

Our experience with ligation of intersphincteric fistula tract (LIFT) for anal fistula

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Abstract:

Objective: In this study we aimed to assess the results of LIFT (ligation of intersphincteric fistula tract) technique for patients with low anal fistula in our unit.

Study design: Observational case-series.

Place and duration of study: Department of General Surgery, Jinnah teaching hospital, Peshawar, for a period of 1 year from November 2015 to November 2016.

Material and methods: A total of 78 patients with low anal fistulas were recruited for this study. All subjects underwent ligation of the intersphincteric fistula tract. Symptomatic relief and early post-operative complications were recorded. The patients were followed for 6 months. Outcome measures included presence of recurrence, fecal incontinence and surgical complications.

Results: We enrolled 75 patients with a mean age of 40.5 (range 16-69) years, 20 of the patients had recurrent fistula and 55 were newly diagnosed. Mean follow-up was 6 months. Successful fistula repair was achieved in the 87.5% of the patients, 9 patients had failure at the follow-up. No incontinence was observed in any of the patients.

Conclusion: Ligation of the intersphincteric tract is a novel sphincter preserving method for complex anal fistulas. As a simple, safe, cost-effective procedure with high success rates it could be candidate for being the gold standard method for complex anal fistulas.

Keywords: Fistula-in-ano, ligation of intersphincteric fistulous tract, incontinence, recurrence.

Introduction:

An anal fistula is an abnormal pathological tract between the anal canal and the peri-anal skin which primarily originates from abscess formation with crypto-glandular infection. The estimated prevalence of anal fistula is 12 to 28/100,000 individuals per year with a male to female ratio of 1.8:1.¹

The classifications of anal fistula have shown variability but the simplest and the most widely used one is the Park's classification. In this classification five main types are described according to the relationship of the fistula to the anal sphincter muscles; inter-sphincteric, trans-sphincteric, supra-sphincteric, extra-sphincteric and superficial fistulas.² The anal fistulas are

also described as simple or complex fistulas by American Gastroenterological Association. The simple fistulas originate below the dentate line (low type) and involve small part of the sphincter complex. Superficial, low inter-sphincteric or low trans-sphincteric fistulas are in this group. Conversely complex fistulas originate above the dentate line (high type), and involves the significant part of the sphincter mechanism. Anterior fistula in women, recurrent fistula, fistulas with multiple tracts, patients with pre-existing incontinence are included in this group.²⁻⁴

The surgical treatment of anal fistula has been a challenge for both surgeons and patients. Simple anal fistulas can be treated by fistulotomy with low recurrence rates and the risk of sphincter

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damage is low as most of the sphincter mechanism is preserved.^{2,5,6} However for complex and high anal fistulas, surgical treatment poses an increased risk of incontinence depending on the probable risk of damaging the sphincter muscles. Therefore ideal treatment of anal fistula is the complete healing of fistula tract while preserving the anal sphincter mechanism and preventing the recurrence.

There are variable surgical procedures for the management of anal fistula with variable risk of incontinence and recurrence. In 2006 from Thailand, Rojanasakul et al. performed a novel sphincter saving technique consisting of ligation of the inter-sphincteric tract (LIFT) and showed high rates of success in healing fistula tract up to 94% of the patients.⁷ In this observational prospective study, we aimed to assess the results of the LIFT technique for patients with simple anal fistula in our unit.

Materials and Methods:

The present study was conducted between November 2015 and November 2016 at Department of Surgery, Jinnah teaching hospital, Peshawar. 75 consecutive patients with simple anal fistula were included. Patients with complex, high and secondary anal fistulas associated with inflammatory bowel disease, tuberculosis or other conditions were excluded from the study.

All patients were examined by a surgeon in outpatient clinic. After initial investigations including the history, digital rectal examination and physical examination was performed.

