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## Fistulotomy or LIFT: Which has better outcome in management of intersphincteric and low transphincteric fistula-in-ano— A randomized prospective study

Dr. Rajiv Nandan Sahai

[drnsahai@gmail.com](mailto:drnsahai@gmail.com)

North Delhi Municipal Corporation Medical College and Hindu Rao Hospital, Delhi

### ABSTRACT

*Anal Fistula in ano is an abnormal connection between ano-rectum and the perianal skin. It is a common condition with a prevalence of 12 to 28/100,000 of population per year. There are many techniques to manage this condition. The aim of each surgery is to prevent recurrence and anal incontinence with early healing with decreased post-operative morbidity. LIFT and Fistulotomy are common types of surgery used in the management of Fistula in ano. This aim of this study is to compare the outcomes of the two procedures LIFT and Fistulotomy in cases of Intersphincteric and Low Trans-sphincteric fistulas primarily in term of healing, infection, recurrence and anal incontinence. This prospective study was carried out in the Department of Surgery at North Delhi Municipal Corporation Medical College and Hindu Rao Hospital, Delhi between April 2017 and November 2017. A total of 50 cases were taken up and assigned either procedure randomly. Patients with recurrent fistulas, complex fistulas, high fistulas, fistulas with more than one external openings and fistulas due to secondary causes (Koch's, Crohn's Malignancy, post-radiation) and those with systemic diseases such as diabetes, HIV, immunosuppressive conditions were excluded. The patients were followed up for maximum 12 months studying recurrence, incontinence and post-operative morbidity. Of 50 patients 45 were males and 5 females all presenting with a history of recurrent perianal discharge. All patients underwent clinical examination, digital fistulogram, trans anal USG (12 patients) and/or MR Fistulogram to assess the characteristics of the fistula. 22 patients underwent LIFT and 28 underwent Fistulotomy. 25 patients were followed up for 3 months and rest for 2 months. There was recurrence in 4 patients (3 in LIFT and one in fistulotomy), unhealed sinus in 10 patients (7 in LIFT and 3 in fistulotomy) which required re-surgery. No patients had incontinence and 15 patients (10 –LIFT and 5- Fistulotomy) had delayed healing (4 to 6 wks). Both LIFT and Fistulotomy are an effective treatment for fistula in ano.*

**Keywords**— *Fistulotomy, LIFT, Inter sphincteric fistula-in-ano, Low transphincteric fistula-in-ano, Recurrence, Delayed healing, Persistent sinus*

### 1. INTRODUCTION

Fistula in ano is a common condition seen in about 12 to 28 per 100,000 of population per year with a male to female ratio of 1.8:1<sup>2</sup>.

The condition is very distressing for the patient as it is a chronic condition, leads to social embarrassment, can be managed only surgically, is commonly recurrent with a history of multiple surgeries, requires multiple dressings with delayed healing and can result in embarrassing complications such as incontinence and soiling.<sup>3</sup>

Ligation of intersphincteric fistula tract (LIFT) is a novel procedure where the fistula tract is approached through the intersphincteric space. The internal opening is delineated and ligated, the infected granulomatous cryptoglandular tissue along with the lining of the rest of the fistulous tract is curreted out, the defect in the external sphincter muscle is repaired and finally, the external opening is excised and closed.

In Fistulotomy the tract is cannulated and laid open between internal and external opening cutting a portion of the sphincter.

All the surgical methods used for treating FIA can be divided into two types:

1. Sphincter sacrificing with or without immediate repair, have high healing rates but also a high incidence of post-operative incontinence
2. Sphincter saving methods have varying healing rates with almost no post-operative incontinence.

