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MANAGEMENT OF COMPLEX FISTULA-IN-ANO WITH KSHARASUTRA: A CASE STUDY

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ABSTRACT
Acharya Sushruta provides a detailed description of Bhagandara, categorizing it as one of the Ashtamahagada. Among the five types of Bhagandara, Sambukavarta is considered incurable (Asadhya), while the other four are regarded as difficult to treat (Kruchrasadhya). Ayurveda advocates for a multi-faceted approach in treating this challenging disease. The para-surgical and surgical techniques outlined by Acharya Sushruta have proven to be highly effective in management of Bhagandara. In modern medical science it can be considered as a fistulain ano. Ksharasutra is one of the parasurgical treatments for fistula in ano. In this case report, a patient with a complex fistula-in-ano and a perianal abscess was treated through a combination of surgical and parasurgical procedure. The perianal abscess was managed with incision and drainage, while the fistulous tracts were treated with Ksharasutra ligation. Old ksharasutra was changed with a new one by rail-road method on every week. The length of tract (LOT) was measured and noted at each session. The patient achieved complete recovery within four and half months.

INTRODUCTION

In Ayurvedic texts, "Bhagandara" is described in detail. The term "Bhaga" refers to the structures surrounding the Guda (anus), including the Yoni (vagina) and Basti (bladder), while "Darana" denotes a tear in the surface that causes pain. The abscess which appear in this area are called as bhagandara pidika in their apakwa avastha and they are called bhagandara at pakwavastha.[1] A fistula in ano is a chronic abnormal communication extending from the ano rectal lumen (internal opening) to an external opening on the skin of perineum or buttock (or rarely, in women, to vagina).[2] The majority are idiopathic or cryptoglandular or lined by granulation tissue. Anal fistulae may be found in association with Crohn's disease, tuberculosis, lymphogranuloma venereum, actinomycosis, rectal duplication, foreign body and malignancy (which may also very rarely arise within a longstanding fistula). The prevalence is greater in men than women, with a rate of 12.3 cases per 100,000 and 5.6 cases per 100,000, respectively. It is characterized by symptoms like pain, swelling, discharge, itching, and social discomfort.[3]

Bhagandara (fistula-in-ano) is classified into five types based on the involvement of Doshas. Among those Shataponaka Bhagandara, associated with Vata Dosha, is characterized by multiple openings resembling a sieve. This condition manifests as fistulas and rectal sinuses with numerous perforation-like openings (Chalanika).[4] A fistula-in-ano is considered complex when it involves a high intersphincteric or transsphincteric tract, an extrasphincteric or suprasphincteric tract, the presence of abscess or collection, multiple tracts, an anorectal-vaginal fistula, or an associated anal stricture. Acharya Sushruta describes Guda Vidradhi, which can be compared to a perianal abscess, along with its treatment involving procedures such as bhedana (incision) and visravana (drainage).

Acharya Sushruta and charaka both described ksharasutra in treatment of bhagandara. Contemporary surgical treatments include fistulectomy, fistulotomy, fibrin glue application, fistula plug insertion, video-assisted anal fistula treatment (VAAFT), and ligation of the intersphincteric fistula tract (LIFT).

CASE REPORT

CHIEF COMPLAINTS

1. Pain over perianal region since 8 months.
2. Intermittent episode of pus discharge from perianal region since 6 months.

ASSOCIATED COMPLAINTS
Fever since 15 days.

HISTORY OF PRESENT ILLNESS
A 30-year-old male patient, N/K/C/O DM or HTN, was apparently healthy before 8 months. Then he experienced pain over perianal region. Initially he neglected the condition and did not seek medical attention. After 2 months, he noticed pus discharge from perianal region. Seeking relief; the patient sought allopathic treatment at a private clinic, which provided temporary relief from pain and pus discharge. However, the symptoms recurred intermittently. Two months later, he again noticed pus discharge but continued to neglect the condition. For the past 15 days, the patient has also experienced fever, prompting him to visit the Shalyatantra OPD at GAMC Bengaluru for further evaluation and management.

