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Case Report

Complex Anal fistula treated with IFTAK (Interception of fistulous track with application of ksharsutra) technique- A case report

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ABSTRACT

Background: An anal fistula is a common benign anorectal disease that tends to reoccur simple or low-type fistulas can be treated without affecting the sphincter mechanism; however, repairing a complex ano fistula without compromising anal continence can be difficult for a surgeon.
Case presentation: Here, we present an anal fistula of complex clinical appearance managed successfully by the IFTAK (Interception of fistulous track with application of *ksharsutra*) technique practiced at Banaras Hindu University, Varanasi, India. The diagnosis was made via visual and bi-manual digital rectal examination then confirmed by Endoanal ultrasonography (EAUS). The patient showed remarkable improvement and the fistula healed completely in due course of time without impairing the anal continence status of the patient. At four months of follow-up the patient was healthy and no recurrence was found.
Conclusion: IFTAK is a minimally invasive technique and very effective in managing complex fistula in ano of cryptoglandular origin. The main cause of recurrence in complex anal fistula is non-identification of an infected anal crypt, secondary extensions, associated sepsis, or abscess at the time of examination or surgery. So, precise diagnosis and appropriate surgical measures play an equal role in the successful outcome of anal fistula treatment, failure to either will result in non-healing or recurrence.

1. Introduction

An anal fistula is a recalciterant disease [1] that typically consists of an internal opening into the anal canal and a secondary or external opening on the perirectal skin [2]. It is a chronic phase of persistent infection in which the anal glands present in the inter-sphincteric plane get occluded, this results in the formation of cryptoglandular abscess [3], and eventually, an unhealthy granulated track develops between the anorectal and perianal skin. Anorectal disorders, especially complex fistula in ano, have always been challenging for both general and colorectal surgeons [4]. Despite taking standard surgical measures and utmost care in the management of anal fistulas, many times, there are recurrences. Simple and low anal fistulas can be managed with little effort, but the problem arises when the fistula is of complex nature. Understanding the complex type of fistula clinically is a difficult task and requires much clinical experience as sometimes fistula traverses a very unusual course and creates a diagnostic dilemma; even the experienced surgeon may misdiagnose the disease in this situation. Inaccurate assessment of the disease and delineation of the complex anatomy of this region often remains the cause behind recurrence. Detecting and eradicating the infected anal crypt is the mainstay of fistula treatment. However, the surgical eradication of infected anal crypt must be weighed against the risk of damaging the anal continence status of the patient. *Ksharasutra* therapy is considered a gold standard treatment modality for managing anal fistulas in *Ayurvedic* practice with less recurrence rate and no impaired anal continence [5,6]. However, the disadvantages of conventional ksharsutra therapy are multiple hospital visits, long-time discomfort, and big post-procedural scar. Also, the branching tracks and distant extensions in fistula cannot be intervened at the same time, and if done, it may create a difficult situation for the patient [7]. These shortcomings led to development of an innovative treatment modality known as IFTAK i.e. Interception of fistulous track with application of *ksharsutra*. With this technique, all types of nonspecific complex fistula in ano are dealt effectively and

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if performed accurately with proper diagnosis, it can state the potential effectiveness of the treatment. In the present report, we submit a case of posterior complex fistula in ano treated successfully with IFTAK technique. We also propose that diagnosis and surgical procedures are equally crucial for the successful outcome of fistula surgery.So, if there is any doubt about the diagnosis, one should go for diagnostic tools like EAUS and MRI so that correct diagnosis can be made and all the infective foci are dealt with during surgery to prevent recurrence.

2. Patient information

A male patient, aged about 34 years, was admitted with complaints of repeated episodes of boils in the perianal region with on-and-off pain for six months in the indoor patient department (IPD) of *Shalya Tantra*, Faculty of *Ayurveda*, Institute of Medical Sciences, Banaras Hindu University, Varanasi, Uttar Pradesh, India. The patient initially had mild symptoms, but as the time went on, the perianal symptoms worsened. The patient did not seek any medical help previously because the disease had very little influence on his routine work, leading to today's intractable condition.

