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Management of recurrent fistula-in-ano with underlying osteomyelitis by partial fistulectomy, *Ksharsutra* and antibiotics: A case report

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Abstract

Introduction: Osteomyelitis is an infectious disease of bone which is a difficult disease to treat. In advanced stages, the infection spreads to the surrounding tissues which may result in formation of a fistulous track which can present as a continuous discharge through its external (cutaneous) opening. Fistula-in-ano is treated by various surgical procedures including fistulotomy, fistulectomy, LIFT, Setons, fibrin glue, laser etc. In Ayurveda, however *Ksharasutra* (caustic alkaline thread) is regarded as the best line of treatment in any kind of sinus infection and the same treatment has been extended to Fistula-in-ano in past century with a lot of modification which has become a pioneer in itself finding a mention in modern surgical text books as well. In the present case study after controlling osteomyelitis with antibiotics and Nano-extracts of Curcumin, we have carried out a blended procedure using partial fistulectomy and then placement of *Ksharasutra* for fistula-in-ano.

Clinical Findings and Presenting Symptoms: A 40 yr. old male patient diagnosed with Fistula-in-ano with underlying osteomyelitis of coccyx visited our OPD section and after proper evaluation it was found that the patient has previously been operated for fistula-in-ano by fistulotomy which was unsuccessful in mitigating the disease and has resulted in partial loss of anal tone as well because of damage to internal anal sphincter musculature during the surgical procedure. The presenting symptoms were active puss discharge with collected in perianal area as an abscess. No fever, malaise, pain was noticed. Low anal tone due to previous surgery was noticed on per rectal examination.

Main Diagnosis and Therapeutic Intervention: The patient was diagnosed with osteomyelitis of coccyx bone which presented as perianal fistula based on the contrast MRI. The challenge was to design a procedure which can mitigate three components simultaneously: cure the osteomyelitis, disinfect and heal the fistulous track and prevent any damage to internal sphincter which may result in post-operative incontinence. Hence it was decided to give antibiotics (Faropenem 300 mg) twice daily and Nano- extracts of *Curcuma Longa* (*Haldi*) 30 mg twice daily as first line of treatment followed by a Trans Rectal Ultrasonography (TRUS) to establish elimination of infection to coccyx bone. On confirmation of infection free bone a surgical procedure under spinal anesthesia was carried out with partial fistulectomy, de-roofing and drainage of the abscess which had formed near the external opening followed by placement of *Ksharasutra* (Standard 21 layer- *Snuhii* Latex *(10), Apamarga Kshara (7), Haridra* Powder *(4)*) in the main fistulous track using a copper malleable probe. After proper hemostasis, the external wound was packed by a sterile gauze dipped in *Septiloc* antiseptic lotion (Venus Ayurveda). Patient was kept under observation for post-operative care. On discharge oral antibiotics in form of Faropenem 300 mg twice daily and Nano- extracts of *Curcuma Longa* (*Haldi*) 30 mg twice daily were given for next one week again. *Ksharasutra* was changed every 7th day for next 7 weeks with no to minimal cutting followed by dressing with Septiloc lotion regularly. *Ksharsutra* was removed in 7th week when there was no discharge from the fistulous track and the external wound had healed completely.

Keywords: Osteomyelitis, fistula-in-ano, *Ksharasutra*, *curcumin*, faropenem, fistulectomy, case report

Introduction

Fistula-in-ano is a common anorectal condition characterized by an abnormal tract connecting the anal canal to the perianal skin. Most cases arise due to cryptoglandular infections; however, secondary causes, including tuberculosis, Crohn's disease, trauma, malignancy, and osteomyelitis have also been reported.[1]Osteomyelitis is an infectious disease of bone which is a difficult disease to treat. In advanced stages, the infection spreads to the surrounding tissues which may result in formation of a fistulous track which can

