OUTCOMES OF LIFT VERSUS SETON IN COMPLEX FISTULA-IN-ANO- A COMPARATIVE STUDY

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ABSTRACT

BACKGROUND

A fistula-in-ano is an abnormal tract or cavity establishing a communication between rectum or anal canal and the perianal area. Surgery is the treatment of choice with the goals of draining infection, eradicating the fistulous tract and avoiding persistent or recurrent disease while preserving anal sphincter function. Various surgical options available include fistulotomy/fistulectomy with seton wire placement, advanced flaps, fistula plugs, fibrin glue and more recently newer techniques such as Ligation of the intersphincteric fistula tract (LIFT), Video-assisted anal fistula treatment (VAAFT) and FILAC technique (Fistula–Tract Laser Closure).The present study was conducted to assess and compare the outcome of LIFT procedure and Seton wire placement in complex fistula-in-ano.

MATERIALS AND METHODS

A prospective, randomized trial was carried out, in the Department of Surgery, Dayanand Medical College and Hospital, Ludhiana where 20 patients diagnosed to have complex fistula in ano were included. These were equally divided into two groups (10 patients each) group A undergoing LIFT procedure and Group B receiving Seton wire placement. The results were analysed and compared for healing time, post-op pain, anal incontinence at 1 week, 1 month and 3 months. Recurrence was compared at 1 month and 3 months.

RESULTS

Significant difference in healing time was noted in two groups with 5.3 weeks in LIFT group and 8.7 weeks in Seton wire group. Post-operatively, there was comparatively lesser pain at 1 week and 3 weeks in patients who had undergone LIFT procedure (2.6 &0.5 respectively) than Seton wire (3.9 & 1.0 respectively). Faecal incontinence was not seen in any of the patients in two groups. There was increased recurrence at 3 months in LIFT group (30%) as compared to Seton wire (10%).

CONCLUSION

In patients having complex fistula-in-ano, LIFT procedure provides better outcome than Seton wire placement in terms of decreased healing time and post-op pain. Although, the chances of recurrence are less with seton wire placement but multiple sittings are required for wire tightening.

KEYWORDS

Fistula -in-ano, complex, Ligation of the intersphincteric fistula tract (LIFT), Seton wire, recurrence, healing time.

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BACKGROUND

A fistula-in-ano is an abnormal tract or cavity with an external opening in the perianal area that is communicating with the rectum or anal canal. Most fistulas are thought to arise as a result of crypto glandular infection with resultant perirectal abscess. Symptoms range from minor discomfort to drainage with resultant hygienic problems and sepsis and generally affect quality of life significantly. In 7-40% cases fistula tract is formed following anorectal abscess.[1,2] Other fistulas develop secondary to trauma (e.g. rectal foreign bodies), tuberculosis, Crohn's disease, anal fissures, carcinoma, radiation therapy, actinomycoses and lymph granuloma venereum secondary to chlamydial infection. Fistulas can be simple or complex. Simple fistulas include low transsphincteric and intersphincteric fistulas that cross <30% of the external sphincter. Complex fistulas include high transsphincteric fistulas, suprasphincteric, extrasphincteric, horseshoe fistulas and those associated

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with inflammatory bowel disease, radiation, malignancy, those having multiple ramifications or multiple external openings. High transsphincteric fistulas involving the upper two-thirds of the external sphincter remain a surgical challenge because incontinence may result from the division of muscle involving more than one-third of the sphincter.[1]

Surgery is the mainstay of treatment and numerous surgical options are available. Fistulotomy involves dividing the overlying skin, subcutaneous tissue and internal sphincter muscle with a knife or electrocautery, thereby opening the entire fibrous tract. It is useful for 85-95% of simple fistulas.

A seton can be placed alone or in combination with fistulotomy, or in a staged fashion. It is useful in complex or multiple fistulas, recurrent fistulas after previous fistulotomy, anterior fistulas in female patients, poor preoperative sphincter pressures, patients with Crohn's disease or patients who are immunosuppressed. The seton is tightened on subsequent office visits until it is pulled through over 6-8 weeks.

Transanal advancement flap repair has been advocated as an effective treatment for transsphincteric fistulas passing through the upper or middle third of the external anal sphincter. A diamond or V-shaped flap consisting of mucosa, submucosa and few superficial fibers of the internal anal sphincter is mobilized from the dentate line and sutured to the neodentate line with absorbable sutures.

