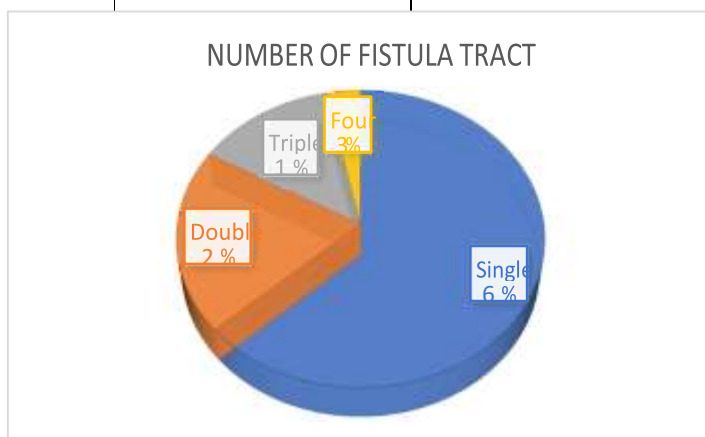


**INCIDENCES**

**Number of Fistula Tract**

Table no 1: Table showing the distribution of patients according to number of fistula tract :

Tract	No of Patients
Single	19
Double	6
Triple	4
Four	1
Total	30



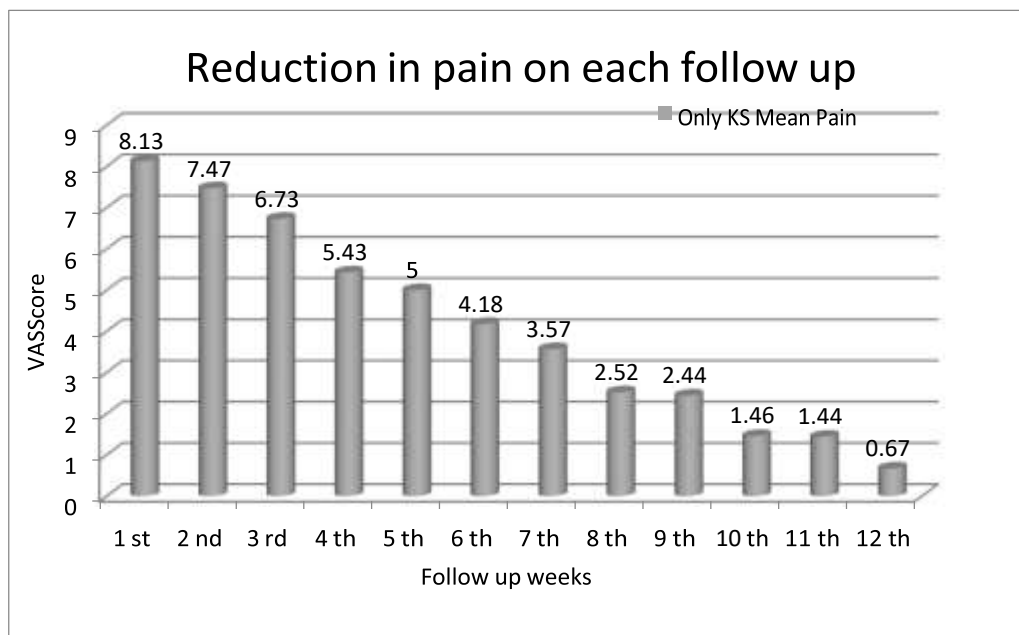
Patients having single fistula in ano were more i.e. 19. while four tracts of fistula in ano were less i.e. 1. Patients having double and triple fistula in ano were 6 and 4 respectively.

**PAIN (Mean VAS Score)**

**2.1 Table showing Pain as per VAS score on each follow up**

Week	Mean Pain	Mean Reduction in pain
1 st	8.13	
2 nd	7.47	0.67
3 rd	6.73	0.73
4 th	5.43	1.30

5 th	5.00	0.43
6 th	4.18	0.82
7 th	3.57	0.61
8 th	2.52	1.04
9 th	2.44	0.08
10 th	1.46	0.98
11 th	1.44	0.02
12 th	0.67	0.78



Reduction of pain was observed in both groups. Pain was reduced gradually after every follow ups.

