Journal of Ayurveda & Holistic Medicine

https://jahm.co.in

eISSN-2321-1563

Case Report

Integrated Treatment Approach in the Management of Complex High Trans-Sphincteric Fistula-in-Ano (*Bhagandara*): A Case Report

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ABSTRACT:

Background: Fistula-in-ano is a chronic morbid condition, usually associated with high recurrence and sphincter injuries with the conventional surgical approach. This is a unique case because of the successful outcome of the integrated approach of modern surgeries (Fistulotomy and Fistulectomy) and Ayurvedic *Ksharasutra* therapy, and demonstrates a patient-centered, multidisciplinary, integrated clinical approach, with preservation of the sphincter with enhanced and speedy post-procedural healing. **Clinical Findings:** A 57-year-old male laborer presented with chief complaints of pain, swelling, intermittent pus-draining wound near the anal region for 8 years. He had undergone two previous similar episodes, and incision and drainage were done in the past. Examination revealed three external openings at 7 o'clock, 8 o'clock, and 11 o'clock and an internal opening at 7 o'clock, with a high trans-sphincteric tract, swan neck type. **Intervention:** Fistulotomy and Fistulectomy were done for drainage and bland excision of the tract, followed by *Ksharasutra* ligation of the residual tract. Post-operative management includes intravenous antibiotics and analgesics, Internal ayurvedic medications (*Triphala Guggulu, Gandhaka Rasayana, Avipattikara Churna*), and Local *Jatyadi Taila* dressing. *Ksharasutra* was changed weekly, and the patient followed up regularly. **Outcomes:** Complete healing of the wound was achieved by the 35th Day; in addition to no post-procedural complications or recurrence were reported. Post-treatment, no discomfort was observed, and overall satisfaction was present, with preserved sphincter function. **Conclusion:** A chronic high trans-sphincteric fistula-in-Ano was successfully managed through an integrated approach combining Fistulectomy, Fistulotomy, and Ayurvedic *Ksharasutra* therapy with internal and external medications. The integrative plan facilitated faster wound healing, complete sphincter preservation, and recurrence-free recovery. This case highlights the potential of a safe, effective, and evidence-based multidisciplinary protocol as a reproducible management option for complex high trans-sphincteric fistula-in-ano.

KEYWORDS: *Bhagandara*, fistula-in-Ano, fistulotomy, fistulectomy, *Ksharasutra* ligation, Case Report.

RECEIVED ON:
21-07-2025

REVISED ON:
07-11-2025; 10-11-2025

ACCEPTED ON:
11-11-2025

Access This Article Online:

Quick Response Code:

Website Link:

https://jahm.co.in

DOI Link:

https://doi.org/10.70066/jahm.v13i10.2240

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CITE THIS ARTICLE AS

Laxmikant S D, Suketha Kumari, Bawadkar Prasad. Integrated Treatment Approach in the Management of Complex High Trans-Sphincteric Fistula-in-Ano (*Bhagandara*): A Case Report. *Journal of Ayurveda and Holistic Medicine (JAHM).*2025;13(10):98-107

1. INTRODUCTION

Fistula-in-Ano is a chronic ailment defined as an abnormal communication between the anal canal and perianal skin, lined by unhealthy granulation tissue. Anorectal abscess resulting from obstruction of anal glands often leads to fistula formation. If fistula is close proximity to the sphincter complex, tract might pass through the sphincter and cause discomfort. This may result in complications like incontinence. Most patients undergo abscess drainage subsequently develop a fistula sooner or later. Apart from this, 30–70% of patients have a fistula at presentation and common in men. Associations related to obesity, diabetes, smoking, hyperlipidemia and sedentary lifestyle have been described as possible risk factors. Average age of onset is around 38 years. [1] Despite various modern surgical techniques like fistulotomy, fistulectomy, seton placement anal fistula plugs, Video-Assisted Anal Fistula Treatment (VAAFT) and stem cell therapy, no one technique has been demonstrated to be consistently superior in all respects, with special reference to complex trans-sphincteric fistula which often fail conventional procedures with prolonged healing, recurrence or sphincter compromise. [2]

