European Journal of Molecular & Clinical Medicine

ISSN 2515-8260 Volume 09, Issue 02, 2022

Ligation of Intersphincteric Fistula Tract (LIFT) versus conventional fistulectomy in management of low fistula in ano: A comparative study from a tertiary hospital

[1]Dr. Balaji Laxmanrao Salunke, [2] Dr. Lamture Yeshwant Ramrao

[1]Associate Professor, Department of General Surgery, Swami Ramanand Tirth Rural Medical College, Ambajogai, Beed, Maharashtra, India
[2]Professor, Department of Surgery, JNMC, Wardha, Maharashtra, India

Corresponding Author:
Dr. Lamture Yeshwant Ramrao (yash18671@gmail.com)

Abstract

Background: Fistula in ano is an abnormal track connecting the anal canal with the perineum. Different treatment modalities are available for managing anal fistulae, such as fistulotomy, fistulectomy, ligation of intersphincteric fistula tract (LIFT), seton placement, advancement flaps, and use of biological agents like fibrin glue. The present study aimed to compare Ligation of intersphincteric Fistula Tract (LIFT) versus conventional fistulectomy in treating low fistula in ano at a tertiary hospital.
Material and Methods: Present study was a single-center, comparative study conducted on patients suffering from low anal fistula between 18-55 yrs.
Results: 80 patients were divided into groups Group A (LIFT procedure) & Group B (conventional fistulectomy), with 40 patients in each group. Among various Intra-operative & Postoperative Factors, we noted that Group A (LIFT) had less mean duration of surgery, less hospital stay, less need for analgesics, less mean duration of wound healing, less mean duration of return to work as compared to Group B (Conventional Fistulectomy) & difference was significant statistically ($p<0.001$). Postoperative complications were more minor in Group A (LIFT) (only 1 case of incontinence) as compared to group B (Conventional Fistulectomy) (2 cases of Wound infection/Abscess, two instances of incontinence & 1 patient of recurrence), but the difference was not significant statistically.
Conclusion: The ligation of intersphincteric fistula tract (LIFT) procedure is easy to learn, perform, safe, has a high healing rate, low morbidity, quickly treats fistula in ano & better fecal continence preservation compared to open fistulectomy.

Keywords: Anal glands, fistula in ano, fistulectomy, incontinence

Introduction

A fistula in ano is defined as an abnormal track connecting the anal canal with the perineum [1]. Fistula in ano may be simple or complex and are mainly caused by chronic infection arising in anal glands that communicate with anal crypts [2]. Maximum fistulas (approximately 90%) are non-specific and are of cryptoglandular origin, which occurs as a result of the infection of anal glands & the rest are due to a specific etiology like tuberculosis, Crohn's disease, ulcerative colitis, pelvic disorders, radiations, carcinomas and traumas to the

ISSN 2515-8260 Volume 09, Issue 02, 2022

anorectal region [3, 4].
This condition does not heal spontaneously because of the persistently closed sepsis within the fistula tract constantly entering through its internal opening [5]. Magnetic resonance imaging (MRI), Fistulogram, Ultrasound or Transrectal Ultrasonogram (TRUS) can help diagnose high and complex anal fistula [6].
There are various treatment modalities available for the management of anal fistula. These include fistulotomy, fistulectomy, ligation of intersphincteric fistula tract (LIFT), seton placement, advancement flaps and use of biological agents like fibrin glue [7]. LIFT procedure is based on securing the internal opening and removing infected crypto glandular tissue through the intersphincteric approach. The present study aimed to compare Ligation of Intersphincteric Fistula Tract (LIFT) versus conventional fistulectomy in treating low fistula in ano at a tertiary hospital.

Material and Methods

The present study was a single-center comparative analysis conducted in the department of general surgery at the Department of General Surgery, Swami Ramanand Tirth Rural Medical College, Ambajogai, India. The study duration was one year (January 2021 to December 2021). The institutional ethical committee approved the study.

Inclusion criteria

- Patients were suffering from low anal fistula, between 18-55 yrs of age, able to understand the merits and demerits of both procedures, and willing to participate & follow up.

Exclusion criteria

- Patients with complex high anal fistulas.
- Patients with inflammatory bowel disease, malignancy.
- Patients critically ill and with a known history of immuno-suppressed states.
- Patients are not willing to participate & follow up.

Procedures were explained to the patients and written informed consent was taken. Patients underwent a thorough history taking (age, gender, symptoms, past medical/surgical history), clinical examination, proctoscopy, sigmoidoscopy/colonoscopy and radiological evaluation by MR epistolography & details were noted in case record proforma.
Using a randomized sampling technique, 80 patients were divided into two groups in a surgical theatre.

