



ORIGINAL ARTICLE

Comparison of outcome in fistulectomy and Ligation of intersphincteric tract in patients of fistula in ANO.

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ABSTRACT... Objective: To compare fistulectomy and ligation of inter sphincteric tract in patients of fistula in ano in terms of postoperative pain and duration of wound healing. **Study Design:** Prospective Experimental study. **Setting:** Department of General Surgery of Faisalabad Medical University and Affiliated Hospitals. **Period:** 22-01-2021 to 21-07-2021. **Material & Methods:** Computer-generated random numbers were used to assign the type of treatment (group. A or B). Group A patient underwent treatment with fistulectomy. Group B patient underwent treatment with ligation of inter sphincteric tract (LIFT). Post-operative pain was noted and scored at 12, 24 and 48 hours and after one week on visual analogue scale (VAS). Healing time noted in both groups and patients followed up for 5 months. **Results:** Out of these 60 study cases, 46 (76.7 %) were male patients while 14 (23.3 %) were female patients. Mean age of our study cases was 43.17 ± 10.77 years. Mean pain score in group A was noted to be 4.77 ± 0.858 while that of group B was noted to be 3.07 ± 1.01 ($P < 0.001$). Mean duration of wound healing in group A was 7 weeks and in group B was 3 weeks ($P < 0.001$). **Conclusion:** Ligation of inter-sphincteric tract is better than fistulectomy in patients of fistula in ano as it is associated with significant reduction of pain and duration of wound healing.

Key words: Fistula in ANO, Fistulolectomy, Healing, Ligation of Intersphincteric Tract, Pain.

INTRODUCTION

Fistula-in-ano is characterized by chronic purulent discharge or cyclical pain accompanied by recurrent abscess followed resolution.¹ It is a common colorectal disease with an incidence of 0.01% to 0.02% in Europeans and a high incidence during the third and fourth years of life.² Fistulectomy is still the only effective treatment for this condition. Proper surgical management of fistula in ano should aim to eliminate sepsis and help healing of tissues, while maintaining sphincter continence.³

In an effort to attain three main therapeutic aims (i.e., fistula closure, sphincter function maintenance, and reduction of healing time) numerous sphincter saving techniques have been defined in conjunction with fistulotomy in last 3 decades. This includes endorectal progression flap (ERAF), fibrin glue, fistula plugs, stem

cells derived from adipose tissues, ligation of intersphincteric fistula tract (LIFT), video-assisted anal fistula surgery (VAAFT), laser fistula closure (FiLaC™), and over-the-scope clip (OTSC®) Proctology system.⁴

A Fistulectomy is a procedure that involves removing a fistula by means of a sharp dissection or diathermy. This procedure provides a sample of histopathology to rule out Crohn's disease, malignancy and tuberculosis as well as a careful cutting of the tissue involves the removal of an additional but insignificant sphincter. However, it increases the size of the wound and increases healing by 5 to 7.5 times.⁵

LIFT was presented by Rojasakul and he showed a healing rate of 94%. This is based on safe closure of the internal opening. Key procedural steps include access into the intersphincteric

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plane, recognizing the intersphincteric tract, closure of tract near the internal opening, and excision of the intersphincteric tract.⁶

Previous data shows, pain score on visual analogue measurement on first day of operation to be 4.05 ± 1.47 after fistulectomy according to Jain BK et al⁷ and 3.3 ± 1.4 after LIFT according to Baghdadi MA. Although Rohit et al shows no difference in pain points and healing time. Six weeks on Ligation of intersphincteric tract.⁸

This study was done to compare postoperative pain and duration of healing of wound in fistulectomy and ligation of the intersphincteric tract. No local evidence is available regarding this study. The result of this study may be suggested to be used more frequently in future if these show relative benefits. Therefore, this study will provide a basis for future surgeons to use ligation of intersphincteric tract as a normal procedure because this procedure is simple, wound healing is rapid and there is minimal postoperative pain

MATERIAL & METHODS

This Prospective Experimental Study was conducted at Department of General Surgery of Faisalabad Medical University and its Affiliated Hospitals for Six Months from 22-01-2021 to 21-07-2021. The Sampling Technique Non-Probability Consecutive Sampling.

