



Ligation of Intersphincteric Fistula Tract (LIFT) for Fistula-in-Ano: Feasibility and Our Experience

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Abstract

Background: A sphincter saving technique known as Ligation of Intersphincteric Fistula Tract (LIFT) has become popular for treatment of fistula-in-ano. This technique involves ligation and division of the fistula tract in the intersphincteric space without using any biological material.

Aim: The aim of the study was to see the feasibility and results of LIFT technique in managing different types of fistula-in-ano and the postoperative complications and recurrence rates.

Method: A prospective study conducted in the Department of Colorectal Surgery, a Division of General and Minimal Invasive Surgery, Sher-I-Kashmir Institute of Medical Sciences (SKIMS) Srinagar over a period of 26 months. Patients with fistula-in-ano were enrolled for the study. Detailed history, clinical examination & evaluation were done as per the protocol. Patients were subjected to standard surgical treatment. LIFT was used where found to be feasible depending on type and nature of fistula. All patients were followed regularly and results analyzed statistically.

Results: The LIFT technique seems to be safe and simple but our study revealed that only 38.2% cases of all fistula-in-ano could be treated by this technique. Procedure is difficult in patients having horse shoe fistula, non-location of internal opening or tract, scarring due to previous surgery multiple tracts, complex fistulas, abscesses, high fistula, curved and short tract. None of the patients had post-operative incontinence however 6.4% had post-operative infection and 12.9% had wound dehiscence. Recurrence was observed in only one patient. Most of the patients (77.41%) had less than 1 day stay in hospital post procedure. On satisfaction score, 67.74% patients who underwent LIFT technique were satisfied and 22.58% were non-satisfied. The median follows up was 17.6 months.

Conclusion: The ligation of the intersphincteric fistula tract technique for fistula-in-ano surgery, which aims at total anal sphincter preservation is safe and easy to perform but has its demerits too. Further modifications and studies with large samples and longer follow up are needed to treat the complex fistulae and fistulas having multiple tracts and to make verdict on the technique.

Introduction

Fistula-in-ano is a common condition but a potentially complex disease process. A fistula can be found in 26% to 38% of all anorectal abscesses [1,2]. A fistula-in-ano is characterized by chronic purulent drainage or cyclical pain associated with abscess re-accumulation followed by intermittent spontaneous decompression. Fistula-in-ano is categorized on the basis of location relative to the anal sphincter muscles by Parks classification where the fistula can be intersphincteric, transsphincteric, suprasphincteric, or extrasphincteric. The goal of surgical management is to effectively eradicate current and recurrent septic foci, associated epithelialized tracts and preserve continence.

An ideal procedure for treating a fistula-in-ano should be minimally invasive with minimal failure rates and morbidity. However, no single technique is appropriate for the treatment of all fistula-in-ano and the surgeon's experience and judgment should guide treatment decision. Ligation of the Intersphincteric Fistula Tract (LIFT) has recently been described by Rojanasakul et al. [3]. Since the initial description in 2006, several studies on LIFT have been reported in literature with variable results and indications.

The primary aim in the treatment of an anal fistula are to eliminate the fistula opening and

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associated tracts and any secondary openings without a change in continence. The Ligation of the Intersphincteric Fistula Tract (LIFT) technique for fistula-in-ano surgery, which aims at total anal sphincter preservation, appears to be both safe and easy to perform, with encouraging early outcomes. However, the success rate has been reported variably and there are still limited reports available in the literature with small samples. Long term outcome studies are also awaited.

The study bears a significance in terms of feasibility of technique for management of different types of fistula ano, surgical results, post-operative complications, sphincter preservation and recurrence following this technique.

Material and Methods

The study was conducted for a period of 26 months in the Department of Colorectal Surgery, a Division of General and Minimal Invasive surgery, Sher-I-Kashmir Institute of Medical Sciences. All the cases diagnosed to have fistula-in-ano from their medical history, clinical and physical examination out of which the cases were chosen to be feasible for the LIFT technique. The common complaint in patients that were dealt with LIFT technique were perianal discharge, perianal swelling, constipation, perianal pain, itching and incontinence. All patients underwent Digital Rectal Examination (DRE) for the clinical assessment. Proctoscopy/Sigmoidoscopy with or without fistulogram was done in patients were found to be feasible in the group of patients for LIFT technique. MRI was resorted for cases that had a preoperative suspicion of complex fistula, recurrence or had multiple openings externally.

The patients were subjected to operative procedure depending on feasibility and assessment by the operating surgeon. Cases who were not found fit to undergo LIFT technique were preceded by other techniques like fistulectomy which involves excision of whole of the fistulous tract or fistulotomy in which the tract is laid open. Some patients who had complex fistula underwent Seton procedure. Incision and drainage were also done in patients who had associated perianal abscess.

