Management of recurrent, complex, and high anal horseshoe fistula-in-ano by partial fistulectomy with *Ksharsutra*: a case report

Monica Shrestha[1]*, Tukaram S Dudhamal[2]

European Journal of Medical Case Reports
Volume 2(3):117–120

https://doi.org/10.24911/ejmcr/173-1535125374

ABSTRACT

Background: Hippocrates advocated the use of a seton. *Ksharsutra* works as a cutting and draining seton, besides that, it has antimicrobial property and chemically cauterizes the unhealthy tissue lining the fistulous tract; and thus, decreasing the recurrence rate in cases of complicated fistula-in-ano. This study aims to diagnose the recurrent complicated case of fistula-in-ano, to treat the case by integrated method (Partial fistulectomy with *Ksharsutra*), to improve the quality of life of the young patient, and assess the result of *Ksharsutra* with trans rectal ultrasonography (TRUS).

Case Presentation: This was a case of a 32-years-old male patient with recurrent horseshoe high anal fistula operated twice at a reputable hospital in Vellore (Tamil Nadu) arrived with seton *in situ*. On examination, a seton was seen at 6 o'clock and a scar was seen at 2 o'clock position. Partial fistulectomy was done along with *Ksharsutra*. On the 20th week, the *Ksharsutra* got cut through and the wound healed completely. There was no pus discharge and sphincter tone was within the normal limit. Post-operative TRUS showed no evidence of fistula.

Conclusion: Ksharsutra was a successful integrated intervention in recurrent horseshoe fistula-in-ano.

Keywords: Ayurveda, Bhagandara, Basti, chronic disease, seton, case report.

Received: 28 August 2018 **Accepted:** 18 September 2018

Type of Article: CASE REPORT

Specialty: Surgery

Funding: The study was supported by Institute for postgraduate teaching and Research in Ayurveda, Gujrat Ayurveda University, Jamnagar, Gujrat.

Declaration of conflicting interests: None

Correspondence Author: Monica Shrestha
*Room No. 18 Girl's Hostel, Department of Shalyatantra, IPGT&RA, Gujarat Ayurved University, Jamnagar, India.
Email: shresthamonica33@gmail.com
Full list of author information is available at the end of the article.

Background

Fistula-in-ano dates to antiquity. Hippocrates first advocated the use of a seton (derived from Latin *seta* meaning "bristle") in the management of fistula-in-ano in about 430 BC. Treatment of choice in fistula-in-ano is surgery, as it eradicates the fistulous tract and drains the infection. The exact prevalence rate of fistula-in-ano is unknown. The incidence of a fistula-in-ano developing from an anal abscess ranges from 26% to 38%. One of the studies showed the prevalence rate of fistula-in-ano as 8.6 cases per 100,000 population. In men and women, the prevalence rate was 12.3 and 5.6 cases per 100,000 population, respectively. The incidence of fistula-in-ano in males was 1.8 times more than in females. The mean patient age was 38.3 years [1].

A seton can be applied with fistulotomy or alone. This technique was useful in patients with complex fistulas (i.e., high trans-sphincteric, suprasphincteric, extrasphincteric) or multiple fistulas, recurrent fistulas, anterior fistulas in females, patients who were immunocompromised, and patients with Crohn disease. Seton helps in the visual identification of the amount of sphincter muscle involved, drains the tract, promotes fibrosis, and cuts through the fistula. Setons can be made from silk suture, rubber bands, stainless steel wire, or silastic vessel markers that are applied in the fistulous tract [2].

The success rates for cutting setons range from 82% to 100%, however, long-term incontinence rates exceed 30% [3]. *Ksharsutra*, a medicated seton which in barbour thread coated with *snuhi* (*Euphorbia nerifolia* Linn.) latex, turmeric (*Curcuma longa* Linn.), and *Apamarga Kshar* (alkaline powder made by burning *Achyranthus aspera* Linn.). Murthy adopted this in a large number of patients and established the treatment as an effective, ambulatory, and safer alternative treatment for patients with fistula-in-ano [4]. The efficacy studies at the Central Council of Research in Ayurvedic Sciences institute revealed the overall recurrence rate of 5.88% [5]. The Indian Council of Medical Research had validated this therapy by conducting multicentric research trials and concluded that *Ksharasutra* was better than the conventional surgery in fistula-in-ano [6]. *Ksharsutra* being a seton carries out all the functions of a seton but it also has advantages over a normal cutting or draining seton, *Ksharsutra* has an antimicrobial property as shown by some *in vitro* studies; therefore, it promotes wound healing by creating a healthy environment. The pH of *Ksharsutra* is alkaline in