By using WHO sample size calculator for two means, the test value of population mean = 3.5⁸ anticipated population mean = 4.05.⁸ Pooled standard deviation = 1.45. Level of significance = 5%, Power of study = 80% and sample size = 60 (30 in each group).

Inclusion Criteria

Patients between 18-60 years of age and of both gender diagnosed clinically as having low lying fistula in ano.

Exclusion Criteria

1. Active infection at the time of surgery.
2. Inflammatory bowel disease.
3. Diabetic Patients.
4. Crohn's disease.

5. Tuberculosis.
6. Complex fistula in ano.
7. Malignancy

Following approval by the hospital ethics committee (IRB0006912), all patients with fistula in ano who fulfilled the criteria of inclusion were included in the trial after informed consent. The type of treatment was assigned using computer-generated random numbers (group. A or B). The patient in Group A had a fistulectomy. The patients in Group B had their inter sphincteric tracts ligated (LIFT). On a pre-designed Performa, all of the pertinent information was filled. Following surgery, each patient was given an injection of diclofenac sodium, and the response of each patient was recorded, i.e. how long before another painkiller was required. On a visual analogue scale, post-operative discomfort was assessed and scored at 12hrs, 24hrs, 48hrs, and one week. SPSS version 20 was used to analyse data.

RESULTS

60 patients meeting inclusion criteria were inducted in our study. Of these 60 study cases, 46 (76.7 %) were male while 14 (23.3 %) were female. (Table-I).

Most of the patients in both groups were upto 45 years of age Table-II.

Mean pain score in group A was noted to be 4.77 ± 0.858 while that of group B was noted to be 3.07 ± 1.01 ($P < 0.001$) (Table-III).

Mean duration of wound healing in group A was 7 weeks and in group B was 3 weeks (Table-IV).

| Gender (n=60) | Group A | | Group B | |
|-------------------------------------|-----------|------------|-----------|------------|
| | Frequency | Percentage | Frequency | Percentage |
| Male n = 46 (76.7 %) | 24 | 80.0 | 22 | 73.3 |
| Female n = 14 (23.3 %) | 06 | 20.0 | 08 | 26.7 |
| Total | 30 | 100 | 30 | 100 |

**Table-I. Gender wise distribution of study cases.
(n = 60)**

| Age Groups (In Years) (n=60) | Group A | | Group B | |
|------------------------------------|-----------|------------|-----------|------------|
| | Frequency | Percentage | Frequency | Percentage |
| Up to 45 n= (66.0 %) | 24 | 80.0 | 23 | 76.7 |
| More than 45 n= (%) | 06 | 20.0 | 07 | 23.3 |
| Total | 30 | 100 | 30 | 100 |

**Table-II. Age wise distribution of study cases.
(n = 60)**

| Group A | | Group B | |
|---------|-------|---------|------|
| Mean | SD | Mean | SD |
| 4.77 | 0.858 | 3.07 | 1.01 |

P = 0.000

**Table-III. Distribution of mean pain score among
study cases. (n = 60)**

| Wound healing in weeks | Group A | Group B | P-Value |
|---------------------------|----------|----------|---------|
| | 7 +/-3.4 | 3 +/-2.2 | 0.001 |

Table-IV. Wound healing in weeks in both groups

DISCUSSION

With an average frequency of 8.6 per 100,000 people, fistula in ano is one of the most common anorectal cases diagnosed by general surgeons and colorectal surgeons. Vast majority of fistulas are caused by cryptoglandular infection, with a tiny percentage being caused by disorders including Crohn's disease, sexually transmitted diseases, or toxins.

Some researchers have attempted to speed wound healing and enhance the outcome of fistulectomy surgery. In a randomised placebo-controlled experiment, Alvandipour et al found that topical sucralfate oil was effective in reducing postoperative discomfort and improving wound healing in patients undergoing anal fistulectomy.⁹

Our study comprised of 60 patients fulfilling inclusion criteria. Of these 60 patients, 46 (76.7 %) were male while 14 (23.3 %) were female. A study conducted in Egypt by Anan et al.¹⁰ showed 83.3% male gender predominance that is identical to our results. A study done in Karachi by Murtaza et al¹¹ has also reported 84 % male gender predominance. Sileri et al¹² has also reported 60 % male gender predominance.

