

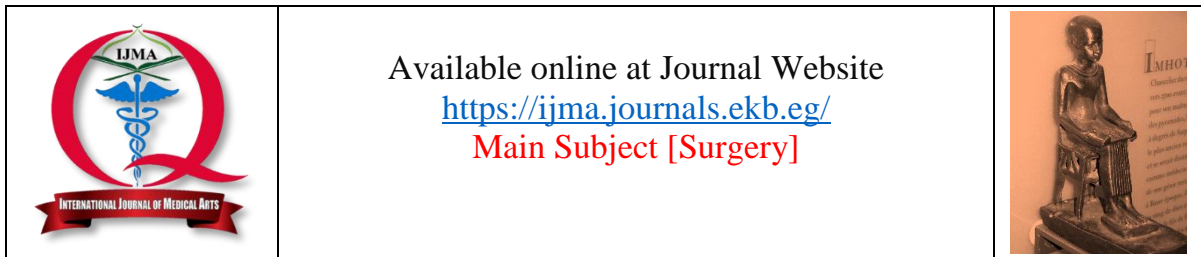
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Original Article

A Comparative Study between Fistulectomy and Fistulotomy with Marsupialization in Management of Simple low Anal Fistula

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ABSTRACT

Article information

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Background: A fistula in ano is an opening lined by granulation tissue that extends from the deep anal canal or rectum to the superficial epidermis of the anus. Fistulotomy is considered the gold standard treatment.

The Aim of the work: This work aimed to compare fistulectomy and fistulotomy with marsupialization in uncomplicated low anal fistula.

Patients and Methods: Sixty [60] individuals with uncomplicated perianal fistula were enrolled in this prospective study. Patients were enrolled from the surgical clinics of El Hussein University Hospital and Fayoum insurance hospital. Complete medical history, physical examinations were done for every patient at the time of enrollment and before the surgical intervention.

Results: According to the types of fistulae, intersphincteric type was the most common type with no significant difference between the 2 groups [P value = 0.8]. As regards the wound healing time, it was shorter in group B than in group A [P value = 0.001]. In terms of the postoperative complications, Urinary retention, bleeding, infection, and incontinence were the most reported complications, with an overall complication was higher in group A than in group B.

Conclusion: Faster recovery and shorter wound discharge time are the results of a fistulotomy with marsupialization as opposed to a fistulectomy. For simple perianal fistulas, fistulotomy with marsupialization is an effective alternative to fistulectomy.

Keywords: Anal fistula; Transsphincteric fistula; Fistulectomy; Marsupialization.



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INTRODUCTION

Hippocrates, writing in 400 B.C.E., recorded the first case of an anal fistula. In most cases, Symptoms such as abdominal pain, weight loss, watery or purulent discharge, altered bowel habits, skin excoriation, diarrhea, bleeding, swelling, perianal discharge, and pain are caused by the abnormal channels that form between the anal canal and rectum and the skin around the anus as a result of abscess ulceration or incision drainage [1, 2]. It's a granulation tissue-lined aberrant tube between the anorectal mucosa and the perianal skin. With a prevalence rate of 8.6 occurrences per 100,000 people, anal fistula is one of the most prevalent anorectal diseases seen by general and colorectal surgeons [3, 4].

Among men, the rate is 12.3 per 100,000, while among women, it's 5.6 per 100,000. Men are more likely to be affected. Most diagnoses occur in people aged 20 to 40, with the average age at diagnosis being 38. Obesity, diabetes, hyperlipidemia, a prior history of anorectal surgery, and even a high sodium consumption has all been linked to the development of a perirectal fistula [5].

Simple anal or rectal cancer, trauma, and inflammatory bowel disease [IBD] are some of the additional causes of inflammation that can lead to perineal fistulization [6].

Males are about twice as likely to be affected as females, at a rate of 1-2 new cases per every 10,000 persons [6]. It is believed that glandular blockage causes anorectal abscess and, eventually, a fistula in patients with an anorectal fistula. A single tract, a subcutaneous tract, and involvement of less than 30% of the external sphincter are all indicative of a simple fistula [7].