Group A: patients underwent the LIFT procedure. In this method dilute methylene blue dye injected into the outer opening and internal opening of fistula tract. The intersphincteric groove was digitally palpated directly overlying the inner opening and an incision was made along the track between the external anal sphincter and internal anal sphincter. The plane of dissection was carried out in the intersphincteric area, and the fistula tract communication was identified and isolated. The outer opening and the remnant fistulous tract were curetted to the level of the proximity of the outer anal sphincter. At the end, the intersphincteric incision was loosely re-approximated with an absorbable suture. The curetted wound was left open, and the dressing was done.

Group B: Patients underwent conventional fistulectomy. The external opening was probed in

ISSN 2515-8260 Volume 09, Issue 02, 2022

this procedure and the entire fistulous tract was entirely excised. No cogitatio is given to the divided sphincter and muscles are not repaired. The complete tissue was laid open or closed partially.

Standard postoperative care was provided & follow up advised with appropriate analgesics, Seitz bath and a high fiber diet. Initially each patient was followed up for three months weekly for the first month & then fortnightly for the next two months. Wound healing, pain score and incontinence rate were documented at each visit.

Data was collected and compiled using Microsoft Excel and analysed using SPSS 23.0 version. Frequency, percentage, means and standard deviations (SD) were calculated for the continuous variables, while ratios and proportions were calculated for the categorical variables. The difference of proportions between qualitative variables was tested using a chi-square test or Fisher exact test. A P-value less than 0.5 was considered statistically significant.

Results

Eighty patients were divided into Group A (LIFT procedure) & Group B (conventional fistulectomy), with 40 patients in each group. General characteristics such as mean age, gender, Symptoms (Pain, Swelling, Discharge), duration of symptoms (months) and history of previous abscess/surgery were comparable among groups A & B; the difference was not statistically significant.

Table 1: Comparative analysis of general characteristics

General characteristics	Group A (LIFT)	Group B (Conventional Fistulectomy)	p-value
Age (years) (Mean ± SD)	37.21 ± 12.2	39.52 ± 10.3	> 0.05
Gender			
Male	34 (85%)	36 (90%)	> 0.05
Female	6 (15%)	4 (10%)	
Symptoms			
Pain	26 (65%)	30 (75%)	> 0.05
Swelling	30 (75%)	28 (70%)	> 0.05
Discharge	28 (70%)	28 (70%)	> 0.05
Duration of symptoms (months)	7.14 ± 2.2	8.22 ± 1.3	> 0.05
Previous abscess	9 (22.5%)	8 (20%)	> 0.05
Previous surgery	5 (12.5%)	4 (10%)	> 0.05

Among various Intra-operative & Postoperative Factors, we noted that Group A (LIFT) had less mean duration of surgery, less hospital stay, less need for analgesics, less mean duration of wound healing, less mean duration of return to work as compared to Group B (Conventional Fistulectomy) & difference was significant statistically ($p<0.001$). No intra-operative complications/Difficulties were noted in any group. Conversion to fistulectomy was required in 1 patient of group A. Postoperative complications were more minor in Group A (LIFT) (only 1 case of incontinence) as compared to group B (Conventional Fistulectomy) (2 points of Wound infection/Abscess, two instances of incontinence & 1 chance of recurrence) but the difference was not significant statistically.

Table 2: Comparative analysis of intra-operative and post-operative factors

Intra-operative & Post-operative Factors	Group A (Lift)	Group B (Conventional Fistulectomy)	P-value
Mean duration of surgery (Minutes)	35.6 ± 6.2	46.5 ± 7.4	< 0.001
Hospital stay (Days)	1.69 ± 0.79	2.59 ± 1.29	< 0.001

Need for analgesics (Days)	3.6 ± 2.8	4.7 ± 3.3	< 0.001
Intra-operative complications/Difficulties	Nil	Nil	--
Conversion to fistulectomy	1 (2.5%)	Nil	--
Mean duration of wound healing (days)	33.2 ± 4.6	42.5 ± 7.6	< 0.001
Mean duration of return to work (days)	9.4 ± 2.6	13.5 ± 4.2	< 0.001
Postoperative			--
Wound infection/Abscess	0	2 (5%)	
Incontinence	1 (2.5%)	2 (5%)	
Recurrence	0	1 (2.5%)	

Discussion

Fistula in ano is a not uncommon anorectal disorder that tends to recur, especially in complicated cases, commonly due to missed or undetected sepsis at the time of examination or surgery. Diagnosis is by history, clinical examination, rectal examination with discharging sinus and pain and histopathological examination of the fistula tract.