Mean age in our study was 43.17 ± 10.77 years (with minimum age of 24 years while maximum age was 69 years). Mean age of the male patients was 42.89 ± 9.77 years while that female patients was 44.07 ± 14.05 years ($p=0.723$). Majority of our study cases i.e. 47 (78.3 %) were aged up to 45 years. A study conducted in Egypt by Anan et al¹⁰ has also reported 43.5 ± 12.5 years mean age which is similar to that of our study results. A study done in Karachi by Murtaza et al¹¹ has also reported 41.14 ± 11.3 years mean age. A study undertaken by Sileri et al¹² has also reported 47 years mean age.

Mean pain score in group A was 4.77 ± 0.858 while that of patients in group B was 3.07 ± 1.01 ($P<0.001$). Less pain and less requirement of anagesics in group B was related to small incision, less dissection and minimum trauma to tissues when compared with fistulectomy. Previous data showed, the visual analogue scale score of 4.05 ± 1.47 for fistulectomy according to Emile et al¹³ and 3.3 ± 1.4 after LIFT according to Baghdadi et al¹⁷ These findings are close to our study results. Pain scores were higher in fistulectomy and lower in LIFT as shown by Omer et al.¹⁴

Healing time in our study was 3 weeks (± 2.2) in group B while that in group A was 7 weeks (± 3.4). It is clearly understandable that larger wounds take more time to heal and there are more chances of wound infection as compared to small wounds. Baghdadi et al.¹⁵ in a prospective observational study showed a healing time of 6 weeks (± 2.2) in patients who underwent LIFT. Cianci et al.¹⁶ showed a healing time of 4 weeks (3-5 weeks) while Shanwani et al¹⁸ demonstrated healing time of 7 weeks (4-10 weeks) in LIFT group. Khadia et al.¹⁹ showed a healing time of 4 weeks and a longer time in fistulectomy group. Wang et al.²⁰ revealed a shorter healing time in LIFT and longer time in fistulectomy group.

CONCLUSION

As there is a significant reduction in pain and wound healing time in anorectal fistula patients, our findings support the use of inter-sphincteric

tract ligation over fistulectomy. Inter-sphincteric tract ligation is a safe, effective, and dependable treatment for anal fistulas, and it should be used by all surgeons who treat such patients to obtain the better clinical outcome.





