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SURGICAL MANAGEMENT OF FISTULA-IN-ANO USING THE LIFT TECHNIQUE: A PROSPECTIVE STUDY OF OUTCOMES AND RECURRENCE RATES

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ABSTRACT

Introduction:
Fistula-in-ano is a challenging anorectal condition characterized by an abnormal communication between the anorectal lumen and the skin, often resulting from cryptoglandular infection. Traditional surgical approaches, while effective, often carry risks of postoperative complications, including recurrence and incontinence. The Ligation of Intersphincteric Fistula Tract (LIFT) technique has emerged as a promising sphincter-preserving surgical option aimed at reducing these risks.

Materials and Methods:
This prospective, single-centered study was conducted over two years from June 2022 to May 2024 at tertiary care centre, Tamil Nadu. A total of 30 adult patients with a confirmed diagnosis of fistula-in-ano, who met the inclusion criteria, were enrolled and treated using the LIFT technique. Patients with complex or recurrent fistulas, or those with underlying chronic diseases, were excluded. Postoperative pain was assessed using the Visual Analogue Scale (VAS), and patients were followed for six months to monitor recurrence and other complications. Data were analyzed using SPSS version 22.0, with results presented as means and percentages.

Results:
The study population consisted predominantly of males (80%), with a mean age of 53.9 years. Postoperative pain assessment revealed significant improvement, with 66.7% of patients reporting minimal pain (VAS <3) by the fifth postoperative day. The majority of patients (66.7%) resumed normal physical activities by the fourth day post-operation. The recurrence rate within the six-month follow-up was low, supporting the efficacy of the LIFT technique in managing fistula-in-ano.

Conclusion:
The LIFT technique is a viable and effective surgical option for the management of fistula-in-ano, offering advantages in terms of reduced postoperative pain, shorter hospital stays, and low recurrence rates. Its sphincter-preserving approach minimizes the risk of incontinence,

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making it an attractive first-line treatment. However, further studies with larger sample sizes and longer follow-up periods are warranted to confirm these findings and refine patient selection criteria.

Keywords:
Fistula-in-ano, LIFT technique, postoperative pain, recurrence, sphincter preservation, anorectal surgery.

INTRODUCTION

Fistula-in-ano, commonly referred to as an anal fistula, is a chronic condition characterized by an abnormal communication between the anorectal lumen and the external skin surface, typically on the perineum or buttock. This pathological connection is usually lined by granulation tissue and results from various etiologies, with cryptoglandular infection being the most prevalent cause, accounting for approximately 90% of cases[1.] The condition can present a significant surgical challenge due to its recurrent nature and the complexity of its management[2.]

Historically, the condition has been documented as early as the time of Hippocrates[3], yet despite this long-standing recognition, the optimal management of fistula-in-ano remains a topic of ongoing debate within the surgical community[4.] The condition is not only distressing for patients but also demands meticulous surgical intervention to balance effective treatment with the preservation of continence[5.]

The classification of fistula-in-ano, as proposed by Sir Alan Parks in 1976, remains widely used and is based on the relationship of the fistulous tract to the anal sphincter muscle[6]. This classification aids in determining the appropriate surgical approach, which has traditionally included procedures such as fistulotomy, seton placement, and various forms of flap advancement[7]. However, these methods often carry a risk of postoperative complications, including incontinence and recurrence, making the search for safer and more effective treatments critical[8].

The Ligation of Intersphincteric Fistula Tract (LIFT) technique has emerged as a promising surgical intervention in the management of anal fistulas[9]. This minimally invasive procedure focuses on securely closing the internal opening and removing the infected tissue via an intersphincteric approach, thereby preserving the sphincter and minimizing the risk of incontinence[10]. Early results have shown LIFT to be effective, with high healing rates and a favorable postoperative recovery profile.

Given the significant impact of anal fistulas on patients' quality of life and the challenges associated with their surgical management, this study aims to evaluate the outcomes of the LIFT procedure in terms of postoperative pain, duration of hospitalization, and short-term recurrence over a six-month follow-up period. By doing so, it seeks to contribute valuable

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data to the existing body of literature and assist in guiding future clinical decisions in the management of fistula-in-ano.

