

# Rate of Recurrence after Ligation of Intersphincteric Tract (LIFT) or Fistulectomy for Complex Fistula-In-Ano with Assessment of Quality of Life - A Single Centre Prospective Observational Study

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**Abstract:** *Complex fistula in ano is a complex disorder whose management requires surgical expertise and has tremendous effect on quality of life of the patients. There are various surgical modalities available for its management among which Ligation of intersphincteric tract (LIFT) and fistulectomy are two most commonly performed procedures. We performed 35 of such procedures over period of 1 year and followed up patients for rate of recurrence and change in quality of life. In our study, Recurrence rate detected after end of 6 months were 21.4% for LIFT and 19% for fistulectomy respectively. There was significant improvement in quality of life ( $p < 0.05$ ) after the surgery based on applied EQ5D5L questionnaire.*

**Keywords:** complex fistula in ano, ligation of intersphincteric tract, fistulectomy, quality of life

## 1. Introduction

A Fistula in Ano is a chronic abnormal communication which run outward from anorectal lumen(internal opening) to an external opening on the skin of perineum or buttock usually lined to some degree by granulation tissue.(1) Various surgical modalities exist for its management which includes fistulotomy, fistulectomy, endorectal advancement flap, anocutaneous flap, fibrin glue injection, anal fistula plug, seton drainage, ligation of the intersphincteric fistula tract (LIFT procedure), Transanal opening of intersphincteric space(TROPIS) etc. It is associated with post-surgical complications including anal incontinence and recurrence which is known to impact quality of life.(2)Even after so much advancement in treatment of anorectal fistulas, there is no specific guidelines available to decide management for complex fistula in ano. Healing rate and recurrence rate varies according to surgeon's expertise and choice of procedure and complexity of fistula. A survey suggested lack of consensus regarding the optimal management strategy of patients with Anorectal fistula, demonstrating profound intra- and inter-procedural variations across the various geographic regions and participants' level of expertise. Geographic and demographic differences were found in both the diagnostic and therapeutic approaches to anal fistula.(3) About 80% considered fistulotomy as the gold standard treatment for simple fistulas. Endorectal advancement flap was performed using partial- (42%) or full-thickness (44%) flaps. Up to 38% of surgeons performed ligation of the intersphincteric fistula tract (LIFT) sometimes with technical variations. Another study suggested variation in 12-month clinical healing rates was observed: 55%, 64%, 75%, 53% and 42%

for fistula plug, cutting seton, fistulotomy, advancement flap and LIFT procedure, respectively.(4)A published meta analysis has suggested Overall success and recurrence rates were not significantly different between the endorectal advancement flap and LIFT procedure, but continence was better preserved after LIFT.(5)FIAT study (Fistula-in-ano Trial) from NHS (National Health Service) which is a randomised, prospective, multicentre clinical trial with 304 patients which suffered from transsphincteric anal fistula with involvement more than 33% of the sphincter complex compared anal fistula plug versus other commonly used surgical techniques. The results showed no differences in quality of life amongst the two groups in the 12-month follow-up. The healing rate was 54% in the fistula plug arm and 55% in the surgeon's preference arm.(6)Recurrence remains a major concern after complex fistula in ano repair. A recent meta-analysis showed recurrence rates after surgery for anal fistula ranging from 2.5% to 57.1% (5) Studies on quality of life related to anal incontinence following surgery are also limited and the authors could not find many prospective studies which had compared preoperative and postoperative quality of life related to anal incontinence post complex fistula in ano repair. Therefore, this study is aimed to compare LIFT with fistulectomy with regards to recurrence rate and also objectively assess the impact of operative treatment on quality of life in COMPLEX fistula-in-ano.

