

A novel application of the IMPAKT technique with Kadali Ksharasutra for multiple-opening fistula-in-ano: A case report

Rakesh Meher¹, Alok Kumar²

From ¹PG Scholar; ²Assistant Professor (Senior Scale), Department of Shalya Tantra, North Eastern Institute of Ayurveda and Homoeopathy, Shillong, Meghalaya, India

ABSTRACT

Fistula-in-ano is a chronic condition with an abnormal communicating tract between the anus, rectum, and perianal skin lined by unhealthy granulation tissue. Ayurveda describes a similar condition as Bhagandara, with available treatment options being Ksharasutra therapy. IFTAK and MIKST are advanced ksharasutra techniques that require specialization, whereas the IMPAKT technique is a newer approach that combines fistulotomy with Ksharasutra therapy. This case report aims to look into the effect of IMPAKT with Kadali Ksharasutra in a patient with a complex, multiple-opening fistula-in-ano. A 27-year-old male from East Khasi Hills, Meghalaya, presented to the Shalya Tantra outpatient department with recurrent pus discharge, pain and three small external openings. On examination, a cord-like tract was felt extending radially from the external opening at the 2 o'clock position and opening at the 2 o'clock position internally. Magnetic resonance imaging fistulogram showed a left-sided complex trans-sphincteric fistulous tract with multiple extensions. Under local anesthesia, the fistulous tract from the external opening was partially laid open and curetted, and a plain linen thread was placed through the remaining tract, which was replaced by Kadali Ksharasutra on the 5th post-operative day. Ksharasutra was changed at regular 7-day intervals. After healing of the laid-open portion, the remaining tract was again laid open under local anesthesia. The patient continued the prescribed medication and local care. At follow-up, the wound showed complete contraction and healing. This case suggests that the IMPAKT technique may be a useful approach for managing complex, multiple-opening fistula-in-ano, resulting in healing of the fistulous tract without reported sphincter damage or recurrence during follow-up.

Key words: Ayurveda, Bhagandara, Fistula-in-Ano, IMPAKT, Ksharasutra

Fistula-in-ano is an abnormal communication between the anus or rectum and the perianal skin, lined by unhealthy granulation tissue. It is a chronic condition characterised by a non-healing tract that connects the skin to the lumen of the anus or rectum [1]. This abnormal communication develops due to an infective focus or cavity in any of the spaces around the anus. In classical Ayurvedic literature, a similar condition is described as Bhagandara. It is categorized as one of the Astamahagada, a group of eight diseases that are very difficult to cure. Fistula-in-ano is classified as simple or complicated, based on treatability and complications during treatment. On the basis of sphincteric involvement, fistulae are classified as intersphincteric, transsphincteric, extraspincteric, and suprasphincteric [2-4]. Recently, based on magnetic resonance imaging (MRI) findings, the radiological classification of fistula ranges from Stage I to Stage

V. Fistula-in-ano is very difficult to cure because of its tendency to recur. This is an infective condition in which the source of infection is deep within the tissue, mostly in the intersphincteric space, from which it spreads and forms tracts. The tract could be single or multiple, depending on the infecting organism, the patient's general health, or the location of the primary focus of infection.

Ayurvedic proctology includes the ksharasutra technique for the successful management of fistula-in-ano, with a very low recurrence rate and minimal sphincteric damage. Ksharasutra is a medicated seton made by applying multiple coatings of an alkali material. With advancements in Ayurvedic proctology, the ksharasutra technique has evolved as well. Recent ksharasutra techniques used to treat fistula-in-ano include IFTAK, MIKST, and IMPAKT. IMPAKT is a novel technique for the management of fistula-in-ano, in which conventional fistulotomy or fistulectomy is integrated with the ancient ksharasutra therapy [5-7].

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Correspondence to: Alok Kumar, Department of Shalya Tantra, North Eastern Institute of Ayurveda and Homoeopathy, Shillong, Meghalaya, India. E-mail: dr.alokv@gmail.com

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This case report aims to describe the use of the IMPAKT technique on the management of a multiple-opening, complicated fistula-in-ano.

