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General Surgery

# CLINICAL STUDY OF FISTULA IN ANO WITH OUTCOME AND COMPLICATIONS OF VARIOUS FISTULA SURGERIES IN TERTIARY CARE CENTER IN NORTH INDIA

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**ABSTRACT** **Background** Fistula in ano is a common problem in the general population. The incidence of perianal fistula in men and women is 12.3 per 100,000 and 5.6 per 100,000, respectively. Fistula-in-ano is treated using traditional techniques such as fistulotomy, fistulectomy, and seton placement. Fistula Tract Laser Closure (FILAC), Ligation of Intersphincteric Fistula Tract (LIFT), and Video Assisted Anal Fistula Treatment are all newer procedures (VAAFT). **Aims:** To compare the outcome in terms of post-operative pain, wound healing, rectal/anal incontinence and recurrence rate in different types of fistula-in-ano surgery. **Study Design:** Open randomised controlled comparative prospective study. **Method:** The study was conducted on the patients that attended the OPD and were admitted for surgery for fistula in ano. The patients were selected for surgery based on clinical and radiographic evaluation showing the fistula in ano. **Conclusion:** We concluded from our study that FILAC and LIFT for fistula in ano is better in terms of less recovery time, healing time, and healing rate, and very few chances of incontinence and recurrence in comparison to fistulectomy and fistulotomy.

**KEYWORDS :** FISTULA-IN-ANO , FILAC, LIFT,VAFFT

## INTRODUCTION

Anal fistula, or fistula-in-ano, is an abnormal connection between the epithelialised surface of the anal canal and (usually) the perianal skin. Crypto glandular infection is responsible for causing almost 90% of all anal fistulas.

Anal fistulas per se do not generally cause harm, but can be very painful and can be irritating because of the pus-drain (it is also possible for formed stools to be passed through the fistula). Additionally, recurrent abscesses may lead to significant short-term morbidity from pain and create a nidus for systemic spread of infection.

The foundation of proper management of fistula in ano is based on an accurate diagnosis. Physical findings are the mainstay of the diagnosis. A digital rectal examination may reveal a fibrous tract underneath the skin. Anoscopy is usually required to recognise the internal opening. Proctoscopy is also an indication in the case of rectal disease (like Crohn's disease or other associated conditions). However, recurrent and complex fistulas may need imaging for a proper preoperative assessment. Magnetic resonance imaging (MRI) is the investigation of choice because it is a well-tolerated, noninvasive, painless, and accurate diagnostic modality that accurately predicts the tract-course, outlines all hidden tracts, and defines the fistula's relationship to the anal sphincter. The MRI-based classification, the St James's University Hospital classification, consists of five grades and relates the Parks surgical classification to anatomy seen on MRI in both axial and coronal planes.

Fistula-in-ano is treated using traditional techniques such as fistulotomy, fistulectomy, and seton placement. Fistula Tract Laser Closure (FILAC), Ligation of Intersphincteric Fistula Tract (LIFT), and Video Assisted Anal Fistula Treatment are all newer procedures (VAAFT). The fistula plug and fibrin glue, as well as the mucosal advancement flap, are two further options.

AIM AND OBJECTIVES - To compare the outcome in terms of post operative pain ,wound healing , rectal/anal incontinence and recurrence rate in different types of fistula- in- ano surgery Timeframe: January 2020 to June 2021

**STUDY DESIGN-** Open randomised controlled comparative study The sample size 150.

**Selection criteria:** Patients are included and excluded in the study as per the following criteria:

**Inclusion criteria-**

- A patient with intersphinctric and transphinctric fistula.
- Age greater than 12 years
- Patient provides written informed consent for fistula surgery and is aware of alternative procedures.

## METHOD AND MATERIAL-

**Exclusion criteria-**

- Horseshoe shaped, extrasphinctric, suprasphinctric fistula in ano.
- Pregnant women
- Patients with ano fistulas who also have HIV,Tuberculosis, IBD, Ca rectum, and other conditions.

## RESULTS AND DISCUSSION -

A total of 150 patients were included in the study, of which 3 patients were excluded because of missing follow-up. So, we included 147 patients in our study. There were 73% (n = 108) males and 27% (n = 39) females, whose mean age was 41.01+/-12.35, with a range of 20-70 years. Mainly Based on the MR fistulogram, intraoperative findings, clinical findings, and other investigations, the classification of type of fistula revealed that 66 patients had transphincteric fistula and 81 had intersphincteric fistula, as shown in the table.There was a male preponderance in our study with a ratio of 2.76:1. The study excluded patients with any previous illness or prior fistula operations.