By removing the entire fistulous tract during a fistulectomy, pathologists can be sure that no secondary tracts were missed. In addition, they have access to a full specimen for histological analysis [8, 9].

A fistulotomy exposes the fistulous tract, leaving smaller, easily healed epithelized lesions. If the fistulotomy wounds are marsupialized, the recovery time is even faster [10].

This randomized clinical trial compared two treatment options for uncomplicated anal fistulas; fistulectomy and fistulotomy with marsupialization.

PATIENTS AND METHODS

This study was carried out in our university Sixty [60] individuals with uncomplicated perianal fistula were enrolled in this prospective study. Patients were enrolled from the surgical clinics of El Hussein University Hospital and Fayoum insurance hospital, after taking an ethical approval from Al-Azher Faculty of Medicine, and written consent from every patient. Two groups of patients were created at random; Group A underwent a fistulectomy, and Group B who underwent a fistulotomy with marsupialization. We enrolled the patients according to the following criteria:

The Inclusion criteria: Patients over the age of 14 years old, with an External and internal aperture in a subcutaneous fistula, and additionally a transsphincteric fistula that involves less than the anal sphincter's lower a third.

The Exclusion criteria: unfit patients, those under the age of 14, those with anal incontinence patients, patients with high fistulas, branching fistulas, and malignant fistulas, patients with inflammatory bowel syndrome such as ulcerative colitis and Crohn's disease, recurrent fistulae, and anal fissures or hemorrhoids.

Data collection

Complete medical history and detailed clinical examinations were done for every patient at the time of enrollment. Routine laboratory work-up was done after admission including complete blood count [CBC], International normalization ratio [INR], liver and renal function tests. Electro-cardiogram [ECG] and magnetic resonance imaging [MRI] and fistulogram were also done for every patient.

Surgical techniques

It was decided to divide the patients into two groups: Surgery to remove the fistulous tract makes up Group A. In Group B, the fistulous tract was left exposed after the procedure and checked for secondary expansions [marsupialization]. Edges of the fistula tract were sutured to the wound borders.

Fistulectomy: Proctoscopy allowed us to view and identify the external entrance while the patient was under spinal anesthetic in the lithotomy posture, so we could pinpoint the interior opening and fistula tract. To pinpoint the

presence and location of an interior opening, hydrogen peroxide was administered through the outside aperture. To diagnose the fistula according to Park's classification, a probe was inserted via the external opening and used to determine the orientation of the fistula tract [thick granulation tissue] leading to the internal opening. It was found that by coring out the primary track, the risk of missing subsequent tracks, which showed up as transected granulation tissue, may be reduced. The track was cored out from the outside toward the inside entrance with scissors or cautery dissection, and then the defect was closed anatomically with mucosal closure utilizing interrupted absorbable sutures. The wound was softly packed outside the sphincters.

Fistulotomy with marsupialization: The patient was positioned in lithotomy posture under spinal anesthesia, and over the probe, the fistula tract was laid open. Fistula tracts are curetted and checked for secondary expansions after the primary tract has been exposed. The surgical incision was marsupialized from the toes up then employing interrupted 3-0 vicryl sutures to close the incision and the fistula tract. In close proximity, marsupialization would be difficult in spots where the ano-rectal mucosa has been permeable. After the fistulous tract was laid out flat, it was curved so that any secondary expansions could be seen. The wound's edges were sewn up with the fistula tracts. Clotting has stopped.

Statistical Analysis: Data was entered, processed, and analyzed using SPSS 20, a

statistical program designed for the social sciences. Categorical outcomes were described as numbers and percentages and the comparison between the two groups regarding it was done by the Chi-square test. quantitative data were presented as mean and SD, and the comparison between the two groups regarding it was done by the independent t test. P value of < 0.05 was considered significant.

RESULTS

A total number of 60 patients were included in the present study. The two study groups were matched for their age, gender, and BMI [P value > 0.05] [Table 1]. According to the types of fistulae, intersphincteric type was the most common type with no significant difference between the 2 groups [P value = 0.8] [Table 2].

