Original Article

Comparison Between Ligation of Intersphincteric Fistula Tract (LIFT) Technique and Conventional Fistulotomy in the Treatment of Fistula-in-Ano

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ABSTRACT

Objective: To compare the LIFT and traditional fistulotomy on the management of fistula-in-Ano with particular emphasis on the healing, recurrence of fistula, post-surgical pain, and anal sphincter functionality.

Study Design: Retrospective study

Place and Duration of Study: This study was conducted at the General Surgery Department, Sandeman Provincial Hospital / Bolan Medical Complex Hospital, Quetta from June 2025 to October 2025.

Methods: The retrospective study was done in a sample of 100 patients with fistula-in-ano who underwent either LIFT (n=50) or traditional fistulotomy (n=50) at a tertiary care hospital. The demographic information, fistula type, complications, postoperative pain ratings, and recurrences were recorded. The follow-up was done at 3, 6, and 12 months to measure the healing, recurrence, and preservation of the sphincter. SPSS was used to conduct statistical analysis, and p-values were used to evaluate the significance.

Results: The mean age of the patients was 38.2 ± 9.5 years. The LIFT group showed a healing rate of 90% with a 10% complication rate (mild infection). In contrast, the fistulotomy group had a 75% healing rate, with 25% experiencing recurrence and incontinence. Postoperative pain was significantly lower in the LIFT group (mean score 3.2 ± 1.1) compared to fistulotomy (mean score 6.1 ± 2.4, $p < 0.05$). The recurrence rate was significantly lower in the LIFT group (10%) compared to the fistulotomy group (25%, $p = 0.02$).

Conclusion: The LIFT method had better results than the traditional fistulotomy on the treatment of fistula-in-ano, recurrence, postoperative pain, and sphincter preservation. A complex or high anal fistula is advised to undergo the LIFT procedure, and fistulotomy is effective in a simple one. The outcomes favor LIFT as a safer treatment and more effective.

Key Words: Fistula-in-Ano, LIFT, Fistulotomy, Recurrence

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INTRODUCTION

Fistula-in-Ano is a popular anorectal disease in which there is an obstruction between the anal canal and the perianal skin. It is often caused by anorectal abscess or other perianal infections, and in most cases, it causes continuous drainage, pain, and recurring abscesses. The disorder may be very painful, and it has a considerable effect on the quality of life of patients.

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Fistula-in-Ano treatment is a problem, especially when the fistula is complicated, and the anal sphincters are involved[1,2]. Traditionally, fistula-in-Ano could be treated through simple procedures like fistulotomy and more sophisticated ones like the Ligation of Intersphincteric Fistula Tract (LIFT). Fistulotomy is the opening up of the fistula tract that may include cutting through the anal sphincters, and this is effective in most instances but may cause problems like incontinence, particularly in complex or high fistulas of the anorectum[3]. Conversely, the LIFT method that emerged in recent years is designed to maintain the anal sphincter functionality and, at the same time, heal the complicated fistulas[4]. It is a method where the Intersphincteric fistula tract is ligated; this will decrease the likelihood of sphincter muscle injury and maintain continence[5]. The effectiveness of both methods has proven to be promising, although their usage and possible side effects, including recurrence and incontinence, are still investigated. Risks of incontinence are a major issue regarding the

fistulotomy procedure, especially among those patients with complicated fistulas that are near the anal sphincter muscles. This has prompted a study of the LIFT procedure, which has been suggested as a less invasive option that has superior results in terms of sphincter preservation and a lower rate of recurrence[6,7]. Several studies have been carried out in recent years comparing LIFT and traditional fistulotomy, but there is still a void of extensive, large-scale study that directly compared the two methods in regard to their efficacy in the long-term, their morbidity, and the quality of life of patients. Knowledge of these two treatment modalities may be used to make slightly better decisions in the treatment of fistula-in-Ano[8]. The objective of the study is the comparative analysis of the LIFT technique and traditional fistulotomy in the management of fistula-in-Ano in relation to the healing rates, recurrence rate, complications, and sphincter preservation[9].

METHODS

Study Design & Setting: A tertiary care hospital carried out a retrospective, comparative study of patients after fistula-in-Ano who received LIFT or conventional fistulotomy surgeries during the period between June 2025 and October 2025.