**TABLE NO 1.**
**PATIENTS DEMOGRAPHIC DATA ( SEX AND TYPE OF FISTULA SURGERY)-**

| | MALE | FEMALE | | |
|---|---|---|---|---|
| Patients average age ( years) | 40.24+/-12.25 | 41.78+/-12.28 | 41.01+/-12.35 | |
| PROCEDURE | FISTULOTOMY | 14 | 8 | 22 |
| | FILAC | 28 | 15 | 43 |
| | LIFT | 14 | 5 | 19 |
| | FISTULECTOMY | 52 | 11 | 63 |
| TOTAL | 108 | 39 | 147 | |
| PERCENTAGE | 73.46% | 26.54% | | |

ARSHAD AHMAD et al. (2017) (98), who included 110 patients, 83 (75.45%) of whom were male and 27 (24.54%) of whom were female, inspired our study. Men under the age of 60 have been proven to be the

most affected by the condition and to have few comorbidities. According to Fabiano Roberto Fugita (75), there were more patients under the age of 60 (93.2 percent; n = 137) than over the age of 60 (6.8 percent; n = 10).JW Kim et al. reported that in Korea, the male-to-female ratio was 4.6:1. Anal fistulas were most common in individuals in their third or fourth decades of life, and they were rare after the age of 60. Both SIRIKURNPIBOON S et al. (79) and SEOW-CHOEN et al. (23) studies support our findings, with a mean age for fistula of 40.78+/-11.84, a male: female ratio of 3:1, and a male preponderance with a male: female ratio ranging from 2:1 to 7:1, and an age distribution more commonly seen in the third and fifth decades. After the age of 60 years, anal fistulas were rare. Irfan Parvez Qureshi et al. (2018) (102) found that 56.81 percent of patients were between the ages of 31 and 60, while 34.09 percent were between the ages of 11 and 30. Only 9.09 percent of those admitted to the hospital were over the age of 60.The patients were 81.81 percent male and 18.18 percent female, resulting in a 4.5:1 ratio.

**TABLE NO 2. TYPE OF FISTULA AND DISTRIBUTION PATIENTS -**

| Type of fistula | No of patient | Percentage (%) |
|---|---|---|
| Intersphrintric | 81 | 55.12 |
| Transsphrintric | 66 | 44.88 |

According to Saadeldin Ahmed Idris et al. (2015), the rate of intersphincteric fistulae in their study was 75.5 percent. In addition, 35.198 percent of fistulas are transphincteric , 2.8 percent are extrasphincteric, and 1.9 percent are suprasphincteric. In research by Marks and Ritchie et al.fistulas were classified as superficial (16%), intersphincteric (54%), transsphincteric (21%), suprasphincteric (3%), extrasphincteric (3%), numerous, or unclassified in 793 individuals (3 percent). In our study, however, intersphincteric accounted for 55.12% and transsphincteric accounted for 44.8%. This discrepancy could be explained by the fact that our study included a small number of patients (147), as well as the highly selected participants in our series, since we excluded patients with comorbidities.

**CLINICAL PRESENTATION-**

**TABLE NO 3. DISTRIBUTION OF THE PATIENTS ACCORDING TO THE CLINICAL PRESENTATION-**

| Serial no. | Clinical presentation | No.of cases | PERCENTAGE(%) |
|---|---|---|---|
| 1 | Discharge | 147 | 100 |
| 2 | Perianal itching | 74 | 50.34 |
| 3 | Pain | 108 | 73.46 |
| 4 | External opening | 147 | 100 |
| 5 | Internal opening | 102 | 69.3 |

In our study, all 147 patients were discharged via external opening, while 50.34 percent had perianal itching, 73.46 percent had discomfort during defecation, and roughly 69.3 percent were discharged via internal opening.There was no evidence of soiling or incontinence in any of the patients. Shruti Yadu et al. (2018) also claimed that 74 percent of patients had perianal discharge and 66 percent of patients had perianal pain, which supports our findings. Discharge through an exterior aperture was the most typical method of presentation. Clinico-Pathological Study of Fistula-in-ano, Veerendra Kumar et al. (2015) (103).External openings are present in all cases, internal openings are present in 42 (84 percent) of patients, and edoema is present in 22 (44%). Irfan Parvez Qureshi et al. (2018) (102) found that key clinical characteristics such as perianal discharge, pain, edoema, and peri-anal irritation were seen in 75 percent, 65.91 percent, 43.18 percent, and 11.36 percent of patients, respectively. Almost all of the cases had doors that could be opened from the outside. The most prevalent type of fistula in ano was one with only one external orifice. Anal pain was reported by 52% of patients, followed by recurring perianal edoema (44%), bleeding (8%), and pruritus (68%).

