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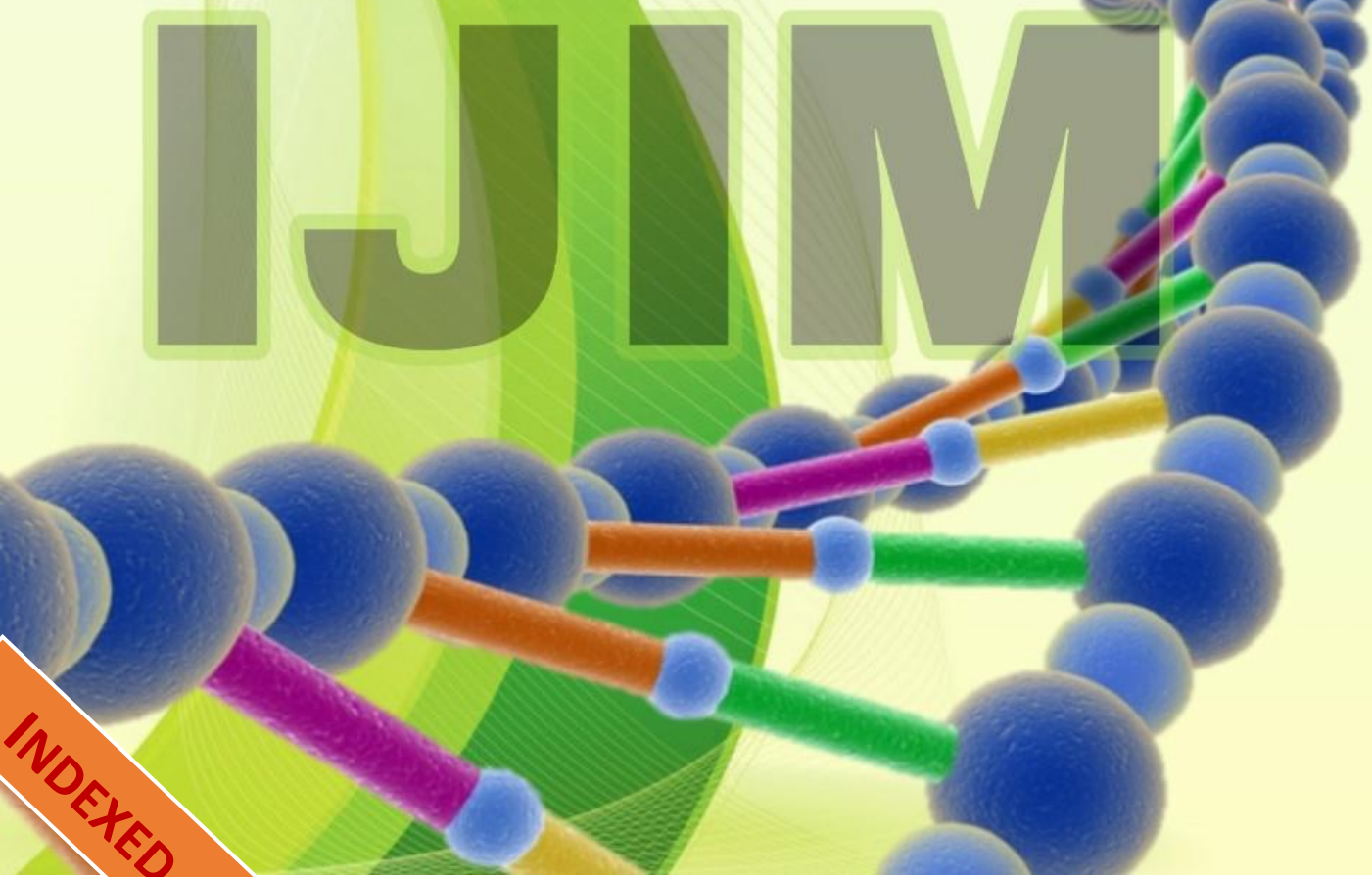