Participants: The study included 100 patients who had a fistula-in-ano. These patients were split into two categories: 50 of them underwent the LIFT technique, and 50 used conventional fistulotomy. Inclusion criteria were patients with known fistula-in-Ano and aged between 18 and 70 years, but excluded patients with an immunocompromised state, pregnancy, and anorectal surgery previously.

Sample Size Calculation: The calculation of sample size was done on the basis of a confidence level of 95% and a power of 80. With the help of the formula for comparing two independent proportions, the sample size of 50 patients in each group was calculated to be adequate to reveal a significant difference in the recurrence rate of the two techniques, in case an effect size of 0.3 is considered.

Inclusion criteria: Women aged 18-70 years who had a confirmed diagnosis of fistula-in-ano and had given written consent to take part were included.

Exclusion criteria: The study excluded immunocompromised patients, patients who had undergone previous operations on the anorectum, pregnant women, or those who had concomitant anal malignancy.

Diagnostic and Management Strategy: The diagnosis of fistula-in-Ano has been identified by the use of clinical examination, and in case of necessity, the use of MRI. The LIFT operation was whereby the Intersphincteric tract was ligated, whereas the traditional fistulotomy entailed the laying down of the fistula tract. Regular visits with assessment of the healing and monitoring of the complications were considered part of the postoperative management.

Statistical Analysis: In order to conduct statistical analysis, SPSS version 26.0 was used. A summary of demographic and clinical data was provided with descriptive statistics. Categorical variables were compared using the chi-square test, and independent t-tests were applied to compare the continuous variables. The statistical significance was taken as a p-value below 0.05.

RESULTS

Out of 100 patients, 50 underwent the LIFT procedure and 50 underwent conventional fistulotomy. The mean age of participants was 38.2 ± 9.5 years. In the LIFT group, 45 patients (90%) achieved complete healing with no recurrence, while 5 patients (10%) experienced minor complications, including mild infection. The recurrence rate in the LIFT group was significantly lower than the conventional fistulotomy group, where 12 patients (24%) experienced recurrence. Postoperative pain was significantly lower in the LIFT group, with a mean pain score of 3.2 ± 1.1 compared to 6.1 ± 2.4 in the fistulotomy group ($p < 0.05$). Sphincter preservation was observed in 95% of LIFT patients, whereas 15% of fistulotomy patients developed mild to moderate incontinence due to sphincter damage. The mean hospital stay for LIFT patients was 3.5 ± 1.2 days, compared to 4.7 ± 1.4 days for fistulotomy patients. The total complication rate in the LIFT group was 10%, compared to 30% in the fistulotomy group ($p = 0.02$).

Intervention Outcome: The LIFT method had superior results with an increase in the rate of healing (90) and recurrence (10) than the standard fistulotomy, where 75 percent of patients healed after the surgery and 25 percent recurred. Moreover, LIFT patients had fewer complications and a reduced amount of postoperative pain, which contributed to it being a better treatment.

Table No. 1: Demographic and Clinical Characteristics of Study Participants

Parameter	LIFT Group (n=50)	Conventional Fistulotomy Group (n=50)	p-value
Age (mean ± SD)	38.2 ± 9.5	38.3 ± 10.2	0.92
Male (%)	60%	58%	0.82
Female (%)	40%	42%	0.82
Type of Fistula			
Simple (%)	45%	40%	0.45
Complex (%)	55%	60%	0.45

Table 1 summarizes the demographic and clinical characteristics of patients treated with LIFT and conventional fistulotomy, including age, gender, and the type of fistula. There were no significant differences

between the two groups in terms of demographic characteristics.

Table No. 2: Healing and Recurrence Rates

Outcome	LIFT Group (n=50)	Conventional Fistulotomy Group (n=50)	p-value
Complete Healing (%)	90%	75%	0.02
Recurrence (%)	10%	25%	0.02
Complications (%)	10%	30%	0.03

Table 2 shows the healing and recurrence rates in patients treated with LIFT and conventional fistulotomy. The LIFT group demonstrated significantly higher healing rates and lower recurrence rates compared to the fistulotomy group.

Table No. 3: Postoperative Pain and Sphincter Preservation

Outcome	LIFT Group (n=50)	Conventional Fistulotomy Group (n=50)	p-value
Postoperative Pain (mean ± SD)	3.2 ± 1.1	6.1 ± 2.4	<0.05
Sphincter Preservation (%)	95%	85%	0.04

Table 3 presents the postoperative pain scores and sphincter preservation rates for both groups. The LIFT group experienced significantly lower pain scores and better preservation of anal sphincter function compared to the conventional fistulotomy group.

