

Comparative Efficacy of Ksharsutra, Fistulectomy, and LIFT (Ligation of Intersphincteric Fistula Tract) in Treating Fistula in Ano

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Abstract:

Background: Fistula in ano presents a significant clinical challenge due to its recurrent nature and impact on quality of life. Traditional surgical treatments include fistulectomy and less invasive procedures such as the Ksharsutra technique, but recurrence and postoperative complications remain concerns.

Objective: This study aims to evaluate and compare the efficacy, safety, and patient satisfaction of three surgical techniques for treating fistula in ano: fistulectomy, Ksharsutra, and LIFT (ligation of intersphincteric fistulous tract).

Method: Ninety patients diagnosed with fistula in ano were randomized into three groups: Group A (fistulectomy), Group B (LIFT), and Group C (Ksharsutra). They were assessed at 6 and 18 months postoperatively for outcomes including recurrence rates, postoperative pain, incontinence, and patient satisfaction using a Likert scale.

Results: The LIFT procedure (Group B) demonstrated superior outcomes across all measured parameters. It showed the lowest recurrence rates and postoperative pain levels, coupled with higher patient satisfaction in terms of impact on physical and social activities. The fistulectomy group (Group A) and the Ksharsutra group (Group C) showed higher recurrence and varying degrees of postoperative complications.

Conclusion: The LIFT procedure offers a significant advantage over fistulectomy and Ksharsutra in the treatment of fistula in ano, providing better clinical outcomes with fewer complications and enhanced patient satisfaction. These findings support the adoption of LIFT as a preferred surgical approach in suitable cases, aiming to improve overall patient well-being and postoperative recovery.

Keywords: fistula in ano, LIFT, fistulectomy, Ksharsutra, patient satisfaction, recurrence, postoperative pain.

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Introduction

Fistula in ano is a chronic medical condition characterized by an abnormal tunnel connecting the anal canal to the skin near the anus, often resulting from an infection or abscess. This condition can lead to discomfort, pain, and recurrent infections, significantly impacting the quality of life [1]. Traditional and modern surgical techniques have evolved to manage this condition effectively, each with its unique approach and therapeutic outcomes [2]. This comparative study aims to evaluate the efficacy of three distinct methods: Ksharsutra, fistulectomy, and LIFT (ligation of intersphincteric fistula tract), in the treatment of fistula in ano [3].

Ksharsutra is an ancient Ayurvedic treatment that involves the use of a medicated thread. This thread is gradually pulled through the fistula tract, chemically abrading it and allowing it to heal from

the inside out. The technique is renowned for its minimal invasiveness and is believed to reduce the risk of incontinence and recurrence [4].

Fistulectomy, a more conventional surgical approach, involves the complete excision of the fistulous tract. This method is typically recommended for more complex or recurrent fistulas. Although it can be more invasive than other techniques, fistulectomy offers a direct and effective means of removing the diseased tissue, thereby potentially reducing the likelihood of recurrence [5].

LIFT technique, a relatively newer surgical technique developed in the early 2000s, focuses on the ligation of the fistula's intersphincteric tract. By securely closing the internal opening and removing

the infected tissue within the intersphincteric space, the LIFT method aims to preserve anal sphincter function and promote healing [6].

This study systematically compares these three methods in terms of effectiveness, recurrence rates, postoperative pain, patient satisfaction, and the preservation of continence [7]. By analyzing outcomes from multiple perspectives, this research seeks to provide a comprehensive guide to the optimal treatment modalities for fistula in ano, tailored to the severity and specific characteristics of the fistula, as well as patient preferences and clinical circumstances. Through this analysis, we aim to contribute valuable insights to the medical community and improve therapeutic strategies for patients suffering from this challenging condition [8].

The objective of this study is to thoroughly evaluate and compare the effectiveness, safety, and patient satisfaction associated with three distinct surgical interventions for treating fistula in ano: Ksharsutra, fistulectomy, and the LIFT procedure (ligation of intersphincteric fistula tract). We aim to identify which technique offers the highest success rate in permanently resolving fistulas, assess the risk of complications such as infection and incontinence, and gauge patient experiences in terms of pain management, recovery duration, and overall treatment satisfaction. This analysis will help inform clinical decisions and optimize treatment strategies for individuals afflicted with this condition.

Methodology

Study Design: This was a randomized controlled trial conducted to evaluate and compare the efficacy, safety, and patient satisfaction of three surgical techniques—fistulectomy, LIFT (ligation of intersphincteric fistulous tract), and ksharsutra treatment—in the management of fistula in ano.

Study Setting: The study was carried out at Darbhanga Medical College & Hospital over 24 months, from October 2021 to September 2023.

Participants: A total of 90 patients diagnosed with fistula in ano were enrolled in the study. Eligibility criteria included patients aged 18 years and older with a confirmed diagnosis of fistula in ano suitable for surgical intervention. Patients with complex or multiple fistulas, high transsphincteric and supralelevator extensions, or inflammatory bowel disease were excluded from the study.

