AYUSHDHARA
ISSN: 2393-9583 (P)/ 2393-9591 (O)
An International Journal of Research in AYUSH and Allied Systems

Research Article

MINIMAL INVASIVE *KSHARA SUTRA* TECHNIQUE (MIKST) - A NEW SPHINCTER SPARING TECHNIQUE FOR THE MANAGEMENT OF LOW TRANS-SPHINCTERIC FISTULA IN ANO WSR *USHTRAGRIVA BHAGANDARA*

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Article info
Article History:
Received: 16-11-2025
Accepted: 21-12-2025
Published: 20-01-2026

KEYWORDS:
Low Trans-Sphincteric fistula in ano, *Usthtragriva Bhagandara,* MIKST, *Kshara Sutra.*

ABSTRACT

Acharya Sushruta mentioned the *Bhagandara* in *Astha-Mahagada*, due to difficult to treat this condition. Fistula in ano management is a growing burden to the surgeon's society due to its recurrence chances. Overall prevalence rate of the fistula in ano is 8.6 per one lac. In present time there are many new advance techniques available for the management of fistula in ano in contemporary science but no any single technique is gold standard for this condition. So, it is a high time to amalgamate the ancient wisdom with new modern surgical techniques to overcome this condition. **Methods**: This study was conducted from May 2023 to 2025 at NIA, Jaipur and total 40 diagnosed patients of low trans-sphincteric fistula in ano selected and underwent MIKST. All the patients screened with all routine investigation prior to the surgery and written informed consent was taken. Preoperative, intra-operative and post-operative data collected and assess the clinical outcomes on different parameters for 6 weeks trial period and 6 weeks additional follow up and results were analyzed with Friedman statical test. **Results & conclusion**: The MIKST techniques showed the significant results in reducing pain, discharge from wound and post operative inflammatory signs and minimize the wound healing period, post operative complication, length of hospital stays and chance of recurrence. Therefore; MIKST can be considered as minimal invasive efficient technique for the low trans-sphincteric fistula in ano treatment.

INTRODUCTION

Ayurveda is the most primitive stream in the history of health sciences. The aim of this stream is making the patients diseases free and maintain the health of the healthy individual[1]. *Shalya Tantra* is the first and the most famous branch among them. *Shalya* is defined as anything that causes any discomfort or uneasiness physically or mentally[2]. It can be anything from our body or some extrinsic factor and the branch which deals with the knowledge of extraction of these *Shalya* is known as *Shalya Tantra*[3]. Acharya Sushruta mentioned *Bhaganadara* in *Asthamahagada*[4] due to difficulty in management. As per *dosha* involvement *Acharya Sushruta* described five types of *Bhagandara* as *Shatponak, Ushtragreeva, Parishravi, Shambukavritta* and *Unmargi* and explained different types of management[5]. In contemporary science fistula in ano is a communicating tract between two epithelial surfaces lined by unhealthy granulation tissue[6]. Sir Parks classify the fistula in ano in intersphincteric, transphincteric, suprasphincteric and extrasphincteric[7]. Trans-sphincteric fistula in ano can be corelated with *Ushtragreeva Bhagandara* on the basis of course of the fistulous tract.

In modern science there are number of techniques available for the management of fistula in ano like fistulotomy, fistulectomy, LIFT, VAAFT, Fibrine glue, FiLaC[17], Dermal advancement flap, Endorectal advancement flap (ERAF), Endoscopic clipping etc[15,16]. But trans-sphincteric fistula in ano still very challenging for all surgeons because of its reoccurrence, chances of incontinence and difficulties faced during surgical treatment.

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	https://doi.org/10.47070/ayushdhara.v12i6.2354

In Ayurveda, *Kshara-Sutra*[8] therapy is a specialized modality of treatment for the management of *Bhagandara.* This technique is unique because of its drug delivery mechanism.

In this study Minimal Invasive *Kshara Sutra* therapy (MIKST)[9] used to treat *Ushtragriva Bhagandara* and assessed the outcomes on the standard parameters.

AIM

To evaluate the effect of MIKST technique in the management of *Ushtragriva Bhagandara* wsr to Low Trans-sphincteric fistula in ano.