present as a continuous discharge through its external (cutaneous) opening. While osteomyelitis is typically associated with long bones, chronic infections of the coccyx, though rare, can lead to contiguous spread of infection to the perianal region. In modern medicine high grade antibiotics are used to treat osteomyelitis or any other bony infections. Fistula-in-ano is treated by various surgical procedures including fistulotomy, fistulectomy, LIFT, Setons, fibrin glue, laser etc. In *Ayurveda*, however *Ksharasutra* (caustic alkaline thread) is regarded as the best line of treatment in any kind of sinus infection (*Nadi Vrana*) [3, 4] and the same treatment has been extended to Fistula-in-ano in past century [5] with a lot of modification which has become a pioneer in itself finding a mention in modern surgical text books as well. In the present case study after controlling osteomyelitis with antibiotics and Nano-extracts of Curcumin, we have carried out a blended procedure using partial fistulectomy and then placement of *Ksharasutra* for fistula-in-ano.

Osteomyelitis of the coccyx [2] is an uncommon condition, often resulting from trauma, pressure sores, or iatrogenic causes. Its insidious presentation and anatomical proximity to the anorectal region can allow the infectious process to breach tissue planes, forming deep-seated abscesses or sinus tracts. When such infections track toward the anal canal, they may manifest as fistula-in-ano a scenario that presents unique diagnostic and therapeutic challenges.

Due to the rarity of this etiology, there is a paucity of literature describing fistula-in-ano secondary to coccygeal osteomyelitis. Most available evidence is limited to isolated case reports or small case series. Consequently, this unusual presentation is often overlooked, leading to delayed diagnosis and recurrent infections despite conventional fistula treatment. Awareness of this rare but significant association is crucial, especially in patients with persistent or atypical fistulas unresponsive to standard surgical management.

This study aims to explore the clinical presentation, diagnostic workup, and management strategies of fistula-in-ano arising from osteomyelitis of the coccyx, with the goal of contributing to the limited body of literature and improving outcomes in such atypical cases. This case report aims to design a treatment protocol which can simultaneously disinfect the bone (osteomyelitis), disinfect and heal the fistulous track and prevent any further damage to anal sphincter musculature which may otherwise result in post-operative incontinence.

Patient Information

A 40 yr old male with history of recurrent Fistula-in-ano with underlying Osteomyelitis of coccyx bone visited OPD section of Surgery department. The patient had no comorbidities. The patient had already been operated by fistulotomy for same disease in 2022 which did not prove beneficial in managing the disease. Partial damage to the internal sphincter musculature was also noticed which resulted in low anal tone owing to previous surgery for fistula-in-ano.

The presenting symptoms were active puss discharge with collected in perianal area as an abscess. No fever, malaise, pain was noticed.

Clinical Findings

Patient was examined thoroughly and active puss discharge from a cutaneous opening at 7 O' Clock position was noted. Patient also complained of pain in the tail bone which aggravated on sitting.

Patient had no other co morbidity. Contrast MRI (Magnetic Resonance Index) Fistulogram revealed Fistula-in-ano with underlying infection (osteomyelitis) of the coccyx bone. A puss culture was done which showed sensitivity to various antibiotics among which Faropenem was chosen for treatment.

A treatment plan which had a blend approach using antibiotics, nano extracts and surgical procedure was designed and explained to the patient in his native language.

Timeline

Table 1: Timeline of Treatments received

Year	Intervention	Result
2022	Fistulotomy	Failure
2024	Antibiotics and Curcumin nano Extracts for Osteomyelitis	Successful
2024	De-roofing off Abscess and *Ksharsutra*	Successful

Diagnostic Assessment

1. Contrast MRI showed a Fistulous track in the perianal with external opening at 7 O'clock
2. Puss Culture showed sensitivity to Faropenem
3. Routine Investigations showed results within normal limits
4. HIV, HBSAg, HCV- Negative
5. Chest Xray and ECG - Normal
6. TRUS was conducted after first Phase of treatment which showed infection free bone.