Surgery is considered the best treatment modality for anal fistula. The aim of any treatment method used for anal fistula is to altogether remove the fistulous tracts and septic foci and yet prevent the occurrence of recurrence or incontinence. The sphincter-saving procedures have varying healing rates with risks of recurrence. Still, they have no postoperative incontinence, due to which the sphincter-saving processes are being probed into new techniques and are more famous than the sphincter sacrificing plans [8, 9].

Ligation of the intersphincteric fistula tract (LIFT) is now a well-documented and accepted treatment option for high transsphincteric perianal fistulas that was first described in 2007 by Rojanaskul *et al*. [10] Ever since, it has been modified, combined with biomaterials, used for low fistulas and combined with other procedures [11].

Base AK[12] studied 84 patients with simple low-lying fistula were randomized into two groups: fistulotomy and fistulectomy (42 patients each). The mean duration of surgery in the fistulotomy group was 28.6min and that of the fistulectomy group was 31.7 min; the difference was statistically not significant ($p>0.05$). The median duration of wound healing was shorter in the fistulotomy group (12 days) compared to the fistulectomy group (21 days), and the difference was statistically highly significant ($p<0.001$). The incidence of incontinence in the fistulotomy group was observed in 5 cases compared to a single point in the fistulectomy group. The difference was statistically significant. Recurrence was observed in one case from both the groups, each within six months post-op period.

Arunraj P *et al*., [13] studied 80 patients, suffering from low anal fistula divided into group A (undergoing LIFT procedure) & group B (undergoing open fistulectomy). Group A patients, at the end of the 3rd postoperative week, had a pain score of 0.43 compared to group B patients (1.33). Group A patients had 100% continence preservation, whereas a 17.5% moderate incontinence was documented in Group B patients. About 97.5% of patients in Group A had complete wound healing by the 3rd postoperative week, compared to group B patients, where 100% complete wound healing was noted at one and half month after surgery. It was proved that LIFT was a promising procedure in reducing postoperative pain significantly, with better wound healing rates. It was influential in maintaining good sphincter function, providing better fecal continence following surgery in the low anal fistula.

Goudar BV [14] compared the outcomes between ligation of intersphincteric fistula tract (LIFT) and conventional fistulectomy (CF) with 30 patients in each group. The mean age in LIFT was 44 years, and in CF was 41 years. Successful primary healing was observed in 86% of LIFT and 100% of CF. Mean pain scores were significantly lower in LIFT compared to CF when checked on Postoperative days 1, 3, and 7. Anal incontinence was seen in 10.2% of CF and none in LIFT and recurrence was seen at the same site in LIFT in 6.66% of LIFT and none in CF, both being not statistically significant. LIFT is a promising and sphincter-saving

technique that has a straight learning curve for surgeon with rapid healing rates and better patient contentment but not without the complications like recurrence. hence Modifications of LIFT have to be probed for minimizing the losses.

Pallavi VA [15] noted that patients operated by LIFT showed significantly shorter operative time (mean of 32.50 minutes vs. 40.17 minutes) and hospital stay (tell of 1.64 days vs. 2.53 days), decreased severity of pain and faster wound healing (mean 5.74 weeks vs. 6.89 weeks) compared to patients undergoing fistulectomy/fistulotomy. Though more patients had a recurrence in the LIFT group (five patients in LIFT vs. three patients in fistulotomy/fistulectomy), this difference was not statistically significant. There was no incontinence (temporary or permanent) in patients of LIFT while three patients of fistulectomy had temporary flatus incontinence. LIFT offers the benefit of a shorter operative time, decreased postoperative pain, shorter hospital stay and faster wound healing with a very low incidence of incontinence compared to fistulectomy or fistulotomy with a recurrence rate not significantly different from it.

Factors associated with recurrence have been identified in various studies as the complex type of fistula, horseshoe extension, lack of identification or lateral location of the internal fistulous opening, and previous fistula surgery [16]. Earlier studies noted that LIFT seemingly has a higher recurrence rate compared to fistulotomy or fistulectomy. It does not bar any further procedures from treating the fistula. As Bleier JI *et al*. stressed the use of LIFT as a choice of procedure [17].