It's rarely listed case showing successful outcome of integrated approach combining current surgical methods (fistulotomy and fistulectomy) and Ayurvedic *Ksharasutra* ligation along with supportive internal medications in treating a complicated longstanding trans-sphincteric fistula with multiple external openings. This combination approach overcomes the shortcomings of conventional surgical treatment**,** both contemporarily it effectively tackles the fistulous tract and sphincteric preservation along with minimal recurrence and decrease duration of wound healing at faster rate. Ayurvedic medication like *Triphala Guggulu* and *Gandhaka Rasayana* along with local *Jatyadi Taila* dressing were proved to reduce inflammation and promote tissue regeneration. Reporting of this case would hence broaden the clinical knowledge based on need-based evidence for a multimodal cross-disciplinary patient-centric integrated therapeutic strategy for safe, cost-effective and effective management of complicated or recurrent fistula-in-ano, at same time providing a reproducible treatment model for treating similar complex fistula cases. [3]

2. CASE REPORT

Patient Information: A 57-year-old male patient, labor worker by occupation, came to outpatient department with chief complaints of pain and swelling in anal region since last eight years associated with intermittent pus discharge from swelling for past six months. Previously he had undergone incision and drainage twice for similar complaints, which provided temporary relief but, symptoms recurred after a few months each time. He denied any history suggestive of inflammatory bowel disease, Crohn’s disease, ulcerative colitis or tuberculosis. There was no history of trauma, previous surgery apart from above mentioned or any systemic illness like hypertension, diabetes mellitus or any other chronic medical conditions. Family history for anal or gastrointestinal disease was not found. Patient had mixed diet pattern with normal appetite, regular bowel and bladder habits and adequate sleep. Psychosocially,

chronicity of ongoing symptoms and recurrence led to mild anxiety and occasional work disruption but no depressive features was not observed.

Clinical Findings: On general examination, patient was well oriented with stable vitals: Pulse rate 78/min, blood pressure 124/78mmHg, Respiratory rate 18/min. temperature 98.4 ^{o} F, no pallor, icterus, cyanosis or pedal edema was noted. Systemic examination revealed no abnormality. Local perianal inspection revealed three external openings, located at 7, 8 and 11 o'clock position, with respect to anal verge, at a distance of around 10 cm, 3 cm and 4 cm away from it respectively. All the external openings were discharging pus. The swelling was tender on palpation and indurated along the fistulous tract. On-table per-rectal examination revealed an internal opening at 7 o'clock position. External swelling was corresponding to internal opening at 11 o'clock position. Findings indicate high, complex, trans-sphincteric fistula, baseline continence was normal (Wexner score=0).

Diagnostic assessment: On clinical examination there was multiple external openings at 7, 8 and 11 o'clock position and single internal opening at 7o' clock position. (Figure 1).

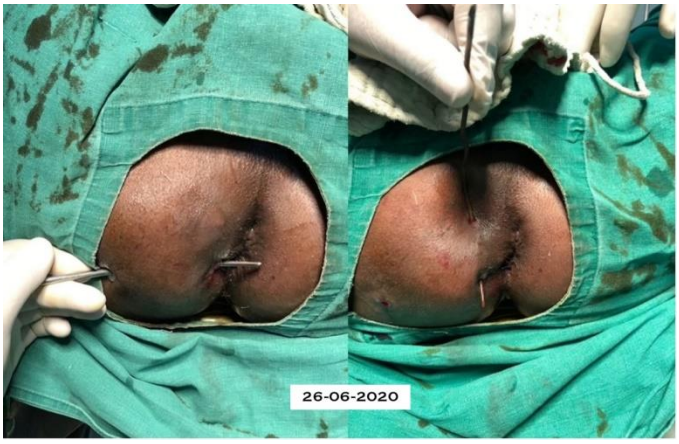

Figure 1: Before treatment- Showing multiple openings at 7 O' clock, 8 O' clock and 11 O' clock positions near the anal verge.