The procedure is performed in Trendelenburg lithotomy position under monitored regional anesthesia (spinal or epidural) and local anesthetic block. Essential steps of the procedure include, incision at the intersphincteric groove, identification of the intersphincteric tract, ligation of intersphincteric tract close to the internal opening and removal of intersphincteric tract, scraping out all granulation tissue in the rest of the fistulous tract, and suturing of the defect at the external sphincter muscle.

Patients were discharged on the next day or the consequent days of surgery depending upon the post-operative condition. All patients were followed regularly for any complications and results of surgery, weekly for one month, biweekly for three months after surgery and thereafter monthly for one year.

Satisfaction score for all the patients was seen using a questioner provided to patients at 3 months of follow up post operatively. A questionnaire was made that was relevant for the LIFT technique. Questions included were if the surgery helped in treating the problem? How long did it take to heal? Is there any other abscess or discharge postoperatively? Ability to hold the gas and feces postoperatively? Need to change the undergarments frequently? Any accidental passage of stools any time? A satisfaction score was made to check

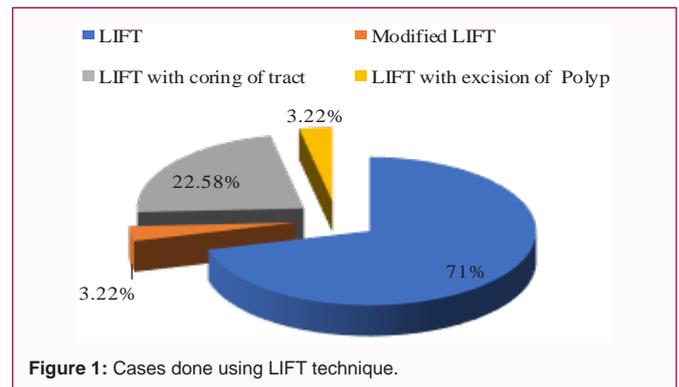


Figure 1: Cases done using LIFT technique.

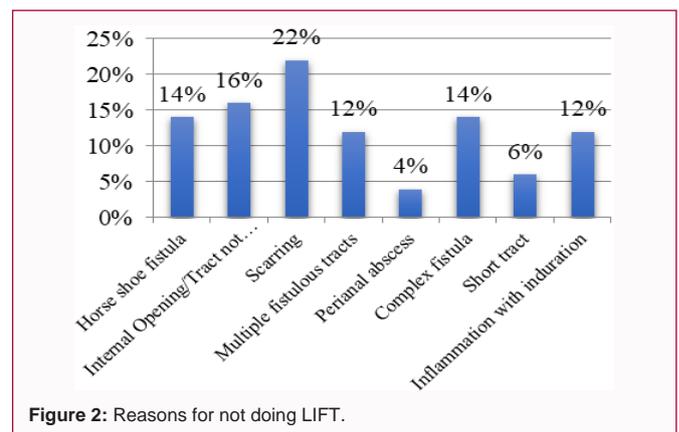


Figure 2: Reasons for not doing LIFT.

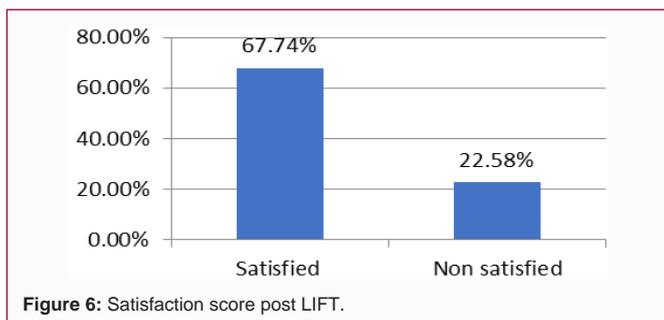
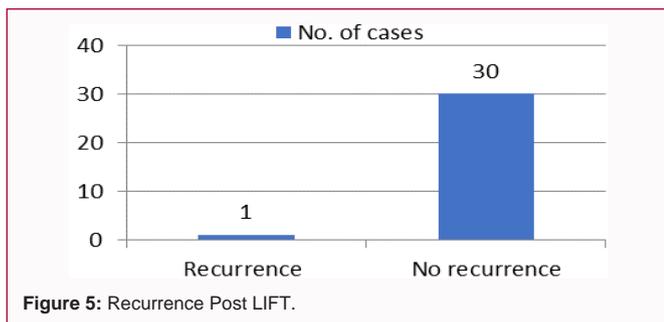
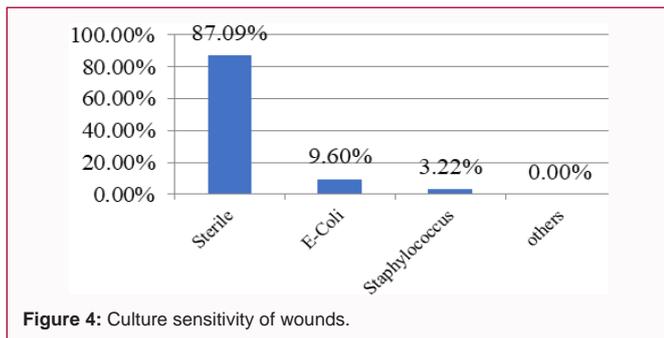
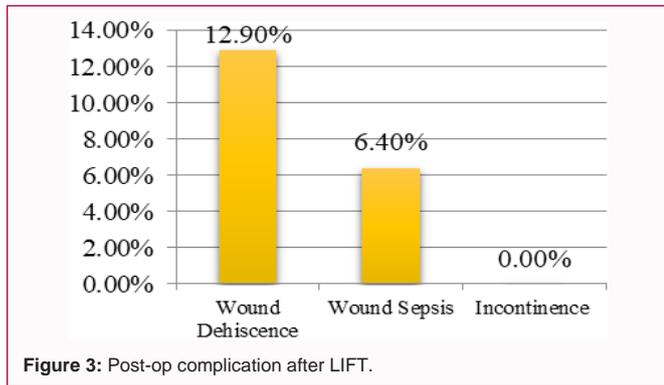
for the level of satisfaction. At the end satisfaction score was broadly divided into satisfied and non-satisfied, ranging from 1 to 2.