After the adequate fasting period, enema was administered for bowel preparation. The procedure was performed under general or regional anesthesia and patients were placed in lithotomy position. Povidone iodine was used for the surgical field cleansing. The external opening of the anal fistula was identified, anoscope was placed after anal dilatation and hydrogen peroxide (H₂O₂) was injected through the external opening for identifying the internal opening. The stilette was forwarded through the external opening to the internal opening for identify-

ing the inter-sphincteric tract. Then the inter-sphincteric groove was determined and 2cm circumanal incision was made at the site of fistula tract to enter the inter-sphincteric plane. Meticulous dissection was performed via electrocautery for dissecting the inter-sphincteric plane to isolate inter-sphincteric tract. Two retractors were used. The right-angled clamp was used to isolate and circle the tract. After the stilette was removed, tract was ligated close to the lateral side of internal anal sphincter and medial side of external anal sphincter with 3-0 vicryl. We divided the tract between these two sutures. To control the closure of the internal and external fistula tract, we injected H₂O₂ from the internal and external openings. After the fistula tract was curetted from the external opening, surgical field was irrigated with saline and H₂O₂. For the inter-sphincteric incision interrupted polyglactin 3-0 suture was used. The external orifice was left open for drainage.

All the patients were discharged the day after the operation. All patients were recommended to perform sitz bath 2-3 times a day for 15 minutes each time. Also, the patients were advised to take anti-inflammatory analgesic if they feel pain and record the need of the medication. Antibiotics were prescribed. Patients were evaluated at the surgical outpatient clinic at the first week, first, fourth and sixth month after the surgery. The need of anti-inflammatory analgesia was questioned. For the evaluation of incontinence Wexner and Fecal Incontinence Quality of Life (FIQL) score was performed at the follow-up. Time to return the work after the surgery was noted.

Results:

A total of 78 consecutive patients with simple anal fistula were recruited in this prospective study between November 2015 and November 2016. 55 patients (71%) were men and 23(29%) were women. The mean age was 40.5 years (range 16-69) and follow-up was 6 months. 20 of the patients had recurrent fistulas and 58 patients were newly diagnosed. All of the patients were discharged home day after the surgery. No early complication as bleeding or severe pain

Table-1: Basic characteristics of study population

Number of the patients(N)	78
Gender, N (%)	
Male	55 (71%)
Female	23 (29%)
Age	
Mean	40.5
Range	16-69
Localization of fistula N (%)	
Anterior	38 (48.7)
Posterior	40 (51.3)

was observed. Mean time to return to work after surgery was 15.5 days (range 7-35 days). The demographic and clinical characteristics of the patients are shown in table-1.

At the first week follow-up 38 of the patients did not need anti-inflammatory analgesic, 22 of the patients needed to take once a day, 18 patients more than twice a day. At the first month follow-up 69 of the patients were free of pain, 9 of the patients needed anti-inflammatory analgesic once a day due to the pain. 3 of the patients had persistent symptoms at the first week, clinical follow-up was recommended and surgery was recommended for recurrence at the first month, but the patient rejected to undergo surgery. 3 of the patients had discharge ongoing from the incision and had induration and swelling so under the local anesthesia, incision was opened but no abscess formation was observed and these patients were free of symptoms at the fourth month. At the 45th day after the surgery, another patient was evaluated because of persistent wound discharge and was re-operated with fistulotomy as the recurrent anal fistula was identified as simple fistula.

At the end of the follow-up, 69 patients (87.5%) had healed with recurrence free and 9 patients (12.5%) had recurrence (table-2). No fecal or gas incontinence was observed in any of the patients at the follow-up.

Discussion:

In this study our experience showed that LIFT technique can be preferred treatment option for anal fistulas preventing the recurrence and preserving the continence. The surgical treatment

of anal fistula aims to eradicate septic focus and fistula tract while preserving anal sphincter function, preventing recurrence, providing comfort and allowing patients to return to the normal daily activities as early as they can. LIFT technique could achieve these goals as in the recent meta-analysis over 24 articles showed that during the 10.3 months of follow-up, mean success rate was 76.4%, no incontinence was observed, intraoperative and post-operative complication rates were 0 and 5.5% respectively.⁸

