

## Assessment of Ligation of Intersphincteric Fistula Tract (Lift) for Perianal Fistula in Terms of Operation and Healing Time

**Received:** 18 February 2023, **Revised:** 20 March 2023, **Accepted:** 26 April 2023

**Dr. Keval R. Dhone,**

Assistant Professor, Department of Surgery, Datta Meghe Medical College, Nagpur, Maharashtra, India

**Dr. Meen More,**

Assistant Professor, Department of Surgery, Datta Meghe Medical College, Nagpur, Maharashtra, India

**Dr. Anil Akulwar,**

Professor, Department of Surgery, Datta Meghe Medical College, Nagpur, Maharashtra, India

**Dr. Avinash Rinait,**

Assistant Professor, Department of Surgery, Datta Meghe Medical College, Nagpur, Maharashtra, India

**Dr. R. K. Ashwini,**

Junior Resident, Department of Surgery, Datta Meghe Medical College, Nagpur, Maharashtra, India

**Dr. Rupesh Verma,**

Junior Resident, Department of Surgery, Datta Meghe Medical College, Nagpur, Maharashtra, India

**Corresponding Author: Dr. Avinash Rinait**

### Keywords

ligation, intersphincteric fistula tract, perianal fistula

### Abstract

**Aim:** The aim of the present study was to assess ligation of intersphincteric fistula tract (lift) for perianal fistula in terms of operation and healing time. **Methods:** The present study included patients coming to General surgery OPD and Data was collected with meticulous history taking clinical examination and appropriate radiological and operative findings and regular follow ups. 85 patients were included in the study. **Results:** In the present study most of the patients were belonging to the age group of 40- 50 years (45.9%) followed by 30-39 (30.6%), >50 years (18.8%). Whereas least no of cases were reported in the age group of 20-29 years accounting to 4 (4.7%). We observed male 59(69.4%) preponderance compared over female 26(30.6%) with sex ratio of 2.26:1. we observed perianal discharge as most common complaint 75(88.2%) followed by 18(21.1%) as perianal swelling and pain was present in 05 (5.9%). In the present study we observed 4(4.7%) had history of the previous perianal surgery for fistula in ano. In this study 83.53% patients presented with posterior external opening. 16.47% patients presented with opening anteriorly. In this study 89.41% patients have low fistula. 10.6 % of patients are having high level of fistula. In this study 67.1% patients require 30 mints time for LIFT procedure. 18.8% patients require 25 mints time for surgery, 10.6% patients require 35 mints for surgery & 3.5% patient require 40 minutes for surgery. In this study 80% patients had 8 weeks for healing, 15.3% patients required 10 weeks for wound healing & 3.53% patients required 6 weeks for wound healing. **Conclusion:** Our findings show that the LIFT-plug approach is straightforward, secure, and efficient for treating trans-sphincteric fistula with minimal to no risk of fecal. Anal fistula is mostly treated surgically to close the fistula, stop it from returning, and maintain anal continence.

### 1. Introduction

Curing anal fistula without causing fecal incontinence is the best course of action. Sphincter-sacrificing and sphincter-sparing treatments are two of the numerous surgical options for treating anal fistula. While there is

a high success rate for healing with sphincter-sacrificing procedures (whether or not rapid repair is performed), there is also a high rate of post-operative incontinence. Success rates for healing with sphincter-sparing techniques vary, but incontinence is uncommon after surgery. Sphincter-sparing techniques

have gained popularity because of the negative impact that incontinence has on quality of life. There are a number of sphincter-sparing methods such as fibrin or cyanoacrylate glue injection<sup>1,2</sup> anal fistula plug<sup>3</sup>, endorectal muscular or mucosal advancement flap<sup>4,5</sup>, core-out fistulectomy<sup>6,7</sup>, radiofrequency ablation<sup>8</sup>, ayurvedic seton<sup>9</sup>, ligation of intersphincteric fistula tract (LIFT)<sup>10,11</sup> and finally, video-assisted anal fistula treatment (VAAFT).<sup>12</sup>

Anal fistula affects a large percentage of people all over the world and has always been a frustrating disease for both patients and surgeons. An anal fistula cannot heal on its own because germs are constantly entering via the internal orifice and there is persistent inflammation within the fistula. Therefore, surgical repair is the standard method of treating fistula-in-ano. Fistulotomy, fistulectomy, seton excision, and endorectal advancement flaps are all surgical options for fixing a fistula. However, incontinence and fistula recurrence are common after the operation. Fistula plugs, injections of fibrin sealant, and the LIFT operation, which ligates the inter-sphincteric fistula tract, are sphincter preservation techniques that have been developed. Rojanasakul et al.<sup>13</sup> initially presented LIFT, with an initial success rate of 94%. Since then, nevertheless, a number of facilities have claimed success rates ranging from 18% to 94%.<sup>14-16</sup> To increase the rate of success By combining LIFT with the anal fistula plug technique, Wang et al. updated the LIFT treatment (called LIFT-plug) and discovered that the success rate reached 95%.

