Clinical Medicine and Medical Research

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CMMR 03 (04) , 198–204 (2023)
Received 27 Dec 2022 | Revised 13 Jan 2023 | Accepted 20 Jan 2023 | Published Online 26 Jan 2023

CMMR JOURNAL
Open Access Journal

ISSN (O) 2693-499X

OPEN ACCESS

RESEARCH - ARTICLE

Ligation of the intersphincteric fistula tract (lift) procedure; a new sphincter preserving procedure in treatment of high anorectal fistula in holy karbalaa.

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Abstract

Background: Anorectal fistula is one of the most common annoying conditions that the patients suffering from, which making him seeking surgical advice. High fistula is the most risky type of anorectal fistula to be treated surgically, due to the risk of sphincter injury. Many surgical procedures are used to treat this condition, LIFT is one of the newest procedures that are used to treat high fistula in ano. **Aim:** In this study we evaluate the LIFT procedure as a sphincter preserving modality in treating high type fistula in ano on the base of post-operative complication including incontinence and recurrence. **Method:** An interventional comparative study conducted from 1st of November 2019 to 30th of October 2021 in gastroenterology medical and surgical center in AL-Hussain medical city in Karbala. Where, collect sixteen patients who presented to had high fistula in ano (trans or supra sphincteric fistula). **Result:** A 16 patients with a mean age (40, 7 ± 8 years) underwent ligation of inter- sphenctric fistula tract, vast majority of patients who were suffering from pain, nearly all combined with discharge, about one quarter of them previously suffering from bleeding . and only 25% where suffer from incontinence a single case had a recurrence of his fistula after 4 weeks of surgical intervention, there was significant statistical difference between type of fistula and recurrence. A total of 14 patients underwent ligation of intersphincteric fistula, only 2 cases underwent suprasphinictric tract ligation,. 32% had two previous attempts at surgery. The mean follow up was 26 months. Successful fistula closure was achieved in nearly all patients. The time of recurrence was 4 weeks. Only one case of each procedures report transient gas incontinence. **Conclusion:** even-though working procedure is relatively difficult to perform, but ended with a high healing rate and appears to be safe with low morbidity and no impact on continence. The results without or with partial fistulectomy procedures are similar.
Keyword: Ligation, LIFT, high anorectal fistula, Holy Karbala

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1 | INTRODUCTION

The perfect method to manage fistula in ano is to treat it the without fecal incontinence risk, The surgical technique that used in the treatment of fistula in ano divide mainly in to many groups the first one that could this sphincter sacrificing technique or without immediate repair had a high healing rate but carry risk of Post-operative incontinence risk while the second one, Sphincter sparing technique considerate the main another type of Surgical intervention that that varied and they're with low rates of healing but with little incidence of impairment of the incontinence at and quality effect of life if many actress pairing method used. (1, 2)

There are a number of sphincter-sparing methods such as fibrin or cyanoacrylate glue injection (1,2), plug of anal fistula (3), mucosal flap or endorectal muscular advancement(4,5), fistulectomy core-out (6, 7), ablation- radiofrequency(8) ayurvedic seton(9), ligation of intersphincteric fistula tract (LIFT) (10,11), lastly, (VAAFT) anal fistula video-assisted treatment (12). Rojanasakul et al present LIFT procedure of ligation (10) with94% rate of healing. It was an effective, safe, and simple, technique of minimum-invasive, with a rapid and high healing rate without any resultant incontinence.

Though, advanced reports exhibited rates of healing changing amid of 57% to 83% (13-20). The recurrence or treatment failure might be related to inadequate management of infection sources of or fistula tract remnancy as projected by Rojanasakul et al (21) and Mitalas et al (22).

2 | MATERIAL AND METHOD

An interventional comparative study conducted from 1st of November 2019 to 30th of October 2021 in gastroenterology medical and surgical center in AL-Hussain medical city in Karbala. Where, collect eighteen patients who presented to had high fistula in ano (Trans or supra sphincteric fistula).

All of the patients were diagnosed with fistula-in-ano from their medical history and physical examination. All patients underwent colonoscopy and MRI to identify the type of fistula and to exclude other fistula types. Inclusion criteria; (1) Age more than 18. (2) High fistula type, Trans and supra sphincteric type.