High-resolution trans perineal ultrasonography was done using 7.5–12 MHz linear probe to delineate fistulous tract. It has shown a high, complex trans-sphincteric fistula with a swan-neck configuration and small abscess collection near 7 o'clock position, at 5 cm from anal verge. MRI was not done due to cost and limited access at treatment facility, though ultrasonography provided adequate anatomical details for planning surgical intervention. Based on imaging and clinical correlation, a diagnosis of complex high trans-sphincteric fistula-in-Ano (*Bhagandara*) was confirmed by ruling out other relevant conditions as presented in table 1.

Table 1: Differential diagnosis ruled out

Differential Diagnosis	Basis for Exclusion
Perianal abscess	Chronic course, multiple openings, persistent external discharge without acute inflammation
Pilonidal sinus	Openings not located in natal cleft; tract directed toward anal canal
Hidradenitis suppurativa	No axillary or groin lesions; absence of recurrent nodules or scarring
Tubercular fistula	No history or evidence of pulmonary/intestinal TB; negative chest X-ray and ESR within normal limits
Crohn's disease-related fistula	No GI symptoms, family history, or systemic features of IBD

Expected Prognosis and Recurrence Risk: With integrative approach combining fistulotomy, fistulectomy and *ksharasutra*, prognosis was favorable, reported recurrence rates for similar integrative treatment are less than 5%, lower than that of conventional surgery alone.

Therapeutic intervention: Patient underwent combined surgical, pharmacologic and Ayurvedic therapies. Timeline of intervention mentioned in Table 2.

Table 2. Consolidated Timeline of Clinical Course and Therapeutic Interventions

From–To	Clinical Event /Intervention	Drug/Therapy	Duration	Anupana	Rationale/Remarks
26/06/2020	Presentation to OPD with pain, swelling, pus discharge	—	—	—	Provisional diagnosis of *Bhagandara* made
26/06/2020	Admission & routine evaluation, pre-anesthetic check-up	—	—	—	Baseline workup prior to surgery
27/06/2020	Fistulectomy + Fistulotomy + Initial *Ksharasutra* ligation under spinal anesthesia	—	Single procedure	—	Combined approach for debridement, drainage and controlled fibrosis
27/06 to 03/07/2020	Post-operative care	• Inj. Ceftriaxone IV bid (Sara Pharmaceuticals- batch no. B2001-03B), • Inj. Metronidazole 100 ml IV tid (Lxir Medilabs- batch no. ID19002), • Inj. Pantoprazole Sodium 40 mg IV bid (JM Lifesciences- batch no. S1108035), • Inj. Diclofenac Sodium 75 mg IM s.o.s (Troikaa Pharmaceuticals- batch no. -PA20002), • Local ***Jatyadi Taila*** (Baidyanath Pharmacy- batch no. B48) dressing daily.	7 Days	—	Infection control, analgesia, and wound healing support
03/07/2020	First ***Ksharasutra t****hread change*; discharge with oral Ayurvedic therapy	• *Triphala Guggulu* 1 tab bid oral (SDM Pharmacy- batch no. 191243), • *Gandhaka Rasayana* 250 mg bid oral (Unisage Green Sciences - batch no. 076), • *Avipattikara Churna* 1 tsp HS with warm	15 Days	Warm water (for *Churna*)	Promote wound healing, reduce inflammation, regulate digestion

		water (KLE Pharmacy- batch no. ikle2028),			
10/07 to 24/07/2020	Weekly ***Ksharasutra*** changes (2nd–4th)	Continuation of oral Ayurvedic medicines	2 weeks	—	Sustained debridement and fibrosis induction; progressive wound healing
01/08/2020	**Complete wound healing** observed	—	—	—	No recurrence, normal continence maintained

Interventional SOPs:

***Ksharasutra* SOP:** Apamarga *Ksharasutra* was prepared as per Standard Operating Procedure given in **Ayurvedic Pharmacopoeia of India** using *Snuhi* (*Euphorbia neriifolia L.*) latex, *Apamarga-Kshara* (*Achyranthes aspera* L.) and *Haridra* (*Curcuma longa* L.) *churna*. Under aseptic precautions, *Ksharasutra* was applied under local anesthesia by gently probing tract and ligating it with full contact with tract. **Frequency**: Thread was changed once a week till healing of tract. **Safety**: Sterile technique was ensured; minimal manipulation was done with no bleeding or infection throughout.