Several sphincter-sparing procedures come with a chance of recurrence and a level of incontinence of their own. The majority of them are intricate and challenging treatments that demand skill, highly skilled medical professionals, or cutting-edge equipment. Rojanasakul et al.<sup>13</sup> presented the ligation of LIFT technique, which had a 94% healing rate. This was a straightforward, secure, and minimally intrusive process. Additionally, it worked well, with a high rate of healing and no incontinence afterward.

The current study's objective was to evaluate the surgery and recovery time associated with ligating the intersphincteric fistula tract (lift) for perianal fistula.

## 2. Materials and Methods

Patients who visited the general surgery outpatient department (OPD) were included in the current study. Data were gathered by careful history collection, clinical examinations, suitable radiological and surgical results, and regular follow-ups. 85 patients were included in the study.

### Methodology

To gather data for the investigation, an observational descriptive study in fistula in a patient's database was made. Patient demographics, previous surgical procedures, fistula features, MR Fistulogram findings, operational information, and follow-up results are all recorded. The database also contained data on postoperative morbidity, operational results, and the duration of follow-up.

After screening with predefined criteria all fistula in ano patients reported at our hospital during a period of August 2017 to August 2019 was selected for the study. MR Fistulogram to be done and patient were categorized according to grade. All patients were continent and had no history of any chronic disease. All patients were be precounselled regarding the procedure and written inform consent was taken. They were operated using the standard LIFT technique.

Follow-up is to be done to assess effectiveness of the treatment.

### A. INCLUSION CRITERIA

1. Age:18-75 Yr
2. Proved cases of fistula in ano on MR Fistulogram
3. Recurrent anal fistulas

### B. EXCLUSION CRITERIA

1. Anorectal abscess.
2. Patients with perianal fistulas from another source (Tuberculosis, Malignancy, Crohn's disease)
3. Patients not willing to participate in the study.

### STUDY PROCEDURE:

All the patients who are between the age of 18 and 75 years were selected according to inclusion and

# Journal of Coastal Life Medicine

exclusion criteria. History was taken from the patient. Consent was taken from the patient or else from next of kin. All the patients were subjected to a thorough clinical examination on an outpatient basis. Every patient included in the study was admitted and made to undergo a MR Fistulogram. On basis of MR Fistulogram diagnosis was confirmed and grading of fistula was done. Fitness for the surgery was taken from Anaesthetist. Definitive surgical procedure i.e. LIFT Technique was performed under spinal anaesthesia.

Operating time was recorded from incision to completion of procedure. Patient was hospitalized for 3-4 days for Postop regular dressing and to assess wound healing. After hospital discharge, patients were invited to attend to first follow-up on post-operative day 7, then at regular interval of 7 days to assess healing and continence. Required ethical clearance from the college and the university committees was taken. After the requisite ethical clearance, informed consent in written was obtained separately from each study subject individual.

## Surgical technique

One day prior to surgery, oral dose of 400 g polyethylene glycol was used for Intestinal preparation. In the surgical area, local skin preparation was made. The prophylactic antibiotic cefoxitin, 2 g, intravenously, was administered 30 minutes prior to surgery if the patient was not allergic to beta-lactams. General, lumbar, or epidural anesthesia was used, along with the left lateral decubitus posture.