**Table no 2.2: Table showing the significance of difference in Pain on each follow up**

Pain	Mean Pain	Mean Difference in follow up	S.D.	S.E.	t	P	
0 th	8.13						
1 st	7.47	0.67	1.71	0.31	-15.80	< 0.05	< 0.001
2 nd	6.73	0.73	1.36	0.25	-19.59	< 0.05	< 0.001
3 rd	5.43	1.30	1.12	0.20	-19.87	< 0.05	< 0.001
4 th	4.83	0.55	1.48	0.27	-12.48	< 0.05	< 0.001

5 th	4.03	0.96	1.29	0.24	-12.29	< 0.05	< 0.001
6 th	3.42	1.00	1.09	0.20	-13.18	< 0.05	< 0.001
7 th	2.41	1.14	1.06	0.19	-9.00	< 0.05	< 0.001
8 th	2.32	0.22	1.06	0.19	-9.55	< 0.05	< 0.001
9 th	1.36	1.08	1.04	0.19	-4.85	< 0.05	< 0.001
10 th	1.30	0.00	1.58	0.29	-3.15	< 0.05	< 0.001
11 th	0.60	0.78	1.09	0.20	-1.71	< 0.05	< 0.001
12 th	0.17	0.60	1.34	0.24	-0.08	< 0.05	< 0.001

Reduction of pain was observed. Pain was reduced gradually after every follow ups. Reduction in mean pain was highly significant.

### Bleeding

**Table no 3.1: Table showing bleeding from wound on each follow up in different groups :**

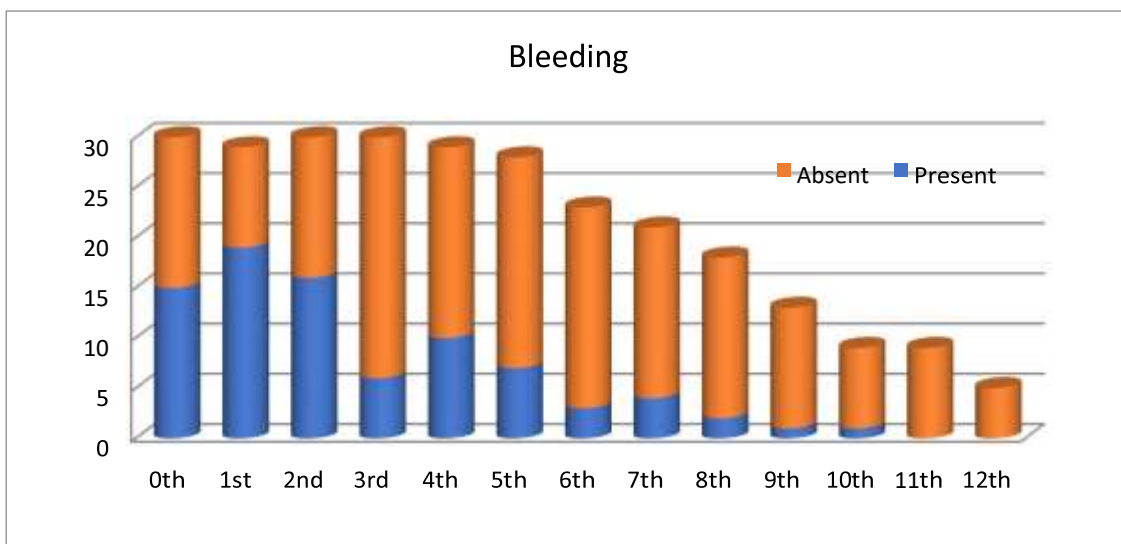
Week	Ksharsutra		
	Present	Absent	Total
0th	15	15	30
1st	19	10	29
2nd	16	14	30
3rd	6	24	30
4th	10	19	29
5th	7	21	28
6th	3	20	23
7th	4	17	21
8th	2	16	18
9th	1	12	13
10 <sup>th</sup>	1	8	9
11 <sup>th</sup>	0	9	9
12 <sup>th</sup>	0	5	5

$$\chi^2 17.05$$

$$P >$$

$$P > 0.050.001$$





Reduction in bleeding is not significant in Ksharsutra group but reduction is there.