***Jatyadi taila* dressing SOP**: *Jatyadi Taila* containing *Jatipatra* (*Jasminum officinale* L.), *Nimba* (*Azadirachta indica* A. Juss.), *Patola* (*Trichosanthes dioica* Roxb.), *Karanja* (*Pongamia pinnata* L.) Pierre), *Haridra, Daruharidra* (*Berberis aristata* DC.), *Kustha* (*Saussurea lappa* C.B. Clarke), *Lodhra* (*Symplocos racemosa* Roxb.) and *Yashtimadhu* (*Glycyrrhiza glabra* L.) *in Tila Taila* (*Sesamum indicum* L.) was warmed to body temperature. **Frequency**: Applied once daily over the wound using sterile gauze after cleaning the region with normal saline. **Safety**: No irritation or hypersensitivity was noted.

3. FOLLOW UP AND OUTCOME

Follow-up was continued every 7 Days for 4 weeks with change of *Ksharasutra*, examination of wound and dressing with *Jatyadi Taila*. Clinical outcomes complete resolution of pain, swelling and pus discharge from wound was achieved. Complete wound healing was noted on 35th Day. (figure 2), as evidenced by physical examination and absence of discharge from wound (primary outcome). Detail follow-up wise observations presented in table 3.

Figure 2: After treatment- Masked post-treatment image showing complete wound healing by Day 35.

Table 3: Follow-up and Outcomes

Follow-ups	Clinical Findings	Clinician-Assessed Outcome	Wound Status / Outcome	Patient Perspective	Adverse Events
27-06-2020 (Day 1)	Initial intraoperative *Ksharasutra* application; no complications	Tenderness; noted post-procedure.	Initiation of controlled drainage and wound healing	Reported immediate relief from pain and pressure	None
03-07-2020 (Day 7)	First *Ksharasutra* change; no complications	Mild tenderness; pus reduced; granulation healthy	Reduced pain and discharge	Reported comfort and relief	None
10-07-2020 (Day 14)	Second *Ksharasutra* change	Tenderness minimal; tract contracting; granulation healthy	Tract showing progressive healing	Expressed satisfaction with improvement	None
17-07-2020 (Day 21)	Third *Ksharasutra* change	No pus; swelling decreased; healthy granulation	Significant reduction in swelling	Felt confident about recovery	None
24-07-2020 (Day 28)	Fourth *Ksharasutra* change	Tract almost closed; granulation complete	Almost complete closure of tract	Noted continued comfort and healing	None
01-08-2020 (Day 35)	Final review	Wound completely healed; no discharge; normal tissue observed	Wound completely healed, no recurrence	Very satisfied; first time with lasting relief	None

Adherence and tolerability: Was monitored on weekly reviews, tablet counts and observation for local or systemic reactions. No pain, bleeding, infection or hypersensitivity was noted. Progressive wound healing led to complete closure by Day 35, with preserved continence (Wexner score 0) and high patient satisfaction.

4. DISCUSSION

Fistula-in-Ano is a perplexing disease which is difficult to manage i.e. heal and to prevent recurrence. In this case, we used combination techniques (fistulotomy and fistulectomy [4-5] with *Ksharasutra* ligation) and each technique had its own advantages.