The surgical procedure followed the same steps as those previously described by Han et al.<sup>16</sup> For drainage, the exterior hole was located and made larger. The fistula was then aligned and the internal entrance was located by inserting a metal fistula probe into the fistula tract from the external opening. Above the fistula tract, a 1.5 cm to 2.0 cm curvilinear incision was performed along the inter-sphincteric groove. The probe was taken out once the tract was separated. Between the internal and exterior sphincters, a separate fistula was created. It was cut as closely as possible to the internal sphincter, and the internal sphincter was stitched up

using a 3/0 absorbable suture. From the external sphincter to the external aperture, the fistula was kept. Gently scraping away the diseased granulation tissue and washing it in metronidazole saline. A plug was created by rolling a 3 by 5 cm piece of human acellular dermal matrix (ADM) into a conical shape, trimming it to the right width, and soaking it in saline for five minutes. The ADM plug was then inserted through the external opening into the fistula tract and fixed with a 3/0 absorbable suture at the external sphincter. The excess ADM material that protruded from the external hole was cut away without being fixed. With 3/0 absorbable sutures, the incision was loosely sutured in spots.

## Postoperative protocol

Following surgery, antibiotics (cefaxitin) were administered for two days. To keep the incision clean, the dressing could be changed every day if necessary. All patients had to follow a fluid diet within three days and take an oral stool softener for a week after surgery. Showering was permitted after hospital discharge, but swimming, having intercourse, and lifting weights were not advised for the first two weeks. Patients had to keep an eye on changes to their incision and, if necessary, promptly call their surgeon.

Patients were checked in at the outpatient clinic every week after discharge until the incision was fully healed. During outpatient examinations, the internal and exterior healing condition of the prior openings, as well as the inter-sphincteric incisions, were inspected, and sphincter tension was evaluated by rectal digital examination. Data were gathered and examined when the patient was hospitalized or from their most recent outpatient visit, including information on other morbidities, operating time, healing time, postoperative problems, recurrences, and duration of stay.

## STATISTICAL ANALYSIS:

Analysis is done by Microsoft and SPSS version 25.0 IBM USA.

### 3. Results

**Table 1:** Demographic details

Age	Number of Patients	Percentage
20-29	4	4.7
30-39	26	30.6
40-50	39	45.9
>50	16	18.8
<b>Sex</b>		
Female	26	30.6
Male	59	69.4
<b>Mode of Presentation</b>		
Perianal Discharge	75	88.2
Perianal Swelling	18	21.1
Pain	05	5.9
<b>Previous surgery</b>		
No	81	95.3
Yes	4	4.7
<b>Position of external opening</b>		
Anterior	14	16.4
Posterior	71	83.5
<b>Level of fistula</b>		
High	9	10.6
Low	76	89.4

# Journal of Coastal Life Medicine

In the present study most of the patients were belonging to the age group of 40- 50 years (45.9%) followed by 30-39 (30.6%), >50 years (18.8%). Whereas least no of cases were reported in the age group of 20-29 years accounting to 4 (4.7%). We observed male 59(69.4%) preponderance compared over female 26(30.6%) with sex ratio of 2.26:1. we observed perianal discharge as most common complaint 75(88.2%) followed by 18

(21.1%) as perianal swelling and pain was present in 05 (5.9%). In the present study we observed 4 (4.7%) had history of the previous perianal surgery for fistula in ano. In this study 83.53% patients presented with posterior external opening. 16.47% patients presented with opening anteriorly. In this study 89.41% patients have low fistula. 10.6 % of patients are having high level of fistula.

**Table 2:** Distribution of Patients according to operative time

Operative Time in minutes	Number of patients	Percentage
25	16	18.8
30	57	67.1
35	9	10.6
40	3	3.5
Total	85	100

In this study 67.1% patients require 30 mints time for LIFT procedure. 18.8% patients require 25 mints time for surgery, 10.6% patients require 35 mints for surgery& 3.5% patient require 40 minutes for surgery.

**Table 3:** Distribution of Patients according to wound healing time

Number of Weeks	Number of Patient	Percentage
4	1	1.2
6	3	3.5
8	68	80
10	13	15.3
Total	85	100

In this study 80% patients had 8 weeks for healing, 15.3% patients required 10 weeks for wound healing & 3.53% patients required 6 weeks for wound healing.

## 4. Discussion

Anal fistula is an improper connection between the perianal skin and the epithelized surface of the anal canal. About 65% of patient with perianal abscess will develop chronic or recurrent anal fistula. Anal fistula is the chronic phase of anorectal infection, it is characterized by chronic purulent drainage or cyclic pain. Fecal particles enter into internal opening causing infection and the intersphincteric tract is compressed between two anal sphincters causing a closed septic foci due to this fistula does not heal spontaneously.<sup>17</sup> The present study was conducted in the department of surgery of a tertiary care center over a period of two years. This includes 85 patients presenting with clinical features of fistula in ano.