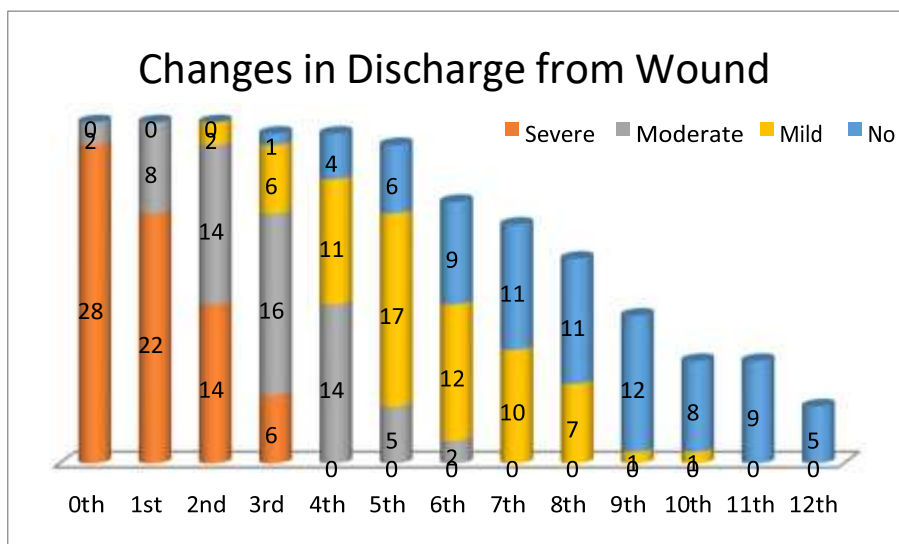
**Discharge**

**Table no 4.1: Table showing Discharge from wound on each follow up**

Week	Severe	Moderate	Mild	No	Total
0th	28	2	0	0	30
1st	22	8	0	0	30
2nd	14	14	2	0	30
3rd	6	16	6	1	29
4th	0	14	11	4	29
5th	0	5	17	6	28
6th	0	2	12	9	23
7th	0	0	10	11	21
8th	0	0	7	11	18
9th	0	0	1	12	13
10 <sup>th</sup>	0	0	1	8	9
11 <sup>th</sup>	0	0	0	9	9
12 <sup>th</sup>	0	0	0	5	5

Chi Square test Applied after 6 weeks

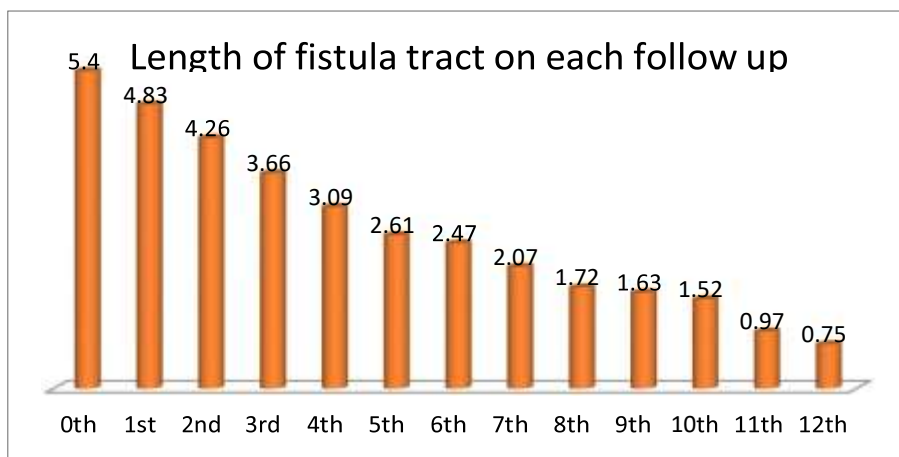
Chi Square : 167.45 P < 0.05, < 0.001



Above observation and significance test shown that Discharge from fistula wound before and after 6 weeks treatment was highly significant. Hence, from above observations and statistical analysis it can be said that reduction in discharge may be due to treatment.

**Table no 5. 1 : Table showing Cutting rate on each follow up**

Weeks	Average FTL Length	Cutting rate	Mean	S.D.	S.E.	T	P	
0th	5.40							
1st	4.83	0.58	0.58	0.10	0.02	-248.80	< 0.05	< 0.001
2nd	4.26	0.57	0.57	0.08	0.01	-302.96	< 0.05	< 0.001
3rd	3.66	0.60	0.60	0.08	0.01	-250.19	< 0.05	< 0.001
4th	3.09	0.57	0.57	0.08	0.02	-192.22	< 0.05	< 0.001
5th	2.61	0.48	0.60	0.10	0.02	-132.55	< 0.05	< 0.001
6th	2.47	0.14	0.62	0.10	0.02	-115.92	< 0.05	< 0.001
7th	2.07	0.39	0.60	0.09	0.02	-100.70	< 0.05	< 0.001
8th	1.72	0.36	0.64	0.10	0.02	-71.94	< 0.05	< 0.001
9th	1.63	0.09	0.60	0.08	0.02	-70.20	< 0.05	< 0.001
10 <sup>th</sup>	1.52	0.11	0.67	0.07	0.02	-62.86	< 0.05	< 0.001
11 <sup>th</sup>	0.97	0.55	0.61	0.08	0.03	-35.70	< 0.05	< 0.001
12 <sup>th</sup>	0.75	0.22	0.66	-	-	-	-	-

