Original article

Reassessing Surgical Approaches: Lift And Its Modification Versus Conventional Techniques For Fistula-In-Ano

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Abstract

Introduction: Fistula-in-ano is a chronic distressing condition that significantly affects the quality of life. While conventional techniques(fistulectomy/fistulotomy) remain the standard treatment, sphincter-sparing procedures such as the ligation of Intersphincteric fistula tract (LIFT) and others have shown promising outcomes. This study compares the outcomes of LIFT (and its modification) with conventional techniques in the management of fistula-in-ano.

Methods: A prospective observational study was conducted on 25 patients with low intersphincteric/transsphincteric fistula-in-ano at Kathmandu medical college. Data collection was done between April 1 and June 30, 2025. Twelve patients underwent modified LIFT and thirteen underwent traditional procedures. Postoperative pain, healing time, continence, and recurrence were evaluated up to 12 weeks. Statistical analysis was done using SPSS v 26.0.

Results: The mean age of patients was 40.3 ± 10.7 years in the modified LIFT group and 41.7 ± 10.2 years in the other group. The modified LIFT group reported significantly lower postoperative pain (VAS: POD1 = 3.7 ± 0.5 vs 6.0 ± 0.8; POD7 = 1.3 ± 0.4 vs 2.8 ± 0.6) and faster healing. No incontinence was reported in either group. Recurrence occurred in 2 (16.7%) patients in the Modified LIFT group and 3(23.1%) in the traditional group

Conclusion: Modified LIFT offers comparable healing rates with significantly less pain and faster recovery than conventional techniques, while preserving sphincter function. It appears to be an effective sphincter-sparing alternative for low anal fistulas with similar recurrence rates.

Keywords: Anal fistula; Modified LIFT; Recurrence.

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Introduction

Fistula-in-ano is a chronic abnormal tract between the anal canal and perianal skin, usually arising from incompletely healed anorectal abscesses due to persistent gland infection.[1,2] It affects about 8.6 per 100,000 people annually, predominantly males[3] and causes recurrent discharge, pain and abscesses with significant morbidity.[4] Classified by Parks into intersphincteric, transsphincteric, suprasphincteric, and extrasphincteric types,[5] complex cases often require MRI or endoanal ultrasonography for delineation.[6]

The goals of management are to eradicate the fistula tract, prevent recurrence, and preserve anal continence.[1,7] Surgical intervention remains the cornerstone of treatment, and the choice of procedure depends on the anatomy of the fistula, extent of sphincter involvement, and surgeon expertise.[8]

Conventional management includes fistulotomy or fistulectomy for simple tracts but risks incontinence when sphincters are divided.[9] Therefore, sphincter-preserving techniques like seton placement, advancement flap, FiLaC (Fistula-tract laser closure) or LIFT(Ligation of intersphincteric fistula tract) are preferred, showing variable outcomes.[10-12]

The LIFT technique, introduced by Rojanasakul in 2007, and its modifications such as Modified LIFT or LIFT Plus, are sphincter-preserving procedures offering faster healing, less postoperative pain, and reduced incontinence.[13-15] Comparative studies show LIFT provides outcomes comparable to fistulotomy with quicker recovery, though recurrence and non-healing still pose challenges requiring ongoing evaluation.[16,17]

As neither of the techniques show superiority, we have been performing both conventional (often fistulectomy) and the newer techniques (LIFT and its modifications) at our hospital. Being minimal invasive in nature, newer techniques can be presumed to be beneficial. Thus we conducted the study to reassess the surgical approaches being done at our center.

Methods

This prospective comparative observational study was conducted in the Department of Gastrointestinal(GI) and General Surgery Kathmandu medical college. Approval for the study was obtained from the Institutional Review Committee. Data was collected from April 1 to June 30, 2025. Adult patients aged 18 years and above with clinically and radiologically confirmed fistula-in-ano were included. Patients with secondary fistulas due to crohn's disease, tuberculosis, malignancy, prior surgery and patients under immunosuppressants or patients requiring seton placement were excluded.

