**Case report**

**Management of High Anal Complex Fistula by Integrative Management with Partial Fistulectomy & Application of *Ksharasutra* Therapy (IMPAKT): A case report**

**Abstract**

The management of high anal multiple opening fistulas presents significant challenges in colorectal surgery. This paper examines the integration of modern surgical techniques with *Ksharasutra*, an ancient *Ayurvedic* method, in treating this complex condition through a combination of partial fistulectomy and *Ksharasutra* therapy. The study involved a patient diagnosed with high anal multiple opening fistulas, treated with *Ksharasutra* application across several stages. The primary aim was to assess the efficacy, safety, and outcomes of this combined approach. Methods included detailed patient assessments, precise surgical procedures, and strict follow-up protocols. Results showed promising outcomes in terms of Fistula closure, reduced recurrence, shorter hospital stays, treatment duration, and higher patient satisfaction. The staged use of *Ksharasutra* not only facilitated effective Fistula management but also minimised complication risks, leading to faster recovery and better quality of life. This paper highlights the potential of *Ksharasutra* as a viable alternative to traditional surgical techniques in managing high anal multiple opening fistulas, advocating for its adoption in modern colorectal practice. Further research and larger clinical trials are recommended to validate these results and optimise treatment protocols.

**Keywords**: Fistula-in-ano, *Bhagandara*, *Ksharasutra*, IMPAKT

**Introduction:**

Fistula-in-ano(1) is a serious condition; it involves the formation of an abnormal, chronic, non-healing infectious tract lined by unhealthy granulation tissue, connecting the inside of the anal canal or rectum to the perianal skin outside. This condition is characterised by recurrent pus discharge, pain, and swelling around the anus. Perianal abscess is the initial stage of fistula-in-ano(2). If the abscess is drained properly, causing the cavity to collapse and the space to be obliterated, the condition subsides. However, if the cavity is not drained correctly, a Fistula can form by bursting inside the anus or rectum and extending outside near the anus. Fistula in ano is a similar condition mentioned in Sushruta Samhita as Bhagandar(3). It is classified into four types according to their characteristics(4). Fistula in ano is classified in various ways, such as low anal Fistula and high anal Fistula, low-level Fistula and high-level Fistula, intersphincteric, trans-sphincteric, supra-sphincteric, and extra-sphincteric Fistula. The latest classification(5), based on MRI findings, is the St James University classification, which describes four stages: Stage 1: A simple linear intersphincteric tract, Stage 2: An intersphincteric tract with an abscess cavity and secondary tracks, Stage 3: A simple trans-sphincteric tract, and Stage 4: A trans-sphincteric tract with an abscess cavity and secondary tracks. Although the development of medical science has provided numerous tools and techniques for diagnosing and managing Fistula in ano, there is still no single technique that claims a complete cure without complications and recurrence. The recent advancements in the management of Fistula in ano are anal advancement flap, seton, fibrin glue, anal Fistula plug, LIFT, VAFT, Autologous adipose-derived Stem Cell and Fistulectomy with Primary Sphincter Reconstruction(6). The old conventional techniques, like fistulotomy or fistulectomy, have reasonable success rates but possess complications like sphincter damage and the new sphincter-saving techniques, like LIFT, VAFT & fibrin glue, have a high rate of recurrence. *Acharya Sushruta* was the premier surgeon of ancient times; he described various types of incisions to be used for managing different types of *Bhagandara* in the *Sushruta Samhita(7)*. He also advocated the *shastra karma* (conventional fistulotomy) for the same. The technique known as *Ksharasutra* therapy, mentioned in the classical *Ayurvedic* text *Sushruta Samhita*, yields remarkable results, boasting an excellent success rate and a very low recurrence rate compared to conventional techniques. *Ksharasutra* therapy involves the placement of a medicated seton prepared by smearing alkali powder, latex from the euphorbia niterifolia, and turmeric powder. The *Ksharasutra* can be prepared using alkali powder from any of the drugs mentioned in the *Sushruta Samhita*. There are various studies conducted using different types of *Ksharasutra*, such as *Nimba* *Ksharasutra*(8), *Aragrvadha(9)*, *Kadali,* and *Palasha* *Ksharasutra*(10). The classical method for preparing the *Ksharasutra* is now standardised, and there is a Standard operative procedure for preparing the different *Ksharasutra*(11,12). In this study, *Kadali* *Ksharasutra* was prepared using a 100% alcoholic solution of Guggulu resin. This *Ksharasutra* was prepared in accordance with the standard operating procedure for preparing this thread.

Furthermore, several new techniques using the *Ksharasutra* have been developed by various *Ayurvedic* surgeons, such as IFTAK(13) and MIKST(14). These recently introduced methods are highly effective in treating complex fistulas (stages 3 and 4, according to the St. James University classification), achieving very high cure rates with almost no recurrence. In this study, a novel integrated approach has been developed by combining Ksharasutra and surgery for complex fistula-in-ano with long tracks, secondary tracks, and multiple openings. The technique was assessed based on success rates, the patient's quality of life during treatment, sphincter preservation, and the risk of recurrence. In the present study, titled “Management of High Anal Complex Fistula by Integrative Management with Partial Fistulectomy & Application of *Ksharasutra* Therapy (IMPAKT): A case report”. A case of high anal complex Fistula was treated using the IMPAKT technique.