Plugs and Adhesives are less-invasive options which lead to decreased postoperative morbidity and risk of incontinence, but long-term data are lacking for eradication of disease, especially in complex fistulas, which carry high recurrence rates.

Video-assisted anal fistula treatment (VAAFT) is a minimally invasive and sphincter-saving technique in which the fistulous tract is destroyed from inside under continuous direct vision. FiLaC (Fistula – Tract Laser Closure) uses a newly invented radial emitting laser probe to destroy the fistula tract epithelium but has a higher rate of surgical failure and recurrence. Ligation of the intersphincteric fistula tract (LIFT) is a sphincter-sparing procedure for complex transsphincteric fistulas. The fistula tract is identified and isolated by meticulous dissection done through the intersphincteric plane. Once isolated, the intersphincteric tract is ligated close to the internal sphincter and then divided distal to the point of ligation. The external opening and the remnant fistulous tract are curetted to the level of the proximity of the external sphincter complex. Finally, the intersphincteric incision is loosely reapproximated with an absorbable suture. Simple fistulas can be managed with either of the older techniques but management of high and complicated fistula-in-ano remains a difficult surgical challenge and newer sphincter sparing techniques can be tried for the same. The present study was conducted to assess and compare the outcome of LIFT procedure and Seton wire placement in complex fistula-in-ano.

MATERIALS AND METHODS

This was a prospective randomised trial conducted in the Department of Surgery, Dayanand Medical College and Hospital, Ludhiana, from Jan 2016 to Jun 2017.

Inclusion Criteria

Patients with complex fistula in ano who were willing to give consent for the study were included.

Exclusion Criteria

-Rectovaginal fistula.
-Fistula with chronic cavities.
-Acute sepsis.
-Patients having immune compromised diseases.

A total of 20 patients participated in and they were educated about the study and written informed consent was taken. A detailed history of each patient and a general physical examination followed by perianal and per rectal examination was performed.

Fistulogram/ MRI perineum was done as and when needed. MRI perineum was done in patients having previous history of surgery, recurrent fistula or fistula having external opening more than 3 cm away from anoderm. The patients were equally divided into two groups (10 each). Group A underwent the LIFT procedure and Group B the seton wire placement. These were compared for healing time and post-operative pain, discharge, anal incontinence at 1 week, 1 month and 3 months postoperatively. Recurrence was compared at 1 month and 3 months.

Statistical Method

Data were described in terms of range; mean ±standard deviation (± SD), median, frequencies (number of cases) and relative frequencies (percentages) as appropriate. Comparison of quantitative variables between the study groups was done using Student t-test and Mann Whitney U test for independent samples for parametric and non-parametric data respectively. For comparing categorical data, Chi square ($\chi 2$) test was performed and exact test was used when the expected frequency is less than 5. A probability value (p value) less than 0.05 was considered statistically significant. All statistical calculations were done using SPSS (Statistical Package for the Social Science) SPSS 21 version statistical program for Microsoft Windows.

RESULTS

The age of the patients ranged from 19 to 65 years. The average age of patients undergoing LIFT procedure and fistulectomy with seton wire placement was 40.1 and 43.6 respectively. There was no statistically significant difference among the 2 groups with respect to age, P-value being 0.552 (Table 1).

	Lift		Seton Wire		t	p-value	95% Confidence Interval of the Difference	
	Mean	SD	Mean	SD			Lower	Upper
Age (yrs.)	40.1	13.76	43.6	11.99	-0.61	0.55	-15.62	8.62

Table 1. Mean Age of Patients

Out of 20 patients included in the study 18 were males (90%) and 2 females. Both the groups were comparable with respect to sex distribution, with P-value of 0.136 (as shown in Table 2).

Sex	Lift	Seton	Total	Chi Square	p-value
Male	2	0	2	2.222	0.136
Female	8	10	18		
Total	10	10	20		

Table 2. Sex Distribution

On the basis of history, patients having a previous history of perianal surgery were noted and it was found that 7 out of 20 patients (35%) had a previous history of surgery.

Among 20 patients having complex fistula in ano, 16 patients (80%) had trans-sphincteric fistula while rest 4 had intersphincteric fistula. Intra-operatively, 40% of the patients had a single radial tract and 40% had a single curvilinear tract while multiple ramifications were seen in 20% of the patients.

Post-operative pain assessment was done at 1 week, 1 month and 3 months using visual analogue scale (VAS). Table 3 depicts the data for the same.