**TABLE NO 4. OUTCOME OF VARIOUS PROCEDURES -**

| | LIFT | FISTULOTOMY | FILAC | FISTULECTOMY |
|---|---|---|---|---|
| Pain on VAS Score( after 48hrs) | 3.05+/-1.22 | 4.0+/-1.57 | 3.06+/-1.16 | 5.42+/-1.82 |
| MEAN HEALING TIME (in weeks ) | 7.5+/-2.68 | 7.88+/-2.17 | 5.804+/-1.939 | 8.444+/-3.075 |
| Mean length of hospital stay (days) | 2.1+/-1.2 | 4.3+/-2 | 1.8+/-.59 | 3.03+/-2.05 |
| MEAN DAYS RESUMED TO NORMAL ACTIVITY | 20+/-4.59 | 21.5+/-5.49 | 13.83+/-5.99 | 22.26+/-7.01 |

**TABLE NO 5. COMPLICATIONS OF VARIOUS PROCEDURES -**

| | HEALING PERCENTAGE (%) | RECURRENCE (%) | POST OP INCONTINENECE | EARLY INCONTINANC (6 WEEK) | LATE INCONTINANCE (12 WEEKS) |
|---|---|---|---|---|---|
| LIFT | 89.47 | 11.76 | 10.52 | 10.52% | 0.00% |
| FIATULOTOMY | 86.36 | 15.78 | 9.09 | 27.27% | 22.72%) |
| FILAC | 95.34 | 4.87 | 6.97 | 4.65%) | 0(0.00%) |
| FISTULECTOMY | 85.71 | 7.40 | 21.15 | 19.05% | 9(14.28%) |

According to VAS (VISUAL ANALOGUE SCALE), we detected post-operative discomfort in our patients 48 hours after surgery. The mean VAS score for pain after LIFT is 3.05+/-1.22, fistulotomy is 4.0+/-1.57, FILAC is 3.06+/-1.16, and fistulectomy is 5.42+/1.82, which is very similar to previous studies by P. Meinero and L. Mori (2011), who stated that pain control in the VAAFT procedure was based on a VAS score of 4.5 (on a scale of 1–10) during the None Twenty-one patients (21.4%) did not require analgesics, but 49 patients (50%) required Ketorolac trimetamine on postoperative day one, 20 (20.4%) for three to four days, and only 8 (8.2%) for a week. According to Ramachandra M. L., Mayank, Garg et al., 5 (25%) of patients receiving fistulectomy have post-operative pain.

In our study, the healing rate for FILAC was 95.34 percent at 6 weeks, compared to 89.47 percent for LIFT, 86.36 percent for fistulotomy, and 86.36 percent for fistulectomy (85.71 percent). According to Sanjeev Singh Yadav et al. (2019), laser surgery for fistula closure resulted in primary tract healing in 93 percent of patients. The FILAC procedure, according to Alexander L. Pérez de Carvalo et al. (2017), successfully closes fistula tracts in 71–82 percent of patients. The FILAC procedure, according to Giamundo P. et al. (2015), was successful in closing fistula tracts in 71.1 percent of patients.This variation could be the result of a well-chosen group of people.

In our study, patients treated with LIFT for fistula in ano had an 89.47 percent healing rate, which is consistent with the findings of Hall JF et al. (2014) (85) who found that cases treated with the LIFT Technique had an 84 percent healing rate at three months. Rojanasakul et al. (2007) reported that 94.4 percent of LIFT patients recovered.The average in both investigations was very similar to ours. According to ARSHAD AHMAD et al. (2017), at 12 weeks, the LIFT Technique has a primary healing rate of 80.90 percent (98). Shanwani et al. [25] reported an 82.2 percent success rate in their other studies.

Caroline Sauter Dalbem et al. (2014) discovered that the average healing time for the LIFT technique ranged between 4 and 8 weeks. Ooi et al. and Shanwani et al. reported mean healing times of 6 and 5 weeks, respectively, but our findings differ slightly from these studies. In comparison to LIFT surgeries, FILAC surgery has a shorter mean healing time of 5.804+/-1.939 (in weeks),Fistuotomy 7.88+/-2.17 (in weeks), and Fistulectomy 8.444+/-3.075 (in weeks), which was significant as the p value was less than 0.001.

As the quality of life after surgery is an important factor in determining the efficacy of any surgery, we measured the quality of life in the post-op period by observing the patient's hospital stay time, convalescence time, and continence status.

