

SHORT-TERM OUTCOMES OF LIFT VERSUS CONVENTIONAL FISTULECTOMY FOR CRYPTOGLANDULAR ANAL FISTULA: A PROSPECTIVE COMPARATIVE OBSERVATIONAL STUDY

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ABSTRACT

Background: Surgical treatment of fistula-in-ano requires eradication of the fistulous tract while minimizing sphincter injury. Ligation of the intersphincteric fistula tract (LIFT) is a sphincter-preserving option, particularly for trans-sphincteric fistulas. This study compared short-term outcomes of LIFT and conventional fistulectomy in cryptoglandular anal fistula [10,16,17,21].

METHODS: This prospective comparative observational study was conducted in the Department of General Surgery, Government Medical College and Hospital, Omandurar Government Estate, Chennai. Sixty adults with cryptoglandular intersphincteric or trans-sphincteric fistula-in-ano were included; 30 underwent LIFT and 30 conventional fistulectomy. Allocation was non-randomized and based on treating-surgeon decision and fistula anatomy. Operative duration, hospital stay, day-1 pain, return to normal activity, three-month healing, persistent/recurrent disease, continence and complications were assessed.

RESULTS: Operative duration was longer with LIFT (54.93 ± 10.91 vs 46.87 ± 10.28 minutes; $p=0.005$). Hospital stay was shorter (2.47 ± 1.22 vs 4.30 ± 1.66 days; $p<0.001$), day-1 VAS pain lower (3.7 ± 1.2 vs 5.5 ± 1.3 ; $p<0.001$), and return to normal activity earlier (10.6 ± 3.4 vs 20.5 ± 5.1 days; $p<0.001$). Three-

month complete healing occurred in 23/30 (76.7%) vs 19/30 (63.3%; $p=0.398$). Persistent/recurrent disease occurred in 6/30 (20.0%) vs 8/30 (26.7%; $p=0.760$). Final Wexner score was 1.13 ± 0.86 vs 2.97 ± 1.22 ($p<0.001$). Postoperative complications occurred in 3/30 (10.0%) vs 8/30 (26.7%; $p=0.144$) [16,17].

CONCLUSION: LIFT and conventional fistulectomy showed broadly comparable three-month healing and persistent/recurrent disease outcomes. LIFT was associated with more favorable early recovery measures, but interpretation is limited by non-randomized allocation and significant imbalance in fistula anatomy. These findings do not establish causal superiority of either procedure.

KEYWORDS: anal fistula; fistula-in-ano; LIFT; fistulectomy; continence; Wexner score; recurrence [16,17]

INTRODUCTION

Anal fistula is a common anorectal disorder in which an abnormal tract connects the anal canal or rectum to the perianal skin. Most fistulas are cryptoglandular in origin, although inflammatory bowel disease, tuberculosis, malignancy, radiation and previous anorectal surgery are recognized secondary causes. The central surgical challenge is eradication of the fistula while preserving anal sphincter function [1,18].

Fistulotomy or fistulectomy remains effective for selected low and simple fistulas where limited sphincter division is considered safe. For trans-sphincteric and more complex disease, sphincter-preserving procedures are increasingly used. LIFT involves identification, ligation and division of the fistulous tract within the intersphincteric plane and avoids deliberate division of the external sphincter [7,8,13].

Published LIFT series and meta-analyses generally report healing in approximately three quarters of patients, although failure rates vary with fistula anatomy, previous surgery, follow-up duration and patient selection. A 2020 systematic review of 26 studies involving 1,378 patients reported a pooled success rate of 76.5%, while a 2025 network meta-analysis of 49 studies involving 3,520 patients reported a 28.6% failure rate for LIFT over a mean follow-up of approximately 35 months.

The present study compared LIFT with conventional fistulectomy in a tertiary-care surgical setting, focusing on healing, persistent/recurrent disease, continence and early postoperative recovery.

AIM AND OBJECTIVES

Aim: To compare healing, recurrence and continence outcomes between LIFT and conventional fistulectomy in cryptoglandular fistula-in-ano [2,21].

Primary objective: To compare complete wound healing and persistent/recurrent disease at three months.

Secondary objectives: To compare Wexner continence score, operative duration, postoperative pain, hospital stay, complications and time to return to normal activities [16,17].

MATERIALS AND METHODS

Study design and setting

This was a prospective comparative observational study conducted in the Department of General Surgery, Government Medical College and Hospital, Omandurar Government Estate, Chennai. The dissertation states a study period from January 2025 to December 2025. Sixty patients were included, with 30 patients in each treatment group.

Participants and allocation

Consecutive eligible adults aged 18–70 years with cryptoglandular fistula-in-ano who were fit for surgery under spinal or general anesthesia and provided written informed consent were included. Patients with Crohn's disease, tuberculous fistula, malignancy-associated fistula, radiation-induced fistula, HIV-associated fistula, pregnancy, severe uncontrolled systemic illness, or recurrent fistula with previous sphincter repair were excluded. Patients were allocated to LIFT or conventional fistulectomy according to treating-surgeon decision and fistula anatomy; allocation was therefore non-randomized.