The many surgical techniques used in treating anal fistula can be divided into 2 groups: sphincter-sacrificing and sphincter-sparing methods. The sphincter-sacrificing techniques, with or without immediate repair, have a high healing rate but also a high post-operative incontinence rate, while the sphincter-sparing methods have varied healing rates but little or no resultant incontinence. The impairment of continence has an effect on quality of life, so the sphincter-sparing methods are now popular. There are a number of sphincter-sparing methods such as fibrin or cyanoacrylate glue injection<sup>4</sup>, anal fistula plug, endorectal muscular or mucosal advancement flap, core-out fistulectomy, radiofrequency ablation<sup>5</sup>, ayurvedic seton<sup>6</sup>, ligation of intersphincteric fistula tract (LIFT)<sup>7,8</sup>, and finally, video-assisted anal fistula treatment (VAAFT)<sup>9</sup>. Most sphincter sparing methods are complicated procedures which require an expert surgeon or high technology equipment. Even then these procedures have a risk of incontinence and recurrence. The LIFT procedure was presented by procedure was developed by Thai colorectal surgeon, Arun Rojanasakul, Colorectal Division Department of Surgery, Chulalongkorn University in Bangkok, Thailand et al<sup>7,10</sup> with a healing rate of 94%. This procedure was a simple, safe, minimally-invasive technique. It was also effective, with a high and rapid healing rate without any resultant incontinence. However, later reports showed healing rates varying between 57% and 83%<sup>10</sup>. The treatment failure or recurrence might have been related to inadequate management of sources of infection or remnant fistula tract as proposed by Rojanasakul et al.<sup>8</sup>

Fistulotomy procedure is easy to perform and has a Fistulotomy is an effective treatment for simple anal fistula that results in healing in over 90% of patients.<sup>11,12,13</sup> Fistulotomy failures have been associated with complex types of fistula, failure to identify the internal opening, and Crohn's disease.<sup>14,15</sup>

When fistulotomy is used for simple (low) anal fistula, in properly selected patients, the risk of fecal incontinence is minimal or none. On the contrary, earlier, large retrospective studies reported some degree of fecal incontinence (mainly soiling and flatus incontinence) in up to 42% of patients who underwent fistulotomy.<sup>16</sup>

This study is being done to assess the efficacy of LIFT procedure and compare its results with Fistulotomy in simple cases of Fistula in ano in cases of simple fistula in ano.

Complex fistula are transphincteric fistulas that involve greater than 30% of the external sphincter, suprasphincteric, extrasphincteric, or horseshoe fistulas, and anal fistulas associated with IBD, radiation, malignancy, pre-existing fecal incontinence, or chronic diarrhea.<sup>17,18</sup>

## 2. MATERIALS AND METHODS

This prospective study was carried out in the Department of Surgery at North Delhi Municipal Corporation Medical College and Hindu Rao Hospital, Delhi between April 2017 and November 2018.

A total of 50 cases were taken up and assigned either LIFT or Fistulotomy procedure randomly using blinded envelop method. Patients with recurrent fistulas, complex fistulas, high fistulas, fistulas with more than one external openings and fistulas due to secondary causes (Koch's, Crohn's Malignancy, post-radiation) and those with systemic diseases such as diabetes, HIV, immunosuppressive conditions were excluded. The patients were followed up for maximum 6 months studying wound healing, recurrence, incontinence and post-operative morbidity.

All patients were assessed clinically making a note of:

- (a) A number of external opening. Its distance and O'clock position from the anal opening.
- (b) If discharge present.
- (c) Any previous scar.
- (d) The position of internal opening and its depth distance from anal verge.
- (e) Palpation of the tract between the two openings.
- (f) Anal sphincter tone.

History was taken to find out if I&D was done for peri-anal abscess and to rule out and secondary cause. Digital Fistulogram, MR Fistulogram and endo-anal USG were done. The patients were operated under spinal anesthesia. In all cases, the tract or portion of the tract was sent for HPE. The patients were discharged once they passed stool. All patients were instructed to keep their wound clean by sitz bath and local antibiotic ointment application. They were also given a course of oral antibiotics, oral liquid laxatives and anti-inflammatory drugs.

The patients were called for follow up at 1 week, 2 weeks and the monthly for 6 months. Healing wound or success was defined as healing of the external opening and intersphincteric incision wound.<sup>19</sup>

**Treatment failure or recurrence:** Persistent discharge (purulent stool) more than 4 week after surgery or recurrent drainage; air leakage from external opening and/or intersphincteric incision wound after the wound had healed.<sup>19</sup> Continence was evaluated according to clinical continence grading (Table 1) reproduced from Browning et al.<sup>20</sup>

**Table 1: Clinical continence grading**

| Category | Description   |
|----------|---|
| A        | The continent of solid and liquid stools and flatus ( <i>i.e.</i> , normal continence)                          |
| B        | The continent of solid and usually liquid stools but not flatus (no fecal leakage)                              |
| C        | Acceptable continence for a solid stool but no control over liquid stool or flatus (intermittent fecal leakage) |
| D        | Continued fecal leakage   |

Morbidity was assessed by post-op pain using Wong Baker Face scale (VAS)<sup>21</sup> and days off work.