## 2. Methodology

The study was initiated after approval from the Institutional Ethics Committee (IEC).Patients diagnosed with complex anal fistula according to definition and ready to undergo

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surgery were included in the Age group of 18-60 years. complex anal fistula was defined as those with more than 30% muscle involvement, anterior fistulas in female patients, recurrent fistulas or those associated with preexisting fecal incontinence. (4) patients not willing to take part in the study or any patient having complex fistula in ano with underlying systemic disease like chrohn's disease and colorectal cancer were excluded. All consecutive patients satisfying inclusion criteria for complex fistula for a period

of 1 year from April 2021 to April 2022 were included. Patients underwent surgery for complex fistula in ano depending upon their complexity and surgeons preference. Post operative follow up for recurrence and Quality of life at 6 months was done using EQ5D5L questionnaire. Approval for the use of questionnaire was obtained from EuroQoL organization and was availed in vernacular languages

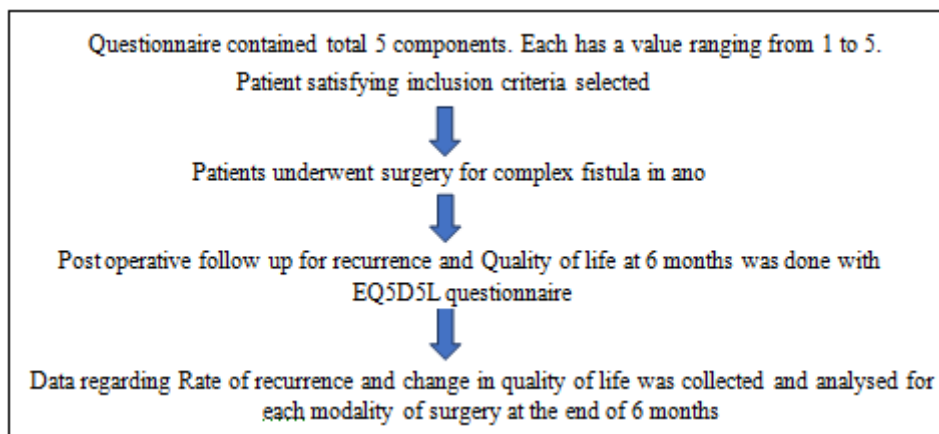


Figure 1: Methodology

**Data Analysis and Interpretation:**

Data was entered into Microsoft Excel (Windows 7; Version 2007) and analyses were done using the Statistical Package for Social Sciences (SPSS) for Windows software (version 26.0; SPSS Inc, Chicago. paired t test was used to compare mean of quantitative variable of quality of life. Bar charts and Pie charts were used for visual representation of the analysed data. Level of significance was set at 0.05.

**3. Results**

Total 35 patients were included in the study. Among which 30 patients were male while 5 patients were female.

All patients (n=35) predominantly presented with complain of pain, while 32 patients (91.4%) Patients presented with complain of purulent discharge. Average duration of symptoms was 7.1(3-17) months.

21 patients underwent fistulectomy while 14 patients underwent ligation of intersphincteric tract (lift) for the complex fistula in ano. Patient were followed up till 6 months of surgery and examined for recurrence.

Patients were also assessed with the help of questionnaire EQ5D5L to assess the quality of life and change in quality of life after surgery.

Patients were followed up till 6 months duration.

Total 7 patients had developed recurrence of fistula as shown in the table. rate of recurrence was found to be for ligation of intersphincteric tract(lift) is 21.4% while Rate of recurrence of fistulectomy was 19%.