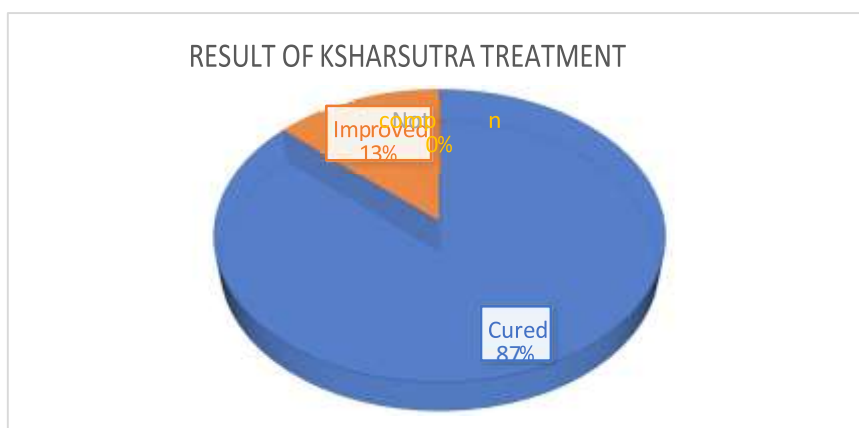


Above observation and significance test shown that cutting rate was highly significant. Fistula tract was reducing on every follow up. Treatment is effective in view of cutting rate of fistula tract.

**Results**

Table no 10 : Table showing Results in both groups:

Result	No of patient
Cured	26
Improved	4
Not Cured	0
complication	0
Total	30



Above analytical table of results of treatment shows that more patients cured. No patient has any complication. Hence it can be said that Ksharsutra treatment is effective in relieving Fistula in ano.

**DISCUSSION:****1) Number of fistula in ano**

Patients having single fistula in ano were more i.e. 19, while double were 6, Triple opening were 4 and more than 3 opening were in 1 patient. As chronicity increase number of opening may increase. This was observed that number of opening were increased in patient having more ignorance and chronicity towards disease.

In cited article number of external opening were single in 89 % cases and rest were more than single, in current study number of single tracts were about 60 %. In current study though patient with multiple opening are more but distributed equally in both groups.

**2) Pain during defecation**

Patients having maximum pain as per mean VAS score were on 0th day. Pain was decreased on each follow up. Significance test shown that difference of mean VAS score before and after treatment was highly significant. Hence, it can be said that change occurred may be due to treatment.

Also, as treatment course advances patient's threshold towards pain also increases hence patient feels like reduction in pain. Also, Sitz bath after defecation also increases relief due to reducing inflammation.

**3) Bleeding from wound site**

Reduction of bleeding after treatment was highly significant. Hence, it can be said that change occurred may be due to treatment.

**4) Discharge from Wound :**

It was observed that Discharge from fistula wound before and after 6 weeks treatment was reduced highly significantly. Hence, from above observations and statistical analysis it

can be said that reduction in discharge may be due to treatment.

**5) Cutting Rate**

Above observation and significance test shown that cutting rate was highly significant. Fistula tract was reducing on every follow up. Cutting rate was equivocal with previous study. Cutting rate was nearly 0.61 cm/ week.

Probable mode of action of drug:

**Ayurveda View**

**Pain** -Sitz bath with warm water : It worked in relieving vitiation of Vata and relieving spasm and localised inflammation at wound site. This also helps in reducing contamination at site of wound.

Pathya and Avipattikar Churna were useful for relieving Agnimandya and helped smooth passage of stool. This ultimately helped in healing of wound at anal region and relieving pain during defecation.

**Discharge**- Reduction in discharge was secondary with increase in healing of wound due to Ksharasutra discharge was simultaneously reducing. Hence effect of decrease in discharge was observed.

Bleeding from wound site:

This may be due to Vranaropak, Vranashodhak, Shothahar effect of drugs and Ksharasutra. Also as follow up underwent with Ksharasutra healing was also associated which helped in reduction of discharge from wound site.

**Cutting Rate** -Ksharasutra is well known for its cutting rate. Standard cutting rate of Ksharasutra was noted as 0.5 cm/week, but in current study it was observed at nearly 0.61 cm/week. This may be due to difference in technique of tightening of Ksharasutra. Also, slight difference may be due to concentration

of Ksharasutra and its storage technique. This property should be studied as a further scope of study. Both groups had nearly equal cutting rate. So, this may be said that dhoopan does not interfere with cutting rate of Ksharasutra.

### CONCLUSIONS

- 1) Bhagandar is present mainly in age group 35 to 50 years, with sex wise more incidence in male and having more non-vegetarian diet.
- 2) Pain during defecation is reduced in significantly in subsequent follow up of Ksharasutra.

- 3) Ksharasutra treatment was effective in reducing discharge from wound site.
- 4) Bleeding from wound site was effectively reduced on subsequent follow ups.
- 5) Cutting rate was good and Fistula in ano tract was cut highly significantly. Hence it can be said that treatment is effective in relieving Fistula in ano

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### Conflicts of interest

Nil.

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