Objectives- To assess

- Post operative pain
- Time taken in accomplishment of the procedure
- Post operative inflammatory signs
- Pus Discharge from wound
- total wound healing duration
- Complication
- Recurrence
- Hospital stay
- Time to return to work

MATERIAL AND METHODS

Study design

This study was a prospective study conducted at NIA, Jaipur from May 2023 to April 2025, Jaipur.

Inclusion criteria

Diagnosed case of low trans-sphincteric fistula-in-ano.

Age-group- 18-60 years with irrespective of gender.

Exclusion criteria

Other than low trans sphincteric fistula in ano.

Other co-morbid diseases like uncontrolled DM, HTN, COPD.

Pre-operative evaluation

1. Local examination and DRE to identify the fistulous tract and internal opening of the fistula in ano.
2. Systemic examination to rule out any other systemic illness.
3. Routine blood investigations- CBC, ESR, CT, BT, RBS, HIV, HbsAg, LFT, RFT, CXR-PA view.
4. MRI pelvis as per need.
5. Prophylactic antibiotics and tetanus prophylaxis.

Surgical Technique

All preoperative measures were taken care before the surgery. All cases performed under local anaesthesia. Patient taken in lithotomy position and painting- draping was done followed by 1% lignocaine with adrenalin infiltrate at local site. After coming the effect of local anesthesia, check the patency of the fistulous tract by pushing the Hydrogen peroxide.

A malleable fistula probe inserted through the external opening of fistula in ano and taken out this from internal opening from anal canal, after that palpate the fistulous tract at the level of intersphincteric plane and intercept the fistulous tract under direct vision. After proper interception of the tract *Kshara sutra* ligate between internal opening to the interception window and the lateral tract cored out.

Post-operative Management

1. Pain management as per need.
2. Standard wound care with daily dressing.
3. Patient were monitored for wound infection, Recurrence, total time taken in wound healing, hospital stay.
4. Follow up was done at 1, 3 and 6th week postoperatively.

Demographic presentation

Gender	Male- 37, Female- 3
Age (Mean)	40.2 years

Clinical presentation

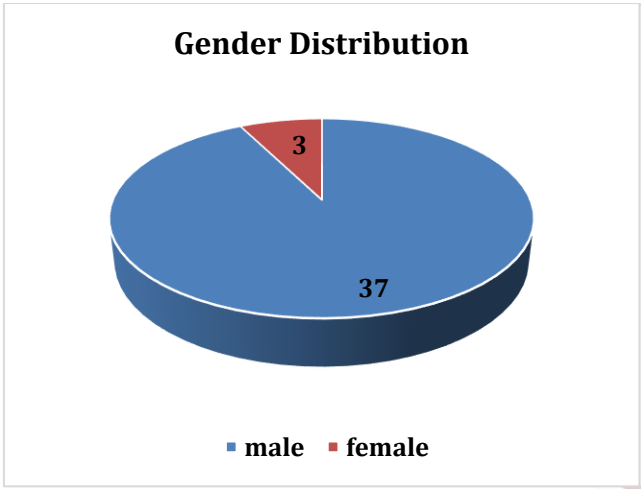
S.No.	Clinical presentation	Value
1	Boil with pus discharge	32
2	Posterior external opening of fistula in ano	24
3	Below dentate line internal opening	33