Preoperative assessment

Clinical assessment included symptom duration, previous perianal abscess or surgery, pain, discharge, bleeding, diabetes and smoking history. Perianal inspection, digital rectal examination and proctoscopy were performed. MRI was used selectively when complex or recurrent disease was suspected or additional anatomical delineation was required [6,19].

Surgical procedures

LIFT: Patients were placed in lithotomy position under spinal or general anesthesia. Following identification of the external and internal openings, a curvilinear incision was made over the intersphincteric groove. The intersphincteric plane was dissected and the tract isolated. The tract was ligated close to the internal sphincter and distally using absorbable sutures, divided between the ligatures, and the external tract was curetted. The intersphincteric wound was closed in layers.

Conventional fistulectomy: The tract was identified using a malleable probe. An elliptical incision was made around the external opening and the tract was completely excised from the external opening to the internal opening. Hemostasis was secured and the wound was left open to heal by secondary intention.

Postoperative management and outcome measures

Postoperative management included antibiotics according to institutional protocol, analgesics, stool softeners, a high-fiber diet, sitz baths, wound dressing and perianal hygiene advice. Primary outcomes were complete wound healing, persistent/recurrent disease and fecal continence. Complete healing was defined as complete epithelialization without discharge or evidence of persistent fistula. Recurrence was defined as

reappearance of discharge or development of a fistulous tract after complete healing. Continence was assessed using the Wexner score [16,17].

Secondary outcomes included operative duration, length of hospital stay, postoperative pain, postoperative complications and time to return to normal daily activities.

Follow-up

The dissertation Methods section describes follow-up at 2 weeks, 6 weeks, 3 months and 6 months. The Results section documents complete follow-up through three months and reports final comparative outcomes at three months. Accordingly, this manuscript reports the analyzed comparative outcomes through three months.

Statistical analysis

Continuous variables were summarized as mean $\pm$ standard deviation or median with interquartile range as appropriate. Shapiro–Wilk testing assessed normality. Independent-samples t-test with Welch correction or Mann–Whitney U test was used as appropriate. Categorical variables were analyzed using chi-square testing with Yates correction or Fisher exact testing. All tests were two-sided and $p < 0.05$ was considered statistically significant.

Ethical considerations

The dissertation states that Institutional Ethics Committee approval was obtained from Government Omandurar Medical College. Written informed consent was obtained from all participants, confidentiality was maintained, and the study was conducted in accordance with institutional ethical requirements and the Declaration of Helsinki.

RESULTS

Baseline characteristics

The mean age of the overall cohort was 39.2 ± 10.4 years. Baseline characteristics were broadly comparable except for Parks classification. Trans-sphincteric fistulas were more frequent in the LIFT group (23/30, 76.7%) than in the fistulectomy group (14/30, 46.7%; $p = 0.034$), representing an important potential confounder [10,16,17,21].

Variable	LIFT (n=30)	Fistulectomy (n=30)	p-value
Age, years, mean $\pm$ SD	37.0 $\pm$ 8.0	41.4 $\pm$ 12.0	0.107
Male sex, n (%)	21 (70.0)	22 (73.3)	1.000
Diabetes, n (%)	4 (13.3)	9 (30.0)	0.210
Previous perianal abscess, n (%)	14 (46.7)	14 (46.7)	1.000
Trans-sphincteric fistula, n (%)	23 (76.7)	14 (46.7)	0.034
MRI performed, n (%)	18 (60.0)	14 (46.7)	0.438

Table 1. Baseline demographic and clinical characteristics.

Operative and early postoperative outcomes

Mean operative duration was significantly longer in the LIFT group (54.93 ± 10.91 vs 46.87 ± 10.28 minutes; $p=0.005$). Hospital stay was shorter (2.47 ± 1.22 vs 4.30 ± 1.66 days; $p<0.001$), day-1 VAS pain was lower (3.7 ± 1.2 vs 5.5 ± 1.3 ; $p<0.001$), and return to normal activity was earlier (10.6 ± 3.4 vs 20.5 ± 5.1 days; $p<0.001$).

Outcome	LIFT	Fistulectomy	p-value
Operative duration, minutes	54.93 ± 10.91	46.87 ± 10.28	0.005
Hospital stay, days	2.47 ± 1.22	4.30 ± 1.66	<0.001
Day-1 VAS pain	3.7 ± 1.2	5.5 ± 1.3	<0.001
Return to normal activity, days	10.6 ± 3.4	20.5 ± 5.1	<0.001

Table 2. Operative and early postoperative outcomes.

Healing, persistent/recurrent disease and continence

At three months, complete wound healing occurred in 23/30 (76.7%) patients after LIFT and 19/30 (63.3%) after fistulectomy; the difference was not statistically significant ($p=0.398$). Persistent/recurrent disease was recorded in 6/30 (20.0%) and 8/30 (26.7%), respectively ($p=0.760$). The final mean Wexner score was 1.13 ± 0.86 in the LIFT group and 2.97 ± 1.22 in the fistulectomy group (Mann–Whitney $U=108$; $p<0.001$) [16,17].