AIMS AND OBJECTIVES

This study aims to evaluate the outcomes of surgical management of anal fistulae using the LIFT technique, focusing on:

- Post-operative pain level
- Duration of hospitalization
- Short-term recurrence within a six-month period

MATERIALS AND METHODS

Study Design:

This study was a prospective, single-centered, interventional study conducted at tertiary care centre, Tamil Nadu over two years from June 2022 to May 2024.

Study Population:

Patients diagnosed with fistula-in-ano, admitted to the general surgical wards were included in the study.

Sample Size:

A total of 30 patients with fistula-in-ano were enrolled in the study.

Inclusion Criteria:

1. Adult patients (18 years and older) with a confirmed diagnosis of fistula-in-ano.
2. Patients who consented to undergo surgical management using the LIFT technique.

Exclusion Criteria:

1. Patients below 18 years of age.
2. Patients with recurrent fistulae or fistulae secondary to chronic diseases such as tuberculosis, malignancy, Crohn’s disease, etc.
3. Patients with subcutaneous fistulae that could be excised safely without injury to sphincters.
4. Patients unable to provide informed consent.

Ethical Considerations:

The study was approved by the hospital’s ethics committee. Informed written consent was obtained from all patients before enrollment.

Data Collection:

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1. **Preoperative Assessment:**
    - Demographic details including age, sex, occupation, and medical history were recorded.
    - Clinical evaluation included digital rectal examination (DRE) and proctoscopy.
    - Diagnostic investigations such as X-ray fistulography were performed to confirm the diagnosis and assess the fistula tract.
2. **Surgical Procedure:**
    - All surgeries were performed under spinal anesthesia with the patient in the lithotomy position.
    - The internal opening of the fistula was identified by injecting a dye.
    - A circumferential incision was made in the intersphincteric groove over the fistula tract.
    - The intersphincteric space was dissected, and the fistula tract was isolated.
    - The tract was ligated near the internal sphincter and then cut.
    - The wound was sutured using interrupted absorbable sutures.
3. **Postoperative Care:**
    - Postoperative pain was assessed using a Visual Analogue Scale (VAS), where 0 indicated no pain and 10 indicated the worst pain.
    - Pain assessment was conducted on the first and fifth postoperative days.
    - The duration of hospital stay was recorded.
    - Patients were monitored for postoperative complications and the time required to return to normal activities was noted.
4. **Follow-up:**
    - Patients were followed up at 1 month, 3 months, and 6 months post-surgery.
    - Recurrence of fistula and other complications were recorded.
    - Patients were asked to fill out a questionnaire during each follow-up visit to assess their recovery and any recurrence of symptoms.

Statistical Analysis:
Data collected were entered into Microsoft Excel and analyzed using SPSS version 22.0. Descriptive statistics, including means and percentages, were used to summarize the data. The outcomes were compared and analyzed to determine the effectiveness of the LIFT technique.

RESULTS:

Table:1 Age Distribution

The age of the patients ranged from 21 to 70 years, with a mean age of 53.9 years. The distribution of patients across different age groups is as follows:

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Age (in years)	No. of Cases	Percentage (%)
21-30	3	10
31-40	2	6.7
41-50	7	23.3
51-60	8	26.6
61-70	5	16.7
>70	5	16.7
Total	**30**	**100**

Table:2 Sex Incidence

The study population consisted of 24 males (80%) and 6 females (20%), indicating a higher incidence of fistula-in-ano among males.

Sex	No. of Cases	Percentage (%)
Male	24	80
Female	6	20
Total	**30**	**100**

Table:3 Post-Operative Pain Assessment

Pain was assessed using the Visual Analogue Scale (VAS) on the 1st and 5th post-operative days (POD). The following observations were made:

VAS Score	No. of Patients on 1st POD	No. of Patients on 5th POD
<3	9 (30%)	20 (66.7%)
3-5	10 (33.3%)	6 (20%)
6-8	8 (26.7%)	3 (10%)
>8	3 (10%)	1 (3.3%)
Total	**30**	**30**

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By the 5th POD, a significant reduction in pain was observed, with 66.7% of patients reporting a VAS score of less than 3.

Table:4 Time to Return to Pre-Operative Physical Activity

The time taken for patients to return to their pre-operative physical activity varied, with most patients recovering by the 4th day post-operation.