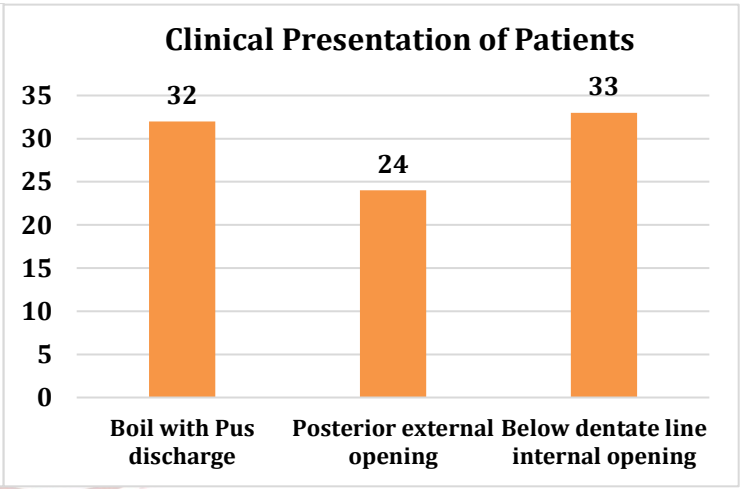
Post operative assessment

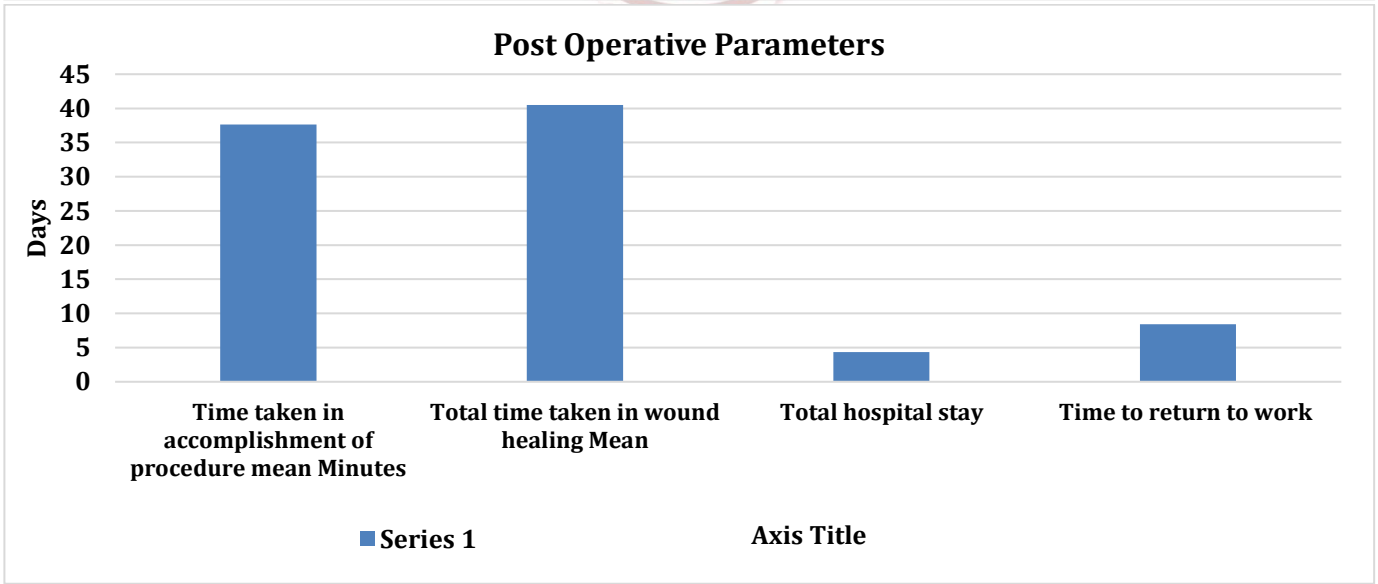
Assessment	Pain (VAS) Mean value	Discharge Mean value	Inflammatory sign mean value
BT	1.564	1.60	0.9744
1st week	1.875	2.050	0.3750