Exclusion criteria; (1) other types of fistulas. (2) Inflammatory bowel disease. (3) Malignant fistula.

3 | OPERATIVE TECHNIQUE

All patients were admitted a day before the surgery. Chemical bowel preparation attempted with bisacodyl tablet in the afternoon before the surgery and rectal enema as mechanical preparation at the day of surgery. Broad spectrum antibiotic given to the patients at time of induction, spinal or general anesthesia was used according to the patients' medical condition.

With the patient in lithotomy position, inspection and identification of the site of external opening was done, and proctoscopy was applied for detection of internal opening and the fistula tract.

A probe was passed in the external opening to define the direction of the fistula tract to the internal opening. A curvilinear incision was made just outside the intersphincteric groove. Dissection was continued in the intersphincteric plane until the fistula track was encountered. Care must be not to injure the sphincters. A small right angle forceps was used to isolate the tract. After its isolation, the probe was removed a double-suture LIFT were performed to the tract with absorbable sutures (3/0 Vicryl).

Medial and lateral suture, the medial ligation at the lateral aspect of the internal anal sphincter obliterated the internal opening and the lateral ligation at the medial aspect to the external sphincter. The track was then transected between the two ligation points.

The external opening was then widened and left opens to facilitate drainage and then allow adequate curettage of the fistula tract from the external opening to the lateral suture. The internal opening also curetted to remove any granulation tissue.

The skin was closed with 3/0 absorbable interrupted suture.

4 | POSTOPERATIVE CARE

Antibiotics were administered to the patient in form of 3 doses of intravenous 1 g cefotaxime 8 hours interval. They were instructed to follow a soft diet, bathroom hygiene after every motion with warm water, and to avoid exercises, lifting weights for 2 weeks postoperatively. Patients were discharged 1–2 days postoperatively.

5 | RESULTS

A 16 patients with a mean age (40, 7 ± 8 years) underwent ligation of inter-sphenctric fistula tract, vast majority of patients who were suffering from pain, nearly all combined with discharge, about one quarter of them previously suffering from bleeding . And only 25% where suffer from incontinence a single case had a recurrence of his fistula after 4 weeks of surgical intervention, there was significant statistical difference between type of fistula and recurrence. A total of 14 patients underwent ligation of intersphincteric fistula, only 2 cases underwent suprasphinictric tract ligation, 32% had two previous attempts at surgery. The mean follow up was 26 months. Successful fistula closure was achieved in nearly all patients. The time of recurrence was 4 weeks. Only one case of each procedures report gas incontinence.

Table-1 *Determinants of outcome and gender Cross tabulation*

		Gender			
		Female	Male	Total	Chi-square , p value
Type of fistula	Supra sphincteric(SS)	1	1	2	.674
		25.0%	8.3%	12.5%	.412
	Trans sphincteric(TS)	3	11	14	
		75.0%	91.7%	87.5%	
Symptoms	Discharge	2	9	11	.834
		50.0%	75.0%	68.8%	.361
	Discharge + pain	2	3	5	
		50.0%	25.0%	31.3%	
Previous repair trial	1 trial	1	2	3	3.586
		25.0%	16.7%	18.8%	0.532
	2 trials	1	0	1	
		25.0%	0.0%	6.3%	
	3 trials	0	1	1	
		0.0%	8.3%	6.3%	
	No	2	9	11	
		50.0%	75.0%	68.8%	
Total	Count	4	12	16	
	% within gender	100.0%	100.0%	100.0%	

Table 2: *Incidence of complications according to gender*

		Sex			
		Female	Male	Total	Chi square , p value
Pain, Bleeding, Gas incontinence.	Yes	1	1	2	0.597, 0.440 (pain)
		25.0%	8.3%	12.5%	0.890, 0.712 (bleeding)
	No	3	11	14	1.502, 0.507 (Incontinence)
		75.0%	91.7%	87.5%	
Recurrence	No	4	11	15	.597
		100.0%	91.7%	93.8%	0.440
	After 4 weeks	0	1	1	
		0.0%	8.3%	6.3%	
Hospital stay	1 day	4	9	13	1.946
		100.0%	75.0%	81.3%	.393
	2 days and more	0	3	3	
		0.0%	25.0%	18.8%	
Total	Count	4	12	16	
	% within gender	100.0%	100.0%	100.0%	