PAST HISTORY
Not a K/C/O HTN, DM, Thyroid disorder, TB, Chrons disease, Ulcerative colitis.

FAMILY HISTORY
All family members are said to be healthy and nobody suffered from fistula in ano.

PERSONAL HISTORY
Appetite: Moderate
Bowel: Constipation (hard stool – 1 time / 3- 4 days)
Micturition: 5-6 times / day
0 time / night
Sleep: Disturbed
Diet: Mixed
Addiction: NIL

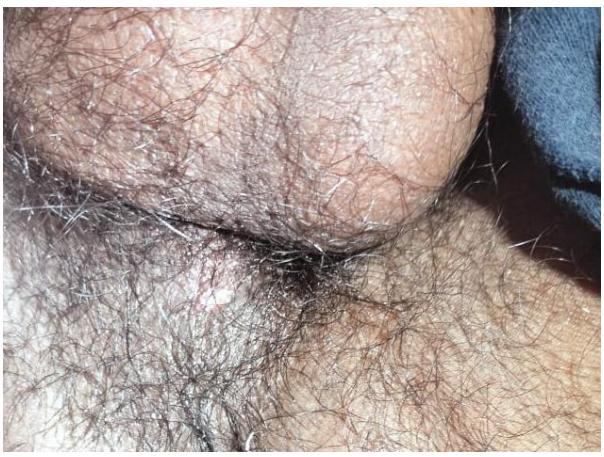
MEDICAL HISTORY
Tab. Amoxiclav 625mg 1-0-1 for 5 days (A/F)
Tab. Paracetamol 325 mg + Aceclofenac 100 mg 1-0-1 for 5 days (A/F)
Tab. Pantop 40mg 1-0-0 for 5 days (B/F)

SURGICAL HISTORY
Not underwent any surgery.

GENERAL EXAMINATION
Temperature: Febrile (100 degree F)
BP: 110/80 mmhg
PR: 84 / min
RR: 19/ min
Pallor: Absent
Icterus: Absent
Clubbing: Absent
Cyanosis: Absent
Lymphadenopathy: Absent
Edema: Absent

SYSTEMIC EXAMINATION
CNS – Conscious and well oriented to time, place and person.
CVS – S_1, S_2 heard, No cardiac murmur, No ectopic beats.
RS - Normal Vesicular Breath Sound Present, Air Entry Bilaterally Equal, No adventious sound present.
P/A – Soft, None tender, Elastic, No organomegaly present, bowel sound – heard

LOCAL EXAMINATION
On Inspection
1. External opening at 10’ o clock position approximately 1.5 cm away from anal verge.
2. External opening in perineo-scrotal junction at 12’ o clock position approximately 3.5-4 cm away from anal verge.
3. Swelling at 5’ o clock position approximately 2 cm away from anal verge.
4. Pus discharge from both external openings.
5. No active bleeding present.



On palpation
Temperature: Local temperature raised over 5 – 11’ o clock position at perianal region.
Tenderness: Present over external openings and 5 – 11’ o clock position at perianal region.
Fluctuation: present on swelling at 5’o clock position.

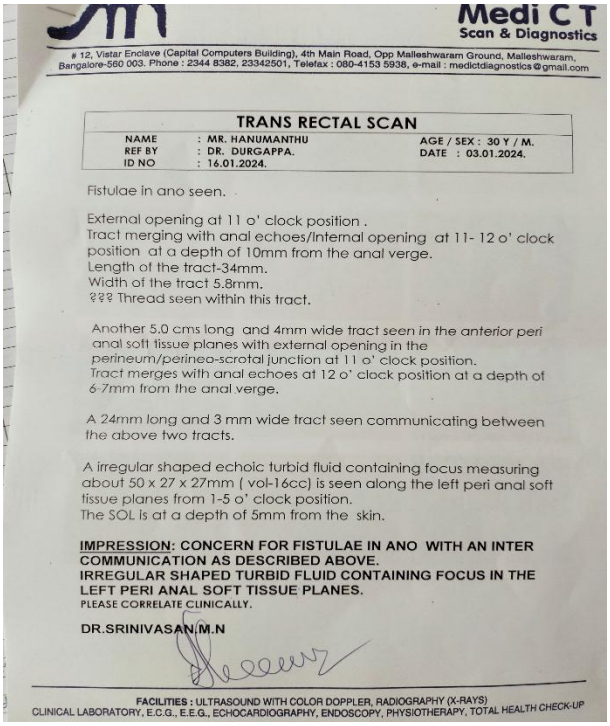
Per rectal examination
Sphincter tone: Normal
Internal opening felt between 11-12’o clock position.