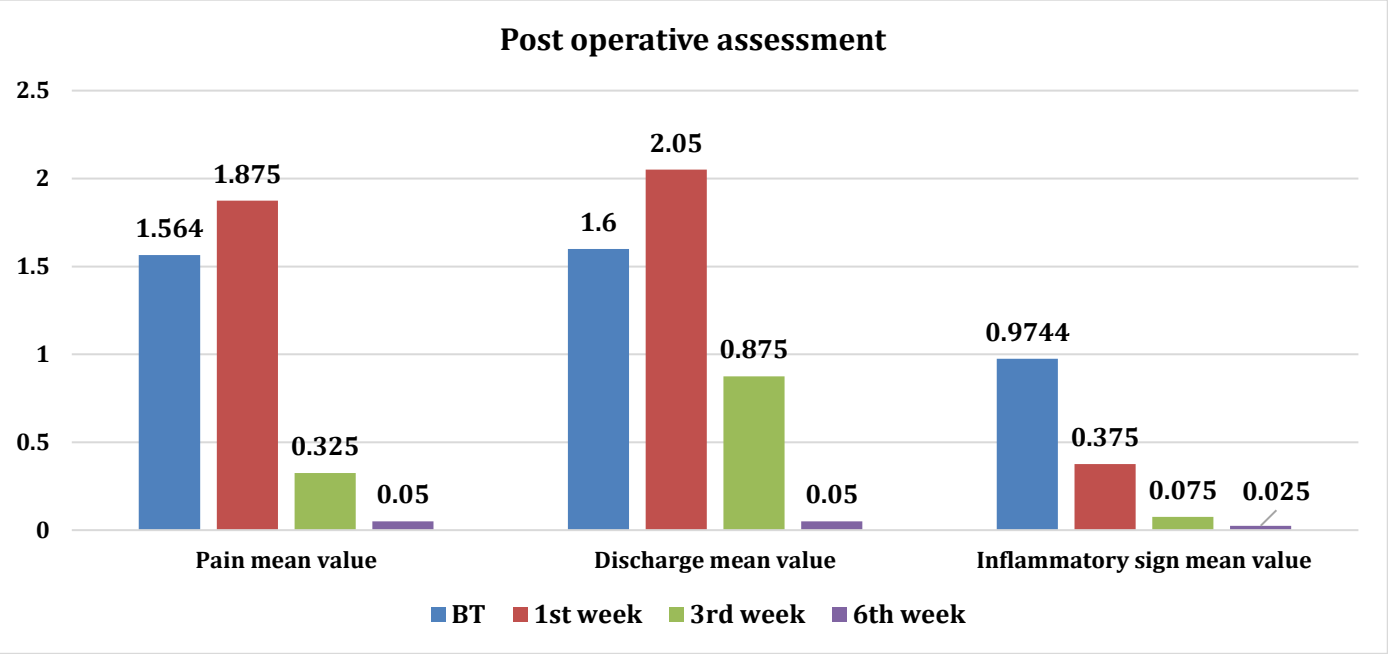
3rd week	0.325	0.8750	0.0750
6th week	0.050	0.0500	0.0250
F value	151.3	202.9	52.15
P value	<0.0001	<0.0001	<0.0001

S.No.	Parameters	Value
1	Time taken in accomplishment of procedure (Mean)	37.62 minutes
2	Total time taken in wound healing (Mean)	40.48 days
3	Complication	2 patients
4	Recurrence	2 patients
5	Total duration of hospital stay (Mean)	4.35 days
6	Time to return to work (Mean)	8.4 days