In the present study, most of the patients were belonging to the age group of 40-50 years (45.9%) followed by 30-39 (30.6%), >50 years (18.8%). Whereas least no of cases were reported in the age group of 20-29 years accounting to 4(4.7%) Median age most affected was 42 year. It shows that the disease was more common in middle age population causing loss of productive working hours. This might be because rate of cryptoglandular infection is more common in this age group.<sup>18</sup> This finding was comparable with study conducted by Tomiyoshi et al(2014) where median age of fistula in ano presentation is 42.8 Yr.<sup>19</sup> In our study we observed male 59(69.4%) preponderance compared over female 26(30.6%) with sex ratio of 2.26:1, this was comparable with the study done by Shanavani et al<sup>15</sup> showed ratio of 2.46:1.

In our study we observed perianal discharge as most common complaint 75(88.2%) followed by 18(21.1%) as perianal swelling and pain was present in 05(5.9%) patients. This was comparable with study done by Kamal (2012)<sup>21</sup> in his study 94.73% patients presents with perianal discharge. This shows that most common mode of presentation of fistula in ano is perianal discharge, as fistula in ano have external opening through which discharge come which soaked patient's undergarments, which is very embracing and irritative to patient so they tends to present with this complaint most often. In present study 89.41% patients was having low level fistula in ano and 10.59% patients had high anal fistula. this is comparable with study done by Shanwani et al (2010)<sup>15</sup> where 93.33% patients show low level fistula and 6.67% patients show high anal

fistula. It was found that low level fistula have better outcome with LIFT procedure than high anal fistula.<sup>22</sup>

In the present study mean operative time for LIFT procedure was approximately 30 mints. It was calculated from incision to completion of procedure. Whereas a study conducted by LO O et al<sup>23</sup> had mean operative time of 39 mints. Higher time was recorded in study conducted by Shanwani et al<sup>15</sup> of 67 mints, where operative time was recorded from positioning of patient to completion of procedure. In the present study median time of wound healing after LIFT procedure was 8 weeks. Study conducted by Rojanasakul et al (2007)<sup>13</sup> and Tan et al (2011)<sup>24</sup> showed wound healing time of 4 weeks. Whereas a study conducted by Bleier et al (2010)<sup>14</sup> shows healing time of 10 weeks.

## 5. Conclusion

Our findings show that the LIFT-plug approach is straightforward, secure, and efficient for repairing trans-sphincteric fistula with minimal to no risk of fecal. Anal fistula is mostly treated surgically to close the fistula, stop it from returning, and maintain anal continence. As there is no rigid model for the selection of surgical treatment to be used, the current trend is that the technique with preservation of anal sphincter as the LIFT gain more space in the treatment of anal fistulas. However, among the various alternatives for the treatment of anal fistulas, none of them is currently considered as the technique of choice due to their rates of recurrence and incontinence.

## References

- [1] de la Portilla F, Rada R, León E, Cisneros N, Maldonado VH, Espinosa E. Evaluation of the use of BioGlue® in the treatment of high anal fistulas: preliminary results of a pilot study. *Diseases of the colon & rectum*. 2007 Feb;50:218-22.
- [2] Barillari P, Basso L, Larcinese A, Gozzo P, Indinnimeo M. Cyanoacrylate glue in the treatment of ano-rectal fistulas. *International journal of colorectal disease*. 2006 Dec;21:791-4.
- [3] Han JG, Wang ZJ, Zhao BC, Zheng Y, Zhao B, Yi BQ, Yang XQ. Long-term outcomes of human acellular dermal matrix plug in closure of complex anal fistulas with a single tract. *Diseases of the colon & rectum*. 2011 Nov 1;54(11):1412-8.
- [4] Abbas MA, Lemus-Rangel R, Hamadani A. Long-term outcome of endorectal advancement