CASE REPORT

A 27-year-old male, a student from East Khasi Hills, Meghalaya, comes to Shalya Tantra outpatient department (OPD) at the tertiary Ayurvedic center with the complaint of recurrent pus discharge from the perianal area and having three small openings near the anus for 2 years. The patient has a history of long-term sitting for study and a history of chronic constipation. The patient also complains of pain and recurrent pus discharge in the intergluteal area with a small opening. There was no relevant family history, and the patient did not consume alcohol or smoke. He has a history of occasional constipation. The patient had not received any surgical management for the same condition before coming to the OPD. However, he has taken some over-the-counter medication for the pain in the same condition before. Patient has no history of any other systemic illness like Diabetes mellitus, Hypertension, thyroid dysfunction, or any other significant illness.

On thorough examination, the patient has no signs of pallor, cyanosis, or jaundice. The vital signs are within normal limits: Blood pressure 110/80 mmHg, pulse rate 73/min, SpO₂ 96%. On local examination, the patient was placed in the lithotomy position; on inspection, there were three external openings at the 1 o'clock, 2 o'clock, and 4 o'clock positions, 4 cm, 2 cm and 5 cm, respectively. On palpation, a cord was felt radiating from the 2 o'clock opening toward the anus, and the other two openings joined the same tract, as shown in image no. 1. On digital rectal examination, internal dimpling was felt at the 2 o'clock position. The proctoscopic examination was performed, but there was no evidence of piles or any other local pathology (Fig. 1a). The patient was again placed in the decubitus position, and the intergluteal area was examined; one opening was found and identified as a pilonidal sinus. As the patient preferred treatment of the fistula-in-ano first and the pilonidal sinus later, only the fistula-in-ano was treated in this case. Hence, the study includes only the treatment of fistula-in-ano.

The patient was investigated for routine blood, urine, viral profile, coagulation profile and the MRI fistulogram. The complete blood count findings are within normal limits. The total leucocyte count was 6500/mm³; Hb%

was 13 g/dL; differential cell counts were within normal limits; fasting blood sugar was 86.8 mg/dL; postprandial blood glucose was 109 mg/dL; blood urea was 29.0 mg/dL; serum creatinine was 0.90 mg/dL; bleeding time was 1 min; clotting time was 5 min; the patient was non-reactive for HIV, hepatitis C virus, and hepatitis B surface antigen. Urine examination revealed Sp. Gravity-1.030, pH-5, red blood cell-Nil, white blood cells-2-3 and 5-6 epithelial cells, no granules, no crystals, no ketones, sugar or proteins. There were no significant findings in the urine suggestive of any other specific pathology.

The MRI findings are as follows: An irregular, enhancing T2/short tau inversion recovery (STIR) high-signal-intensity complex trans-sphincteric tract with an internal opening at the 2-3 o'clock position of the anal canal, piercing the external sphincter and extending inferiorly into the left ischiorectal fossa, splitting into three tracts. One ends blindly, and two tracts reach the skin surface, with external openings on the left side of the perianal region. Surrounding soft-tissue inflammatory changes are seen. An irregular, T2/STIR high-signal-intensity, tract-like structure, approximately 6.4 cm in length and 5.7 mm in width, is seen in the subcutaneous plane of the sacrococcygeal region, with an external opening on the right side of the intergluteal cleft. No evidence of intraspinal extension, favoring a pilonidal sinus. The MRI concluded that there was a left-sided complex trans-sphincteric (grade IV- St James University Classification) fistulous tract and pilonidal sinus in the intergluteal region.