3. Clinical findings

After taking the brief history of the patient, a visual and digital rectal examination was performed under aseptic conditions. Visual examination presented that there was skin discoloration on the left side of the anal canal with an external opening in the intergluteal region at about 3 ‘o’ clock position through which the little pus was oozing (Fig. 1). The digital rectal examination could feel induration and a small pit posterior to the anal canal in the midline position, possibly the internal opening of the fistula in ano and bogginess was also felt posteriorly and on the left posterolateral wall of the anal canal suggesting the collection which was extending laterally towards left ischiorectal fossa and upwards towards the levator ani muscle (Fig. 1). By local and digital rectal examination, the patient was diagnosed as a case of complex fistula in ano.

4. Time line for health events and treatment is presented in Table 1

The sequence of events in the current case study are depicted in Table 1 as a timeline. It also depicts all of the symptoms as well as the patient's prior medical interventions and the outcomes.

5. Diagnostic assessment

Anal fistulas are challenging to treat, particularly if they are complex. The accuracy of a clinical diagnosis is not always guaranteed. Therefore, it should be standard practise to use imaging modalities when there is cause for concern. Alhough MR- Fistulograms are gold standard modality, endoanal ultrasonography is very cost effective and live imaging can increase the operating surgeon's confidence. The IFTAK technique is highly regarded for its best outcomes in complex ano fistula, but repairing an anal fistula with this technique is not the only job required. An accurate and precise diagnosis is just as important for the technique's success, and this can be achieved effectively by using endoanal ultrasonography. Endoanal ultrasonography (EAUS) was performed in this case to precisely identify the anatomical course of the fistulous track, including secondary tracks, associated sepsis or abscess, and its relationship to nearby structures, as well as to strengthen the diagnosis made via bi-manual digital rectal examination. Axial reconstruction of volume acquired and EAUS showed a posteriorly located fistulous track with intersphincteric collection with transsphincteric extension towards left ischiorectal fossa. The collection in left ischiorectal fossa showed a translevator extension towards the supralevator space as well (Fig. 2). EAUS findings suggested it as a case of posterior Complex Transphincteric Fistula with left side ischioanal and supralevator extensions.

All laboratory findings were found to be within normal limits. Patient didn't give any history of Diabetes Mellitus, hypertension, Tuberculosis, previous surgery, or any other major ailments. The case was discussed among colleagues, and considering the patient's condition, it was agreed that the patient would be treated with IFTAK (i.e., Interception of fistulous track with application of *ksharsutra*) technique.

The essential goal ofthis technique is to treat the infected anal crypt by the application of *ksharsutra* while simultaneously facilitating drainage to the primary track,the secondary extensions or the abscess cavities via interception and rerouting at the level of external sphincter [8].

6. Therapeutic intervention

After obtaining informed consent, patient was brought to the operation theatre, where he was placed in a lithotomy position, and a local anesthetic agent (Lignocaine 2%) was infiltrated in and around the sphincters region to achieve local anesthesia. The

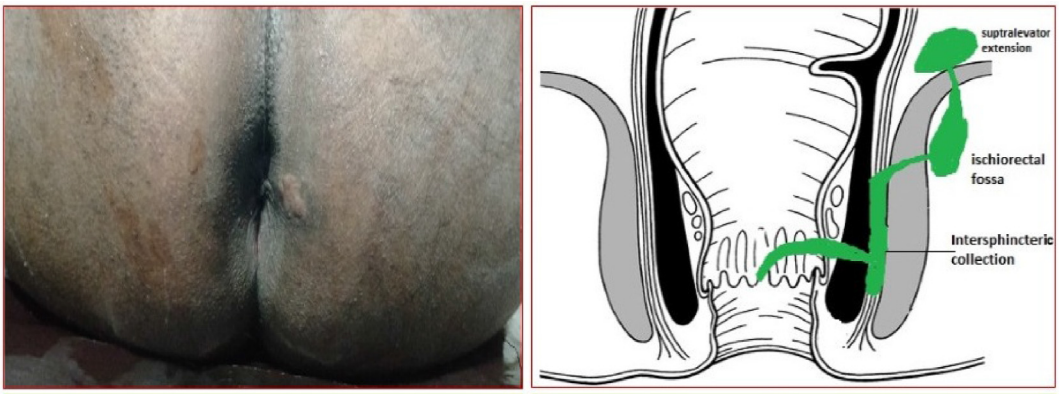


Fig. 1. Showing clinical status of Fistula.