Therapeutic Intervention

Patient was initially given Faropenem [6] 300 mg twice daily and *Curcumin* Nano Extract [7] 30 mg (Snac-30) twice daily for 15 days. A TRUS (Trans Rectal Ultrasonography) was done after 15 days to establish infection free coccyx bone. TRUS revealed no signs of Osteomyelitis and patient was taken up for surgery. Under all aseptic precautions, part was prepared and drapped. Findings identified as shown by MRI Fistulogram. An abscess was observed at the cutaneous openings of the fistulous track. After proper maximum finger dilatation, methylene blue dye was passed through the external openings and a half cut proctoscope was kept in place inside the anal canal to visualize the dye coming out from the internal opening at 3 cm from the anal verge at around 5 O'clock which was a single internal opening. Keeping the probe in place and secured the external abscess was de-roofed and drained thoroughly. A 21 *bhawana* standard *Ksharasutra* [8] was introduced through the track with the help of the already placed probe. A loose loop was created with the *Ksharasutra* and the knot was kept outside the anal canal in the wound created by de-roofing of abscess. All bleeding spots were cauterized and hemostasis was achieved. Wound was packed by sterile gauze dipped in SEPTILOC lotion manufactured by Venus *Ayurveda*, Haryana. Patient was shifted to IPD and kept under observation for 1 day. Patient was discharged subsequently. Post operatively Faropenem 300 mg and *Curcumin* Nano extracts (*Haridra)* were continued in same dosage for 2 weeks. Patient was also advised proper cleaning and dressing of wound by SEPTILOC lotion and gauze. *Ksharasutra* was changed weekly for next 7 weeks. *Ksharasutra* used was a 21 *bhawana* standard thread coated with *Apamarga*, *Snuhi* and *Haridra.*