**Aim & Objective**

1. The study aimed to assess the effectiveness of the technique.
2. The objective was to provide a sustainable treatment option for managing Fistula without compromising patients' productivity and while improving their quality of life during treatment.

**Case presentation**

A 37-year-old married gentleman, residing in Jowai, West Jaintia Hills, Meghalaya, India, a policeman by profession, visited the tertiary *Ayurveda* centre in Shillong with a complaint of recurrent pus discharge from the perianal region for the last four years, on and off. He has a history of perianal abscess, which was operated on (Incision & Drainage) in the local hospital in Jowai four years ago. He was asymptomatic for a few weeks after that recurrent pus discharge occurred from the perianal region. He visited a surgeon in a nearby hospital, where he was advised to do a colostomy. He experienced pain in between when the pus stopped; once the pus was discharged, he felt relieved from the pain. He has no history of hospitalisation, no diabetes mellitus, no Hypertension and no other lifestyle or metabolic disorder. He has no similar history in his family members. No history of any addiction to tobacco or alcohol.

He was examined in the lithotomy position. There is no significant finding in any systematic examination. The findings of the local examination include a scar on the perianal skin from previous surgery and two fibrosed external openings at the 3 and 5 o'clock positions, with one closed opening in between. On palpation, the fibrosed track was felt from the 3 o'clock external opening towards the anus radially, and another track from the 5 o'clock position towards the 6 o'clock position. During a digital rectal examination, a tender dimpling was felt at the 6 o'clock position, i.e., the internal opening. Routine blood and urine tests, along with an MRI Fistulogram, were recommended for the patient to assess fitness for surgery, confirm the diagnosis, and gather information about the morphology of the fistulous tract.

**Routine Investigations with findings are as follows.**

Hb-15.6 gm%, TLC-6,990/cumm, Neutrophills-56%, Lymphocytes-35%, Eosinophills-01%, Monocytes-06% Basophils-00%, Platelet count-3,10,000/cumm, non-reactive to HIV-I & II, Hepatitis B and C, bleeding time-2min30second, Clotting time- 7 min 30 seconds, Random Blood Sugar- 97 mg/dl, ESR-08. His ECG was normal. Routine Urine Investigation findings were within normal limits.

**The MRI findings are as follows**

* There is evidence of a moderately long and left-sided Transhincteric is a high anal fistula noted. The track is fibrosed? seton. The external opening is noted in the paramedian location of the left gluteal region. Track also travels posteriorly in the intersphincteric plane with another internal opening at the 6-7 o’clock position above the dentate line. It ascends superior to the left levator ani, thus becoming a high anal Fistula.
* Two fibrosed tracts seen tracking from the origin track, one tracking anteriorly with the separate external opening in the left gluteal cleft. Another long track seen tracking posteriorly with external opening in the posterior aspects of the gluteal cleft region.
* A small, linear Transhincteric collection measuring 7 mm was seen at the 2-5 o'clock position as a new finding.

Based on patient complaints, history, physical examination, and MRI Fistulogram, he was diagnosed with a high anal complex Fistula with multiple openings. The patient was advised to undergo *Ksharasutra* therapy. After obtaining written informed consent and explaining the procedure, the patient underwent *Ksharasutra* therapy with this new technique called the Integrative Management with Partial Fistulectomy & Application of *Ksharasutra* Therapy (IMPAKT). The patient was cured and has remained asymptomatic for 6 months. No recurrence of symptoms has been observed. No side effects were noted during the treatment.

**Timeline**

First sitting of surgery: 01/03/2024

Second sitting of surgery: 28/06/2024

Third sitting of surgery:18/07/2024

Fourth sitting of surgery:06/06/2024

Fifth sitting of surgery: 25/10/2024

Sixth sitting of surgery: 15/12/2024

Seventh sitting of surgery: 10/02/2025

Total duration of treatment: from 01/03/2024 to 20/02/2025 (approximately 12 months)

Total duration of hospitalisation: The patient was hospitalised for five days during the first surgery session for primary threading and three days during the second session for access to the secondary track. The patient was not admitted during any other sessions; the procedure was performed in the outpatient department (OPD) only, and the patient was discharged after a two-hour observation period. Therefore, the total hospital stay was only eight days.