Table 1
Showing timeline for health events and treatment.

Timeline	Health Events
March, 2021	Perianal abscess and pain, took treatment from local Doctor and recovered
April, 2021	Pus discharge through perianal region with on and off pain, patient ignored
August, 2021	Consulted a Govt. Ayurvedic Doctor for the same and the Doctor advised him to visit National Resource Centre on *Ksharsutra* Therapy (NRC), Banaras Hindu University (BHU), Varanasi, Uttar Pradesh, India
1 September, 2021	Patient visited NRC OPD at BHU, Varanasi and after thorough clinical examination he was diagnosed with complex fistula in ano disease
6 September, 2021	Transrectal ultrasonography **(TRUS)** was performed for clearing doubts about the complexity of the fistula
11 September, 2021	Patient operated by **IFTAK** (Interception of fistulous track with application of *ksharsutra*) technique
13 September, 2021	Patient discharged from hospital
***Ksharasutra* was changed on weekly intervals**	
6 October, 2021	Cut through was done
12 October, 2021	Fistula healed completely
After 4 months of follow up, patient did not complain of any discharge or discomfort	

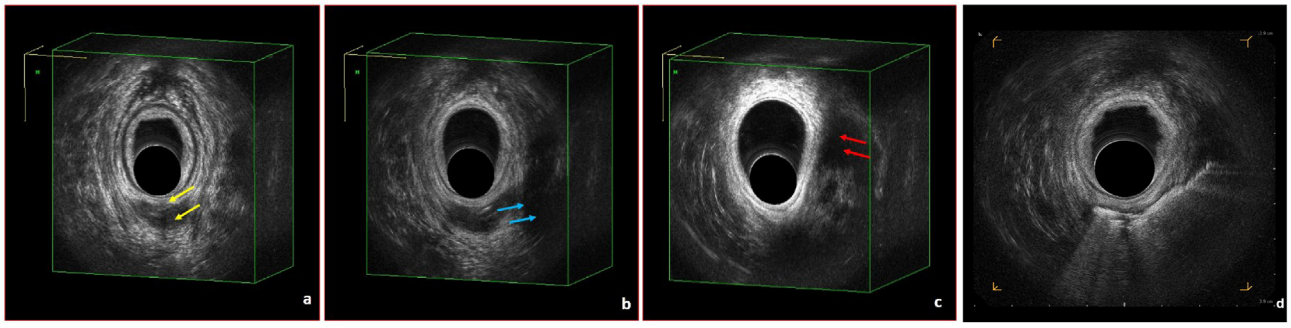


Fig. 2. 3D EAUS image (a-d) showing a posteriorly located fistulous track with intersphincteric collection (marked by yellow arrows) with transsphincteric extension towards left ischioanal fossa (marked by blue arrows). The collection in left ischiorectal fossa showing a translevator extension towards the supralevator space as well (marked by red arrows). EAUS findings were suggesting it as a case of posterior Complex transphincteric Fistula with left side ischioanal and supralevator extensions.

