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Original research article

An observational study on management of fistula in ano by LIFT technique-ligation of intersphincteric fistulous tract

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Abstract

LIFT technique is the novel modified approach to overcome the complications in which ligation is done through the intersphincteric plane for the treatment of fistula in-ano, known as LIFT (ligation of intersphincteric fistula tract) procedure. LIFT procedure is based on secure closure of the internal opening and removal of infected cryptoglandular tissue through the intersphincteric approach. 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. This study includes 100 patients admitted in the Department of General Surgery, Govt. Rajiv Gandhi General Hospital during the period of December 2020 to November 2021 with Fistula in ano. The patients admitted with Fistula in ano who satisfy the inclusion criteria are selected for the study.100 patients underwent LIFT techniques as the surgical management for fistula in ano.Among 100 operated cases 18% had intraoperative complications and 19% had postoperative bleeding. Patients were followed up among which 12 patients lost follow up out of which 20.5% of patients had wound infection, 21.6% patients had flatus incontinence, 12.5% patients had fecal incontinence and success rate was about 85.2%.This observational study indicates that ligation of intersphincteric fistulous tract is a feasible modality of treatment for fistula in ano with better healing rate,low incontinence and recurrence rates.

Keywords: LIFT procedure, cryptoglandular tissue, fistula in ano

Introduction

Fistulae-in-ano form a good majority of treatable benign lesions of the rectum and anal canal. 90% of these cases are end results of crypto glandular infections. As such, the vast majority of these infections are acute and significant minority is contributed by chronic, low-grade infections, hence pointing to varying aetiologies. The common pathogenesis however is the bursting open of an acute or inadequately treated ano-rectal abscess into the peri-anal skin. Most of these fistulae are easy to diagnose with a good source of light, a proctoscope, and a meticulous digital rectal examination[1]. Despite the easy of diagnosis, establishing a cure is problematic surgery causes complications mainly of incontinence and recurrence.

The ligation of intersphincteric tract (LIFT) procedure is a sphincter-saving procedure associated with success rates ranging from 40 to 94%[2]. The aim is to study the favorable postoperative outcome of LIFT technique in management of fistula in ano and to determine the efficacy of LIFT technique to assess the quality oflife,Intraoperativecomplications,postoperativebleeding,hospitalstay,time taken for wound healing, complications like wound infections,flatus and fecal incontinence and recurrence rate.

Materials and Methods

This is a hospital based observational study, which includes 100 patients admitted in the Department of General Surgery, Govt. Rajiv Gandhi General Hospital during the period of December 2020 to November 2021 with Fistula in ano. The patients admitted with Fistula in ano who satisfy the inclusion criteria

1. Patient presenting with symptoms and clinical examination suggestive of fistula in ano.
2. Patients with radiological evidence of fistula in ano.
3. Mature fistula.
4. High fistula with well-formed tracts) are selected for the study.

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In all cases, bowel preparation in the form of enema was given on the prior day of surgery. Preoperatively all patients received Inj. Ceftriaxone 1 gm I.Vstat. All patients were operated under spinal anaesthesia.

Surgical techniques of LIFT Procedure

1. Identifying the internal opening.
2. Incision at the intersphincteric groove.
3. Dissection through intersphincteric plane and identify intersphincteric fistula tract.
4. Secure ligation of intersphincteric fistula tract.
5. Remove the fistula tract.
6. Curette fistula tract from external opening.

Postoperatively all patients received Inj. Ceftriaxone 1 gm i.v bd and Inj. Metronidazole 500 mg i.v tds, as antibiotics. All patient received analgesics. Patients were observed for immediate post-operative complications operative wound infection and late post-operative complications like anal incontinence and recurrence. Data of each patient was collected. The patients were followed up. Patients who did not turn up for follow up were asked to notify the development of any wound complication.

Statistical analysis

The data was entered in MS Excel and SPSS software version 25was usedto describe about the data descriptive statistics frequency analysis, percentage analysis were used for categorical variables and the mean & S.D were used for continuous variables.

Results

This hospital based observational study was carried out to determine the age and sex distribution of fistula in ano along with associated co morbidities, including the frequency of low or high Anal fistula and simple or complex fistula and their intraoperative complications by ligation of intersphincteric fistulous tract and its postoperative outcome in terms of bleeding, post-operative hospital stay, number of weeks to heal, wound infection, flatus and fecal incontinence and it's recurrence rates.

Patient presenting with fistula in ano were presented with different age groups from 30 to 70 years out of which maximum of about 28.4% were found to be in the age of 5th decade. Both male and female sex found to have an almost equal distribution in our study. Among 100 patients 63% did not have co morbidities and about 20% of the patient were found to have Type 2 Diabetes mellitus on treatment. Maximum number of patients had Low perianal fistulas in comparison with high Anal fistulas involving of about 65% of patients and most patients had simple than complex fistulas involving of about 66% among the total patient.

Table1: Outcome distribution among the study participants

S.No.	Variable		Frequency	Percentage
1.	Intraoperative complication	Present	18	18
		Absent	82	82
2.	Postoperative Bleeding	Present	19	19
		Absent	81	81
3.	Wound Infection(12 patients lost follow up)	Present	18	20.5
		Absent	70	79.5
4.	Flatus incontinence(12 patients lost follow up)	Present	19	21.6
		Absent	69	78.4
5.	Fecal incontinence(12 patients lost follow up)	Present	11	12.5
		Absent	77	87.5
6.	Recurrence(12 patients lost follow up)	Present	13	14.8
		Absent	75	85.2

100 patients underwent LIFT technique-ligation of interspincteric fistulous tract as the surgical management for fistula in ano. Among 100 operated cases 18% intraoperative complications and 19% had postoperative bleeding. Patients were followed up among which 12 patients lost follow up out of which 20.5% of patients had wound infection, 21.6% patients had flatus incontinence, 12.5% patients had fecal incontinence and recurrence rate was about 14.8%.