Details of the surgical setting

In the first sitting, the primary threading was performed and replaced with *Ksharasutra* on the third postoperative day. During primary threading, a simple linen thread was inserted. The procedure was carried out under local anaesthesia. The patient was positioned in the lithotomy position after infiltration of regional anaesthesia with Xylocain 2%, infiltrated over the surgical site. The probe was inserted from the external opening at the 3 o'clock position, and after pushing it into the track, it entered the anal canal through the internal opening at the 3 o'clock position radially. Partial fistulotomy was performed (almost one-third of the total track length), and the thread was placed in the track using the probe. Probing was attempted at the opening at the 5 o'clock position, but the probe could not pass due to fibrosis of the track. After three days, the *Ksharasutra* was inserted into the track by replacing the primary thread with a railroad method. After the application of the *Ksharasutra*, the silent track became active, and they became open, causing inflammation over the external opening, which led to the opening of the external opening. In the second sitting, a *Ksharasutra* was placed in the track, communicating with the external opening at the 3 and 5 o'clock positions, with partial fistulotomy (approximately one-third of the total track length), under local anaesthesia, similar to primary threading. In the third and fourth sitting of surgery, partial fistulotomy with debridement of the hyper-granulation tissue at the external opening was again done in both tracks under local anaesthesia. In the fifth surgical sitting, another closed opening was reopened at the 6 o'clock position, followed by primary threading and placing *Ksharasutra*. In the meantime, all previous threads were replaced regularly on a weekly basis. Until the time of the sixth surgical sitting, the track between the 5th and 3rd external openings was cut, and a small remaining track was laid open and dressed for healing with secondary intention. The seventh setting was to lay open the remaining small track of 1-1.5-centimetre track at the 6 o'clock position.

**Discussion:** There are many definitions of a “complex” anal Fistula. In 1976, Parks classified(15) fistulas as intersphincteric, trans-sphincteric, supra-sphincteric, and extra-sphincteric types. The. The Standards Committee for the American Society of Colon and Rectal Surgeons (ASCRS) Standards Committee released practice guidelines in 2011, defining “simple” fistulas as those that are intersphincteric or low trans-sphincteric, involving less than 30% of the external sphincter. “Complex” fistulas are identified by greater muscle involvement, anterior fistulas in women, recurrent cases, and those linked to pre-existing faecal incontinence, inflammatory bowel disease, or radiation. The present case in this study must be considered a complex Fistula, as it involves a long segment of the sphincter, has secondary tracts associated with the primary tract, multiple external openings, and a 7 mm long fistulous tract. The treatment of such cases with conventional techniques like fistulotomy (12%), fistulectomy(10%)(16), VAFT (65% recurrence after VAFT(17)), Fibrin Glue (36%)(18) , and LIFT (22.97%)(19), etc., involve a high risk of recurrence, sphincter damage, and prolonged hospital stays. The above studies suggests the high recurrence rate of fistula treated with above methods. With the use of *Ksharasutra* therapy, the sphincter damage, long-term hospital stay, and recurrence only (20)3.8% is much lower in comparison to other treatment modalities. In conventional *Ksharasutra* therapy, a *Ksharasutra* is placed and changed until the end of the cut through the entire tract. By incorporating partial fistulotomy in stages along with the *Ksharasutra*, we enhance the cutting of the tract, ultimately reducing the treatment duration. One-time cutting of the track, like fistulotomy, causes sphincter damage, and fistulectomy causes a big, deep wound, causing sphincter damage and high chances of recurrence. As the track was deep and tortuous, with multiple branches, this case was not suitable for fibrin glue, VAFT, and LIFT, leaving a high chance of recurrence and failure. The most significant effect of the *Ksharasutra* is to deliver the drugs deep inside the track. The effect of kshara causes chemical debridement, dissolving the retained infection, and facilitating drainage with the help of the thread. According to classical literature, kshara possesses the properties of *Chedana* (excision), *Bhedana* (incision), *Lekhana* (scraping), *Sodhana* (cleansing), and *Ropana* (promoting healing). Through these virtues, *Ksharasutra* is able to heal the fistulous tract. The integration of the surgery with *Ksharasutra* accelerates the healing process of the long tract.

The effectiveness of the approach was assessed by monitoring the healing of the track, the discharge of pus, the quality of life during treatment, and the recurrence of the Fistula. By the end of treatment, the fistulous track was fully healed, with no pus discharge, and the patient was content and back at his job as a policeman; he did not require leave except for hospitalisation days, which indicates his quality of life. Up to the publication of the study, no signs of recurrence had been reported by the patient.

**Conclusion:**

The study concludes that *Ksharasutra* therapy is effective for managing complex Fistulas-in-ano, especially when combined with partial fistulectomy as a standard approach. This combination enhances *Ksharasutra'*s effectiveness, reduces patient discomfort during treatment, and lowers the risk of sphincter damage. Importantly, patients remain ambulatory, maintaining their productivity, and hospital stays are shortened. In summary, the Integrative Management with Partial Fistulectomy And *Ksharasutra* Therapy (IMPAKT) appears to be a promising method for treating complex fistulas. To strengthen these findings, further research should be carried out in multiple centres with larger sample sizes.

**Consent:** Written informed consent from the patient has been obtained and preserved prior to commencing treatment.

**Ethical approval:** Not applicable.

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Picture 1-Pictures of the different stages of treatment

7.Sixth sitting

4.Third Sitting

1. Before Treatment

6.Fifth sitting

9.After Treatment

8.Seventh sitting

5.Fourth sitting

3.Second sitting

2.First Sitting