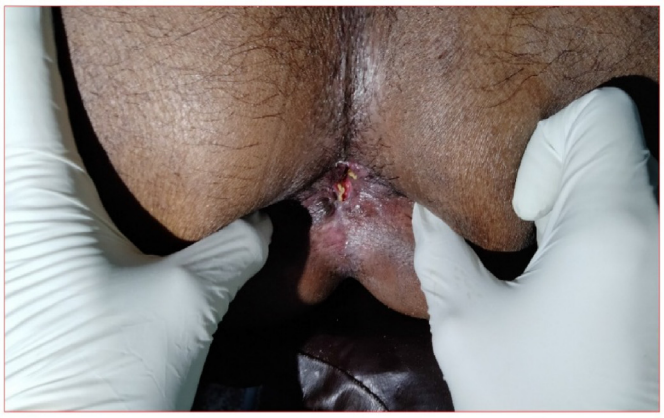
fistula's internal opening was identified by visual inspection, digital rectal examination and probing. Subsequently, a a 2 cm vertical incision was made posterior to the anal canal in the midline position at the level of the external sphincters. The incision was then deepened by splitting the muscle fibers by blunt dissection, fistulous track was intercepted and abscess cavity was approached. When the cavity was reached, a large amount of pus poured out, and the cavity was thoroughly cleaned using saline-soaked gauze. Then, using a malleable silver probe, a standard *ksharsutra* (*Apamarg ksharsutra*) was was inserted into the proximal track of the posterior window and taken out from the internal opening present at 6 o'clock position(Fig. 3a and b). After achieving hemostasis, dressing was applied, and the patient was transferred to the ward for further care.. Beginning the next day, the patient was advised to take a lukewarm sitz bath, followed by dressing with antiseptic agent (*Panchvalkal* cream [9]) and The patient was also instructed to take *Triphala Guggulu* 2 tabs TDS after the meal and *Triphala Churna* 5 gm HS. After two days of primary care patient was discharged from the hospital.

7. Follow-up and outcome

Ksharsutra was changed weekly, and the pateint was asked to take supportive medicines. At begin, there was continuous pus discharge from the window made posterior to the anal canal, which gradually diminished with time. The external opening dried after seven days, and the patient did not complain of any discharge from the external opening These is a good signs are indicative of succesfully performed IFTAK procedure. Fistula completely healed after two months of the treatment, and no recurrence was noted at four months of follow-up (Fig. 4).

8. Discussion

Ksharsutra therapy is a widely practiced technique of the Indian system of medicine and it is regarded as the most effective and reliable treatment option for anal fistulas with considerably high success rate [10]. This therapy is often a day care procedure performed under local anesthesia with minimum postoperative complications compared to other conventional surgical procedures being practiced today. Conventional surgical measures are associated with varying risks of recurrence (0.7–26.5%) and fecal incontinence (5–40%) [10]. These associated risks can be significantly reduced with ksharsutra therapy. However,conventional *ksharsutra* therapy might not be helpful for all types of fistula especially the complex anal fistula as they often have multiple tracks and distant extensions Conventional *ksharasutra* therapy is essentially multisitting fistulectomy hence requires multiple visits and long duration for complete healing of fistula. Additional drawbacks include discomfort, postoperative pain and noticeable scar at operated site post healing. On the other hand IFTAK technique seems to overcome all of the aforementioned problems. In IFTAK, treatment duration is relatively short, there is little or no hospital stay, and significantly less tissue is injured during surgery., Further, it can be performed under local anesthesia and leaves only a minimal scar at the operative site. IFTAK reduces the duration of treatment by shortening the track and focusing on eradicating of infected anal crypt which is the principal site of pathology in anal fistula[11]. As a result, no treatment of the distal or residual track is required. Also, in a study comparing LIFT and LIFT plus partial coring out of the distal track, the author found that dealing with the distal fistulous track provides no additional increase in success rate [12]. Even though we have adequate treatment options for all types of anal



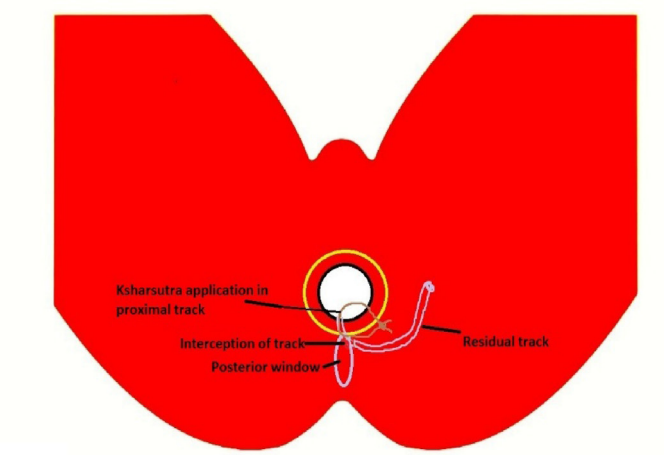


Fig. 3. Diagramatic demonstration of IFTAK technique.