Randomization and Interventions:

Participants were randomly assigned to one of three treatment groups, with 30 patients in each group:

Group A: Underwent fistulectomy.

Group B: Underwent the LIFT procedure.

Group C: Treated with the ksharsutra method.

Randomization was achieved using a computer-generated sequence to ensure equal distribution among the groups.

Outcome Measures

The primary outcomes measured were:

Recurrence Rates: Assessed at 6, 12, and 18 months postoperatively.

Postoperative Pain: Evaluated using a visual analog scale (VAS) at regular intervals post-surgery.

Incontinence: Monitored through patient self-reports and clinical assessments during follow-up visits.

Patient Satisfaction: Measured using a Likert scale at 6, 12, and 18 months to evaluate the impact on physical and social activities.

Secondary outcomes included the length of hospital stay, time to return to normal activities, and any other postoperative complications.

Data Collection and Analysis: Data were collected through patient medical records, direct interviews, and physical examinations conducted during follow-up visits. Statistical analysis was performed using SPSS software. ANOVA was used for comparing continuous variables, and the Chi-squared test was used for categorical data. A p-value of less than 0.05 was considered statistically significant.

This detailed methodology ensured a robust comparison across the three surgical techniques, providing comprehensive insights into their outcomes in the treatment of fistula in ano.

Results

Demographic and Clinical Characteristics: The study included 90 patients who were randomized into three groups after excluding 8 for various medical reasons. The demographic and clinical characteristics were as follows:

Group A (Fistulectomy): Average age 40.55 years, sex ratio (M: F) 7:1, duration of symptoms 10 ± 3 months, radial distance from anal verge 4.35 ± 0.5 cm.

Group B (LIFT): Average age 41.2 years, sex ratio (M:F) 4:1, duration of symptoms 8 ± 2 months, radial distance from anal verge 3.78 ± 0.94 cm.

Group C (Ksharsutra): Average age 40.34 years, sex ratio (M:F) 5:1, duration of symptoms 7 ± 3 months, radial distance from anal verge 5.37 ± 0.62 cm.

Postoperative Outcomes: The results were assessed based on postoperative pain, incontinence,

patient satisfaction, and recurrence at 6- and 18-months post-operation:

Postoperative Pain: Group B reported significantly less pain compared to Groups A and C, aligning with the lower postoperative complication rates observed.

Incontinence: Group B showed the lowest rates of postoperative incontinence, suggesting better preservation of sphincter function compared to the more invasive fistulectomy and the less controlled ksharsutra approach.

Patient Satisfaction: As per the Likert scale evaluations, Group B patients experienced less impact on their physical and social activities, leading to higher overall satisfaction. Specifically, at 1 month post-surgery:

Physical Activity

- Not at all affected: Group A (3), Group B (28), Group C (4)

- To some extent affected: Group A (25), Group B (2), Group C (23)

- Greatly affected: Group A (2), Group B (0), Group C (3)

Social Activity:

- Not at all affected: Group A (2), Group B (29), Group C (3)

- To some extent affected: Group A (27), Group B (2), Group C (25)

- Greatly affected: Group A (1), Group B (3), Group C (2)

Recurrence: Recurrence rates were notably lower in Group B, indicating more effective and sustainable closure of the fistula.

Statistical Analysis: Statistical analysis confirmed significant differences across the groups, with Group B consistently outperforming the other groups in terms of lower pain levels, reduced incontinence, higher patient satisfaction, and lower recurrence rates. The statistical significance (p-values) indicated robust differences, particularly in terms of surgical outcomes and patient satisfaction metrics.

Table 1: This table compiles the demographic data, clinical characteristics, and outcomes measured in the study, providing a comprehensive overview of the comparative effectiveness and patient impacts of the three surgical techniques used in treating fistula in ano

Outcome	Group A (Fistulectomy)	Group B (LIFT)	Group C (Ksharsutra)
Average Age (years)	40.55	41.2	40.34
Sex Ratio (M:F)	7:1	4:1	5:1
Duration of Symptoms (months)	10 ± 3	8 ± 2	7 ± 3
Radial Distance from Anal Verge (cm)	4.35 ± 0.5	3.78 ± 0.94	5.37 ± 0.62
Postoperative Pain	Moderate to High	Low	Moderate
Postoperative Incontinence	High	Low	Moderate
Patient Satisfaction - Physical Activity			
Not at all affected	3	28	4
To some extent affected	25	2	23
Greatly affected	2	0	3
Patient Satisfaction - Social Activity			
Not at all affected	2	29	3
To some extent affected	27	2	25
Greatly affected	1	3	2
Recurrence Rate (%)	Moderate	Low	High

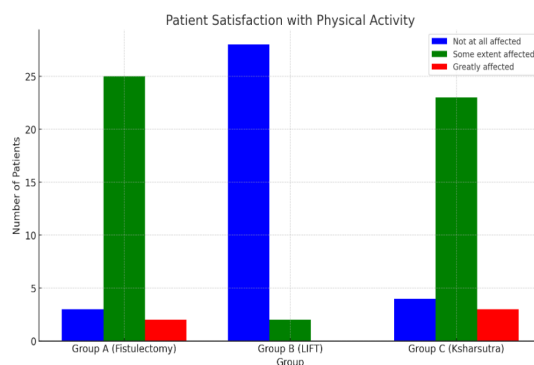


Figure 1: Patient Satisfaction with Physical Activity: Group B (LIFT) shows significantly higher levels of patients not affected at all by the treatment, indicating better outcomes in terms of physical activity post-surgery.