After all pre-operative preparations were completed, the treatment techniques were discussed with the patient. He was informed of the risks, options and all possible outcomes; the patient agreed. Informed consent was obtained from the patient. The patient was placed in the lithotomy position; the complete perianal area was cleaned with 10% betadine solution 3 times. The Lignocaine 1% with adrenaline solution was infiltrated around the tract, and the entire area was anesthetized. After achieving the desired effect, the tract was examined using a copper malleable probe. The probe was inserted from the external opening at 1 o'clock and traversed to the internal opening through the opening at the 2 o'clock position and taken out through the anus, and the part of the external opening from 1 o'clock to the opening at 2 o'clock was laid open and curetted; the unhealthy tissue was scraped out from the open tract as shown in image no 2. A plain

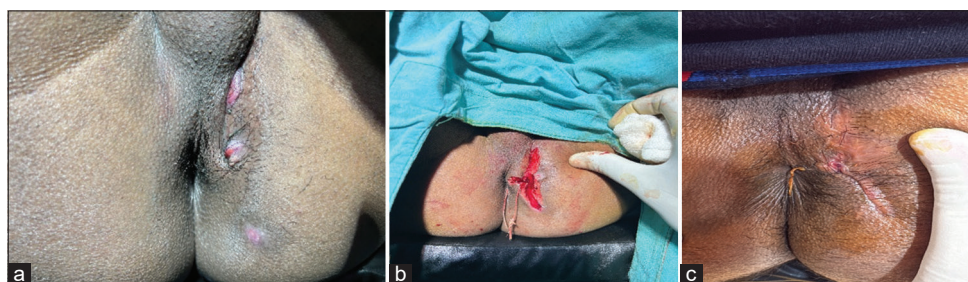


Figure 1: (a) Before treatment; (b) During first sitting; (c) After 6 weeks

linen thread was placed into the remaining tract through the probe's eye. Now the other extension of the tract from the 2 o'clock position to the 4 o'clock position was laid open in a similar manner as earlier. So basically, the tracts present at the 1 o'clock and 4 o'clock positions were laid open, and for the remaining tract at the 2 o'clock position, a primary thread was placed, which was later replaced with Ksharasutra. All unhealthy tissue was removed from the tract. The entire tract was examined, and no further extension was identified. The tract was washed with the hydrogen peroxide solution followed by normal saline. After achieving hemostasis, the wound was packed with a pressure bandage (Fig. 1b). The patient was prescribed prophylactic antibiotics (tab Ciplox -500 mg 1 BD) for 5 days and analgesics (Aceclofenac 100 mg + Paracetamol 325 m + Serratiopeptidase 15 mg combination in one tablet as SOS) for the pain orally during the post-operative period. The patient was discharged after 5 days, with the new ksharasutra in place. At the time of discharge, the patient was advised to take oral Ayurvedic drugs: Tab Triphala Guggulu 2 BD, Tab Saptavinshati guggulu 2 BD, Tab Triphala Amalaki (*Embllica officinalis*) + Bibhitaki (*Terminalia bellirica*) + Harritaki (*Terminalia chebula*) 2 HS, and to perform a hot Sitz bath (perianal region) with 2 pinches of Tankana Bhasma and Jatayadi taila for local application during dressing as adjuvant therapy. The patient was called every 7 days for ksharasutra replacement. The patient visited the OPD weekly for ksharasutra replacement for 6 weeks (Fig. 1c); until then, the laid-open tracts had healed, and the remaining tract was laid open under local anesthesia in a manner similar to that described earlier (Fig. 2a). The entire tract was cut in the second sitting, and the patient was advised to continue the same medication and to apply the Jatayadi Taila locally.

After 3 weeks, the patient returned with complete contraction of the wound. As adjunctive therapy, hot sitz baths and Jatayadi Taila for local application help improve wound cleaning and promote healing, along with the oral medication Triphala Guggulu, which provides mild analgesic, anti-inflammatory, and antibacterial effects. The Saptavinshati Guggulu is a herbal multidrug combination indicated in fistula treatment and also has antibacterial effects. Triphala has laxative effects, which ease the passage of stool and facilitate defecation, reducing patient discomfort. The patient was followed for more than 6 months, and no recurrence was reported (Fig. 2b).