### 3. RESULTS

- A total of 50 patients were recruited for the study of which 22 patients underwent LIFT and 28 underwent Fistulotomy. 2 patients were followed up for 6 months, 20 patients were seen for 2 months and 20 for 4 months. 8 patients did not return for follow up after 1 month.
- Of these 50 patients, 45 (90%) were males and 5 (10%) were females with an average of 41 years.
- 32 (64%) patients had a history of I&D for a perianal abscess.
- The average length of Fistula tract was 2 cms. But all patients who had some sort of delayed healing or recurrence had a fistula length of > 3cms.
- No patients had incontinence as all had a Clinical Continence grading of A.
- 15 patients (30%) of which 5 (23%) of LIFT and 10 (36%) of Fistulotomy) had delayed healing (4 to 6 wks).
- 22 patients who underwent LIFT had an average Wong Baker Facial score of 6 on POD1 and 4 on POD 2 while those 28 who underwent Fistulotomy had a WBFS of 8 on POD 1 and 2 and 6 or 7 on POD 3. All patients had a WBFS of 1 or 2 by POD 7.
- The 22 LIFT patients returned to work by day 10 while the 28 Fistulotomy patients returned to work on day 15.
- There was recurrence in 10 patients of which 7 (32%) were of LIFT and 3 (14%) had undergone fistulotomy.
- The 7 LIFT patients with recurrence had persistent discharge from external opening which was re-explored under local anaesthesia and laid open. All 7 healed subsequently in 2 weeks.
- Of the 3 Fistulotomy patient, 1 fistulotomy patient with recurrence had to undergo surgery again due to the persistent infected cryptoglandular gland. It was not clear whether the infection was a residual infection or a new infection of the crypto-glandular gland. But it healed anyway. While the other 2 healed by curettage of the external opening site under local anaesthesia after 6 weeks.

### 4. DISCUSSION

It is difficult to achieve 100% cure in cases of Fistula in ano. Our study had a recurrence rate of overall 20% with 7 out of 22 (32%) for LIFT and 3 out of 28 (14%) for Fistulotomy. Meta-analyses of published data report that the standard or “classic” LIFT has resulted in fistula healing in 61% to 94% of patients, with little morbidity, a healing time of 4 to 8 weeks, and only rare alterations in fecal continence.<sup>22,23,24</sup>

All patients who had delayed healing or recurrence in both procedures had a fistula length of > 3 cms. This fact has been corroborated by other studies Fistula tract length >3 cm, previous procedures to eradicate the fistula, and obesity have each been associated with LIFT failure.<sup>25,26</sup>

| Various techniques - Comparative Chart Technique | Highlights  | Success Rate    | Complications                               |
|--|---|-----------------|---|
| Fistulotomy                                      | Oldest technique  | 0-64%           | Recurrence (2%-9%)<br>Incontinence (0%-17%) |
| Cutting seton                                    | Mainly for low anal fistulas                                  | 0-58%           | Recurrence (0-8%)<br>Incontinence (2-63%)   |
| Fibrin Glue                                      | Conservative technique. Useful in most fistulas               | 14-60%          | Recurrence (20-83%)                         |
| Endorectal Advancement flap                      | Used for complex fistula in ano.                              | 36.6%-<br>98.5% | Recurrence (5-37%)<br>Incontinence (0-35%)  |
| Anodermal advancement flap                       | Used for complex fistula in ano.                              | 48-83%          | Recurrence (2-40%)<br>Incontinence (0-15%)  |
| Fistula plug                                     | Can be used as a primary treatment modality in most fistulas. | 31-83%          | Recurrence (12-38%)                         |

Above data is courtesy of Dr. Tanweerul Huda et al.

As far as Pain, post-operative incontinence and return to work it was much less in patients undergoing LIFT than Fistulotomy and is comparable to other studies where the best healing rate was associated with fistulotomy (87%) as compared to our study with 86%.<sup>28</sup>

### 5. CONCLUSION

Fistula in ano is a distressing condition with many methods used for its management. None of the methods achieves a 100% cure rate with minimal complication. LIFT is a new procedure primary advantage of which is that it is a sphincter saving procedure where there is no open wound and with similar rates of healing with minimal complications.

The drawback of this surgery is that its results in complex fistulas are not very good.

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