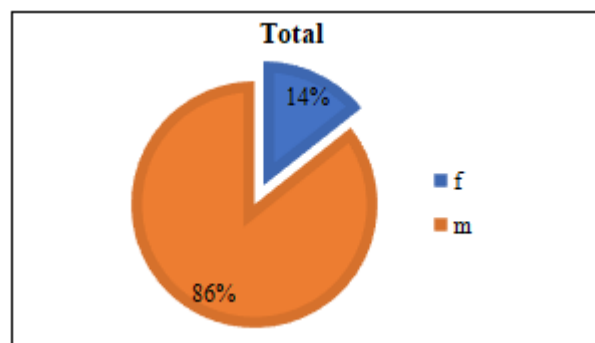


Figure 2: Gender Distribution

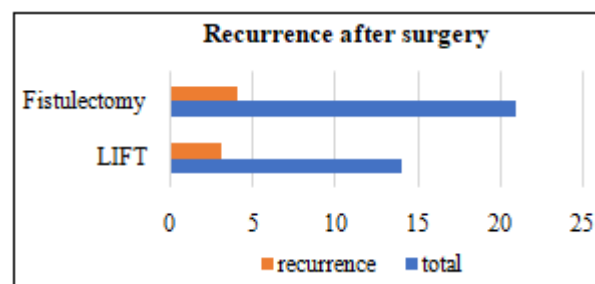


Figure 3: Rate or recurrence after surgery

EQ5D5L questionnaire was used to assess change in quality of life before and after surgery for these patients. Questionnaire contained total 5 components. Each has a value ranging from 1 to 5. The questionnaire assigns a particular value to each dataset entered for each of its 5 subheadings and thus each patient was assigned a unique individual value which was entered in the index value calculator provided by EuroQoL organization which provided with the mean value for each of the subject. Same process was repeated at the end of 6 months and the mean value of QOL was compared using paired t test. These values were then analyzed with the help of paired t test with

confidence interval of 95% leading to p-value of 0.005 quality of life. which is less than 0.05 suggesting significant change in

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	preop	.72623	35	.097967	.016559
	Post op	.77869	35	.075858	.012822

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	preop & post op	35	.309	.071

Calculation of significance									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	preop – post op	-.052457	.103737	.017535	-.088092	-.016822	-2.992	34	.005

Table 1, 2, 3: paired t test for comparison of quality of life with EQ5D5L questionnaire

#### 4. Discussion

Perianal fistula is a disorder that has been documented since 400 bc by hippocrates (7) Various surgical modalities have come into practice for management of both simple and complex perianal fistulas.

No surgical society guidelines have published algorithm for the management of complex fistula. Few authors(8) have devised their algorithm based on their surgical practice and available data. Different surgical methods exist which all have are associated with complications among which most important are recurrence and incontinence which has significant effect on quality of life of the patients.

In present study, two commonly performed surgeries for complex fistula, i. e. fistulectomy and ligation of intersphincteric tract (LIFT) were performed over the period of 12 months and patients were followed up.

All patients had presented with predominant complaint of pain and 32(91.4%) patients has presented with purulent discharge which is also reflected on EQ5D5L scoring system’s pain/discomfort component with average duration of symptoms is around 7.1 months.

Pain and associated discomfort are two most important factors leading patient to seek treatment and surgery has helped in reducing the symptoms as assessed by the the improvement in the pain component of EQ5D5L scoring.

In the current observational study, patients were followed up after the surgery for 6 months. Choice of surgery was predominantly decided by the operating surgeon and experience. Since it was an observational study, patients were not matched for various factors to compare recurrence which includes age, gender, co-morbidities etc. 21 patients underwent fistulectomy while 14 patients underwent LIFT.

Recurrence rate detected after end of 6 months were 21.4% for LIFT and 19% for fistulectomy. Based on the mushaya et al.(9) and other metaanalysis studies (10) (11), the noted recurrence rate for LIFT is 16%(9)and Rate of recurrence for

fistulectomy is noted to be 5-29%.(12) which are comparable with the present study.

LIFT has become a commonly performed procedure, with healing rates that range from 40 to 95%.(13)(14) among which, some case series have low rates of minor complications, without reports of any major complications.(15) Median follow-up in these studies ranged from 6 to 78 weeks, with a median healing time of 8 weeks (range: 2–24), with recurrences typically occurring 2 to 8 months post procedure.(15)(10) Functional outcomes after LIFT have been excellent, with minimal reported disturbances in fecal continence. Wexner Fecal Incontinence Scores do not appear to be affected by LIFT (median: 0–1), (10) and anorectal manometry also shows no significant change after LIFT.(10)

Bakhtawar N et al(16) has identified few factors which are associated with increase chances of recurrence which includes the complexity of tract and missed tracts, not doing mri pre-operatively, experience of operating surgeons, choice of surgery among the rest Surgeons performing the surgeries were not matched in the observational study. Post op follow up with EQ5D5L questionnaire for change in quality of life was used since easy accessibility, availability in vernacular languages and ease of administration. The change in scoring after surgery was significant with p value of <0.05. however, available literature for the recurrence has longer follow up period(17).