Case Study

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Integrative Healing Approach for Complex Fistula in Ano Using Conventional Ksharsutra with MRI And Microbiological Correlation: A Case Report

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ABSTRACT: Complex trans-sphincteric fistulas with multidrug-resistant infection pose high recurrence risks and challenge sphincter preservation. While MRI fistulogram and pus culture-sensitivity guide targeted treatment and Ayurvedic Kshar Sutra ligation—a minimally invasive sphincter-sparing technique—remains under-utilized in modern protocols. A 35-year-old male with a recurrent fistula-in-ano with pus discharge from perianal region and failed private-hospital treatment underwent MRI fistulogram (trans-sphincteric track, intersphincteric abscess extending to scrotal root) and pus culture, isolating a multidrug-resistant organism sensitive only to higher antibiotics. Patient undergone partial fistulectomy surgery with Apamarga Ksharsutra ligation followed by targeted antibiotics were started. Weekly thread changes and modern wound assessment were performed. Significant clinical improvement occurred; the fistula track epithelialized completely within 8 weeks, with symptom resolution and no continence impairment. Antibiotics alone had previously failed; MRI and culture-directed therapy provided diagnostic clarity and effective planning. Integrating MRI fistulogram and pus culture-sensitivity testing with Apamarga Kshar Sutra ligation offers a reproducible integrative protocol for complex fistulas in controlling resistant infection, preserving sphincter function, and reducing recurrence. Broader studies can standardize this Ayurveda–modern approach. This case highlights the potential of combining modern diagnostics with traditional Ayurvedic techniques for effective management of complex fistula-in-ano. The use of Kshar Sutra ligation, guided by MRI and Pus C/S test, provides a promising approach for treating complex fistulas, especially in recurrent cases.

KEYWORDS: Complex transphincteric fistula, multidrug-resistant infection, MRI fistulogram, partial fistulectomy, pus culture-sensitivity, Apamarga Ksharsutra ligation.

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INTRODUCTION:

Bhagandara[1] is one of the *Ashtamahagadas*[2] in *Sushruta Samhita* and classified as a chronic sinus tract near guda that discharges purulent material and resists spontaneous healing, closely matching modern fistula-in-ano,[3] it implies a chronic granulating tract connecting two epithelial lined surfaces. It may be mucosal or cutaneous and characterized by one or more small opening around anal verge. Most anal fistulas originate from intersphincteric abscesses caused by infected anal glands; these abscesses can extend upward, downward, medially, laterally, or circumferentially around the anorectum. Complex subtypes (high trans-sphincteric, suprasphincteric) carry recurrence rates up to 25–40% after fistulotomy and risk continence impairment. The challenge intensifies when multidrug-resistant organisms colonize the tract,[4] rendering antibiotics alone ineffective.

Modern management sets MRI fistulogram as the diagnostic benchmark: multiplanar T2-weighted and STIR sequences delineate primary tracks, secondary ramifications, and supralevator extensions, enabling Parks and St James's grading. [5] Pus culture-sensitivity adds microbiologic direction in an era of rising antimicrobial resistance.[6] Yet operative choices—fistulotomy, LIFT, flaps—still trade cure against sphincter injury.

Acharya Sushruta recommended *Ksharsutra* therapy given the high recurrence after standard surgery; while he mentions *Kshara from Kadali, Palasha,* and others, *Apamarga Kshara* from *Achyranthes aspera* ash is considered the foremost.[7] *Ayurveda* addresses *Bhagandara* primarily through *Ksharsutra* ,[8] an *Apamarga*-based medicated Seton that combines slow mechanical division with controlled chemical cauterization, reporting minimal continence loss.[9] What remains underexplored is a structured protocol that priortised MRI and culture to guide patient selection, antibiotic adjuncts, and timely *Kshar Sutra* ligation.