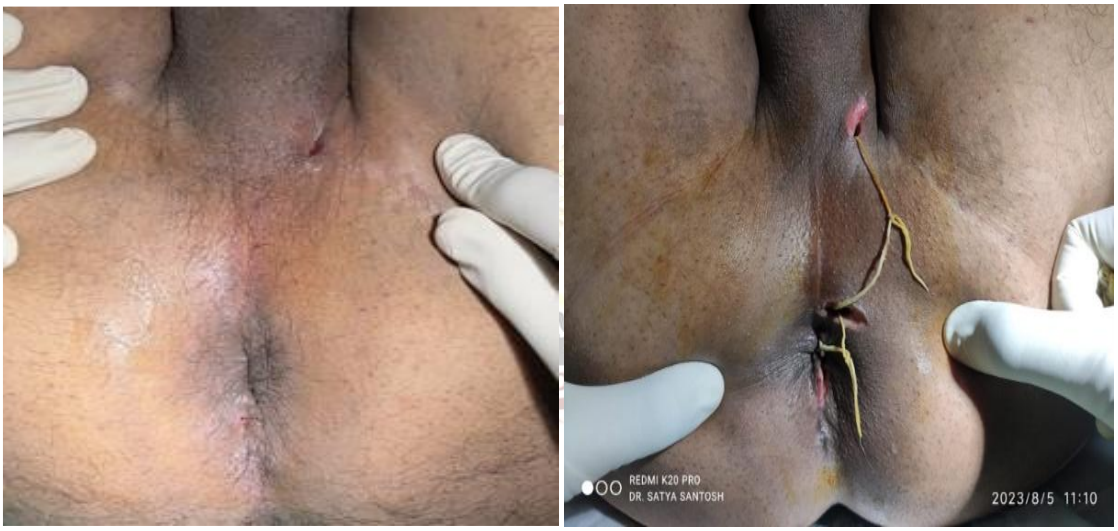




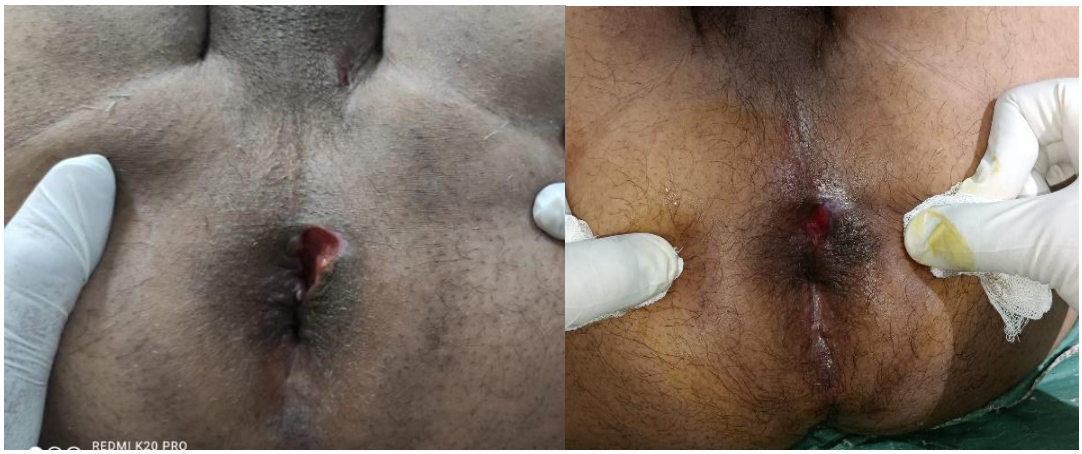


MIKST Group Operated Cases

Case 1

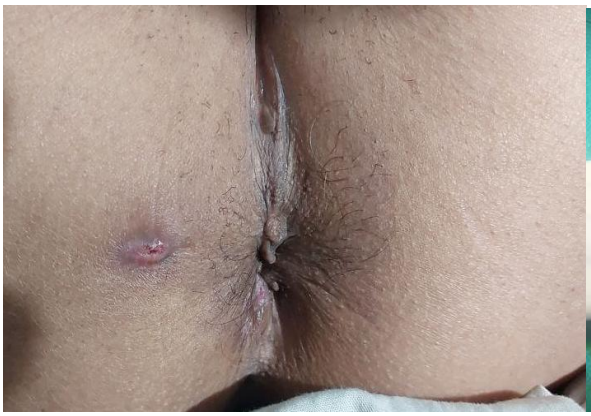


Pre-Operative **Post-Operative**

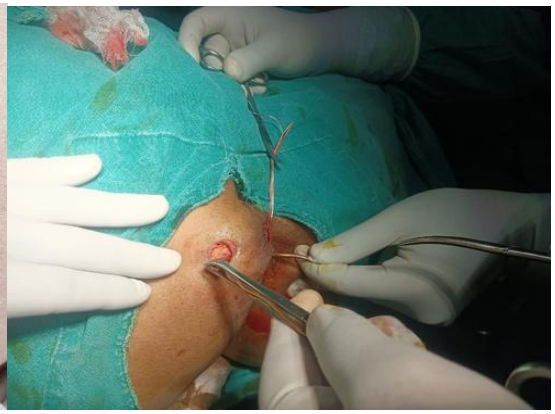


Follow-up **Complete healed wound**

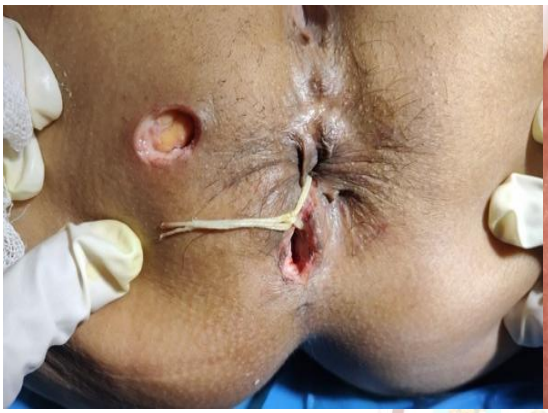
Case 2



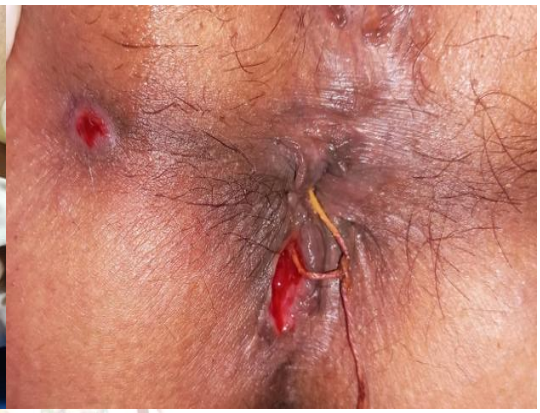
Pre-Operative



During Operative



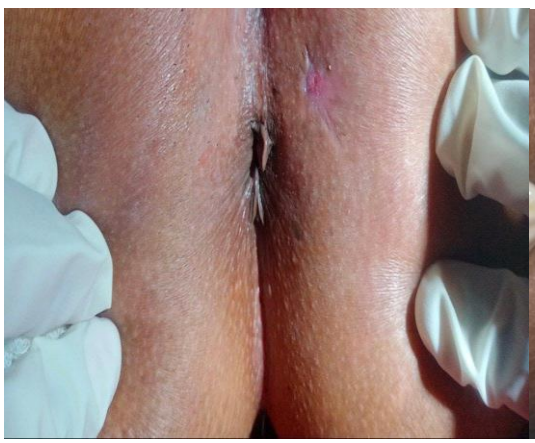
Follow-up



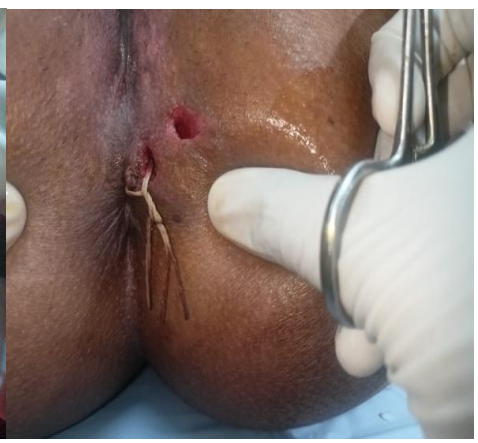
Follow-up

Complete wound healing

Case 3

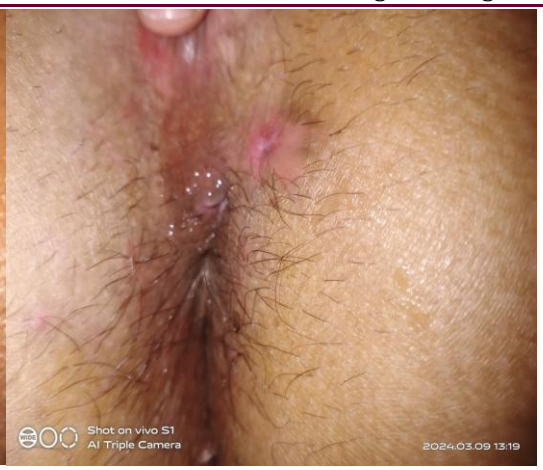


Pre- Operative



Post-Operative

Follow-up



Complete healed wound

RESULTS

Out of 40 patients 37 (92.5%) were male and 3 females with average age group 40.2 and 32 (80%) patients had the boil with pus discharge as chief complaint from the 7-12 months. 27 (67.5%) patients had the history of medical treatment followed by 8 (20%) had the history of surgical treatment for the fistula in ano, only 1 (2.5%) had the family history regarding the condition. 24 (60%) of patients had the external opening in posterior to anal verge[12]; 82.5% (33) patients had the internal opening at below the dentate line.