#### 5. Conclusion

Complex fistula in ano is a disorder which requires adequate pre-operative workup, assistance from radiological investigations, and experience of the surgeon to decide plan of management. Patient needs to be explained regarding various available methods of surgeries and complications associated with it. Surgical management is mainstay of treatment since it helps in improving quality of life. Regular follow up is essential for detecting the complications early.

## 6. Limitations

Since it was an observational, single centre study, predominantly only two types of surgeries were performed and observed. It was also limited by the duration of follow up of only 6 months. patient factors and surgeon factors were not matched to compare two surgeries. Further randomized studies with larger sample size and longer follow up period are advisable.

## Future Scope

Similar studies can help guide developing guidelines and design training program for management of complex fistula in ano since it is a commonly prevalent chronic complex condition requiring surgical expertise for its management and has significant effect in improving patient's quality of life.

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Annexure 1

**EQ5D5L Questionnaire:**

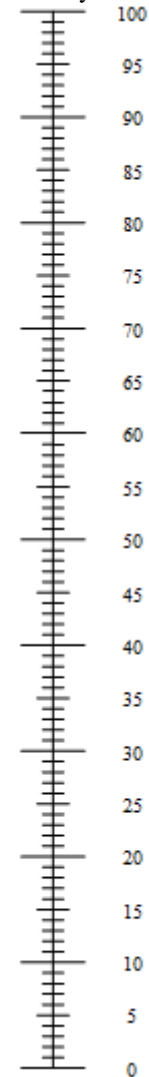
Under each heading, please tick the ONE box that best describes your health TODAY.	
<b>MOBILITY</b>	
I have no problems in walking about	<input type="checkbox"/>
I have slight problems in walking about	<input type="checkbox"/>
I have moderate problems in walking about	<input type="checkbox"/>
I have severe problems in walking about	<input type="checkbox"/>
I am unable to walk about	<input type="checkbox"/>
<b>SELF-CARE</b>	
I have no problems in bathing or dressing myself	<input type="checkbox"/>
I have slight problems in bathing or dressing myself	<input type="checkbox"/>
I have moderate problems in bathing or dressing myself	<input type="checkbox"/>
I have severe problems in bathing or dressing myself	<input type="checkbox"/>
I am unable to bathe or dress myself	<input type="checkbox"/>
<b>USUAL ACTIVITIES (e.g. work, study, housework, family or leisure activities)</b>	
I have no problems doing my usual activities	<input type="checkbox"/>
I have slight problems doing my usual activities	<input type="checkbox"/>
I have moderate problems doing my usual activities	<input type="checkbox"/>
I have severe problems doing my usual activities	<input type="checkbox"/>
I am unable to do my usual activities	<input type="checkbox"/>
<b>PAIN / DISCOMFORT</b>	
I have no pain or discomfort	<input type="checkbox"/>
I have slight pain or discomfort	<input type="checkbox"/>
I have moderate pain or discomfort	<input type="checkbox"/>
I have severe pain or discomfort	<input type="checkbox"/>
I have extreme pain or discomfort	<input type="checkbox"/>
<b>ANXIETY / DEPRESSION</b>	
I am not anxious or depressed	<input type="checkbox"/>
I am slightly anxious or depressed	<input type="checkbox"/>
I am moderately anxious or depressed	<input type="checkbox"/>
I am severely anxious or depressed	<input type="checkbox"/>
I am extremely anxious or depressed	<input type="checkbox"/>

- We would like to know how good or bad your health is TODAY.
- This scale is numbered from 0 to 100.
- 100 means the best health you can imagine. 0 means the worst health you can imagine.
- Mark an X on the scale to indicate how your health is TODAY.

- Now, please write the number you marked on the scale in the box below.

YOUR HEALTH TODAY = \_\_\_\_\_

The best health you can imagine



The worst health you can imagine