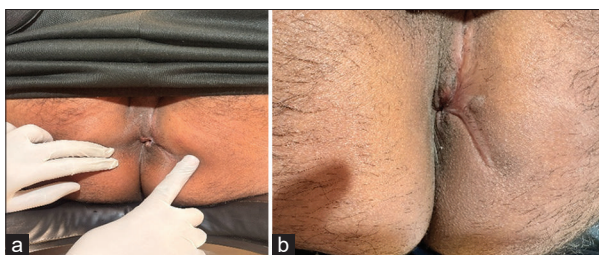


Figure 2: (a) After the second sitting; (b) after completion of healing

Timeline: First sitting on 31-07-25 (Fig. 1a and b); thereafter, Ksharasutra was replaced for the next 6 weeks, and the second sitting on 15-09-25 (Fig. 2a), with the remaining tract left open. The final image was taken on 18-03-2026 (Fig. 2b).

DISCUSSION

Although fistula-in-ano is not a fatal condition, it significantly affects the patient's life. The main symptoms of the disease are recurrent pain and swelling around the anus, and recurrent pus discharge from the opening around the anus. The foul-smelling pus affects the patient's social life, and the pain drastically affects the patient's daily life [8-10].

There are various treatment options available for the management of fistula-in-ano. Fistula-in-ano is a purely surgical condition if not due to any specific etiology, such as complications of inflammatory bowel diseases (ulcerative colitis, Crohn's disease), malignancy, or infection with tuberculosis. There are conventional surgical procedures such as fistulotomy and fistulectomy, and advanced techniques like ligation of the intersphincteric fistula, video-assisted fistula treatment, fibrin glue, seton placement, advancement flaps, and expanded adipose-derived stem cells. The main drawbacks of these treatment modalities are recurrence and sphincteric damage [11,12].

Besides these techniques, Ayurvedic proctology includes the ksharasutra technique for the successful management of fistula-in-ano, with a very low recurrence rate and minimal sphincteric damage. Ksharasutra is a medicated seton made by applying multiple coatings of an alkali material. With advancements in Ayurvedic proctology, the ksharasutra technique has evolved as well. Recent ksharasutra techniques used to treat fistula-in-ano include IFTAK, MIKST, and IMPAKT. IMPAKT is a novel technique for the management of fistula-in-ano, in which conventional fistulotomy or fistulectomy is integrated with the ancient ksharasutra therapy. In this case report, a multiple-opening, complicated fistula was treated with the IMPAKT technique using Kadali ksharasutra. IMPAK is the latest technique in comparison to other ksharasutra techniques, such as MIKST and IFTAK. This technique integrates fistulectomy and fistulotomy with the Ksharasutra technique to achieve better outcomes, including reduced hospital stay, a low recurrence rate, and sphincter-saving benefit, especially in cases with multiple openings and/or long linear tracts. The fistulotomy is performed in steps rather than at 1 time, incorporating the Ksharasutra to avoid hospital stays and reduce the duration of track-cutting, as track-cutting achieved only with the ksharasutra takes longer [13-15].

The IMPAKT technique is an innovative approach for managing complex fistulae, especially those with long tracts or multiple openings. It combines traditional fistulotomy and fistulectomy with the Ayurvedic ksharasutra method. In this case, the initial threading

was performed under local anesthesia, along with partial fistulotomy to open the fistulous tract during the first session. This was followed by applying the ksharasutra, which was replaced with fresh sutras every 7 days for 6 weeks. As the tract healed and was reopened, the fistula fully healed without any sphincter damage or recurrence. This method reduces hospital stay and minimizes sphincteric injury since the sphincters are not surgically divided; instead, the ksharasutra causes gradual cutting and fibrosis. The kshara's properties – wound scraping, excision, and cleaning – help drain infection via capillary action and promote healing. This integrated technique allows controlled fistulectomy and infection drainage, leading to tract healing without sphincter damage and lower recurrence risk. The choice of this method aimed to prevent recurrence, shorten treatment, and preserve sphincter function. Given the multiple openings and long tract, this case was well-suited for the IMPAKT approach.

CONCLUSION

The study concludes that IMPAKT is a novel technique that integrates modern and ancient classical traditional techniques for the successful management of complex fistula-in-ano without recurrence or sphincteric damage. The patient was followed up for more than 6 months, and no recurrence was reported. However, a large sample size is required to obtain concrete results. Although this single case provides preliminary clinical experience, larger studies are required to evaluate its efficacy and safety.

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