Multiple external openings were visible before the intervention (**Figure 1**) and intraoperatively managed using an integrative surgical approach. Complete healing was noted after 35 Days (**Figure 2**). Mechanism underlying these outcomes is illustrated in an integrative Mode of Action flowchart (**Figure 3) (table 3).**

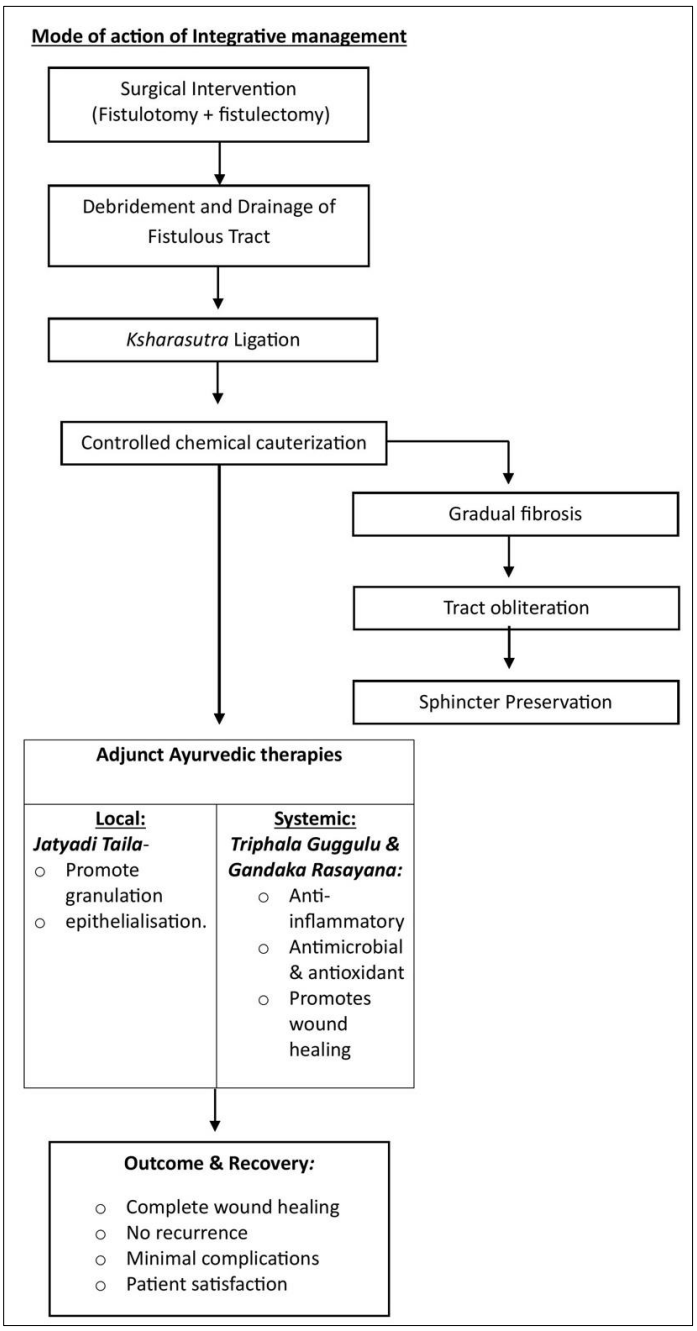

Figure 4: Schematic representation showing an integrative action of surgical and Ayurvedic interventions leading to controlled fibrosis, wound healing and sphincter preservation.

Fistulectomy is commonly preferred treatment for complex and high trans-sphincteric fistula, which involves excision of fistulous tract. When precisely performed such as sphincter sparing fistula coring surgery, procedure could theoretically preserve sphincter mechanism. Additionally, fistulectomy offers advantage of less incontinence as compared to fistulotomy and a lower risk of recurrence. [6] Fistulotomy is most commonly used technique for low-lying fistulas. Its advantages include short operative time, quick healing and few complications. [7] In patients with complex tracts with multiple external openings, fistulotomy is useful in providing drainage and debridement of tracts. Fistulotomy with a seton was reported previously in a 36-year-old man with seven external openings [8] to achieve clinically successful treatment.