Table3: *Determinants of outcome according type of fistula*

		type of fistula			
		Supra sphincteric(SS)	trans sphincteric(TS)	Total	Fisher's Exact Test, p value
Symptoms	Pain	1	10	11	.374[a]
		50.0%	71.4%	68.8%	.542
	Discharge + pain	1	4	5	
		50.0%	28.6%	31.3%	
Previous repair trial	1 trial	1	2	3	2.983
		50.0%	14.3%	18.8%	.538[b]
	2 trials	0	1	1	
		0.0%	7.1%	6.3%	
	3 trials	0	1	1	
		0.0%	7.1%	6.3%	
	NO	1	10	11	
		50.0%	71.4%	68.8%	
Hospital stay	1 day	1	12	13	1.187
		50.0%	85.7%	81.3%	.276
	2 days	1	2	3	
		50.0%	14.3%	18.8%	
	Count	2	14	16	
	% within type of fistula	100.0%	100.0%	100.0%	

Table4: *Complications according type of fistula*

		Type of fistula			
		supra sphincteric (SS)	trans sphincteric (TS)	Total	Fischer Exact test, p value
Incontinence	Gas incontinence	1	1	2	3.323
	At 1st 4 weeks	50.0%	7.1%	12.5%	.355[b]
	No	1	13	13	
		50.0%	92.9%	87.6%	
Recurrence	No	1	14	15	7.467[a]
	% within type of fistula	50.0%	100.0%	93.8%	.030
	recurrence after 4 weeks	1	0	1	
		50.0%	0.0%	6.3%	
Total	Count	2	14	16	
	% within type of fistula	100.0%	100.0%	100.0%	

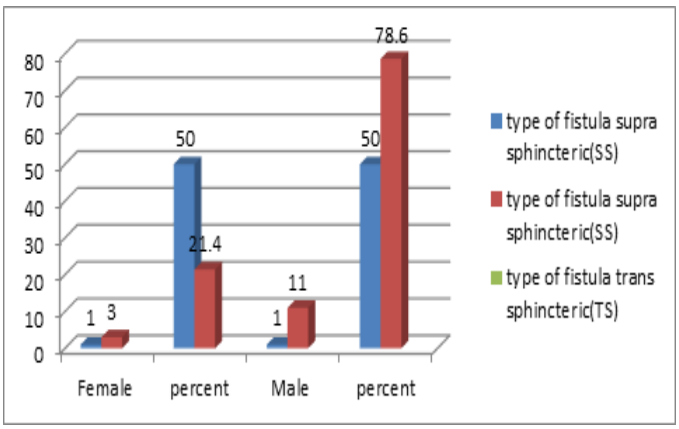

Figure 1: *Types of fistula according to Sex*

There was no significant statistical difference between the sex of patients the types of surgical intervention, whether it was Supra or Trans sphinictric ligation, where p value more than or 0.05

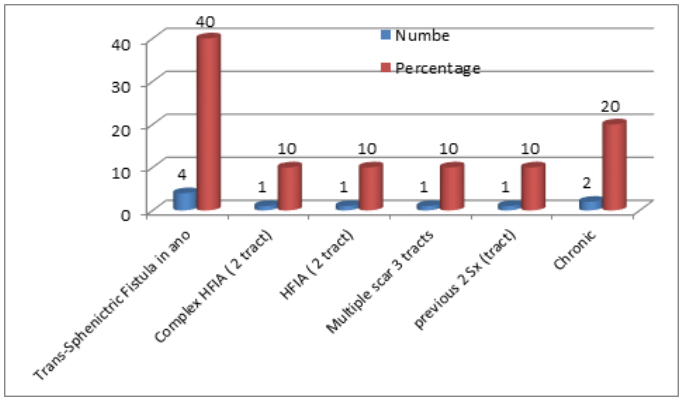

Figure 2: *Pre-operative complicated presentations*

6 | DISCUSSION

Strengths of this study are: firstly it represents the first experience of Iraqi surgeons this procedure and secondly in the current study despite of other previous studies in Thailand, Malaysia and Canada. We apply scoring system of Jorge Wexner for fecal incontinence score. Pre and post procedure implementation. So we could evaluate the effect of LIFT on sphincter function more carefully.