nature (pH=9.3–10); therefore, it scrapes all the unhealthy granulation lining the fistulous tract. Hence, along with mechanical action like seton, *Ksharsutra* has antimicrobial and chemical cauterization properties [7]. Though many research works have been carried out on the efficacy of *Ksharsutra* in fistula, still there is a big scope to create new evidence in the form of rare cases to update the knowledge of surgeons. This report aims to focus on the diagnosis of a case of recurrent complicated case of fistula-in-ano, to treat the case by integrated method (Partial fistulectomy with *Ksharasutra*), to improve the quality of life (QOL) of the young patient, and to assess the result of *Ksharsutra* with trans rectal ultrasonography (TRUS) as evidence-based investigation.

Case Presentation

A 32-year-old male patient came to outpatient department with complains of pus discharge from perianal region, pain in ano, and intermittent fever. He reported a history of surgery for fistula at a reputable hospital in Vellore (Tamil Nadu) a year ago for fistula-in-ano and a seton was inserted; while undergoing treatment, the patient again developed a perianal abscess and was operated for the same 7 months ago but post-operative wound did not heal and he had a seton *in situ*. So, the patient wanted Ayurvedic management for his condition as the pus discharge did not stop even after undergoing surgery. The patient had continuous pain in and around the anal region and so could not do his routine work, this hampered his QOL. The patient had no other medical or surgical illness. On examination, a seton was seen at 6 o'clock position and a scar was seen at 2 o'clock position (Figure 1). On digital rectal examination, the big internal opening was felt at 6 o'clock position and high anal extension (i.e., lower rectum) was felt at 3 o'clock position. The two tracts (3–6 o'clock and 7–6 o'clock) communicated with each other and this was clinically diagnosed as a case of horseshoe fistula. To create documentary evidence, TRUS was advised and that confirmed the diagnosis. TRUS showed 68 mm long linear non-branching fistula in the left perianal region with an external opening at 3 o'clock and internal at 6 o'clock position. The internal opening was 12 mm proximal to the anus. Nineteen-millimeter-long linear non branching fistula in the right perianal region with an external opening at 7 o'clock was also seen. Internally, the fistula communicated with the above-mentioned fistula. All the hematological and biochemical examination were done before planning surgery and were within the normal limit.

All pre-operative preparations were done. Under aseptic precaution, spinal anesthesia was given, the patient was laid down in the lithotomy position, painting and drapping was done. Probe was passed through 3 o'clock which came out from internal opening at 6 o'clock (Figure 2). Partial fistulectomy was done and *Ksharsutra* was inserted in the remaining tract and the high anal extension was scooped, the probe was passed through the external opening at 6–7 o'clock which came out through the internal opening at 6 o'clock, *Ksharsutra* was inserted in that tract also (Figure 3). From the next evening, the patient was advised to take sitz bath with *Panchavalkala* decoction and then antiseptic daily dressing with *Shatadhauta ghrita* and *Matra Basti* with 10 ml *Jatyadi Taila* was done. Five gram *Eranda Bhrishta Haritaki* (*Terminalia chebula*) powder was prescribed with lukewarm water at bedtime. Analgesic was advised on Si opus sit (SOS) basis. *Ksharsutra* was changed by rail-road method every week till complete cut through of fistulous tract.

Discussion

Relief in post-operative pain, discharge, and wound healing were assessed weekly. On the post-operative first week, there was a mild pain so analgesic was prescribed on SOS basis with moderate discharge and healthy wound (Figure 4). On the second week, wound got contracted, having mild pus discharge and mild pain so no analgesic was required. On 12th week, the post-operative partial fistulectomy wound at 3–6 o'clock healed completely with 2 cm long *Ksharsutra* at 3 o'clock and 2.5 cm *Ksharsutra* at 6 o'clock (Figure 5), there was no pain and no pus discharge with the partially healed wound. On 14th week, both the *Ksharsutra* had cut through. On 20th week, wound healed completely, there was no pain, pus discharge, sphincter tone was within normal limit, and no evidence of fistula-in-ano clinically (Figure 6). Post-operative TRUS showed 14 × 7 × 3 mm sized superficial subcutaneous area of fibrosis in the right perianal region at 7 o'clock position. 19 × 18 × 4 mm sized superficial subcutaneous area of fibrosis in the perianal region between 3 and 6 o'clock position was also seen. No evidence of fistula was there. Unit cutting time of fistulous tract was approximately 0.5–1 cm per week which was assessed during the entire study. Every week, *Ksharsutra* was changed by rail-road technique and on that day, oral analgesic was required but in remaining days, the patient was doing his routine job.