Result

For a period of 26 months, 81 cases of fistula-in-ano were treated in the Department of Colorectal Surgery, a Division of General and Minimal Invasive surgery, Sher-I-Kashmir Institute of Medical Sciences.

Out of the 81 patients 31 (38%) were dealt with LIFT technique for fistula-in-ano, either exclusively or with some modification or some additional procedure. Out of 31 cases, exclusive LIFT technique was done in 22 (71%) cases while a modified LIFT technique was performed in 1 (3.22%) case. In 7 cases (22.58%), coring of tract was done along with LIFT technique and in 1 (3.22%) that had a rectal polyp, excision of polyp was done along with LIFT technique (Figure 1).

The common complaint in patients that were dealt with by LIFT technique were perianal discharge in (96.7%), perianal swelling (77%), constipation (35%), perianal pain (32.2%), itching (16%) and incontinence (3%). All the 31 patients underwent DRE for the clinical assessment. Out of total 31 patients 18 patients were evaluated by proctoscopy/sigmoidoscopy. Fistulogram was done in 12 patients. Five of 31 patients were evaluated by MRI. Out of the 50 cases which were not subjected to LIFT technique, 7 (14%) had Horse shoe fistula, 8 (16%) were the cases in which internal opening/tract couldn't be located, 11 (22%) had perianal scarring, 6 (12%) with multiple fistulous tracts, 2 (4%) had associated perianal abscess and 7 (14%) were because of complex fistula. In 3 (6%) of case LIFT technique couldn't be done because of short tract while as in 6 (12%) LIFT technique was not possible due to inflammation and induration



(Figure 2).

Most patients who underwent LIFT technique were followed up for more than one year with median of 17.6 months. One patient was followed up for more than 24 months, 14 patients were on a regular follow up of more than 18 months while 4, 3 and 9 patients were on follow up for less than 6 months, 6 to 12 months and 12 to 18 months respectively cases that were dealt with LIFT technique, 6 (19.3%) had post-operative complications like wound dehiscence 4 (12.9%) or post-operative infections 2 (6.4%) however none of the patients had incontinence. All these complications were managed conservatively (Figure 3). Post-operatively swabs were sent for cultural examination

where 87.09% cases showed sterile culture post operatively while as 9.6% and 3.2% had growth of *E-coli* and *Staphylococcus* respectively (Figure 4).

Twenty-four (77.41%) cases had less than 1-day post-operative stay in hospital and 7 (22.58%) had more than one day hospital stay among the cases dealt with LIFT technique. One (3.22%) patient had recurrence at a follow up of three months (Figure 5). On satisfaction score, 21 (67.74%) patients who underwent LIFT technique were satisfied and 10 (22.58%) were dissatisfied with the procedure (Figure 6).

Discussion

In the present study LIFT technique was done in 31 (38.27%) of 81 cases of fistula-in-ano. However, in some patients can either modification of LIFT was done or additional procedures were performed along with LIFT technique like polypectomy or coring. No significant difference was observed in the outcome of LIFT technique alone or when LIFT was accompanied by additional procedures. Our findings are in agreement with those reported by Siripoung et al. [4] who compared the LIFT technique, with LIFT along with the additional step of coring fistulectomy and found no significant difference in success rate between them.