It is important to consider that no single technique is the best for the treatment for all types of anal fistula. Most of the anal fistulas are simple or superficial and can be treated by fistulotomy with little incontinence and with an approximately 100% high success rate.⁹ Also for complex fistulas, there are many sphincter sparing treatment options but the recurrence and incontinence risk after these procedures should be kept in mind. The recurrence and incontinence rates were reported as 0-63% and 0-32% respectively according to the surgical technique.^{10,11} Set on techniques have been used in the management of fistulas which are simple and safe methods. Inserting a foreign material through the tract and providing the tract to be open prevents closed space infections and allows the drainage.¹² But this is a painful and uncomfortable technique for patients with incontinence being reported to be as high as 60%.¹³ Advancement flap is technically more difficult method especially on posteriorly located fistulas and risk of devascularization and loss of the larger portion of rectal wall exists. Although it is still considered to be the gold standard method for treating complex anal fistulas, successful healing rates range from 55 to 98% and this procedure has an incontinence risk up to 35%.^{13,18} Fibrin glue injection for the management of complex anal fistula was first published by Hjortup et al. in 1991 with promising results but further reports showed success rates varying from as low as 14%¹⁹ to as high as 74%.²⁰ Similarly the anal fistula plug is a novel method with success rates varying between 29% and 87%.^{21,23} Fistula laser closure and video assisted anal fistula treatment procedures are new and expensive and further

studies are required for both of these techniques use in clinical practice.²⁴

Since the first description in 2006 by Rojana-sakul,⁷ LIFT technique has taken interest because of its high success rate and no impact on continence. This simple, safe, sphincter preserving procedure with short healing time has become more popular from 2010. According to the recent meta-analysis published in 2014, pooled results of LIFT indicate that mean success, incontinence, intra-operative and post-operative complication rates were 76.4, 0, 0, 5.5% respectively. It was indicated that, due to the variability of the studies, the pooled success rate should be interpreted with caution. The follow-up time, study size and combining procedures with LIFT could affect the results.⁸ In our study the success rate of 87.5% is comparable to the healing rates with other studies, and no fecal or gas incontinence was observed in any of the patients.

Bleir et al., represented the first North America experience with LIFT, including 39 patients with complex anal fistulas. The healing rate was 57% and 4 of the patients showed recurrence. Although no continence scoring questionnaire was performed in that study, none of the patients reported subjective incontinence. The low success rates compared to the other studies were attributed to the high percentage of the patients (74%) who had previous procedures with a median of 2 failed repairs²⁵ Sileri et al., reported 83.3% success rate with no recurrence, and 3 patients required drainage seton insertion and delayed LIFT. And they stated that no continence change was observed in their study.²⁶

The follow-up time after the surgery varies between the studies. It was stated that short-term follow-up may over estimate the real success rate. Although most of the studies had follow-up period lower than one year, as the failures would occur after this time, longer follow up is recommended.⁸ Bleier et al, reported two patients recurred after 30 weeks, although their median time of failure was 10 weeks.²⁶ In our study we identified this period as 4 months which may be a short time to observe the recurrences however

in this time two of the patients had failure.

In our study we experienced high success rates compatible with the published studies. Low recurrence risk and undamaged sphincter mechanism will support the choice of surgery modality for complex anal fistulas. The major limitations of our study were relatively small number of patients and the shorter follow-up period. But with the help of our study, we consider to choose LIFT for patients with anal fistula as a simple, cost-effective and safe treatment option.

Conclusion:

Ligation of the intersphincteric tract is a novel sphincter preserving method for complex anal fistulas. As other sphincter-preserving procedures exist, further studies are needed to evaluate the effectiveness of LIFT compared to others. In conclusion LIFT as a simple, safe, cost-effective procedure with high success rates seems to be candidate for being the gold standard surgery option.

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Role and contribution of authors:

Dr. Farooq Khan, literature review and wrote the initial write up of the article including introduction, discussion, result and conclusion.

Dr. Jawad Khalil, data analysis.

Dr. Hajira Farooq Khan, data collection.

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