

Original Article

Comparing mean healing time of low fistula in Ano treated by Fistulotomy v/s Fistulectomy.

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Doi: 10.29052/IJEHSR.v9.i1.2021.70-75

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Received 05/04/2020

Accepted 29/01/2021

Published 01/03/2021



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Abstract

Background: Fistula in ano is a chronic abnormality usually lined by some degree of granulated tissue that runs outward from the anorectal lumen, from internal to an external opening on perineum skin or buttock. The current study aimed to compare the mean healing time of low fistula in ano treated by fistulotomy v/s fistulectomy.

Methodology: A randomized controlled trial was conducted at Liaquat National Hospital in Karachi-Pakistan, for six months after the approval of the synopsis by the CPSP. A total of 60 patients selected who met the inclusion criteria were enrolled in this study, with 30 patients in each group. Patients were divided into two groups randomly, i.e. Group-A: Fistula in Ano treated by Fistulotomy and Group-B Fistula in Ano treated by Fistulectomy. All the data was collected from the Department of General Surgery's inpatient services at Liaquat National Hospital, Karachi. The Patients were approached in clinics weekly until complete epithelization of the wound.

Results: The overall mean age of patients was 41.83 ± 4.07 years. In Group A (Fistulotomy), the mean age was observed to be 39.83 ± 6.8 , and in Group B (Fistulectomy), the mean age was 44.1 ± 5.9 . The mean duration of symptoms was observed to be 3.37 ± 0.81 weeks. Comparatively, the duration of symptoms was found to be statistically insignificant (p-value: 0.511). Whereas the mean healing time was found to be highly significant between the two groups. (P-value: 0.000).

Conclusion: It is concluded from the study results that there is a highly significant difference in terms of wound healing between fistulotomy and fistulectomy in fistula in ano treatment. Fistulotomy offers an earlier wound healing as compared to fistulectomy.

Keywords

Anal Fistula, Fistulotomy, Fistulectomy, Wound Healing, Fibrin Glue.



Introduction

An anal fistula is an abnormal empty tract lined with granulation tissue that connects a primary opening inside the anal canal to a secondary opening in the perianal skin; secondary tracts may be multiple and can extend from the same primary opening¹. Most fistulas are thought to arise as a result of cryptoglandular infection with resultant perirectal abscess. The abscess formation represents an acute inflammatory event, whereas the fistula is representative of the chronic process. Usually, the symptoms significantly affect the quality of life, ranging from minor discomfort and drainage with resultant hygienic problems to sepsis¹.

About 5% of the total population experience fistulas once in their lifetimes. The true prevalence of fistula-in-ano is unknown. The incidence of a fistula-in-ano developing from an anal abscess ranges from 26% to 38%². Anal fistula represents one of the most frequent anorectal diseases. Fistulotomy is considered the standard gold treatment with shorter operating time and faster healing time. Fistulectomy lowers the recurrences but is less feasible with longer operating time and healing process².

The obstruction of the anal gland with collecting debris leads to infection in these glands, which penetrate into the anal complex in varying degrees, and suppuration follows the path of least resistance¹. In context to the spread of infection, understanding the perineal and anal anatomy is a must, as the abscess collects in anatomical spaces where the anal gland terminates and from there on follows in the perineal spaces^{2,3}. It needs to be emphasized that an Anorectal abscess is an acute manifestation of the crypto-glandular infection, and fistula is a chronic sequela of this infection. One-third of the patients who undergo incision and drainage of the Anorectal abscess develop the anal fistula³.

Classification of fistula in ano is of immense importance. It gives an accurate description of the anatomy of the fistulous tract anatomy, which

helps a surgeon plan for the surgical cure of the disease^{1,4}. They are usually classified based on relation to the anal sphincter complex. Milligan & Morgan in 1934 classified the fistulas into high fistulas-those in which the internal opening lies above the anorectal ring and low fistulas-those in which the internal opening lies below the anorectal ring. It was a simple classification but was abandoned as the tract information was not forthcoming, leading to recurrences⁴. In most patients, the anatomy of the fistula can be determined by physical examination either in the office or occasionally in the operating room after giving patient anesthesia. Radiographs may rarely be beneficial to identify secondary tracts or abscesses to help delineate the fistula's relationship to the sphincter complex. MRI or endoscopic ultrasound with or without hydrogen peroxide injection are the studies of choice when a radiologic assessment is deemed necessary⁵.

Fistulotomy/Fistulectomy has long been taken as the "gold standard" for treating anal fistulas. In the algorithm, fistulotomy is considered the treatment of choice for "simple" fistulas. The fundamentals of fistulotomy include opening the entire fistulous tract from the primary internal opening to all secondary, external openings⁵. This laying-open technique (fistulotomy) is useful for 85-95% of primary fistulas (i.e., submucosal, intersphincteric, and low trans sphincteric)^{6,7}. The present study aimed to investigate the mean healing time of low fistula in ano treated by fistulotomy v/s fistulectomy at a tertiary care hospital in Karachi.