The patients had shown statistically significant reduction in Pain with mean pain value 1.875, 0.325 and 0.050 at 1st, 3rd and 6th week respectively, Friedman value-151.3, P value <0.0001. The mean value of discharge from wound continuously decrease at 1st, 3rd and 6th week was 2.050, 0.8750 and 0.0500; found statistically significant with F- value 202.9 and P Value <0.0001. Patients had statistically significant reduction in post operative inflammatory signs at 1st, 3rd and 6th week with mean value 0.3750, 0.0750 and 0.0250 respectively, F- Value 52.15 and P value <0.0001; mean value of duration of accomplishment of the procedure was 37.62 minutes; the mean value of the duration of wound healing was 40.48 days; the mean of time to return to work was 8.4 days: Mean of length of hospital stay was 4.35 days; only two patients had the complication of abscess formation and recurrence and 38 patients complete cure and had no recurrence till 6 months follow up.

DISCUSSION

Ushtragriva Bhagandara[10] represent the course of the fistulous tract like camels' neck and in contemporary science it can be correlated with Trans-sphincteric fistula in ano.

The management of fistula in ano remain challenge for the surgeons because of its chances of recurrence. In this prospective case series of 40 patients of fistula in ano, we observed the clinical pattern consistent with existing literature. Patient mean age 40.2 years with 92.5% male and 7.5% female aligning the epidemiological data[11].

Post operative pain reduction was significant with P value <0.0001 and post operative inflammatory signs were minimum owing to its meticulous dissection and minimal tissue damage.

Post operative pus discharge from wound significantly reduced with P value <0.0001 due to proper handling of the primary focus with *Kshara Sutra* which have the properties of *Chedan, Bhedan* and *Lekhan*[12], so it gradually removal the unhealthy granulation tissue and proper drainage without damage the sphincter muscle.

Mean of wound healing time was 40.48 days, owing to proper addressing the primary focus of fistula with proper drainage and complete removal or core out the lateral tract of fistula in ano.

Only 2 patients (5%) were reported with complication of perianal abscess[13] and recurrence may be due to improper drainage of fistula in ano.

Mean hospital stay was 4.35 days and mean of time to return to work was 8.4 days showed that minimal post operative discomfort owing to minimal dissection and trauma to tissue.

Probable mode of action of MIKST

The Minimal Invasive *Kshara Sutra* technique (MIKST) represents a recent advancement in the treatment of fistula-in-ano, combining the foundational principles of classical *Kṣhāra Sūtra* therapy with contemporary minimally invasive surgical practices. The technique is designed to intercept the fistulous tract at the intersphincteric plane and to eradicate the infected anal crypt, which is recognized as a major etiological factor contributing to the persistence and recurrence of the condition. The remaining portion of

the tract is subsequently managed through meticulous curettage or decoring to ensure comprehensive removal of unhealthy tissue.

In MIKST, the *Kshara Sutra* is precisely applied from the site of interception to the internal opening, enabling focused and sustained drug delivery throughout the pathological tract with minimal collateral trauma. The medicated thread facilitates controlled chemical debridement, continuous drainage, and progressive destruction of infected tissue, all while preserving the structural and functional integrity of the anal sphincters. By addressing both the tract and its primary source, this technique significantly reduces postoperative morbidity, lowers the risk of incontinence, and supports accelerated and more predictable healing[13].

CONCLUSION

The results of this study establish the MIKST technique as safe, effective with low complication and recurrence in the management for Low-Trans-sphincteric fistula in ano and can be adopt as choice of the treatment for fistula in ano.

Future Recommendations

The results of this study were very encouraging, so in future this study can be plan with big sample size, with long follow up period and multi-centric.

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Cite this article as:
Lokendra Pahadiya, P. Hemantha Kumar. Minimal Invasive Kshara Sutra Technique (MIKST)- A New Sphincter Sparing Technique for the Management of Low Trans-sphincteric Fistula in Ano wsr Ushtragriva Bhagandara. AYUSHDHARA, 2025;12(6):274-280.
https://doi.org/10.47070/ayushdhara.v12i6.2354
Source of support: Nil, Conflict of interest: None Declared

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