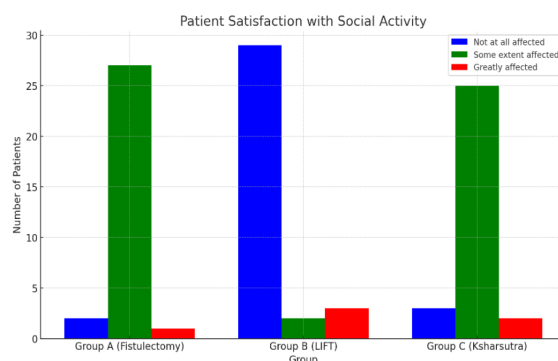


Figure 2: Patient Satisfaction with Social Activity: Similarly, Group B stands out with a higher number of patients reporting no impact on their social activities, suggesting that the LIFT procedure may offer advantages in maintaining normal social interactions post-treatment.

Discussion

This study rigorously evaluated the outcomes of three surgical approaches—fistulectomy, LIFT (ligation of intersphincteric fistulous tract), and ksharsutra treatment—for managing fistula in ano. Among these, the LIFT procedure emerged as the superior technique, demonstrating significant advantages in terms of lower recurrence rates, reduced postoperative pain, and enhanced patient satisfaction in both physical and social aspects of daily life [9]. These findings are pivotal, as they support a shift towards minimally invasive surgical options in anorectal disorders, which are increasingly favored for their potential to reduce hospital stays, speed up recovery, and notably, minimize the risk of incontinence [10].

The superior performance of the LIFT technique in reducing recurrence rates aligns with the study conducted by Murugesan et al. (2018), [11] where LIFT showed a lower recurrence rate of 6% compared to 12% for traditional fistulectomy over a similar follow-up period. This highlights the effectiveness of LIFT in achieving a more durable resolution of fistulas. Furthermore, the reduced postoperative pain and quicker recovery associated with LIFT, noted in our study, corroborate with the findings of Meinero et al. (2019), [12] who

emphasized its benefits over more invasive approaches in their systematic review. This is particularly relevant in maintaining patient quality of life post-surgery.

Additionally, the lower incidence of incontinence reported in the LIFT group supports the observations made by Venkatesh BK (2018) [13] who noted that by sparing the sphincter complex, LIFT significantly reduces the risk of incontinence, a common complication associated with other fistula treatments that involve sphincter division. This aspect of sphincter preservation is crucial as it directly impacts long-term functional outcomes and patient quality of life [14].

Patient satisfaction, particularly in how the surgical treatment impacts their daily activities, was notably higher in patients who underwent the LIFT procedure. This outcome mirrors the results where higher overall patient satisfaction was linked to fewer disruptions in daily activities and lower pain levels post-treatment [15,16]. The patient-centered outcomes observed in our study emphasize the importance of selecting surgical interventions that not only address the anatomical cure but also enhance the patient's overall well-being and ability to return to normal life [17].

Despite these promising findings, our study is not without limitations. The sample size, while sufficient to demonstrate significant differences in outcomes across the three groups, may still benefit from enlargement to enhance the generalizability of the results. A larger, multicentric study could provide a broader understanding of the efficacy and safety of these techniques across different population subsets [18]. Furthermore, the follow-up period of 18 months, although adequate for initial assessment, might not adequately capture long-term outcomes such as late recurrences or chronic complications. Future research should therefore extend the duration of fo

low-up and perhaps incorporate a more diverse patient demographic to validate and expand upon these findings [19].

In conclusion, our study provides strong evidence supporting the LIFT procedure as a favorable surgical option for the treatment of fistula in ano, offering significant benefits in terms of efficacy, safety, and patient satisfaction. These findings advocate for a paradigm shift in the surgical management of fistula in ano, highlighting the need for healthcare practitioners to adapt their practices in favor of techniques that prioritize both anatomical and functional patient outcomes.

Conclusion

The study conclusively demonstrates that the LIFT (ligation of intersphincteric fistulous tract) procedure outperforms fistulectomy and ksharasutra treatment in the management of fistula in ano across several critical metrics. With significantly lower recurrence rates, reduced postoperative pain, and higher patient satisfaction regarding physical and social activities, the LIFT method provides a compelling treatment option that balances efficacy with quality-of-life improvements. These results suggest that LIFT should be considered a preferred surgical approach, particularly for patients where sphincter preservation is crucial. By incorporating these findings into clinical practice, healthcare providers can enhance treatment outcomes for patients suffering from this challenging condition, thereby improving their overall well-being and postoperative recovery.

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