We present a 37 years old male with a Parks grade-IV trans-sphincteric fistula and MDR colonization, treated with MRI- and culture-informed antibiotics followed by partial fistulectomy and standardized *Apamarga Kshar Sutra*. The tract epithelialized in 12 weeks, illustrating how integrative decision-making can link *Sushruta's Bhagandara* principles to contemporary fistula care**.**

Chief Complaints

This single case report was carried out in the Department of *shalyatantra* at Pakwasa Hospital Nagpur between October 2024 to February 2025. Patient gave history of boil at right perianal region 8-9 months ago and complaining intermittent pus discharge from anal and perianal region since last 8 months continuous pain. He had taken treatment from various medical practitioner, incision and drainage was done under local anaesthesia, but didn't get relief and symptoms worsened. Then he came to Shalyatantra OPD of our institute and got admitted for further surgical and conservative management.

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On local examination there was burst boil at 7 o'clock position and induration from 6 to 12 o'clock position upto the root of scrotum. There was purulent pus discharge with raised temperature and tenderness present

A detailed clinical history was obtained and all pre-operative investigations were done such as HIV, HBsAg, CBC, Mantoux test, RBS, PTINR and pus sample sent for culture and sensitivity test. MRI fistulogram done on 16 October 2024, showed right transphincteric fistula in ano Grade IV with small intersphincteric abscess.


SHREE MOLECULAR AND DIAGNOSTIC LAB

Dr. Rutuja Dongare
MD MICROBIOLOGY

Patient ID : 83611933
Patient Name : [redacted]
Age / Gender : 39 Years / Male
Ref. By : SELF
Affiliation : EPL LAB

Sample Collected on 16 OCT 24 07:27 PM
Report Released on 19 OCT 24 10:46 PM
Center Name : SHREE MOLECULAR AND DIAGNOSTIC CEN

PUS Culture/ Sensitivity C/S Test

Investigation	Result
SPECIMEN	PUS
MEDIA	MacConkey Agar, Blood Agar, Hi-Chrome Agar, Mueller-Hinton Agar, Thioglycolate Broth.
ORGANISM ISOLATED	ESCHERICHIA COLI
COLONY COUNT	CONFLUENT
AMIKACIN (AK)	SENSITIVE
IMEPENEM (IMP)	SENSITIVE
MEROPENEM (MRP)	SENSITIVE
GENTAMICIN (G)	SENSITIVE
CEFTAZIDIME (CA)	RESISTANT
CIPROFLOXACIN (CF)	RESISTANT
PIPERACILLIN-TAZOBACTUM (PTZ)	SENSITIVE
CEFOPERAZONE-SULBACTUM (CFS)	SENSITIVE
NETILMICIN (NT)	SENSITIVE
CEFTRIAXONE (CI)	RESISTANT
OFLOXACIN (OF)	RESISTANT
COLISTIN (CL)	MIC:0.25ug/ml: SENSITIVE
CEFUROXIME (CU)	RESISTANT
CEFIXIME (CFX)	RESISTANT
CEFPODOXIME (CEP)	RESISTANT
TEIGECYCLINE (TGC)	SENSITIVE
LEVOFLOXACIN (LE)	RESISTANT
MINOCYCLIN	SENSITIVE

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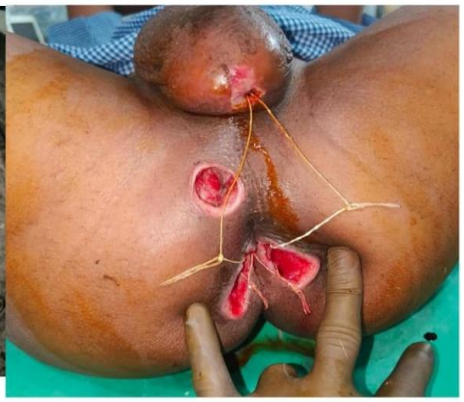
END OF REPORT