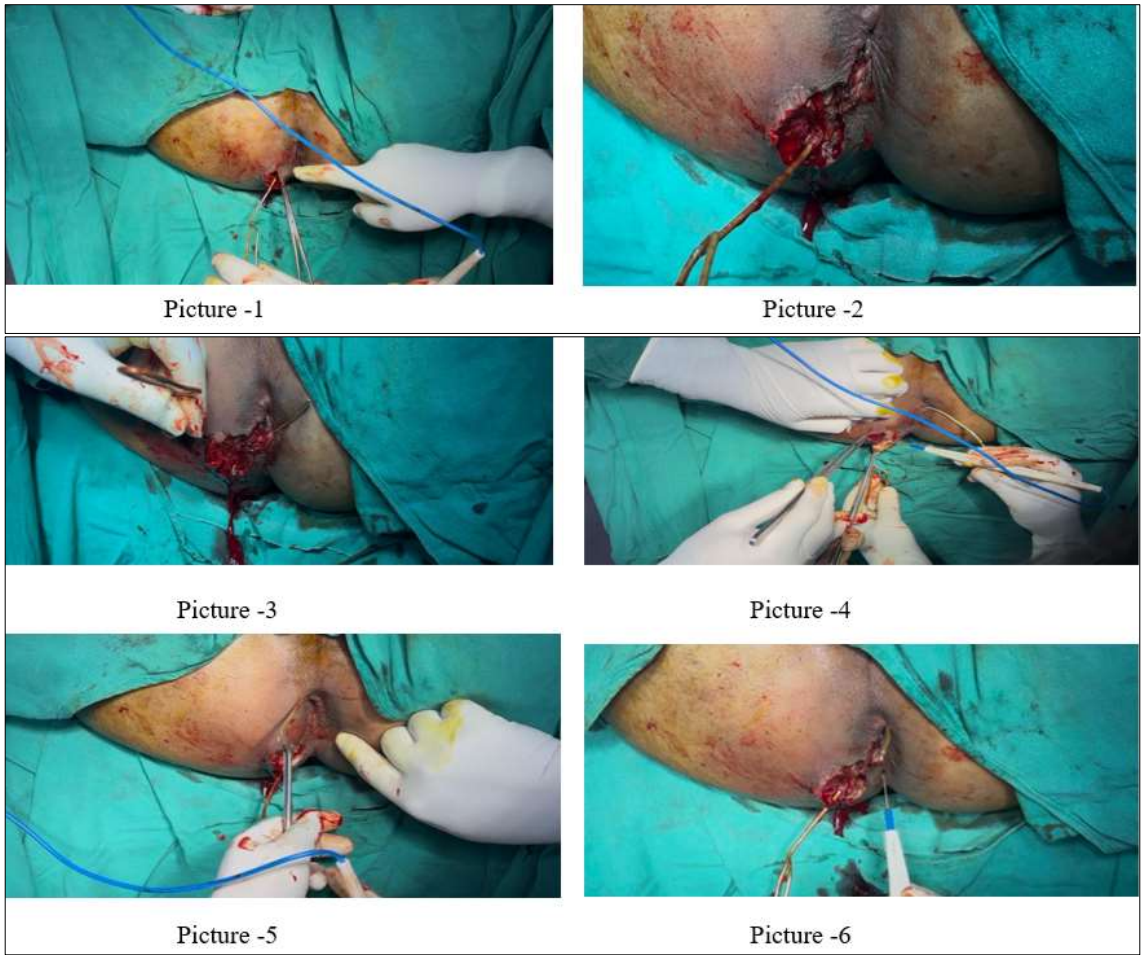

Fig 1: Intra Operative Pictures- De-roofing (1, 2, 3) and Probing (4, 5, 6)

Fig 2: Ksharasutra Placement (7, 8, 9, 10)

Fig 3: Ksharsutra Removal (7 Weeks) **Fig 4:** Complete Healing (9 weeks)

Follow up and Outcome

Table 2: Showing VAS Score, Puss discharge period, Complete Healing

	Results
VAS (Visual Analogue Scale) Score (max)	3/10
Time Taken to puss elimination	7 weeks
Time Taken for Complete Healing	9 weeks

Table 3: Severity of Fecal Incontinence- Jorge-Wexner Scoring System, 1993 [9]

Incontinence episode	Frequency				
	Never	Rarely	Sometimes	Usually	Always
Solid	0				
Liquid				3	
Gas			2		
Wear a Pad	0				
Lifestyle alteration	0				
Total Score	5				

VAS Score- Though there was no significant pain during the course of the treatment but patient complained of discomfort during 3rd week of thread change.

Puss elimination period- After 5 weeks there was minimum puss discharge and puss discharge stopped by 7th week even on pressure and hence the Ksharasutra was removed.

Complete wound healing: was achieved in 9 weeks. No recurrence was observed during 6 months and 1 year follow ups.

Incontinence: Patient had few involuntary episodes of liquid and gas during first 2 weeks. Patient was advised pelvic floor exercises which helped in mitigating the symptoms. Maximum score noted was 5 (Mild) which reduced to 0 by 3rd week.

Recurrence: Patient was reexamined after 6 months and 1 year from the surgical date. There was no fresh complaint. On examination no discharge was noted.

Discussion

Fistula-in-ano resulting from osteomyelitis of coccyx extremely rare as osteomyelitis mainly occurs in long bone. Never the less this case was made more challenging due to previous surgical damage of internal sphincter musculature. *Ksharasutra* has been a primary choice of treatment for sinus infections in *Ayurveda.* Though efficacy of *Ksharasutra* as primary choice of treatment has been established by many research scholars over the time, but this type of blended approach of modern medical and surgical advancements along with usage of modernized *Ayurvedic* drugs and techniques has proven extremely beneficial for this type of challenging cases. More research with a larger group of unique cases should be taken for blended medical or surgical approach which shall give more insights about usage of *Ayurvedic* wisdom and modern technology.

Patient Perspective

Patient was highly cooperative during the entire course of treatment. He had opted for *Ksharasutra* intervention after thorough research and was highly satisfied with a blend approach for management of his disease. Patient was very strict with his follow ups and medication as advised which resulted in elimination of the disease completely with no recurrence.

Informed Consent

Patient has given proper consent for surgical procedure and for publication of this case report.

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Asifa Qadir: Moral and Emotional support
Mohd Akbar Bhat: Handholding and mental ease
Raja Akbar: Love and trust

Conflicts of Interest

Nil

Source of finance & support
Nil

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