As regards the wound healing time, it was shorter in group B than in group A [P value = 0.001]. The wound size was significantly longer in group A than in group B [P value = 0.01]. Patients in group B stayed a shorter time in the hospital than in group A [P = 0.001]. The mean pain score in group A and B was 4 ± 0.7 with no statistically significant difference between the two groups [P = 0.4] [Table 3].

In terms of the postoperative complications, Urinary retention [33.3% vs 26.7%], bleeding [26.7% vs 0 %], infection [23.3% vs 10%], and recurrence [13.3% vs 6.7%] were the most reported complications, with an overall complication was higher in group A than in group B [Table 4].

Table [1]: Demographic characteristics of the two studied group

	Group A [N=30]	Group B [N=30]	P
Age [years], Mean \pm SD	38.8 \pm 9.74	39.27 \pm 8.53	0.843
BMI [kg/m ²], Mean \pm SD	27.41 \pm 3.62	28.13 \pm 3.75	0.452
Sex			
Male	22 [73.3%]	20 [66.7%]	0.573
Female	8 [26.7%]	10 [33.3%]	

Table [2]: Types of fistulas among the two groups

	Group A [N=30]	Group B [N=30]	p
Subcutaneous	10 [33.3%]	12 [40%]	0.861
Intersphincteric	18 [60%]	16 [53.3%]	
Low transsphincteric	2 [6.7%]	2 [6.7%]	

Table [3]: Postoperative outcomes of the two studied groups

	Group A [N=30]	Group B [N=30]	p
Wound healing time [weeks]			<0.001
Mean \pm SD	7.44 \pm 1.31	4.58 \pm 0.826	
Range	5 - 9	3 - 6	
Postop. wound size [cm²]			<0.001
Mean \pm SD	3.42 \pm 0.572	1.88 \pm 0.633	
Time to discharge to stop [weeks]			<0.001
Mean \pm SD	4.75 \pm 0.821	2.53 \pm 0.647	
Pain score VAS [24hr]			0.445
Mean \pm SD	4.06 \pm 0.774	4.21 \pm 0.737	
Return to normal activity [day]			<0.001
Mean \pm SD	14.89 \pm 3.91	10.35 \pm 3.28	

Table [4]: Postoperative complications of the two studied groups

	Group A [N=30]	Group B [N=30]	P
Urinary retention	10 [33.3%]	8 [26.7%]	0.573
Bleeding	8 [26.7%]	0 [0%]	0.002
Infection	7 [23.3%]	3 [10%]	0.01
Incontinence	0 [0%]	0 [0%]	-
Recurrence	4 [13.3%]	2 [6.7%]	0.389

DISCUSSION

In terms of age, sex, and body mass index, neither group differs significantly from the other. Consistent with the study by **Jain et al.** [11].

Computer-generated random numbers were used to place patients into either the fistulectomy group [group A] or the fistulotomy with marsupialization group [group B]. Group A had a mean age of 34.55 \pm 1.96 years and a male to female ratio of 16 to 4. Group B consisted of 18 males and 2 females, with an average age of 34.30 \pm 3.03 years. Neither the average age nor the percentage of males or females differed significantly between groups.

As far as the current study is concerned, there are no discernible fistula-type variations between the two groups. Total fistula prevalence did not differ significantly between groups A and B. Group A had 7 cases of subcutaneous fistulae, 12 cases of intersphincteric fistulae, and 1 case of a low trans-sphincteric fistula. Out of the 19 patients in Group B, 8 had subcutaneous fistulae, 11 had intersphincteric fistulae, and 1 had a low trans-sphincter fistula.

Our findings were consistent with those of **Kumar et al.** [12] who also found that Their study's subjects were randomly split in half. 70 patients in Group I received fistulectomy, while the same number [70] in Group II got fistulotomy with marsupialization. Subcutaneous fistula in-

ano was the most common complication experienced by participants in both study groups [78.57%]. Inter-sphincteric fistula-in-ano affected 12.14 percent of patients while trans-sphincteric fistula-in-ano affected 9.2 percent of patients in both groups. There was no discernible distinction between the two groups statistically speaking [P>0.05].