	Lift		Seton Wire		t	p-value	95% Confidence Interval of the Difference	
Pain Status	Mean VAS Score	SD	Mean VAS Score	SD			Lower	Upper
1 week	2.6	1.35	3.9	1.1	-2.36	0.03	-2.46	-0.14
1 month	0.5	0.85	1	1.41	-0.96	0.35	-1.6	0.6
3 Months	0		0					

Table 3. Comparison of Pain Between the Two Groups

Faecal incontinence was not seen in any of the patients of complex fistula-in-ano undergoing either of the two techniques. Healing was referred to as closure of the wound. Table 4 compares the healing time in both the groups.

	Lift		Seton Wire		t	p-value	95% Confidence Interval of the Difference	
	Mean	SD	Mean	SD			Lower	Upper
Healing time (weeks)	5.3	0.67	8.7	0.95	-9.24	0	-4.17	-2.26

Table 4. Healing Time in Both the Groups

Recurrence was defined as persistence or reappearance of discharge through fistula or development of perianal abcess. The recurrence at 1 and 3 months in both the groups are shown in table 5.

	Lift		Seton Wire		Total	Chi-square value	p-value
Recurrence at	Present	Absent	Present	Absent			
1 month	0	10	0	10	20		
3 month	3	7	1	9	20	1.25	0.26

Table 5. Comparison of Recurrence Among the Two Groups

DISCUSSION

Fistula-in-ano is a common surgical problem. The major objectives in the management of this condition are to define and eradicate the fistulous tract, drain sepsis, preserve sphincter integrity and function. These goals can be achieved in the majority of patients by either laying open (fistulotomy) or excising (fistulectomy) a low fistula.[3] Function is preserved with these treatments because the tract involves only the lower third of the sphincter muscle.

The management of high and complicated fistula-in-ano is challenging as a simple laying open technique will lead to incontinence when the fistulous tract crosses the sphincter muscle in the upper half of the anal canal. For this reason, an alternative strategy that preserves the sphincter mechanism is required in such patients. Methods described include advancement flaps,[4-10] fistulotomy/fistulectomy with seton wire placement, fistula plugs, fibrin glue and more recently newer techniques such as LIFT, VAAFT and FILAC.

The age of the patients having complex fistula-in-ano in the present study ranged from 19 to 65 years with a mean of 41.85 years, similar results were noted by Shanwani et al.[11] Male preponderance was noted in our study with male to female ratio of 9:1. Different studies like Maralcan et al[12] and Chan et al[13] also noted increased incidence of fistula in ano in males (5:1 and 9:1 respectively).

In our study, it was noted that among the patients having complex anal fistulas, 80% had trans-sphincteric fistulas and other 20% had intersphincteric fistula. Ooi et al[14] conducted a trial including 25 patients out of which 18 patients (72%) had transsphincteric tract and 24% had intersphincteric tract.

It was seen that patients undergoing LIFT procedure had pain score of 2.6 & 0.5 at 1 week and 1 month respectively while it was 3.9 & 1.0 in patients undergoing fistulectomy with seton wire placement. None of the patients in both the groups reported any pain at 3 months of follow up.

Mean healing time was 8.7 weeks in patients undergoing fistulectomy with seton wire placement compared to 5.3 weeks in patients who underwent LIFT procedure. Two studies, Han et al[15] and Ooi et al[14] reported healing time of 4 weeks and 6 weeks respectively in patients undergoing LIFT procedure. Misra and Kapur[16] used an outpatient cutting seton technique with stainless steel wire in 56 patients. They reported a healing time of 3.6 weeks which was lower than that analysed in our study probably due to inclusion of both low and high anal fistulas in the former study. Rosen et al[17] reported a healing time of 3 months which was comparably long probably due to increased intervals between progressive tightening of the seton wire (1 month) compared to 1 week in our study.

Recurrence was noted in 30% of the patients undergoing LIFT procedure and only in 10% of the patients who underwent fistulectomy with seton wire placement. In a study conducted by Wallin et al[18] on 93 patients undergoing LIFT procedure, 26% had recurrence. Another study conducted by Hamalainen et al[19] on 44 patients undergoing cutting seton wire placement reported a recurrence of 6%.

CONCLUSION

In patients having complex fistula-in-ano, LIFT procedure provides better outcome than Seton wire placement in terms of decreased healing time and decreased post-operative pain, but the recurrence is more with LIFT. Although, fistulectomy with seton wire placement decreases the chances of recurrence but requires multiple sittings for wire tightening.

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