Outcome	LIFT	Fistulectomy	p-value
Complete healing at 3 months	23/30 (76.7%)	19/30 (63.3%)	0.398
Persistent/recurrent disease	6/30 (20.0%)	8/30 (26.7%)	0.760
Final Wexner, mean $\pm$ SD	1.13 ± 0.86	2.97 ± 1.22	<0.001
Final Wexner, median (IQR)	1 (1–2)	3 (2–4)	—
Wexner score 0	7/30 (23.3%)	0/30 (0%)	—

Table 3. Three-month healing, disease status and continence outcomes.

Postoperative complications

Any postoperative complication occurred in 3/30 (10.0%) LIFT patients and 8/30 (26.7%) fistulectomy patients ($p=0.144$). In the LIFT group, complications comprised infection in one patient, delayed healing in one and abscess in one. In the fistulectomy group, delayed healing occurred in six patients and abscess in two. One intraoperative complication was reported in the fistulectomy group and none in the LIFT group (Fisher exact $p=1.000$).

Complication	LIFT n (%)	Fistulectomy n (%)
None	27 (90.0)	22 (73.3)
Infection	1 (3.3)	0
Delayed healing	1 (3.3)	6 (20.0)
Abscess	1 (3.3)	2 (6.7)
Any postoperative complication	3 (10.0)	8 (26.7)

Table 4. Postoperative complications.

DISCUSSION

The principal findings were a longer operative duration with LIFT but significantly shorter hospital stay, lower day-1 postoperative pain and earlier return to normal activity. Three-month healing and persistent/recurrent disease did not differ statistically between groups. A lower final Wexner score was observed following LIFT [16,17].

The most important methodological consideration is the non-randomized allocation. Treatment selection incorporated surgeon assessment and fistula anatomy, and the groups differed significantly in Parks classification. Trans-sphincteric fistulas were more frequent in the LIFT group. Consequently, the observed differences cannot be interpreted as treatment effects independent of baseline anatomy [10,16,17,21].

The longer operative duration with LIFT is technically plausible because the procedure requires identification of the intersphincteric plane, tract isolation, ligation and division, followed by wound closure. Conversely, avoidance of deliberate external sphincter division provides a plausible explanation for the observed early recovery profile. Nevertheless, postoperative recovery may also be influenced by fistula anatomy, wound management and discharge practice.

The 76.7% three-month healing rate following LIFT is close to the pooled 76.5% success rate reported in the 2020 systematic review by Emile et al. That review also reported a pooled complication rate of 13.9% and fecal incontinence in 1.4% of patients. More recent evidence emphasizes longer follow-up: a 2025 network meta-analysis reported a 28.6% failure rate for LIFT over a mean follow-up of approximately 35 months. Thus, three-month outcomes should not be interpreted as definitive estimates of long-term recurrence [21].

The continence findings are clinically relevant because sphincter preservation is a central rationale for LIFT in trans-sphincteric disease. The ASCRS guideline recognizes LIFT as an option for trans-sphincteric fistulas. However, the lower Wexner scores should be interpreted cautiously because of the non-randomized design and baseline anatomical imbalance [10,16,17,21].

Conventional fistulectomy remains an appropriate treatment for selected simple or low fistulas where sphincter division can be minimized. Procedure selection should be individualized according to fistula anatomy, sphincter involvement, previous surgery, surgeon expertise and patient priorities.

Strengths and limitations

- Prospective comparative design with equal numbers in both treatment groups.
- Structured assessment of healing, disease status, pain, complications and continence.
- No loss to follow-up through the three-month outcome assessment documented in the Results.
- Small sample size limits power for healing, recurrence and individual complications [2,21].
- Non-randomized allocation resulted in a significant imbalance in Parks classification.

- Single-centre design limits generalizability.
- Three-month follow-up is insufficient to establish long-term recurrence and functional durability [2,21].

CONCLUSION

In this prospective comparative observational study, LIFT and conventional fistulectomy demonstrated broadly comparable three-month healing and persistent/recurrent disease outcomes. LIFT was associated with longer operative duration but shorter hospital stay, lower day-1 postoperative pain and earlier return to normal activities. Lower postoperative Wexner scores were also observed following LIFT. Because allocation was non-randomized and fistula anatomy differed between groups, these findings do not establish causal superiority of either procedure. Larger randomized or appropriately adjusted comparative studies with longer follow-up are required [16,17].

DECLARATIONS

Ethics approval: Institutional Ethics Committee approval was obtained from Government Omandurar Medical College. Written informed consent was obtained from all participants.

Consent for publication: Not applicable; no individually identifiable patient information is presented.

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Competing interests: The authors declare no competing interests.

Data availability: The patient-level dataset is not publicly available because of institutional and confidentiality requirements.

Author contributions: Vignesh L: study conception, data collection, surgical management, analysis, manuscript drafting and revision.

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