Egyptian Journal of Surgery Vol. 32, No. 1, January 2013

ORIGINAL ARTICLE

LIFT TECHNIQUE FOR FISTULA-IN-ANO

Gamal Makhlouf,[1] Mohammed Korany[2]
General Surgery Department, Assuit University Hospital, Egypt

Correspondence to: Gamal Makhlouf, Email: g_makhlouf@yahoo.com

Abstract

Introduction and Aim: LIFT technique is the novel modified approach through the intersphincteric plane for the treatment of fistula-in-ano. This work aimed to secure closure of the internal opening and removal of infected cryptoglandular tissue through the intersphincteric approach.

Methods: This was a prospective, observational study. The study was performed on patients with perianal fistula who were admitted to General Surgery Assiut University Hospital. All the included patients were subjected to: Complete history taking including age, gender, Fistulogram and MRI.

Results: The study included 30 patients with fistula in ano, 83.3% (n=25) were males and 16.7 % (n=5) were females. The mean age was 36.53±11.52 (Range 22:66). Types of fistula-in-ano were low trans-sphincteric type (n = 15) and high trans-sphincteric and supra-sphincteric type (n = 15). The lift technique was done in the entire study group. There was no change of the continence status in all patients. Four cases developed post-operative complications in the form of abscess or recurrence. All cases with recurrence occurred with high fistula.

Conclusion: The LIFT technique is simple, less invasive methods for treatment of fistula-in-ano with no major complications.

Keyword: LIFT technique, Fistula-in-ano, new method.

INTRODUCTION

Fistula-in-ano is the chronic phase of anorectal infection.(1) About 65% of patients with perianal abscess will develop a chronic or recurrent anal fistula.(2)

Treating anal fistula remains a challenging issue because of the anatomical location of the disease, the potential risks of septic complications and postoperative stool incontinence.

Surgery remains the only modality for effective treatment of this condition. The main objective of operative intervention is to heal the fistula and minimize the morbidity of the procedure.(3)

Currently, there are several surgical techniques, used for treatment of complex Fistula-in-ano, including endorectal advancement flap, anocutaneous advancement flap, and direct excision and closure of internal opening. Other alternative approaches are the application of fibrin glue and fistula plug.(4-7)

LIFT technique is the novel modified approach through the intersphincteric plane for the treatment of fistula-in-ano, known as LIFT (ligation of inter sphincteric fistula

tract) procedure. LIFT procedure is based on secure closure of the internal opening and removal of infected cryptoglandular tissue through the intersphincteric approach.[8]

The procedure was developed by Thai colorectal surgeon, Arun Rojanasakul, Colorectal Division Department of Surgery, Chulalongkorn University in Bangkok, Thailand. This procedure does not sever the anal sphincters and postoperative anal function can remain intact. The preliminary healing result from the procedure in the first report was 94% in 2007.[9]

Aim of the work: Secure closure of the internal opening and removal of infected cryptoglandular tissue through the intersphincteric approach.

PATIENTS AND METHODS

- **Study design:** This was a prospective, observational study.
- **Study Frame:** The study was performed in Assiut University Hospital, General Surgery Department in the period from November 2011 to November 20 12
- **Study population:** Patients with perianal fistula who were admitted to General Surgery Assiut University Hospital.

All the included patients were subjected to:

1. Complete history taking including age, gender.
2. Fistulogram.
3. MRI (MRI has become an integral part of the assessment of fistula as it can distinguish between sepsis and granulation tissue from sphincter muscles).[10]

Type of fistula-in-ano

Low trans-sphincteric fistula:

The fistula tract passes between or just above the subcutaneous external anal sphincter.

Trans-sphincteric fistula:

The fistula tract passes through the superficial or deep external anal sphincter.

Supra-sphincteric fistula:

The fistula tract passes above puborectalis muscle.

Clinical continence grading.[11]

Category A: continent of solid and liquid stools and flatus (i.e. normal continence).

Category B: continent of solid and usually liquid stools but not flatus (no fecal leakage).

Category C: acceptable continence for solid stool but no control over liquid stool or flatus (intermittent fecal leakage).

Category D: continued fecal leakage.

Operative Techniques: Ligation of Inter-sphincteric Fistulous Tract (LIFT) technique (Figs. 1-4): (like Rojanasakul et al 2007 with some modifications).