In the current study, group B's operative time [29.58 minutes] was considerably lower than group A's [24.33 minutes]. Our results are in line with those observed by **Mallik et al.** [13] who concluded that the fistulectomy group required significantly more time under the knife than the fistulotomy group. In addition, a study by **Naeem Ghaffar and Abbas** [14] found that fistulotomy was quicker than fistulectomy [P = 0.04].

Hiremath and Patil [15] recruited fifty patients for the study, and then randomly assigned them to one of two groups of twenty-five. Fistulotomy was used on Group I, while fistulectomy was used on Group II. Group I had a much shorter average operating time than group II [30 minutes vs. 60 minutes, p 0.001].

In the current study, wound healing duration in group B was found to be 7.44 weeks, substantially shorter than in group A's 4.58 weeks [P < 0.001]. Group A had considerably larger postoperative wounds and took longer to cease bleeding than Group B. **Jain et al.** [11], reported that in group B [4.85 \pm 1.39 weeks],

postoperative lesions healed faster than in group A [6.75±1.39 weeks]. The statistical significance of this difference in healing time was determined by a P-value of 0.003. Group B's postoperative lesions stopped oozing sooner than group A's [2.75±1.71 weeks vs. 4.10±1.71 weeks, P=0.035].

In contrast, in the study by **Kumar et al.** [12], the mean operation wound size in group I was 2.2 ± 0.4 cm² and in group II it was 1.8 ± 0.3 cm² [p>0.05]. [p<0.05] Group II wounds stopped seeping significantly earlier than group I wound [2.4 ± 1.4 weeks vs. 4.5± 1.6 weeks].

In accordance with the findings of **Barase and Shinde** [16]. The median time for a fistulotomy wound to heal was 12 days [IQR: 10-18 days], while the median time for a fistulectomy wound to heal was 21 days [IQR: 14-35 days]. This difference was statistically significant [p<0.001].

In the study by **Chalya and Mabula** [17], the mean operation lesion size for group A was 2.4 0.2 cm² and for group B it was 1.2 0.1 cm² [P=0.542]. In group B [2.6±1.2 weeks], post-operative wounds stopped oozing substantially earlier than in group A [4.3 ± 1.4 weeks] [P=0.012].

In the present study [P0.001], normal activity was resumed more quickly in Group A than in Group B. However, there are no statistically significant variations in postoperative VAS scores or times to return to regular activities across the groups. **Jain et al.** [11] found no significant difference in pain ratings between the two groups.

Our findings were corroborated by those of **Chalya and Mabula** [13], who found that the mean VAS score in Group B was higher than in Group A at all postoperative follow-up dates.

There was no discernible distinction between the two groups statistically. After 24 hours, the average Pain score was 5.566+0.980 [group A: 6.100+0.922; group B: 5.033+0.718] in the study by **Khan et al.** [17].

The average pain rating after 5 days was 3.550 + 0.981, with group A reporting 4.266+0.639 and group B reporting 2.833+0.698. Our data showed a statistically significant distinction between the two groups in terms of bleeding and infection. In terms of frequency of occurrence, there is no discernible distinction between the two classes. In contrast, neither group of patients

experienced recurrence or incontinence in the study by **Jain et al.** [11]. Both groups experienced similar physical, social, and erotic post-operative complications.

In agreement with findings of the current work, less post-operative discomfort and blood loss were noted by patients in group II of fistulotomy with marsupialization, as described by **Kumar et al.** [12]. There was no discernible difference between group I and group II in terms of the post-operative complications that emerged.

Five cases of incontinence were reported by **Barase and Shinde** [16] in the fistulotomy group, but only one case was reported in the fistulectomy group. This variation is also statistically significant. Each cohort had one recurrence within the first six months after surgery.

Furthermore, **Elsonbaty et al.** [18] who conducted a comparative study between conventional and Marsupialized fistulotomy of recurrent perianal fistula, and concluded that, marsupialization with surgical management of recurrent perianal fistula is associated with better outcome regarding wound size, discharge, and time for complete healing.

Conclusion: Faster recovery and shorter wound discharge time are the results of a fistulotomy with marsupialization as opposed to a fistulectomy. For simple perianal fistulas, fistulotomy with marsupialization is an effective alternative to fistulectomy.

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