This type of intervention consider as an effective and safe treatment for management of complex perianal fistulas. The success rate of 93.8% is a noticeable result compared to other treatment options. There are some unfavorable results of other sphincter saving options for treating complex fistulas, where recurrence rate of Mucosal advancement flap reach up to 63%.(23, 24) Fibrin glue injection is a low risk technique but its results have been disappointing with success rate as low as 16%(25, 26) Similarly the results of anal plug success rate are between 29% and 87%.(27, 28).

One of sixteen cases is recurred in the current study, when copaired to other study that managed intersphincteric fistulas which were managed by simple fistulotomy. It may replace a difficult method to treat high transsphincteric fistula to an easier one to manage intersphincteric fistula nonetheless.

Even though this procedure is a difficult for treatment of multiple fistulas, suprasphincteric fistulas, and fistulas with extensions, but it could ended with high success rate for other complex fistulas.

The success rates of sphincter-sparing methods in treating anal fistula have varied considerably. Fibrin glue injection is simple but the results have been disappointing, with success rates as low as 16%-25 %(28-30). Similarly, anal plug studies reported success rates of 29%-87 %(31-33). Draining seton is also a simple technique, but has a long healing time, varying from about 3-9 mo (34, 35). Endoanal advancement flaps and coreout fistulectomy are complicated procedures with high success rates of 86%-97% and with minimal

change in continence (6, 7) due to stretching or tearing of the anal sphincter (Table5).

Table 5: *Overall LIFT success rate*

Author, (ref) year	Success rate	Patient	Follow up period	Incontinence rate
Rojanasakul et al(10), 2007	94%	17	4 wk	0
Bleier et al(13), 2010	57%	39	NA	NA
Shanwani et al(14), 2010	77%	45	9 mo	0
Tan et al(15), 2011	78%	93	23 wk	NA
Sileri et al(16), 2011	83%	18	4 mo	Same as preoperative
Ooi et al(18), 2012	68%	25	22 wk	0
Wallin et al(20), 2012	57%	93	19 mo	NA
Abcarian et al(21), 2012	74%	40	18 wk	NA
van Onkelen et al(36), 2012	82%	22	19.5 mo	0

NA: Not available.

A modifications of LIFT by combining it with addi -tional procedures such as transanal advancement flap (36) or bio prosthetic plug (37). Improve healing rate to 95% in the LIFT with anal fistula plug procedure, but did not improve with the combination of advancement flap.

Our study showed that primary healing was achieved in 17 patients (81%) in the LIFT group and 17 patients (85%) in the LIFT plus group (P = 0.529), with median wound healing time of 4 wk in both groups (P = 0.262).

Recurrence of anal fistula is mainly due to technical errors and infection.

Failure to identify the fistula tract occurred more often in obese patients with 30 kg/m2 BMI of more than (P = 0.001), which suggests that obesity might be a factor for treatment failure, this is compatible with other study (39). It has been suggested that inserting a draining Seton for 8-12 wk (19) preoperatively to eradicate septic foci by adequate drainage.

There were minor incidences of morbidity with 3 cases of minor bleeding of an external wound which was treated,

All of these patients healed without morbidity or change in continence status. Moreover, in most recurrence cases the fistula type was converted to an intersphincteric fistula type which is easy to handle by simple fistulotomy (15).

The limitations of this study

1. Small sample size.
2. Unequal distribution of fistula type.
3. Short follow-up period.

7 | CONCLUSION

even-though working procedure is relatively difficult to perform, but ended with a high healing rate and appears to be safe with low morbidity and no impact on continence. The results without or with partial fistulectomy procedures are similar.

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How to cite this article: DR. Saad Hasan Talib ET AL Ligation of the intersphincteric fistula tract (lift) procedure; a new sphincter preserving procedure in treatment of high anorectal fistula in holy karbalaa. Clinical Medicine and Medical Research. 2023;198− 204