Ksharasutra, [9] traditional Ayurvedic medicated thread, promotes healing, produces fibrosis and prevents recurrence when used independently or especially in case of fistulas involving sphincter, circumferential fistula or those with ramifications, long or horseshoe-shaped complex fistulous tracts involving even part of sphincter or when it crosses trans muscular spaces. [3,10] In this patient, it was used for residual tract management through *Ksharasutra* application after fistulotomy/fistulectomy. In literature, *Ksharasutra* is known to have a high success rate with minimal recurrence, reduced post-operative pain and cost-efficiency compared to conventional surgery. [3,9,11]

Adjunctive Ayurvedic therapies contributed to recovery in this patient. *Triphala Guggulu* has antibacterial, wound-healing and antioxidant properties [12] and *Gandaki Rasayana* having anti-inflammatory and analgesic properties. [13] *Jatyadi Taila* improves

circulation, oxygenation and regeneration of tissues, thus helping in the healing of chronic or non-healing wounds. [14]

Relevant literature identifies that combining approaches in complex fistulas will give better results rather than single approach. Surgical Excision alone has shown more recurrence in complex tracts whereas combination with *Ksharasutra* has decreased recurrence and faster healing of wound. [3,6,10,11] Oral medications and local application of Ayurvedic medicines played role in recovery by their action such as alleviating inflammation (anti - inflammatory), scavenge oxygen free radicals (antioxidants) and they also inhibit growth of infection causing microbes (antimicrobial actions). [12-14]

Strengths of this case include holistic integration of evidence-based modern surgery with traditional therapies (*ksharasutra* and *shamana* medicines), individualized treatment for complex fistula, close follow-up and published patient satisfaction. It helped in a multidisciplinary way in management of complex tracts, thereby reduced recurrence and post-operative complications.

Limitations include single-patient design, limited access to long-term follow up and absence of comparator. Apart from this, integrated approaches may have variable effectiveness depending on expertise of practitioner and patient-specific factors which leads to limiting broader applicability.

Overall message: Integrated modern and Ayurvedic management is a safe, economical and reproducible option for management of complex or recurrent fistula-in-Ano.

5. CONCLUSION

This case highlights the successful management of a 8-year, chronic, recurrent, trans-sphincteric fistula-in-Ano with integrated approach compromising fistulectomy, fistulotomy and ligation with *Ksharasutra*, along with internal (*Triphala Guggulu, Gandhaka Rasayana, Avipattikara Churna*) and external (*Jatyadi taila*) Ayurvedic medicines. Total duration of treatment was 35 Days and total follow-up period was 4-weeks. Complete healing was observed and no complaints or recurrence were observed during the 4-weeks follow-up period. No adverse effects were noted. Main outcome of study was rapid wound healing, with preserved sphincteric function and continence. Key message: Integrated modern and Ayurvedic management is a safe, economical and reproducible option for management of complex or recurrent fistula-in-Ano. Though, in future, larger sample studies are warranted. The case stands to supports an integrative management in complex fistula-in-Ano as effective sphincter preserving approach.

Declaration of Patient Consent – The authors confirm that they have acquired a patient consent form, in which the patient or caregiver has granted permission for the publication of the case, including accompanying images and other clinical details, in the journal. The patient or caregiver acknowledges that their name and initials will not be disclosed, and sincere attempts will be undertaken to safeguard their identity. However, complete anonymity cannot be assured.

Patient perspective - The patient reported satisfactory improvement following treatment. He experienced relief from pain, swelling, and discharge, which had repeatedly affected his daily activities in the past. He expressed satisfaction with the integrated approach and appreciated the structured follow-up and supportive care that contributed to his recovery.

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Declaration of Generative AI

The authors declare this manuscript was written without the use of generative artificial intelligence tools. All the content, including text generation, data analysis and references was developed and reviewed by the author without assistance from AI technologies.

Conflict of Interest – The authors declare no conflicts of interest.

Source of Support – The authors declare no source of support.

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