Table No. 1: LABORATORY INVESTIGATIONS.

Hemoglobin(g/dl)	**15.3**	**Total count(WBC)**	**7.6 *10^3/uL**
RBC	5.50 * 10^6/ uL	**PLT**	219
ESR	20 **/1st hr**	**FBS**	123 mg/dl
BT	4'45''	**HIV**	Non-reactive
CT	2'15''	**HBSAG**	Negative

TRUS REPORT (Tras rectal scan) on 03/01/24

- Fistulae in ano seen.
- External opening at 11 o' clock position. Tract merging with anal echoes/Internal opening at 11-12 o'clock position at a depth of 10mm from the anal verge. Length of the tract-34mm.
- Width of the tract 5.8 mm.
- Another 5.0 cms long and 4mm wide tract seen in the anterior peri anal soft tissue planes with external opening in the perineum/perineo-scrotal junction at 12 o' clock position. Tract merges with anal echoes at 12 o' clock position at a depth of 6-7mm from the anal verge.
- A 24 mm long and 3 mm wide tract seen communicating between the above two tracts.
- An irregular shaped echoic turbid fluid containing focus measuring about 50 x 27 x 27mm (vol-16cc) is seen along the left peri anal soft tissue planes from 1-5 o' clock position.
- The SOL is at a depth of 5 mm from the skin.



Medi C T
Scan & Diagnostics

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TRANS RECTAL SCAN

NAME : MR. HANUMANTHU AGE / SEX : 30 Y / M.
REF BY : DR. DURGAPPA. DATE : 03.01.2024.
ID NO : 16.01.2024.

Fistulae in ano seen.

External opening at 11 o' clock position .
Tract merging with anal echoes/Internal opening at 11- 12 o' clock position at a depth of 10mm from the anal verge.
Length of the tract-34mm.
Width of the tract 5.8mm.
??? Thread seen within this tract.

Another 5.0 cms long and 4mm wide tract seen in the anterior peri anal soft tissue planes with external opening in the perineum/perineo-scrotal junction at 11 o' clock position.
Tract merges with anal echoes at 12 o' clock position at a depth of 6-7mm from the anal verge.

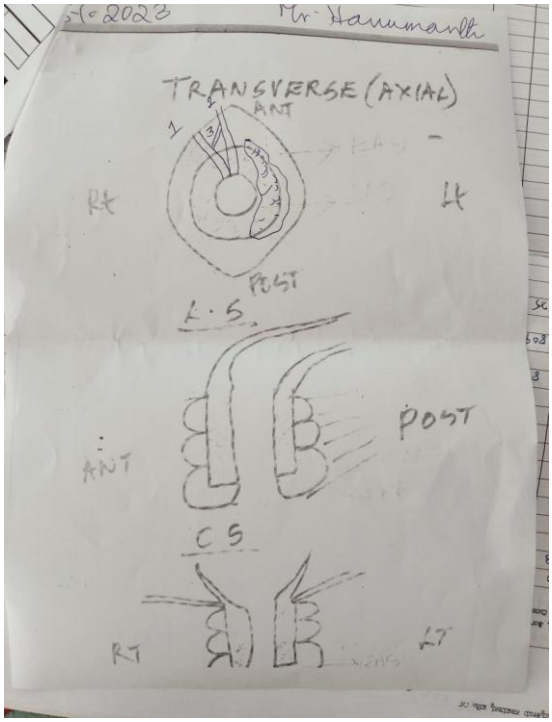
A 24mm long and 3 mm wide tract seen communicating between the above two tracts.