No. of Days	No. of Patients
4	20 (66.7%)
5	5 (16.7%)
6	3 (10%)
7	2 (6.6%)

Overall, 66.7% of patients resumed normal physical activities by the 4th day post-operation, with all patients returning to their pre-operative levels by the 7th day.

DISCUSSION:

Fistula-in-ano remains a challenging condition for both surgeons and patients due to its chronic nature and the significant risk of recurrence and postoperative complications, particularly incontinence. The development of newer surgical techniques like the Ligation of Intersphincteric Fistula Tract (LIFT) has aimed to address these challenges by providing effective treatment while minimizing the risk of sphincter damage and preserving continence.

Age and Sex Distribution

In our study, the majority of patients were males (80%) with a mean age of 53.9 years, which aligns with the demographic trends reported in other studies. Fistula-in-ano is more prevalent in middle-aged males, likely due to lifestyle factors and the higher incidence of crypto-glandular infections in this population. Similar age distributions have been reported by Michel Romaniszyn et al[6]. and Dushyant Kumar Rohit et al.[7], reinforcing the notion that fistula-in-ano predominantly affects middle-aged individuals.

Postoperative Pain and Recovery

The assessment of postoperative pain using the Visual Analogue Scale (VAS) revealed that the majority of patients experienced a significant reduction in pain by the 5th postoperative day. Specifically, 66.7% of patients reported minimal pain (VAS score <3) by day 5,

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indicating that the LIFT procedure is associated with relatively low postoperative pain. This is consistent with the findings of other studies, where LIFT has been shown to result in less postoperative discomfort compared to more invasive procedures like fistulotomy or fistulectomy[8]

In terms of recovery, most patients (66.7%) were able to return to their preoperative physical activity within 4 days, demonstrating the rapid recovery associated with the LIFT procedure. This quick return to normal activities is one of the significant advantages of LIFT, making it a favorable option for patients who prioritize a short hospital stay and minimal disruption to their daily lives[9,10]

Recurrence and Complications

Recurrence of fistula is a major concern in the surgical management of fistula-in-ano. In our study, the recurrence rate within six months of follow-up was low, suggesting that the LIFT technique effectively eradicates the fistulous tract while minimizing the risk of recurrence. This is particularly important because high recurrence rates are often associated with more invasive procedures that may damage the sphincter complex.

The low recurrence rate observed in our study is in line with the results from other research, which has shown that the LIFT procedure is associated with lower recurrence rates compared to traditional methods. The success of the LIFT technique can be attributed to its ability to target the fistula at its origin in the intersphincteric space, allowing for effective closure of the internal opening without compromising the integrity of the sphincter muscles[11].

Comparison with Other Studies

When comparing our findings with other studies, it is evident that the LIFT procedure offers a balance between efficacy and safety. Studies by Xu and Tang[12], as well as Sauter Dalbem et al. [13], have reported similar outcomes, with low rates of incontinence and recurrence, further validating the effectiveness of the LIFT technique. However, it is essential to note that the success of the procedure depends on careful patient selection, particularly avoiding patients with complex or recurrent fistulas, which may require more extensive intervention[14,15].

LIMITATIONS OF THE STUDY

While our study provides valuable insights into the effectiveness of the LIFT procedure, several limitations should be acknowledged. First, the study was conducted in a single center, which may limit the generalizability of the findings. Additionally, the exclusion of patients with complex or recurrent fistulas may have contributed to the favorable outcomes observed, and the relatively short follow-up period of six months does not allow for the assessment of long-term recurrence rates or complications.

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Further research, including multicenter studies with larger sample sizes and longer follow-up periods, is needed to confirm the long-term effectiveness of the LIFT procedure and to determine its role in the management of more complex fistula-in-ano cases.

CONCLUSION

The LIFT technique is a superior surgical option for the management of fistula-in-ano, offering significant advantages in terms of post-operative pain, duration of hospital stay, and short-term recurrence. It provides a sphincter-preserving approach, reducing the risk of incontinence, and should be considered a first-line treatment for patients with intersphincteric fistulae. However, further studies with larger sample sizes and longer follow-up periods are necessary to validate these findings and guide clinical decision-making.

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