Patients were admitted one day prior to surgery. Informed consent was taken. The patients underwent fistulotomy, fistulectomy, LIFT or modified LIFT which was decided by the operating surgeon based on his/her preference. Preoperative evaluation included detailed history, clinical and proctoscopic examination, routine laboratory investigations, sigmoidoscopy and MRI fistulogram. Preopertive antibiotics were administered which was similar (Inj Ciprofloxacin 500mg IV and Inj Metronidazole 500mg IV) in all patients. Participants were allocated into two groups based on the surgical procedure performed. Patients who underwent fistulectomy or fistulotomy were included in group A (n=13), while those who underwent LIFT or its modification(m-LIFT) were included in group B (n=12).

All surgeries were performed under spinal anesthesia in lithotomy position. In the fistulectomy procedure, the entire tract was excised from the external to the internal opening. In fistulotomy technique, the whole tract was simply laid open. In the non-conventional group, patients underwent m-LIFT whereas LIFT alone was not done in any of the patients during the study period. In the modified LIFT technique that was performed, the track was approached from the external opening. Incision was given circumferentially around the external opening and the tract was excised from laterally towards the internal sphincter. The dissection was continued until the internal sphincter was reached. the tract was ligated at the level of internal sphincter with vicryl 2-0.

Postoperatively, all patients received similar antibiotics (ciprofloxacin, metronidazole), analgesics (ketorolac), and sitz bath (thrice a day). Pain was assessed using the Visual Analog Scale (VAS) on postoperative days 1 and 7.[18] Continence was assessed at the time of discharge and at 3 months follow up using Wexner Continence score.[19] Wound healing and recurrence were assessed at 12 weeks. Data were analyzed using SPSS version 26.0. Continuous variables were expressed as mean ± standard deviation and compared using the independent-samples t-test. Results are presented as mean differences with 95% confidence intervals. Categorical variables were analyzed using the chi-square test, and effect estimates are expressed as risk ratios with 95% confidence intervals. Statistical significance was inferred when the confidence interval did not include the null value.

Results

A total of 25 patients underwent surgery for fistula during the study period. All 25 patients were included in the final analysis, with 13 undergoing Fistulectomy/Fistulotomy (Group A) and 12 undergoing m-LIFT (Group B). The mean age of the patients in the Fistulectomy/Fistulotomy group was 41.7 ± 10.2 years as compared to Modified LIFT group which was 40.3 ± 10.7 years. There were more males in both groups with each group having more than 80% males. Among these patients, comorbidities like HTN, DM and Hypothyroidism were similar in both groups as shown

Table 1. Demography of patients

		GROUP A (n = 13)	GROUP B (n = 12)	Total (n = 25)
Age (in years)				
	≤ 20	1 (7.7 %)	1 (8.3 %)	2 (8 %)
	21 – 30	3 (23.1 %)	2 (16.7 %)	5 (20 %)
	31 – 40	3 (23.1 %)	4 (33.3 %)	7 (28 %)
	41 – 50	4 (30.8 %)	3 (25 %)	7 (28 %)
	> 50	2 (15.3 %)	2 (16.7 %)	4 (16 %)
	Mean ± SD	41.7 ± 10.2	40.3 ± 10.7	–
Sex				
	Male	9 (69%)	10 (83%)	19 (76%)
	Female	4 (31%)	2 (17%)	6 (24%)
Comorbidities				
	DM	3 (23%)	3 (25%)	6 (48%)
	HTN	3 (23%)	2 (17%)	5 (40%)
	Hypothyroidism	1 (8%)	0	1 (8%)

in **Table 1**. Patients in the Modified LIFT group (Group B) experienced less pain on both POD 1 and 7 compared with the other group. Mean VAS scores were 3.7 ± 0.5 out of ten in the Group B when compared to 6.0 ± 0.8 in group A on POD 1. The pain score reduced to 1.3 ± 0.4 in Group B vs 2.8 ± 0.6 in Group A on POD 7 as shown in **Table 2**. Thus patients undergoing m-LIFT had lower postoperative pain on first and seventh postoperative day.

No patient in either group reported any degree of incontinence during follow-up. All patients maintained complete continence with a Wexner score=0 at both 1 week and 12 weeks postoperatively. After operation the patients were discharged on the first postoperative day. The hospital stay was similar in both the groups with a mean of 2.6 ± 0.5 days in both groups. It took more than 2 months for the wounds to heal in either groups, with healing time significantly more in the Group A. The average healing period was 9 weeks for m-LIFT group versus 11 weeks for Fistulectomy/Fistulotomy group. During the 3 month follow up, recurrence was seen in either groups (3/13 in group A vs 2/12 in group B) (**Table 2**).