Preoperative rectal enema was carried out the night before surgery. The procedures were performed in lithotomy position, under spinal anesthesia. The steps of the procedure are as follows; the location of the internal opening was identified by injection of Methylene blue and hydrogen peroxide through the external opening and gently probing the fistula tract. The inter-sphincteric plane at the site of fistulous tract was entered via curvilinear incision. The inter-sphincteric tract was identified by meticulous dissection, using scissors and electrical cautery. The exposure of the inter-sphincteric plane was facilitated using specially-designed long and narrow blade retractors. The inter-sphincteric tract was hooked using a small right-angled clamp. The tract was then ligated close to the internal sphincter with polyglactin no. 2/0. After that, the tract was divided distal to the point of ligation. The remnant of the inter-sphincteric tract or possibly the infected gland was removed. The fistulous tract would then be thoroughly curetted. The external opening was left open for drainage.

After the operation, no restriction of diet was required. The patients were advised to self-care their wounds by cleansing with tap water and betadine solution. All patients received oral ciprofloxacin and metronidazole for two weeks9. They were planned for discharge the next day. The following data were collected.

- Wound healing grade was recorded at the second week after the operation and then every 2 weeks until the wound was completely healed (grade 1).
- The clinical continence was noted as above.

Ethical Consideration: Each patient gave his/her written consent to participate before the surgery.

Statistical analysis: Statistical analysis was performed using statistical package for the social sciences (SPSS - version 14: The results were expressed as mean ± SD or frequency.

Fig 1. Identification of fistula tract.

Fig 2. Dissection till the internal opening.

Fig 3.Ligation of the fistula tract.

Fig 4. The opening lift open after repair of muscle.

RESULTS

Characteristics of the study group

The study included 30 patients with fistula in ano. Among 30 patients enrolled in this study, 83.3% (n=25) were males and 16.7 % (n=5) were females. The mean age was 36.53±11.52 (Range 22:66). All of them complained of discharge (Table 1).

Table 1. The demographic data and presenting symptoms of the study group.

Variable	Number (percentage) *
Gender	
Male	25 (83.3%)
Female	5 (16.7%)
Age	36.53±11.52 (Range 22:66)
Pain	
Yes	3 (10%)
No	27 (90%)
Discharge	
Yes	30 (100%)
No	0 (0%)
Bleeding	
Yes	1 (3.3%)
No	29 (96.7%)

***** Values are number and percentages except Age presented as mean ± SD: Total number of cases = 30.

Five cases were excluded from the study because MRI showed pockets of collections and at operation there were immature tracts to be ligated.

The diagnostic methods and types of fistula in the study group

Types of fistula-in-ano were type I low trans-sphincteric type (n = 15) and type II (n = 15) either high trans-sphincteric (n= 12) or supra-sphincteric type (n= 3) (Table 2).

Table 2. The diagnostic methods and types of fistula in the study group.

Variable	Number (percentage) *
Fistulogram	
Yes	30 (100%)
No	0 (0%)
MRI	
High fistula	15 (50%)
Low fistula	15 (50%)
Types of fistula	
Type I Low fistula	15 (50%)
Type II High fistula**	15 (50%)

* Values are number and percentages; Total number of cases=30

** High trans-sphincteric (n= 12) or supra-sphincteric type (n= 3).

Types of operation and complications

The lift technique was done in the entire study group. There was no change of the continence status in all patients. Four cases developed minor post-operative complications in the form of abscess or recurrence. All cases with recurrence occurred with high supra - sphincteric fistula (the tracts were ligated-below the internal openings) (Table 3). There was no change of the continence status (category A) in all patients. There was no major post-operative complication.

Table 3. Types of operation and complications.

Variable	Number (percentage) *
Lift technique	**30 (100%)**
Complications	
No	**26 (86.7%)**
Abscess	**1 (3.3%)**
Recurrence	**3 (10%) ****
Incontinence	**0 (0%)**

* Values are number and percentages; Total number of cases=30.
** All recurrent cases had high fistula (supra-sphincteric).

DISCUSSION

LIFT technique is the novel modified approach through the inter-sphincteric plane for the treatment of fistula-in-ano, known as LIFT (ligation of inter- sphincteric fistula tract) procedure. We perform LIFT technique in all cases of our study. Primary healing occurred in 27 patients (90%) in our study with average healing time of six weeks. No clinical incontinence was reported. Only one patient with high fistula develop perianal abscess after six months.