In the previous surgeries of this patient, only one tract was explored and seton was applied, while the other tract was missed as a result of which there was recurrence. Seton was used for drainage purpose only. *Ksharsutra* act as a cutting and draining seton unlike conventionally used setons, they cut the tract by mechanical pressure as well as chemical cauterization. *Ksharsutra* due to its properties cauterizes the unhealthy fibrosis and granulation of the fistulous tract and provides a healthy environment for wound healing [8]. After cutting and healing of fistula, it induces fibrosis, thus, preventing sphincter damage [9]. *Haridra* (*Curcuma longa* Linn.) has a soothing effect and also promotes wound healing. Partial fistulectomy helped in the proper drainage of pus or unhealthy granulation and reduced the duration of treatment [10].

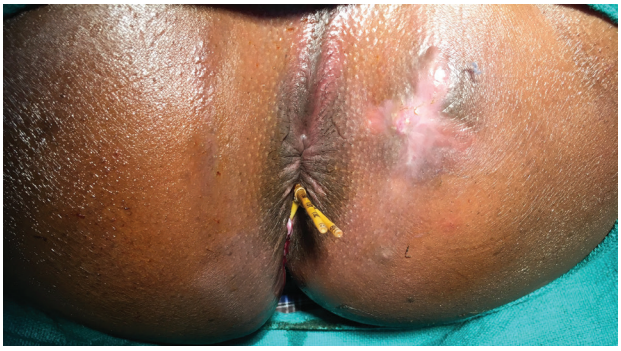

Figure 1. *Pre-operative image.*

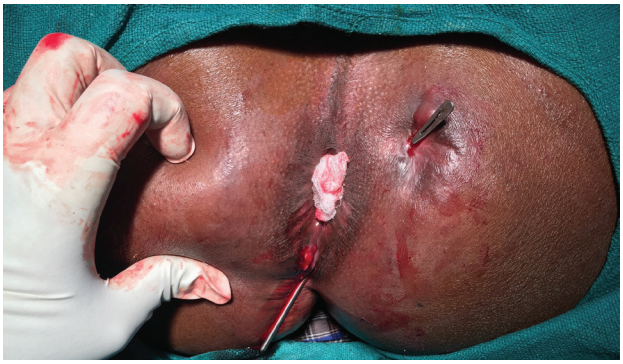

Figure 2. *Probing during surgery.*

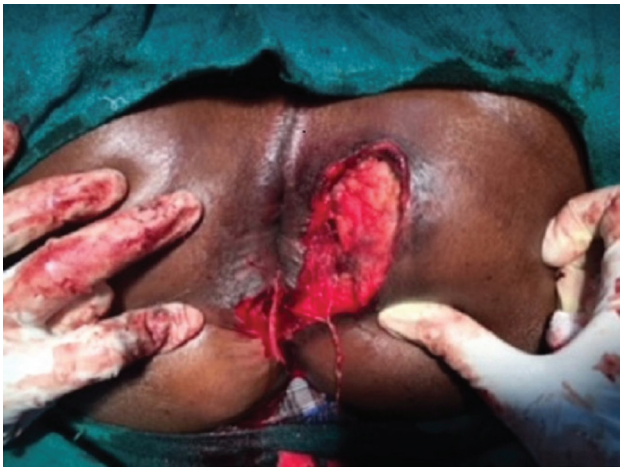

Figure 3. *Post-operative image.*

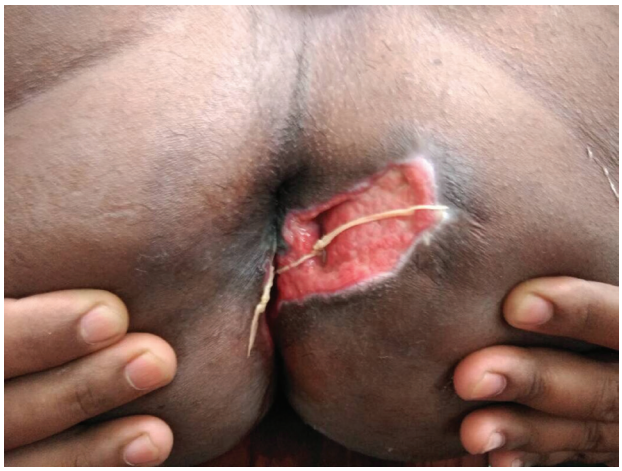

Figure 4. *Post-operative third week.*

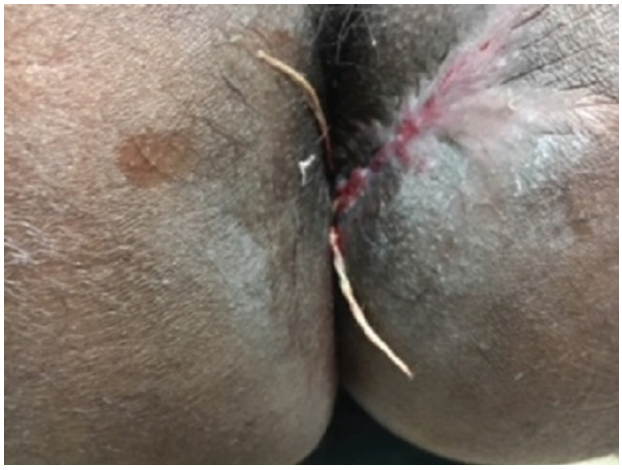

Figure 5. *Post-operative 12th week.*

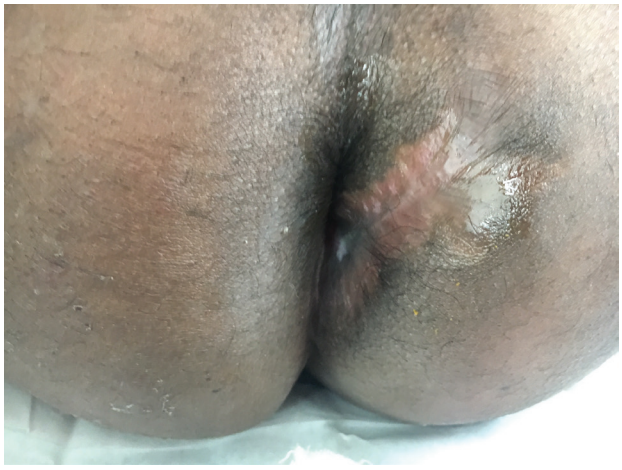

Figure 6. *Post-operative 20th week.*

Panchavalkal decoction sitz bath promoted healing due to its *Kashaya rasa* (Astringent taste) and helped in cleaning the wound [11]. *Shatadhauta Ghrita* (Clarified butter) promoted wound healing [12]. *Jatyadi taila Matrabasti* (Medicated Enema) acts as a soothing agent for smooth evacuation of feces and it takes care of the post-operative pain. Pain occurs because of vitiation of *vata* [13] and *basti* (Medicated Enema) is considered as the best treatment for vitiated *vata* [14]. *Erandbhrishta haritaki* is a mild laxative and helps to relieve constipation. Thus, this