This prospective study indicates that ligation of intersphincteric fistulous tract is a feasible modality of treatment for fistula in ano with better healing rate, low incontinence and recurrence rates.

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Table 2: Clinical Profile of Study participants*

	Minimum	Maximum	Mean	SD
Postoperative Hospital Stay(in Days)	1.0	10.0	3.14	1.83
Wound Healing (weeks)	4.0	10.0	6.39	1.58

*N=88

Discussion

Among the 100 study participants of our study the mean age in was 52.25 +/-12.4yrs, while in Vander *et al.*[21] study it was 40yrs and in RParthasarathy *et al.*[24] it was 43+/-12.8yrs. The sex distribution in our study was more or less same i.e. male 48.9%and female 51.1%. In a study done by Banu[1] in Karnataka had a sex distribution of male predominance i.e. male 80% and females 20%.

In our study the success rate was 85.2%, while in a study done at Coimbatore by RParthasarathy *et al.*[24] was 94%. In a study by Vander *et al.*[21] the success rate was 75%. In a systematic review by Murugesan *et al.*[2] had a success rate ranging from 40-94.4%. The mean postoperative stay was 3.14days in our study while in R.Parthasarathy *et al.*[24] it was 2.4 days.

The LIFT procedure was initially published ROJANASAKUL *et al.*[22] from Thailand. The main objectives of this procedure is to identify the internal opening, removal of the intersphincteric sepsis and suturing of the external anal sphincteric defect. In this procedure the intersphincteric space is entered and the fistulous tract is carefully ligated close to the internal opening. The internal opening is excised by using a linear stapler and the defect is closed by mucosal advancement. The fistulous tract is thoroughly debrided in the intersphincteric plane upto to the external opening. The defect in the external anal sphincter is sutured in order to prevent incontinence.

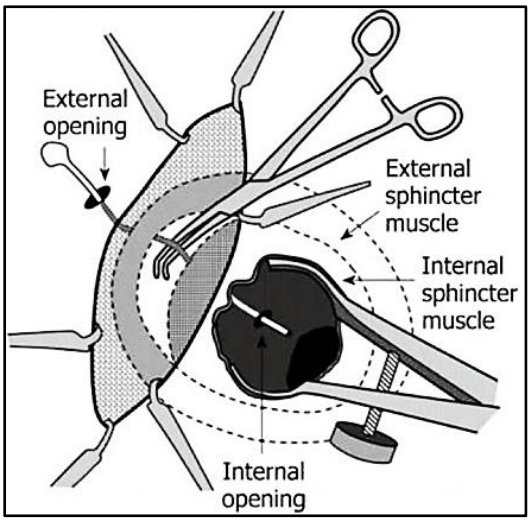

Fig 1: Shows LIFT procedure

This procedure prevents the entry of fecael material into the fistulous tract thus avoiding the nidus for further sepsis in the intersphincteric space.The advantages of LIFT is that there less chance of incontinence because the external anal sphincter is preserved. LIFT technique also has less postoperative pain and failure rate, with healing rate ranges from 40 to 90%.When the LIFT procedure fails to completely heal the fistula, it will downstage the initial transsphincteric fistula to either an intersphincteric fistula or sinus. This medialisation of the external opening to the intersphincteric space facilitates subsequent easier management. Such intersphincteric sinuses can be treated by applying silver nitrate whereas the intersphincteric fistula can be managed by fistulotomy. This procedure is based on secure closure of the internal opening and removal of infected cryptoglandular tissue through the intersphincteric approach.

Ellis introduced BioLIFT procedure[23], using bioprosthetic graft derived from submucosa of porcine small intestine. BioLIFT technique is a variation of the LIFT technique in which a bioprosthetic is kept in the intersphincteric plane which helps in reinforcing the closure of the fistulous tract. The bioprosthetic graft acts as a physical barrier in the intersphincteric plane and facilitates healing process. The technique utilizes transection of the intersphincteric tract and closure of the fistula opening in the internal sphincter, instead of ligating the intersphincteric tract. When compared to the LIFT, this technique has two potential disadvantages. First, it requires extensive dissection in the intersphincteric space because the bioprosthetic graft must overlap the closure of the fistula tract by at least 1 to 2 cm in all dimensions. The second disadvantage is relatively high cost of the bioprosthetic materials, which makes its usage less.

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Conclusion

Perianal abscess and fistulas represent two stages of the same disease. The main etiology is cryptoglandular.The objectives of treatment are to achieve fistula healing, prevent recurrences and maintain continence.

The LIFT procedure involves the following principles:

1. Identification of the internal opening.
2. Incisionat the intersphincteric groove.
3. Dissection of the intersphincteric space.
4. Identification of the intersphincteric fistula tract.
5. Securing ligation and excision of the intersphincteric tract.
6. Confirming the removal of correct fistulous tract.
7. Opening and curetting the external opening.
8. Closure of the intersphincteric wound.

This study indicates that the LIFT procedure is a feasible and effective surgical technique, with low impact on fecal continence. Its main indication is for transsphincteric fistulas in patients without previous surgery and with short fistula tracts.

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