A irregular shaped echoic turbid fluid containing focus measuring about 50 x 27 x 27mm (vol-16cc) is seen along the left peri anal soft tissue planes from 1-5 o' clock position.
The SOL is at a depth of 5mm from the skin.

IMPRESSION: CONCERN FOR FISTULAE IN ANO WITH AN INTER COMMUNICATION AS DESCRIBED ABOVE.
IRREGULAR SHAPED TURBID FLUID CONTAINING FOCUS IN THE LEFT PERI ANAL SOFT TISSUE PLANES.
PLEASE CORRELATE CLINICALLY.

DR.SRINIVASAN.M.N

FACILITIES : ULTRASOUND WITH COLOR DOPPLER, RADIOGRAPHY (X-RAYS) CLINICAL LABORATORY, E.C.G., E.E.G., ECHOCARDIOGRAPHY, ENDOSCOPY, PHYSIOTHERAPY, TOTAL HEALTH CHECK-UP



DIAGNOSIS
Complex fistula in ano (Shataponaka bhagandara)

METHODOLOGY
Pre-operative procedure
A written informed consent was obtained from the patient. The local area of the patient was prepared for the intended procedure. Inj. T. T. 0.5ml IM given. Inj. Xylocaine 2% Test dose 0.5 ml SC given.

OPERATIVE PROCEDURE
1. Perianal abscess: Incision and drainage – 04/01/24
Patient was taken in lithotomy position. peri-anal area painted with povidone iodine followed by sterile draping. Inj. xylocaine was administered for local anaesthesia. Cruciate incision taken by surgical blade no. 11 over most prominent part of perianal abscess and pus drained by breaking all loculi and adequate drainage confirmed by fresh bleeding. Post-operative wound cleaned with povidone iodine and hydrogen peroxide.

2. Fistula in ano: Probing followed by primary threading – 04/01/24

- **1st Fistula tract:** After incision and drainage of perianal abscess, probe was guided from external opening at 10' o clock and taken out from internal opening at 11' o clock position. Primary threading done with barbour linen thread no 20.
- **2nd Fistula tract:** Probe was guided from external opening in the perineum/perineo-scrotal junction at 12 o' clock position, direction of probe noted towards the post-operative wound of perianal

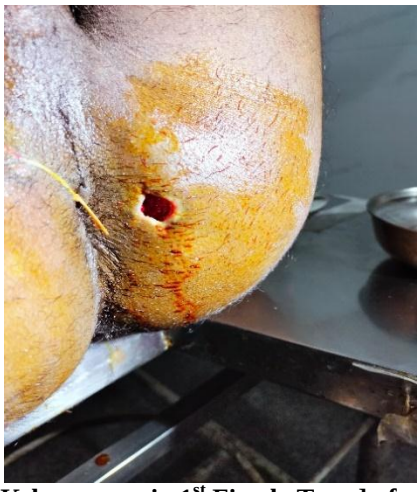
abscess so no intervention has been done for this tract. Fistula tract left untreated so that it healed by secondary intention.

Postoperative procedure: Cleaning of post-operative wound of perianal abscess with povidone iodine followed by sterile dressing with jathyadi taila. 1st sitting of ksharasutra on 07/01/24 and then ksharasutra change on every 7 days by rail road technique.

Table No. 2: LOT of 1st Fistula tract.

Sitting of kshara sutra	1st (07/01)	2nd (10/01)	3rd (17/01)	4th (24/01)	5th (31/01)	6th (07/02)	7th (14/02)	8th (21/02)	9th (28/02)
LOT	Primary thread measured – 5 cm	3.5cm	3.5cm	3cm	2.25cm	1.75cm	1.25cm	0.75cm	0.5cm

After 5 days of incision and drainage of perianal abscess, external opening in the perineum/perineo-scrotal junction at 12 o' clock position was closed.