DR RUTUJA DONGARE
CONSULTANT MICROBIOLOGIST

Pus culture & sensitivity reports


During surgery


Just after surgery

After pre-operative checkup patient underwent partial fistulectomy with *Apamarga Ksharsutra* [KS]ligation on 17 October 2024.Post-operatively patient received intravenous broad spectrum antibiotics like Injection Piperacillin Tazobactum 4.5gm TDS for 7 days because reports of pus culture and sensitivity revealed that causative organism exhibited was resistant to most of the antibiotics and was sensitive only to higher antibiotics, followed by oral antibiotics along with some ayurvedic medications like *Panchatikta Ghrit Guggulu* 250 mg tablet TDS. Proper wound care was taken including daily dressing, sitz bath with *Triphalakashaya* and weekly change of *Ksharsutra*. Patient was advised pelvic floor exercise, high fibre and high protein diet and to maintain proper hygiene. Gradually pus discharge subsided within 10-11 days and healthy granulation tissue formation was seen and pain was also decreased within 28 days. And wound healed completely within 12 weeks.


First week dressing

4th week dressing

8th week dressing

12 th week dressing

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DISCUSSION:

Results and Discussion

In this case, the integration of MRI and pus culture-sensitivity guided antibiotics therapy and *Apamarga Ksharsutra* application along with adjunct Ayurvedic therapy proved beneficial in successfully managing a complex trans-sphincteric fistula with prior failed I & D.MRI-guided surgery was critical: T2/STIR sequences mapped the Grade IV trans-sphincteric track and its intersphincteric abscess, revealing ramifications that would have been missed clinically and enabling precise partial fistulectomy and safe Ksharsutra ligation. Pus culture-sensitivity proved equally important; MDR resistance to first-line drugs prompted escalation to Piperacillin-Tazobactam, avoiding blind antibiotic failure.[10-11] *Apamarga Ksharsutra* provided antibacterial effect [12] like, slow mechanical division with continuous chemical cauterization and medicated drainage, which minimized sphincter injury and likely lowered recurrence risk compared with conventional fistulotomy. Clinically, discharge resolved by days 10–11, granulation appeared and pain decreased by day 20, and the tract epithelialized at 12 weeks with continence preserved. The case supports culture guided therapy for faster healing, lower recurrence and better quality of life; comparative studies versus empirical care are warranted. Further research on well -designed studies comparing culture guided versus empirical management are needed to achieve faster wound healing [13] and avoiding recurrent [14-15] fistulas.

CONCLUSION:

The present case highlights a successful integrative approach in the management of a recurrent, multidrug-resistant (MDR) Grade IV fistula-in-ano, demonstrating that the judicious combination of classical Ayurvedic principles with contemporary diagnostic and antimicrobial strategies can yield durable clinical outcomes. The use of MRI-guided anatomical mapping enabled precise delineation of the fistulous tract and its extensions, thereby facilitating accurate surgical planning. Culture-directed antibiotic therapy ensured targeted microbial control, particularly crucial in the setting of MDR infection, minimizing the risk of persistent sepsis and promoting optimal wound healing.

The incorporation of partial fistulectomy along with Apamarga Ksharsutra provided an effective sphincter-preserving intervention, aligning with the principles described in Sushruta's management of Bhagandara. This approach not only aided in gradual chemical cauterization and debridement of the tract but also reduced the likelihood of recurrence by ensuring continuous drainage and healing from within. Importantly, preservation of sphincter integrity contributed to maintaining continence, thereby significantly improving the patient's functional outcome and quality of life.

The favorable clinical response observed—characterized by sustained healing, absence of recurrence during follow-up, and symptomatic relief—suggests that this integrative protocol may serve as a viable and effective alternative to more invasive conventional procedures, particularly in complex and recurrent cases. Furthermore, it underscores the relevance of antibiotic stewardship when managing resistant infections alongside traditional therapies.

However, as this is a single case observation, the findings must be interpreted with caution. There remains a need for well-designed prospective studies and randomized controlled trials to systematically evaluate the efficacy, safety, recurrence rates, and patient-reported outcomes associated with this combined modality. Such evidence will be instrumental

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in validating this integrative approach as a standardized treatment strategy for complex fistula-in-ano in modern clinical practice.

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