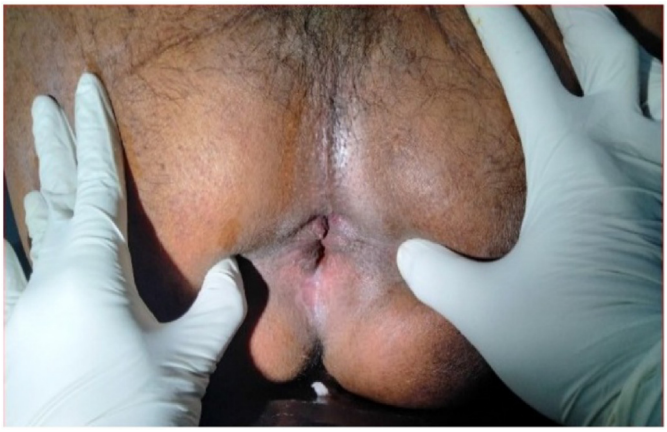


Fig. 4. Showing completely healed fistula after IFTAK treatment with minimal post operative scarring.

fistulas, we fail to effectively cure the disease. Determining the precise nature of the fistula, the anatomical course of disease, is therefore crucial to ensure that nothing is overlooked during surgery. In order to get assured about the diagnosis made by the clinician or to exclude any doubts about the complexity of anal fistula, an Endoanal ultrasonography (EAUS) can be done. EAUS or Transrectal Ultrasonography is an important imaging modality to assess the fistula anatomy with a reported diagnostic accuracy of 95% and 63–94% in identifying internal openings and delineating the primary fistulous track respectively [13]. The hydrogen peroxide injection is also a helpful addition, potentially delineating branching tracts and sepsis or abscess cavities [14] (Fig. 2d). Further 3D imaging has increased the accuracy by 98.5% for primary tracks and 96.4% for secondary tracks [13]. Anal Fistulas are of two types basically, cryptoglandular or non-cryptoglandular [3]. In cryptoglandular fistulas if we can locate the infected anal crypt or gland, the half job is done. In our practice, surgery is typically done following the clinical diagnosis and the outcomes results are excellent. However, when a complex fistula creates a diagnostic quandary, we perform endoanal ultrasonography (EAUS), which dispels questions and enables us to select the best surgical course of action for that specific case.

9. Patient perspective

I was diagnosed with a complex fistula in ano disease after a thorough evaluation by my doctor and his team. Initially I doubted whether to go with *ksharsutra* therapy or if I should consider conventional surgery. However, after a discussion with the doctor I got convinced and my ksharasutra therapy was planned. After a few days of my surgery, all my symptoms subsided and I felt like I was not suffering from any disease. Honestly, it is a very patient-friendly procedure and I could resume all my works just after a few days of the procedure. I have been fully mobile throughout my treatment and would suggest others to opt for this novel treatment.

10. Informed consent

Informed consent was taken from the patient before the treatment and for publishing his details.

11. Conclusion

Complex anal fistulas are hard to handle, as they are challenging to diagnose, and as a result the sufferer might not get the proper treatment at the right time. Accurate assessment and appropriate surgical measures are equally important for an anal fistula to be cured; failure to either will result in recurrence. IFTAK technique is minimally invasive with less or no hospitalization; the patient can do his routine work throughout the course of the treatment. Additonally, anal continence is not impaired with this technique. IFTAK technique in managing complex fistula in ano can play a revolutionary role. There is a need to collect extensive data on the IFTAK technique to establish the facts widely.

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Author contributions

Anil Kumar- conceptualized the idea, collected all data, prepared original draft of article, reviewed and edited the article as per comments.
Ashish Sharma- reviewed and edited the article.
S J Gupta- Supervised and provided resources.
Ashish Verma - Supervised and provided resources.
Rahul Sherkhane- Supervision, Reviewing and Editing.

Declaration of Competing Interest

None.

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