According to our study, the mean number of days hospitalised in FILAC is 1.8+/-0.59 days in comparison to LIFT (2.1+/-1.2 days), fistulectomy (3.03+/-2.05 days) and fistulotomy (4.3+/-2 days). M.L. Ramachandra, GARG, and Mayank (2018) stated that the mean hospital stay is maximum in fistulectomy, which is 8.5 days, followed by 7.6 days in fistulotomy, and 3 days in LIFT. Overall, it also shows that FILAC and LIFT have fewer hospital stays in comparison to fistulotmy and fistulectomy.

In our study, we employed Wexner's score to determine continence status, and we followed patients in the post-operative period at 1 week, 6 weeks, 3 months, 6 months, and one year. In comparison to other procedures, fistulectomy patients had the most incontinence in the first week (21.5%), while filac patients had the least incontinence (6.97%). This is corroborated by the Bokhari S, Lindsey I. et al. (2009) study, which found that patients with fistulas who underwent sphincter division had a considerably higher rate of incontinence (13%) in the post-operative period than those who underwent sphincter conservation (0%).

In comparison to other operations, fistulotomy surgery caused the most early and late incontinence in our study. In support of this, GHULAM MURTAZA et al. (2017) found that when incontinence was compared between fistulotomy and fistulectomy, the incidence of incontinence was greater in fistulotomy. According to a study by Avishkar K. Bara et al., fistulotomy was associated with a higher frequency of incontinence than fistulectomy.No substantial change in continence was recorded by any patient in our study of the LIFT operation.

In every technique, we saw recurrence in healed wounds, with fistulotomy surgery having the highest recurrence and filac surgery having the lowest. Mayank et al. (2018) stated that recurrence was seen in 5 (25%) cases of fistulectomy, 3 (15%) patients in the LIFT operation, and 2 (10%) each in fistulotomy and setons, similar to previous research by L. Ramachandra, GARG. Recurrence was reported in 13.3% of patients performed by fistulectomy in Poon Chi-Ming et al.'s (135 patients), compared to 26% in the current study. Another study by Gulam Murtaza et al. (2017) evaluated the incidence of recurrence in fistulotomy vs. fistulectomy [3/42 (3.12%) vs. 4/42 (4.16%]].

In our study, out of 147 cases, 106 cases' biopsies were sent for histological evaluation. All fistula specimens sent in show a tract lined with chronic inflammatory cells and granulation tissue. Rao G.B. and Srivastava (91) observed that fistulas are lined by fibrous tissue that is infiltrated by chronic inflammatory cells and granulation tissue. In their study, 109 cases showed chronic nonspecific inflammatory pathology, 25 cases showed the presence of foci of neutrophilic abscess, and 17 had collections of foreign body types of giant cells. Umesh Jayarajah et al. (92) stated that among 215 patients who underwent evaluation for fistula-in-ano, eleven patients (5%) had histopathological evidence of a specific aetiology. As mentioned above, both the studies stated the significance of histopathology examination, but this is not of so much importance in our study as we have already excluded the patients with other secondaries (HI, tubercular disease, IBD, and CA Rectum).

## LIMITATIONS-

Every hospital-based study has some limitations, and the present study being undertaken is no exception to this fact. The limitations of the present study are mentioned below: -

- The patients taken up for the study were predominantly from northern India, in and around Uttar Pradesh. Therefore, the results of the present study may not be representative of the whole of the country or the world at large.

## CONCLUSION –

Anal fistula remains a common and complex disease process. The objectives for treatment of this disease are

- The successful elimination of current and recurrent diseases
- The preservation of sphincter function
- Improvement in quality of life

**Our study concludes that:**

In our study, the incidence of fistula in Ano is higher in males (73%), and the most common age group is between 30 and 50 years old, which comprises about 56% of the patients.

- The most common type of fistula belongs to the intersphincteric type (62.58%) with the following presenting symptoms: discharge from external opening & pain during defecation.
- Fistulectomy (42.8%) was the most common type of surgery performed in our study.
- Patients' healing rates were higher and mean healing time was less in FILAC compared to LIFT, fistulectomy, and fistulotomy. The recurrence rate was lowest in FILAC in comparison to other surgical groups.
- Quality of life in terms of hospital stay, return to normal work, incontinence rate, and postoperative pain was better in FILAC surgery in comparison to other surgery groups.
- We concluded from our study that FILAC and LIFT for fistula in ano is better in terms of less recovery time, healing time, and healing rate, and very few chances of incontinence and recurrence in comparison to fistuectomy and fistulotomy.

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