case emphasizes on the proper diagnosis of a recurrent case of fistula-in-ano clinically and through TRUS. It also emphasizes on integrated intervention for the management of such a complicated case to ensure improvement in the QOL of the patient as he continued his day-to-day work and his job with minimal discomfort. Post-operative TRUS is an evidence that fistula healed completely and there was no remnant fistulous tract.

Acknowledgement

The author conveys gratitude to the dean and director of IPGT & RA, Gujarat Ayurveda University for kind support and assistance during the study.

List of abbreviations

QOL	Quality of life
SOS	Si opus sit
TRUS	Trans rectal ultrasonography

Consent for publication

Written informed consent to publish this case was obtained from the patient.

Ethical approval

Ethical approval was taken from Institutional Ethical Committee.

Author details

Monica Shrestha[1], Tukaram S Dudhamal[2]

1. Ph.D. Scholar, Department of Shalyatantra, IPGT&RA, Gujarat Ayurved University, Jamnagar, India
2. Associate Professor, Department of Shalyatantra, IPGT&RA, Gujarat Ayurved University, Jamnagar, India

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Summary of the case

Patient (gender, age)	1	Male, 32 years
Final Diagnosis	2	complex high anal horse shoe fistula
Symptoms	3	Pus discharge from perianal region, pain in ano and intermittent fever
Medications	4	No history of any medication, after surgery antibitiotics and analgesic were given
Clinical Procedure	5	Partial fistulectomy with Ksharsutra application
Specialty	6	Surgery (Ayurveda)