Though LIFT technique is considered a promising technique for fistula-in-ano but not all patients (50/81) could be dealt with this technique because of some reasons and were either dealt by fistulectomy 32 (64%), Coring of tract 10 (20%) or fistulotomy in 3 (6%) and Seton 5 (10%). Among these cases 2 (4%) were having perianal abscess and 6 (12%) were having inflammation with induration and these factors could be attributed to the resolution of inflammatory phase that would have resulted in fibrosis and obliteration for intersphincteric plane, thus making dissection difficult [5]. Eleven (22%) cases were having perianal scarring due to previous procedures or incision and drainage of abscess that made the LIFT impossible. In 8 (16%) cases LIFT technique couldn't be performed because internal opening couldn't be located. The location of internal opening forms an important step of procedure as the tract is ligated close to the internal opening [3]. In 3 (6%) cases tract was too short to be ligated and thus interfere with one of the basic steps of LIFT technique [3]. Multiple tracts were present in 6 (12%) cases thus making the LIFT impossible [3]. In 7 (14%) with horse shoe fistula and in 7 (14%) of cases with complex fistula, LIFT technique couldn't be done and was abandoned by the surgeons, who had experience of treating fistula-in-ano for more than 20 years and did not find it feasible which is also in accord with the study that techniques offered depend on the surgeon's experience and knowledge of the disease [6]. Chowdri in 2017 reported that LIFT technique is not feasible in all the patients with fistula-in-ano and results are not encouraging in fistulas with any scarring, inflammation side branches and with complex and recurrent fistulae [7].

The success of surgery depends on the procedure employed and post-operative outcome. In the present study 19.35% (6/31) patients had complications after LIFT technique which is in accordance with the findings of Aboulian et al. [8] who reported complete healing in 17 (68%) patients out of 25 patients who had undergone LIFT technique while as 8 (32%) showed post-operative complications while the other study reported complication in 13.3% of cases that underwent LIFT technique for fistula-in-ano [9]. Although Rojanasakul [10] himself reported no major post-operative complications in patients dealt

with LIFT technique. The low post-operative complications observed in LIFT technique could be attributed to its more secure than over sewing and removal of infected granulation tissue by curettage is also less time consuming and more practical than total excision of tract and primary repair [3]. Among the post-operative complications most of them (12.9%) had a wound dehiscence. Rojanasakul and Ooi reported wound dehiscence in 5.55% and 4% cases respectively in patients who underwent LIFT technique for fistula-in-ano [10,11]. Incontinence is known complication post-surgery for fistula-in-ano, but the present study along with the other literature found no incontinence post LIFT technique [10]. The low incontinence rate is one the biggest advantages of LIFT technique and can again be attributed to more secure than over sewing nature of LIFT technique.

Out of the 31 patients that underwent LIFT technique, 77.41% cases had less than 1 day post-operative stay in hospital and 22.58% had more than one day hospital stay. Our study is in agreement with the findings of other studies who reported mean length of hospital stay of 1.25 days in the patients treated with LIFT technique [10]. Post-operative wound swab culture showed 87.09% cases being sterile while 4 (12.9%) cases showed growth on culture examination. *E-coli* was grown in 3 (9.6%) cases and one (3.22%) case had *Staphylococcus*.

A satisfaction score was calculated on the basis of questioner at third month of follow up post LIFT to grade their level of satisfaction of a patient. Literature reports a satisfaction score of about 72% to 100% in the patients dealt with LIFT that was close to the results in our study where 67.4% patients were found fully satisfied with the technique [12]. The minimum follows up in our study was 2 months and maximum were 26 months having a median of 17.6 (2 to 26) months. However, follow up in our study was more than reported by Ooi [11] and Liu [13].

The recurrence rate post LIFT is about 6.5% while the present study had recurrence in only one (3.2%) patient though long-term results are awaited [6]. Since the procedure was performed on selected group of patients, it is difficult to comment on recurrence related to present study. In fact surgeons involved in the study are hesitant in doing LIFT procedure in all the patients, as it is associated with higher recurrence rate compared to conventional techniques. However, some studies show concern about the long-term recurrence as more of the data is not available for the technique but are optimistic that recurrence after complete healing is uncommon [10]. We also expect long term results in our patients as the study was completed few years ago and also now admitting a greater number of such patients, a bigger series can be expected from our center.

Conclusion

LIFT technique is totally anal sphincter saving technique with no risk of post-operative incontinence; the technique is patient friendly

with regard to post-operative management, pain and discomfort. Wound management is easy as compared to lay open techniques and has a minimum morbidity with less recurrence rate. Overall LIFT technique was found to be simple, safe, inexpensive and easy to perform preferably feasible for transsphincteric low fistulae. However, outcome of this technique depends to a great extent on the surgeon's experience and patient selection. More studies on larger number of patients with longer follow up are needed before final verdict is given.

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