Methodology

A randomized controlled study was conducted on 60 patients with low trans-sphincteric, inter sphincteric and subcutaneous fistula. Moreover, patients with single internal and external opening along with the absence of other secondary tract were also included in this study. Patients with recurrent fistula confirmed by sonogram, hemorrhoids, chronic colitis or those associated with any co-morbid conditions such as anal fissure, diabetes, hypertension confirmed by history, physical examination and past medical records, along with those patients refusing consent for the

study, were kept under exclusion criteria. The Ethical Review Committee of Liaquat National Hospital approved the study before its commencement. This study was followed by all the ethical guidelines, including the confidentiality of the included patients. The study participants signed a written consent form prior to study enrollment.

All 60 Patients were randomly divided into two groups, i.e. Group-A: Fistulotomy and Group-B Fistulectomy by lottery method with 30 patients in each group. Patient biodata and clinical history were taken before the procedure. The procedure was performed by a senior surgeon having experience of more than five years. All patients were then called to OPD weekly after the procedure and wound assessed for healing. Complete epithelialization of the skin was assessed, and the week in which the patient presented with complete epithelialization was taken as the time of complete wound healing. The data were recorded using a questionnaire composed of patient's demographic details (age, gender, hospital case number, occupation, date of procedure, duration of symptoms), surgery method, date of complete wound healing after the procedure. The final analysis was done post-surgery, taking into

account the time required from surgery to complete wound healing.

Data compilation and statistical analysis were done using SPSS version 22.0. Mean \pm SD was calculated for the quantitative variables, i.e. age and wound healing. The frequency and percentage were calculated for qualitative variables, i.e. gender, occupation and t-test applied to compare the mean time required for wound healing amongst the two groups. Stratification was done on gender, age, and occupation to see the effect of these modifiers on the outcome using an independent sample t-test. P-value \leq 0.05 was considered significant.

Results

Out of 60 patients included in the study, 30 patients underwent fistulotomy (Group A) while 30 patients underwent fistulectomy (Group B) for fistula in ano. There were 54 males (90%) and six females (10%) who participated in this study. Patients included in this study were divided occupationally into five categories. These categories include housewife, labor, banker, engineer and office work. There was a total of 05 housewives (0.83%), 07 labors (2.3%), 07 bankers (2.3%), 07 engineers (2.3%) and 34 office workers (56.6%) personnel participating in this study.

Table 1: Distribution of patients with fistula in ano based on gender and surgical procedure.

Baseline Characteristics		n(%)
Gender	Female	54(90)
	Male	6(10)
Occupation	Housewife	5(0.83)
	Labor	7(1.16)
	Engineer	7(1.16)
	Banker	7(1.16)
	Office Workers	34(56.6)
Group A (Fistulotomy)		30(50)
Group B (Fistulectomy)		30(50)

Group A consisted of 25 (83.3%) males and 05 (16.6%) females, whereas, Group B comprised 29 males (96.6%) and 01 females (0.33%). Overall, the mean age of patients was 41.83 ± 4.07 years. In Group A (Fistulotomy), the mean age was observed to be 39.83 ± 6.8 , and in Group B (Fistulectomy), the mean age was 44.1 ± 5.9 (Table 2).

Table 2: Age and gender-wise distribution among patients with fistula in ano treated with fistulotomy and fistulectomy.

Variable		Group A (Fistulotomy)	Group B (Fistulectomy)	p-value
Gender	Male	25(83.3)	29(96.6)	0.370
	Female	5(16.6)	1(3.3)	
Age (Mean \pm SD)		39.83 \pm 6.8	44.1 \pm 5.9	0.001

*Values are given as n(%) or mean \pm SD.

The mean duration of symptoms was observed to be 3.37 ± 0.81 weeks. The mean duration of symptoms in Group A patients was 2.75 ± 0.187 months, whereas, in Group B, the mean duration of symptoms was 2.93 ± 0.413 . Comparatively, the duration of symptoms was found to be statistically insignificant (p-value: 0.511) (Table 3). Moreover, the mean healing time for the patients of Group A (fistulotomy) was observed to be 3.77 ± 0.817 . In comparison, the patients in Group B (fistulectomy) reported a mean healing time of 5.73 ± 0.583 . This study suggests that the mean healing time was highly significant between the two groups ($p=0.000$) (Table 3).

Table 3: Comparative assessment of duration of symptoms and mean healing time in patients treated with Fistulotomy and Fistulectomy.