- flap for complex anorectal fistulae. *The American Surgeon*. 2008 Oct;74(10):921-4.
- [5] Jarrar A, Church J. Advancement flap repair: a good option for complex anorectal fistulas. *Diseases of the colon & rectum*. 2011 Dec 1;54(12):1537-41.
- [6] Jivapaisarnpong P. Core out fistulectomy, anal sphincter reconstruction and primary repair of internal opening in the treatment of complex anal fistula. *J Med Assoc Thai*. 2009 May 1;92(5):638-42.
- [7] Miller GV, Finan PJ. Flap advancement and core fistulectomy for complex rectal fistula. *Journal of British Surgery*. 1998 Jan;85(1):108-10.
- [8] Gupta PJ. Radiofrequency fistulotomy in anal fistula. An alternative to conventional surgical fistulotomy. *Bratislavske lekarske listy*. 2003 Jan 1;104(4/5):165-6.
- [9] Ho KS, Tsang C, Seow-Choen F, Ho YH, Tang CL, Heah SM, Eu KW. Prospective randomised trial comparing ayurvedic cutting seton and fistulotomy for low fistula-in-ano. *Techniques in coloproctology*. 2001 Dec;5:137-41.
- [10] Rojanasakul A, Pattanaarun J, Sahakitrungruang C, Tantiphlachiva K. Total anal sphincter saving technique for fistula-in-ano; the ligation of intersphincteric fistula tract. *Journal-Medical Association of Thailand*. 2007 Mar 1;90(3):581.
- [11] Matos D, Lunniss PJ, Phillips RK. Total sphincter conservation in high fistula in ano: results of a new approach. *British journal of surgery*. 1993 Jun;80(6):802-4.
- [12] Meinero P, Mori L. Video-assisted anal fistula treatment (VAAFT): a novel sphincter-saving procedure for treating complex anal fistulas. *Techniques in coloproctology*. 2011 Dec;15:417-22.
- [13] Rojanasakul A, Pattanaarun J, Sahakitrungruang C, Tantiphlachiva K. Total anal sphincter saving technique for fistula-in-ano; the ligation of intersphincteric fistula tract. *Journal-Medical Association of Thailand*. 2007 Mar 1;90(3):581.
- [14] Bleier JI, Moloo H, Goldberg SM. Ligation of the intersphincteric fistula tract: an effective new technique for complex fistulas. *Diseases of the colon & rectum*. 2010 Jan 1;53(1):43-6.
- [15] Shanwani A, Nor AM, Amri N. Ligation of the intersphincteric fistula tract (LIFT): a sphincter-saving technique for fistula-in-ano. *Diseases of the colon & rectum*. 2010 Jan 1;53(1):39-42.
- [16] Ooi K, Skinner I, Croxford M, Faragher I, McLaughlin S. Managing fistula-in-ano with ligation of the intersphincteric fistula tract procedure: the Western Hospital experience. *Colorectal Disease*. 2012 May;14(5):599-603.
- [17] Han JG, Yi BQ, Wang ZJ, Zheng Y, Cui JJ, Yu XQ, Zhao BC, Yang XQ. Ligation of the intersphincteric fistula tract plus a bioprosthetic anal fistula plug (LIFT-Plug): a new technique for fistula-in-ano. *Colorectal Disease*. 2013 May;15(5):582-6.
- [18] Rizzo JA, Naig AL, Johnson EK. Anorectal abscess and fistula-in-ano: evidence-based management. *Surgical Clinics*. 2010 Feb 1;90(1):45-68.
- [19] Hämäläinen KP, Sainio AP. Incidence of fistulas after drainage of acute anorectal abscesses. *Diseases of the colon & rectum*. 1998 Nov;41:1357-61.
- [20] Tomiyoshi SD, SANTOS CH. Effectiveness of the ligation of intersphincteric fistula tract (LIFT) in the treatment of anal fistula: initial results. *ABCD. Arquivos Brasileiros de Cirurgia Digestiva (São Paulo)*. 2014 Jul;27:101-3.
- [21] Kamal ZB. Fistulotomy versus fistulectomy as a primary treatment of low fistula in ano. *Iraqi Postgrad Med J*. 2012;11:510-5.
- [22] Alasari S, Kim NK. Overview of anal fistula and systematic review of ligation of the intersphincteric fistula tract (LIFT). *Techniques in coloproctology*. 2014 Jan;18:13-22.
- [23] Lo OS, Wei R, Foo DC, Law WL. Ligation of intersphincteric fistula tract procedure for the management of cryptoglandular anal fistulas. *Surgical Practice*. 2012 Aug;16(3):120-1.
- [24] Tan KK, Tan IJ, Lim FS, Koh DC, Tsang CB. The anatomy of failures following the ligation of intersphincteric tract technique for anal fistula: a review of 93 patients over 4 years. *Diseases of the colon & rectum*. 2011 Nov 1;54(11):1368-72.