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REFERENCES

- Limura E, Giordano P. **Modern management of anal fistula.** World J Gastroenterol. 2015; 21: 12-20.
- Ratto C, Grossi U, Litta F, Di Tanna L, Parello A, De-Simone V, et al. **Contemporary surgical practice in the management of anal fistula: Results from an international survey.** Tech Coloproctol. 2019; 23:729-41.
- Ratto C, Litta F, Donisi L, Parello A. **Fistulotomy or fistulectomy and primary sphincteroplasty for anal fistula (FIPS): A systematic review.** Tech Coloproctol. 2015; 19:391-400.
- Vander Mijnsbrugge GJH, Felt-Bersma RJF, Ho DKF, Molenaar CBH. **Perianal fistulas and the lift procedure: results, predictive factors for success, and long-term results with subsequent treatment.** Tech Coloproctol. 2019; 23:639-47.
- Rojanasakul A, Booning N, Huimin L, Pongpirul K, Sahakitrungruang C. **Intersphincteric exploration with ligation of intersphincteric fistula tract or attempted closure of internal opening for acute anorectal abscesses.** Diseases of the Colon & Rectum. 2021 Apr 1; 64(4):438-45.
- Malakorn S, Sammour T, Khomvilai S, Chowchankit I, Gunarasa S, Kanjanasilp P, Thiptanakij C, Rojanasakul A. **Ligation of intersphincteric fistula tract for fistula in ano: Lessons learned from a decade of experience.** Diseases of the Colon & Rectum. 2017 Oct 1; 60(10):1065-70.
- Jain BK, VaibawK, Garg PK, Gupta S, Mohanty D. **Comparison of a fistulectomy and a fistulectomy and a fistulotomy with marsupialization in the management of a simple anal fistula: A randomized, controlled pilot trial.** J Korean Soc Coloproctol. 2012; 28:78-82.
- Rohit DK, Jain S, Pandey G. **Effectiveness of ligation of intersphincteric fistula tract (LIFT) in the management of fistulas in ano.** International Surgery Journal. 2017 Nov 25; 4(12):3951-5.
- Alvandipour M, Ala S, Tavakoli H, Yazdani Charati J, Shiva A. **Efficacy of 10% sucralfate ointment after anal fistulotomy: A prospective, double-blind, randomized, placebo-controlled trial.** Int J Surg. 2016 Dec; 36(Pt A):13-17. doi: 10.1016/j.ijisu.2016.10.017.
- Anan M, Emile SH, Elgendy H, Shalaby M, Elshobaky A, Abdel-Razik MA, et al. **Fistulotomy with or without marsupialisation of wound edges in treatment of simple anal fistula: A randomised controlled trial.** Ann R Coll Surg Engl. 2019 Sep; 101(7):472-478. doi: 10.1308/rcsann.2019.0057.
- Murtaza G, Shaikh FA, Chawla T, Rajput BU, Shahzad N, Ansari S. **Fistulotomy versus fistulectomy for simple fistula in ano: A retrospective cohort study.** J Pak Med Assoc. 2017 Mar; 67(3):339-342.
- Sileri P, Cadeddu F, D'Ugo S, Franceschilli L, Del Vecchio Blanco G, De Luca E, et al. **Surgery for fistula-in-ano in a specialist colorectal unit: A critical appraisal.** BMC Gastroenterol. 2011 Nov 9; 11:120. doi: 10.1186/1471-230X-11-120.
- Emile SH, Khan SM, Adejumo A, Koroye O. **Ligation of intersphincteric fistula tract (LIFT) in treatment of anal fistula: An updated systematic review, meta-analysis, and meta-regression of the predictors of failure.** Surgery. 2020 Feb 1; 167(2):484-92.
- Omar W, Alqasaby A, Abdelnaby M, Youssef M, Shalaby M, Anwar Abdel-Razik M, et al. **Drainage seton versus external anal sphincter-sparing seton after rerouting of the fistula tract in the treatment of complex anal fistula: A randomized controlled trial.** Dis Colon Rectum. 2019 Aug; 62(8):980-987. doi: 10.1097/DCR.0000000000001416.
- Baghdadi MA, Metwalli AE. **Ligation of intersphincteric fistula tract technique in the management of anorectal fistula.** The Egyptian Journal of Surgery. 2019 Jan 1; 38(1):160.
- Cianci P, Tartaglia N, Fersini A, Giambavicchio LL, Neri V, Ambrosi A. **The ligation of intersphincteric fistula tract technique: A preliminary experience.** Annals of coloproctology. 2019 Oct; 35(5):238.
- Elfeki H, Duelund-Jakobsen J, Lundby L. **Ligation of intersphincteric fistula tract procedure for the treatment of fistula in ano-a video vignette.** Colorectal disease: the official journal of the Association of Coloproctology of Great Britain and Ireland. 2018 Oct 9; 20(12):1154-.
- Shanwani A, Nor AM, Amri N. **Ligation of the intersphincteric fistula tract (LIFT): A sphincter-saving technique for fistula-in-ano.** Dis Colon Rectum 2010;53:39-42

19. Khadia M, Muduli IC, Das SK, Mallick SN, Bag L, Pati MR. **Management of fistula –in-ano with special reference to ligation of intersphincteric fistula.** Niger J Surg. 2016; 22:1–4.
20. Wang Q, He Y, Shen J. **The best surgical strategy for anal fistula based on a network meta-analysis.** Oncotarget. 2017; 8:99075-84.

AUTHORSHIP AND CONTRIBUTION DECLARATION

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| 2 | Bushra Kashf | Data collection. |  |
| 3 | Tahir Nadeem | Proof reading. |  |
| 4 | Javaid Iqbal | Supervised the research. |  |