Variable	Group A (Fistulotomy)	Group B (Fistulectomy)	p-value
Duration of Symptoms	2.75 ± 0.187	2.93 ± 0.413	0.511
Mean Healing time	3.77 ± 0.817	5.73 ± 0.583	0.000

*Values are given as mean \pm SD.

Discussion

Fistula in ano is a common disease that we come across in surgical practice. Fistula in ano usually has cryptoglandular etiology, originating from a perianal abscess and connecting the anal mucosa with the perianal skin. Infection of anal glands occurs in 90 percent of the cases⁸. Most perianal fistulas, undoubtedly, are caused by infection, following perianal abscesses with intermittent drainage. However, perianal fistulas associated with Crohn's disease and ulcerative recto colitis should be excluded, avoiding extensive surgeries, because the wound healing is impaired, and a higher recurrence rate is observed in this inflammatory bowel diseases⁹.

Associated proctological diseases are frequently seen with perianal fistula¹. The present study includes patients in which sample, hemorrhoids and skin tags were the most frequent conditions, but no studies to establish a causal relationship were done. The best surgical treatment is the complete excision of the fistulous tract. This

technique called fistulectomy was used in almost all cases. Despite being a common disease, occurring in young patients and being easy to treat by surgery, the recurrence rate is high in perianal fistulas. Data from the literature reveal a recurrence rate varying from 0 to 33%¹⁰.

Our study only included patients with a low anal fistula having a single internal and external opening and excluded patients with high fistula in ano and secondary tracts, i.e. complex fistulas. Other prospective randomized controlled trials included complex fistula in ano in their study, treated with setons and flaps. The present study only compared the wound healing process of fistula in ano treated with fistulotomy and fistulectomy. The mean age of patients in this study was 41.83 ± 4.07 years. In Group A (Fistulotomy), the mean age was observed to be 39.83 ± 6.8 years, and in Group B (Fistulectomy), the mean age was 44.1 ± 5.9 years. This is comparable to studies conducted by Ali (Peshawar) and Iraq, who reported a mean age of 45.6 ± 3.6 and 45 ± 2.8 years, respectively¹¹. A total of 54 males (90%) and

06 (10%) females participated in this study. Group A consisted of 25 (83.3%) males and 05 (16.6%) females, whereas, Group B comprised 29 males (96.6%) and 01 females (0.33%)¹¹. It is comparable to another randomized control trial conducted by Hadi, which included 50 patients in both groups. They reported Fifty-five (55%) male patients, 45 (45%) female patients¹². Furthermore, studies conducted by Hadi¹², Ali, Nakeeb and Ramzisharam⁹ analyzed that fistula in ano was common in males than females. Similarly, in our study, we noticed that there was a male predominance in the included patients presenting with fistula in ano.

This study also suggests that the majority of patients presenting with fistula in ano were office workers, followed by laborers, bankers and engineers, and housewives. This is comparable to a systemic review conducted by Shanmugam et al.,¹³ who analyzed that professionals, including bankers, doctors and computer/I.T related personnel, in whom there is prolonged sitting (> 25 mins without postural change), attributed to more chances of developing this¹³.

Comparatively, the duration of symptoms in the present study is seen to be statistically significant ($p=0.001$). This is comparable to reference literature^{1, 2, 14-18}, which states that patients mostly present to the out-patient department/doctor once they have developed complications including discharge, perianal pain, itching and bleeding at the perianal region. The time in which the complication has developed is variable, i.e. 4 to 12 weeks (1-3 months). Our study also compared the time required for complete epithelialization of fistula wound treated with fistulotomy or fistulectomy, whereas a similar randomized controlled study comparing this was conducted by Ramzisham AR compared wound healing in both groups (fistulotomy vs. fistulectomy) at 14th day and 28th day. The wound was evaluated by epithelialization¹⁹.

Conclusion

It is concluded that that treatment outcome in terms of wound healing is different in fistulotomy

as compared to fistulectomy in treatment for fistula in ano. There is a massive difference while comparing wound healing between fistulotomy and fistulectomy for fistula in ano treatment. Fistulotomy offers an earlier wound healing as compared to fistulectomy. The hypothesis of this study holds true that the time required for complete wound healing after fistulotomy is comparatively less in respect to the time required for wound healing after fistulectomy. Moreover, the limitations of our study include the lack of a large group of patients along with a lack (due to time constraint) of large follow-up. Furthermore, only a few randomized controlled trials compare these two modalities in the management of low fistula in ano. Therefore, it is recommended that prospective, randomized controlled trials are conducted in multiple centers with longer follow-up of patients.

Conflicts of Interest

There are no affiliations with or involvement in any organization or entity with any financial or non-financial interest in the subject matter or materials discussed in this study.

Acknowledgement

I would like to acknowledge my supervisor, Dr. Salman Faridi, who guided me throughout this study. I would also want to thank my family and my friends who supported me during the study and offered deep insight into it.

Funding

None.

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