[Figure No. 1: Incision and Drainage [Figure No. 2: Ksharasutra in 1st Fistula Tract] of perianal abscess].

- **3rd Fistula tract: (31/01)**

On inspection: external opening at 11’ o clock position approximately 3 cm away from anal verge.
On palpation: Tenderness present at 11’ o clock position
Per rectal examination: internal opening felt at 12’o clock position.
Probing followed by primary threading.

Figure No. 3: 2nd Fistula Tract healed with scar mark at perineo-scrotal junction at 12 o' clock position along with external opening at 11’ o clock position approximately 3 cm. away from anal verge of 3rd Fistula tract.

Pre-operative procedure: A written informed consent was obtained from the patient. The local area of the patient was prepared for the ksharasutra procedure.

Operative procedure: probe was guided from external opening at 11’ o clock and taken out from internal

opening at 12' o clock position. Primary threading done with barbour linen thread no 20.

Postoperative procedure: 1st sitting of ksharasutra on 07/02/24 and then ksharasutra change on every 7 days.

Table No. 3: LOT of 3rd Fistula tract.

Sitting of kshara sutra	1st (07/02)	2nd (14/02)	3rd (21/02)	4th (28/02)	5th (28/02)	6th (06/03)	7th (13/03)	8th (20/03)	9th (27/03)	10th (03/04)
LOT	Primary thread measured 6cm.	4cm	3.5cm	3 cm	2.25cm	1.75cm	1.25cm	0.75cm	0.75cm	0.5cm

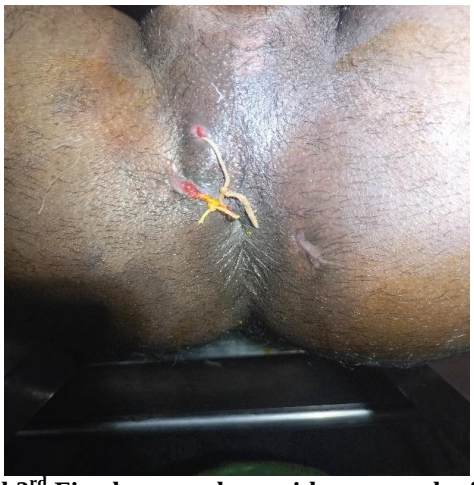


Figure No. 4: ksharasutra in 1st and 3rd Fistula tract along with scar mark of healed post-operative incision and drainage wound at 5'oclock position.

Table No. 4: Internal medication.

03/01/24 – 07/01/24	Tab. Metrogyl 400mg	1-1-1 (A/F)
	Tab. Zerodol SP	1-0-1 (A/F)
	Cap. Pantop D	1-0-0 (B/F)
	Avipathikara choorna	0-0-1table spoon with lukewarm water
	Panchavalkala kashaya sitz bath	Twice a day for 15-20 mins Local
08/01/24 – 30/01/24	Varunadi Kashaya	15ml-0-15ml (B/F)
	Triphala Guggulu	1-1-1(A/F)
	Chitrakadi vati	1-0-1 (B/F)
	Gandhak vati	1-01 (A/F)
	Avipathikara choorna	0-0-1table spoon with lukewarm water
	Panchavalkala kashaya sitz bath	Twice a day for 15-20 mins Local
31/01/24 – 03/04/24	Varunadi Kashaya, Dashamoola kashaya	15ml-0-15ml (B/F)
	Chitrakadi vati	1-0-1 (B/F)
	Gandhak vati	(A/F)
	Avipathikara choorna	0-0-1table spoon with lukewarm water
	Sukumar ghrita	1 TSF -0-0 (B/F) with luke warm water
	Panchavalkala kashaya sitz bath	Twice a day for 15-20 mins Local

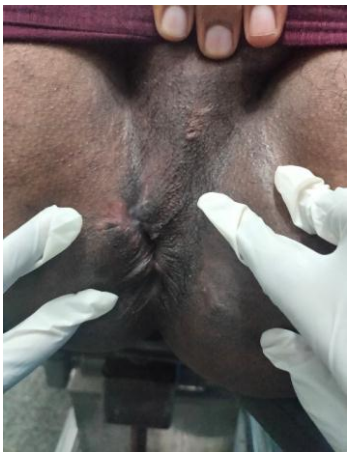
OBSERVATION AND RESULT

A 30-year-old male patient, of complex fistula in ano was admitted to the inpatient department of GAMC Bengaluru under the shalyatantra department.