This procedure, first proposed by Rojansakul in 2007, focuses on the ligation of the inters-sphincteric tract of the fistula, and can be used for both complex and recurrent fistula 8. The success of LIFT procedure was recorded to be 75%-80% in previous studies.[8,9,11,12]

Shanwani et al 12 applied the same technique on 45 patients (trans-sphincteric = 33, complex = 12), with 5 patients presenting with recurrent fistula after prior surgical intervention. After a median follow-up of 9 months (range, 2-16), the primary healing rate was 82%, with a median healing time of 7 wks (range, 4-10). Recurrence occurred in 8 patients over a period of 3 to 8 months, with no significant morbidity.

Fistulotomy has been performed since ancient times. The outcome is generally acceptable. However, fistulotomy causes various degrees of anal sphincter injury. The incontinence status was estimated and reported.

The seton technique was developed to minimize incontinence, but only with moderate success. Recently, many techniques have been developed, such as endorectal advancement flap, anoderm island flap, excision and closure of internal opening, fibrin glue, and fistula plug. These techniques have less risk of anal incontinence, despite some recurrences.

Finally, “the Ligation of Inter-sphincteric Fistula Tract (LIFT) technique” instead of excision and suture the internal opening was used. The technique disconnects the internal opening from the fistulous tract and removes the infected anal gland residual, without dividing any part of the anal sphincter complex.

There are two major differences between the LIFT and the previously described technique. First, the ligation of the fistula tract is more secure than over sewing, and second, removal of infected granulation tissue by curettage is less time-consuming and more practical than total excision of the tract and primary repair.[8]

In conclusion the LIFT technique is simple, less invasive and the early results are satisfactory. The LIFT procedure may convert a difficult-to-treat trans-sphincteric fistula into an easier-to-manage inter-sphincteric fistula.

REFERENCES

1. Whiteford MH, Kilkenny J III, Hyman N, Buie WD, Cohen J, Orsay C, et al. Practice parameters for the treatment of perianal abscess and fistula-in-ano (revised). Dis Colon Rectum. 2005;48:1337-42.

2. Hamadani A, Haigh PI, Liu IL, Abbas MA. Who is at risk for developing chronic anal fistula or recurrent anal sepsis after initial perianal abscess? Dis Colon Rectum. 2009;52:217-1.

3. Abbas M A, Jackson CH, Haigh P I. Predictors of Outcome for Anal Fistula Surgery FREE. Arch Surg. 2011;146:1011-16.

4. Abel ME, Chiu YS, Russell TR, Volpe PA. Autologous fibrin glue in the treatment of rectovaginal and complex fistulas. Dis Colon Rectum. 1993;36:447.

5. Buchanan GN, Bartram CI, Phillips RK, Gould SW, Halligan S, Rockall TA, et al. Efficacy of fibrin sealant in the management of complex anal fistula: a prospective trial. Dis Colon Rectum. 2003;46:1167-74.

6. Cintron JR, Park JJ, Orsay CP, Pearl RK, Nelson RL, Sone JH, et al. Repair of fistulas-in-ano using fibrin adhesive: long-term follow-up. Dis Colon Rectum. 2000;43:944-9.

7. Johnson EK, Gaw JU, Armstrong DN. Efficacy of anal fistula plug vs. fibrin glue in closure of anorectal fistulas. Dis Colon Rectum. 2006;49:371-6.

8. Rojanasakul A. LIFT procedure: a simplified technique for fistula-in-ano. Tech Coloproctol. 2009;13:237-40. Epub 2009 Jul 28.

9. Rojanasakul A, Pattanaarun J, Sahakitrungruang C, Tantiphlachiva K. Total anal sphincter saving technique for fistula-in-ano; the ligation of intersphincteric fistula tract. J Med Assoc Thai. 2007;90:581-6.

10. Halligan S. Imaging fistula-in-ano. Clin Radiol. 1998;53:85–95.

11. Browning GG, Parks AG. Postanal repair for neuropathic faecal incontinence: correlation of clinical result and anal canal pressures. Br J Surg. 1983;70:101-4.

12. Shanwani A, Nor AM, Amri N. Ligation of the intersphincteric fistula tract (LIFT): a sphincter-saving technique for fistula-in-ano. Dis Colon Rectum. 2010;53:39–34.