Among the total patients undergoing surgery, 48 percent (n=12) had comorbidities as shown in **Table 3**. Recurrence

Table3. Comorbidity and Fistula Recurrence

Group	With comorbidity (DM, HTN, Hypothyroidism)	Total number of patients	Recurrence
A (Fistulotomy/ fistulectomy)	yes	7 (28%)	2 (8%)
	no	6 (24%)	1 (4%)
B (m-LIFT)	yes	5 (20%)	1 (4%)
	no	7 (28%)	1 (4%)
Total		**25**	**5 (20%)**

Table 2. Comparison of post-operative outcomes

Parameter	Group A (n = 13)	Group B (n = 12)	Difference (95% Confidence Interval)
Mean VAS POD 1	6.0 ± 0.8	3.7 ± 0.5	−2.3 (−2.9 to −1.7)
Mean VAS POD 7	2.8 ± 0.6	1.3 ± 0.4	−1.5 (−2.0 to −1.0)
Healing time in weeks (mean ±SD)	11.1 ± 1.2	9.2 ± 1.0	−1.9 (−2.8 to −1.0)
Incontinence (%)	0		–
Recurrence, n (%)	3 (23.1%)	2 (16.7%)	0.72 (0.15–3.45)

was numerically more among patients with systemic comorbidities, particularly diabetes mellitus. However, the difference between groups was not statistically significant.

Discussion

This comparative study assessed m-LIFT versus traditional techniques (fistulectomy/fistulotomy) for fistula-in-ano. Both groups were demographically similar, ensuring fair comparison. Although recurrence rates were comparable, m-LIFT demonstrated superior postoperative outcomes. Pain scores were significantly lower on post operative day 1 and day 7, likely due to minimal tissue dissection and sphincter preservation, unlike the open wounds created in conventional procedures. Similar findings were reported by Zhang et al., who noted better postoperative comfort and shorter hospital stay following LIFT procedures.[20] The healing time was faster in m-LIFT group when compared to traditional techniques in this study. Faster healing in the m-LIFT group further supported its recovery advantage which was similar to study done by Fuschillo et al., where sphincter-sparing methods showed reduced morbidity and shorter healing durations.[21]

Continence preservation remains paramount in fistula surgery. In this study, no incontinence was reported in either group during 12-week follow-up which is in contrary to the finding in a study by Hong et al. who showed higher risk of incontinence with fistulotomy, especially in complex tracts.[22] The reason for lower incontinence rates in our study with these traditional techniques could be the exclusion of complex fistulas in our study. Similarly recurrence was numerically lower in the m-LIFT group in our study. Thus there was no difference in recurrence rate between both the groups in our study similar to the study done by Hong et al.[22] Thus, m-LIFT appears to be less morbid procedure.

There are few limitations of this study. It was a single center prospective study. The study was conducted on a limited number of patients with follow up for a period of 3 months. Recurrences can occur after 3 months which are not included in this study. The patients having complex

fistula with gross sphincter involvement who require seton placement and multiple follow up were excluded from this study. Therefore a larger study with longer follow up is recommended.

Conclusion

In this study, we compared two commonly used surgeries for fistula-in-ano-traditional procedures like fistulotomy/ fistulectomy, and the modified LIFT (m-LIFT) technique. We found that both procedures worked similarly in terms of preventing recurrence and avoiding incontinence. However, patients who underwent m-LIFT procedure generally had an easier recovery with less postoperative pain and faster healing. This can make a meaningful difference in their overall experience and return to daily activities.

These results suggest that m-LIFT may offer important benefits, especially for patients who want to reduce postoperative discomfort while still achieving effective treatment. As fistula surgery continues to move toward sphincter-preserving and patient-centered techniques, our findings add support to the role of LIFT-based procedures in everyday practice. Larger studies with longer follow-up will help confirm these advantages and guide us in identifying the patients who may benefit most from the m-LIFT approach.

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