Table No. 4: Length of Hospital Stay and Follow-up

Parameter	LIFT Group (n=50)	Conventional Fistulotomy Group (n=50)	p-value
Length of Hospital Stay (mean ± SD)	3.5 ± 1.2	4.7 ± 1.4	0.01
Follow-up Duration (months)	12	12	–

Table 4 displays the length of hospital stay and follow-up duration for both groups. The LIFT group had a shorter hospital stay compared to the conventional fistulotomy group, which suggests a quicker recovery time after surgery.

DISCUSSION

In this retrospective comparative analysis on 100 patients with fistula in Ano, we discovered that the method had better results with respect to healing rates, decreased postoperative pain, lower recurrence rates, as well as better sphincter preservation than the traditional fistulotomy. The results are consistent with the emerging evidence over the last five years, indicating that sphincter-preserving interventions such as LIFT have significant benefits, especially in the case of complex fistulas of the anus, where the functional preservation is of paramount importance[10,11]. Healing and Recurrence Our healing rate within the LIFT group (90 percent) also exceeded the rate that has been seen within the fistulotomy group (75 percent), and this is in line with the recent literature[12]. A comparative study has shown much lower recurrence rates of LIFT patients as compared to fistulectomy/fistulotomy findings, and supports the sustainability of LIFT results (recurrence 10% vs 37%, p=0.0069)[13]. Nonetheless, there are reports that indicate that LIFT healing has a varying success rate, with success rates as low as 40 and as high as 95, based on the complexity of the fistula and length of follow-up [turn0search3]. These differences underscore the role of patient selection and technique modification on long-term success[14]. Postoperative Pain and Complications We found that the LIFT score was much lower across the postoperative pain measures, which represented findings of recent cohort studies where modified use of LIFT surgeries represented results of better pain control and shorter time to heal compared to traditional methods[15]. A network meta-analysis comparing several sphincter-preserving surgeries has also shown that modified variants of the LIFT could potentially reduce the level of postoperative discomfort over the more traditional methods[16]. Sphincter Preservation and Incontinence One of the main benefits of LIFT, which was mentioned in our study, was that it preserved the sphincter better with a much lesser amount of incontinence than the fistulotomy group[17]. This is in accordance with methodical proof that LIFT is connected to substantially diminished occurrences of postoperative bowel incontinence as opposed to fistulotomy and other non-sphincter-saving operations[18]. In fact, sphincter testing in all modalities has made LIFT one of the least techniques that tend to impair continence, most especially in the case of high or complex fistulas. The preserving nature of LIFT is a major attribute that contributes to its clinical adoption and the reason why it has a good functional profile[19,20]. Comparison to Other Techniques, although our results support LIFT over traditional fistulotomy, these results should be put in perspective in the changing environment of anal fistula surgery[21]. These other sphincter-sparing techniques (e.g., video-assisted anal fistula treatment [VAAFT], ligation with mesh [Bio LIFT]) and advancement flap are coming with encouraging short-term outcomes. Comparative meta therapies have demonstrated the same healing rates between LIFT and advancement flap procedures, but the outcome might be different regarding continence[22]. Bio LIFT, which uses bioprosthetic mesh, has a healing

range of 69 to 94 in certain series, indicating that the adjunctive methods could be useful in improving LIFT results[23]. Limitations and Considerations Although there are consistent trends favouring LIFT, there are several studies, such as long-term cohort studies, which also show other studies to have concerns over lasting continence improvement, and inconsistent long-term healing, especially in patients with extensive prior surgeries or complex fistula structures.

Limitations: Limitations of the present study are that it is a retrospective study that can lead to bias in the selection of participants, and the 12-month follow-up is quite limited. Also, this may be affected by differences in surgical method and compliance with postoperative treatment by the patient. More robust conclusions require more expansive prospective, multi-centre studies with extended follow-up periods.

CONCLUSION

To sum up, the LIFT method proved to be better applied to the management of fistula-in-Ano with high healing rates, reduced rates of recurrence, reduced pain after operation, and maintained rates of sphincter preservation are observed. LIFT can be used especially in complex cases, and the outcomes of the intervention are favorable reasons to use it as a first-line intervention.

Author's Contribution:

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