LIFT has given promising results while maintaining continence and has better patient satisfaction with faster healing rates than other techniques. Though it has risks, the benefits outweigh them. LIFT is a simple, easy-to-learn technique with good results. The modifications in LIFT having better results make it a point to probe more in such procedures and improve this technique so that the failures and recurrences are taken care of adequately for better patient contentment.

Conclusion

The ligation of intersphincteric fistula tract (LIFT) procedure is easy to learn and perform, safe, has a high healing rate, has low morbidity, quickly treats fistula in ano & better fecal continence preservation compared to open fistulectomy. Another advantage is that there is no chance of incontinence as the infective focus is removed without dividing any part of the sphincter complex.

Conflict of interest: None to declare.

Source of funding: Nil.

References

1. Ramachandra ML, Garg M. A comparative study in the management of fistula in ano using various modalities. Int Surg J. 2018;5(6):2223-2227.
2. Anne L, James F. Benign disorders of the anorectum. In: Michael Z, Stanley A, eds. Maingot's Abdominal Operations. 12th edition, McGraw Hill Medical, 2013.
3. Sheikh P, Baakza A. Management of fistula-in-ano-the current evidence. Indian J Surg. 2014;76(6):482-486.
4. Vasilevsky CN, Gordon PH. Benign anorectal: Abscess and fistula. In: Wolff BG, Fleshman JW, Beck DE, Pemberton JH, Wexner SD (eds) The ASCR S textbook of colon and rectal surgery. Springer Science & Business Media, New York, 2007, 192-202.
5. Parthasarathi R, Gomes RM, Rajapandian S, Sathiamurthy R, Praveenraj P, Senthilnathan

P, *et al*. ligation of the intersphincteric fistula tract for the treatment of fistula-in-ano: experience of a tertiary care center in South India. Colorectal Dis. 2016;18(5):496-502.

6. Buchanan GN, Halligan S, Bartram CI, Williams AB, Tarroni D, Cohen CR. Clinical examination, endosonography and MR imaging in preoperative assessment of fistula in ano: comparison with the outcome-based reference standard. Radiol 2004;233(3):674-81.
7. Karen N. The anus and anal canal. In: Williams N, O'Connell P, McCaskie A editors. Bailey and Love short practice of surgery. 27th edition, Boca Raton FL: CRC Press, 2018, 2.
8. Sirikurnpiboon S, Awapittaya B, Jivapaisarnpong P. Ligation of intersphincteric fistula tract and its modification: Results from the treatment of complex fistula. World J Gastrointest Surg. 2013;5(4):123-8.
9. Sugrue J, Mantilla N, Abcarian A, Kochar K, Marecik S, Chaudhry V, *et al*. Sphincter-sparing anal fistula repair: are we getting better? This Colon Rectum. 2017;60(10):1071-7.
10. Rojanasakul A, Pattanaarun J, Sahakitrungruang C, Tantiphlachiva K. Total anal sphincter-saving technique for fistula-nano; the ligation of intersphincteric fistula tract. J Med Assoc Thai. 2007;90:581-586.
11. Ye F, Tang C, Wang D, Zheng S. Early experience with the modified approach of ligation of the intersphincteric fistula tract for high transsphincteric fistula. World J Surg. 2015;39:1059-1065.
12. Base AK, Shinde AM. A comparative study of fistulotomy and fistulectomy in management of simple fistula in ano. Int Surg J 2018;5:3704-6.
13. Arunraj P, Viswanathan MS, Anbazhagan R, Singh K. A prospective interventional study of postoperative pain, healing rates and incontinence rates following ligation of intersphincteric fistula tract procedure. Int Surg J. 2018;5:3976-81.
14. Goudar BV, Dakhani NM. A comparative study of ligation of intersphincteric fistula tract versus conventional fistulectomy in management of low fistula in ano: a randomized control trial. Int Surg J. 2021;8:261-6.
15. Pallavi V Ayyar, Satish B Dharap. Does Treatment of Fistula-in-Ano by Ligation of Intersphincteric Fistula Tract Offer any Advantage over Standard Fistulectomy or Fistulotomy? Journal of Clinical and Diagnostic Research. 2018 Dec;12(12):PC01-PC04.
16. Sirikurnpiboon S, Awapittaya B, Jivapaisarnpong P. Ligation of intersphincteric fistula tract and its modification: Results from treatment of complex fistula. World Journal of Gastrointestinal Surgery. 2013;5(4):123-28.
17. Bleier JI, Moloo H. Current management of cryptoglandular fistula-in-ano. World Journal of Gastroenterology: WJG. 2011;17(28):3286-91.