An incision and drainage of perianal abscess was done. The Post-operative wound from incision and drainage was measured as 2cm* 2cm* 3.5cm. Probing followed by primary threading was done for the first fistula tract, and the wound was cleaned and dressed with povidone-iodine. After 5 days of incision and drainage of perianal abscess, external opening of second fistula tract was closed. Post-operative wound was completely healed by 23 days. Ksharasutra changed on every week and LOT (Length of tract) was measured at each visit. (TABLE No: 2). fistula tract was cut open by kshara sutra after 5 days of last sitting of kshara sutra change and wound was completely healed in next 15 days. The unit cutting time (UCT) for the first fistula tract was recorded as 15 days per centimeter.

After 27 days another external opening was noted at 11' o clock position approximately 3 cm away from anal verge (3rd fistula tract). Probing followed by primary threading was done for 3rd fisula tract. Ksharasutra changed on every week and LOT (Length of tract) was

measured on every sitting. (TABLE No: 3). UCT (unit cutting time) was observed as 16 days /cm for 3rd fistula tract. fistula tract cut opened by kshara sutra after 7 days of last sitting of kshara sutra change and completely healed in 27 days. The patient achieved complete recovery within 4.5 months.



[Figure No. 5: 3rd fistula tract lay opened [Figure No. 6: All fistula tract healed with scar after 10 sitting of ksharasutra] Formation].

DISCUSSION

Fistula-in-ano is one of the most common anorectal diseases. Fistula-in-ano is not a life-threatening condition but can have a significant impact on a patient's quality of life. Complications of surgical treatment can be life-altering for a patient and include faecal incontinence, fistula recurrence, and anal stenosis. Treatment is focused on the destruction of the fistula tract with the preservation of the sphincter complex. The action of Ksharasutra is by simultaneous cutting and healing of the fistulous tract and free drainage of pus from the tract. The high alkaline content does not allow the growth of pathogens inside the tract. The ingredients of Apamarga Kshara Sutra include Snuhi Ksheera, Apamarga Kshara, and Haridra (turmeric) powder. Snuhi Ksheera possesses both Shodhana and Ropana properties, along with Katu and Tikta rasa and Ushna (hot) potency, which promote the healing process by reducing infection and inflammation. Apamarga Kshara exhibits properties typical of Kshara, such as Chhedana (excision), Bhedana (incision), Lekhana (scraping), and Tridoshaghna.[5] On the Kshara Sutra, Apamarga Kshara indirectly cauterizes tissue through its Ksharana (erosive) action. Haridra powder, known for its blood-purifying (Rakta Shodhana) properties, is effective in treating skin disorders (Twaka Doshahara), reducing inflammation (Shothahara), alleviating Vata dosha (Vatahara), acting as an antimicrobial (Vishaghna), and promoting wound healing (Vrana Ropana). The bactericidal properties of turmeric further enhance its healing effect. Overall, Apamarga Kshara Sutra combines chemical and mechanical cutting action with simultaneous healing effects on the fistulous tract.

CONCLUSION

The use of Ksharasutra in the management of complex fistula-in-ano proves to be a highly effective treatment modality. It combines the dual actions of cutting and healing of the fistulous tract, ensuring drainage of pus and promoting healthy tissue regeneration. This approach avoids the complications associated with conventional surgery, such as fecal incontinence and recurrence. Complete recovery was achieved within 4.5 months, highlighting Ksharasutra as a promising treatment for complex cases.

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