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Original Research Article

Comparison of fistulectomy and fistulotomy in low variety perianal fistula

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ABSTRACT

Background: Fistula in ano is an abnormal tunnel between the anal canal and perianal skin, often causing pain and discharge. This study aims to compare the outcomes of fistulectomy and fistulotomy in patients with low variety perianal fistula.
Methods: This cross-sectional, descriptive study was conducted at the Department of Surgery, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh, from April to September 2012. Fifty patients with low variety perianal fistula underwent fistulectomy (n=25) or fistulotomy (n=25) under spinal anesthesia, with pre- and postoperative antibiotics and analgesics. Outcomes assessed included hospital stay, wound healing, pain, workload, and cost, with weekly follow-up for six weeks.
Results: Among 50 participants (mean age 40 years; fistulectomy 39, fistulotomy 41), 82% were male (M: F 5:1 versus 4:1). Most were laborers (38%), shopkeepers (26%), or farmers (18%). Prior anorectal abscesses accounted for all fistulae (spontaneous rupture 80%, incision and drainage 20%). Common complaints were discharge 96%, pain 80%, swelling 64%; purulent discharge 90%. Posterior fistulae predominated (70%). Postoperative pain scores were 8.88 versus 5.20 ($p<0.001$), hospital stay 4.65 versus 4.08 days ($p<0.001$), and wound healing 31 versus 29 days ($p=0.001$) for fistulectomy versus fistulotomy; 18 patients had temporary urinary retention (1 catheterized).
Conclusion: Fistulotomy is the preferred treatment for low variety perianal fistula, offering faster healing, shorter hospital stays and lower patient and healthcare burden compared to fistulectomy.

Keywords: Fistulectomy, Fistulotomy, Perianal fistula

INTRODUCTION

Fistula in ano, or perianal fistula, is a frequently seen surgical problem that forms a tunnel connecting the inside of the anal canal or rectum to the skin around the anus.[1] Essentially, it is an abnormal passage linking the anorectal canal with the surrounding perianal skin.[2] Most cases are of unknown or cryptoglandular origin, often related to infection of the small anal glands between the sphincters.[3,4] The condition typically causes symptoms such as discharge from the perianal area and recurring pain, which can affect daily life and cause social discomfort. Common contributing factors include repeated abscesses, prior rectal or gynecological surgeries, infections like tuberculosis or fungal disease, inflammatory bowel conditions, trauma, chronic fissures, cancer, or previous interventions such as abscess drainage or treatment of low anal fistula.[5]

Various classification systems have been used to categorize fistulae in ano as low or high, simple or complex, or based on their anatomy and relationship with the sphincter.[6] Commonly described types include low (simple) and high (complex) fistulae, as well as intersphincteric, transsphincteric, suprasphincteric, and extrasphincteric fistulae, according to anatomical

location.[3] This study focused on low-lying, simple inter- or transsphincteric fistulae, given their higher prevalence and relatively straightforward management.[7]

Surgical management remains the primary approach for treating perianal fistulae. Low fistulae are typically managed with fistulotomy, while fistulectomy entails complete excision of the tract and carries a higher risk of complications such as incontinence.[8] In fistulotomy, the tract is laid open, resulting in a smaller wound and faster healing, whereas fistulectomy involves excising the tract along a probe, leading to larger wounds and prolonged recovery.[9] Each procedure has its own benefits and drawbacks, with fistulotomy offering quicker healing and fistulectomy involving more extensive tissue removal. High fistulae are treated with alternative techniques such as seton placement, fibrin glue application, advancement flaps, or fistulotomy with sphincter reconstruction; however, these approaches were not addressed in the present study.[10]

Despite the long history of surgical management for low perianal fistulae, there remains no clear consensus on the optimal procedure. Previous studies comparing fistulotomy and fistulectomy have reported conflicting results regarding postoperative pain, healing time, risk of incontinence, and recurrence. Additionally, much of the existing literature focuses on small patient cohorts or includes a mix of low and high fistulae, limiting generalizability. This highlights the need for further investigation specifically targeting low-lying, simple fistulae to guide surgical decision-making. Therefore, the purpose of this study is to compare the outcomes of fistulectomy and fistulotomy in patients with low variety perianal fistula.

The objective of the study was to compare the outcomes of fistulectomy and fistulotomy in patients with low variety perianal fistula.

METHODS

This cross-sectional study with a descriptive component was conducted at the Department of Surgery, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh, between April 2012 and September 2012. A total of 50 patients, both male and female, were purposively selected from 78 patients admitted to various surgical units at BSMMU Hospital based on predefined inclusion and exclusion criteria for the evaluation and comparison of fistulectomy and fistulotomy in low variety perianal fistula.

Inclusion criteria

Patients with low variety perianal fistula, with the internal opening located below the anorectal ring were included.

Exclusion criteria

Patients with horseshoe fistulas, fistulas associated with inflammatory bowel disease, Crohn's disease, tuberculosis, or malignancy, patients in whom the internal opening could not be located and patients with complicating medical conditions such as diabetes mellitus, hypertension, ischemic heart disease, or COPD who were unfit for surgery prior to medical optimization were excluded.

All patients underwent either fistulectomy (n=25) or fistulotomy (n=25). Preoperatively, prophylactic intravenous ceftriaxone 1 g was administered, and spinal anesthesia was used for all patients. Postoperatively, intramuscular diclofenac sodium or pethidine 100 mg was administered every 12 hours for 48 hours, and ceftriaxone 1 g IV was continued for 48 hours in both groups. Outcomes assessed included duration of hospital stay, wound healing measured by complete epithelialization, postoperative pain using a standardized pain score, hospital workload based on bed occupancy and dressing requirements, and cost factors including surgical expenses and loss of working days. Patients were followed weekly for six weeks postoperatively.

RESULTS

The highest incidence of fistula in ano was observed among participants aged 21–50 years. The overall age ranged from 20–70 years, with a mean of 40 years. In the fistulectomy group (group A), ages ranged from 22–70 years (mean 39 years), and in the fistulotomy group (group B), 20–60 years (mean 41 years).

Male participants predominated (82%), with a male: female ratio of 5:1 in group A and 4:1 in group B (Table 1).

Table 1: Baseline demographic characteristics of study participants (n=50).

Variables	Fistulectomy	Fistulotomy	Frequency (%)	Percentage (%)
Age (years)				
0–10	0	0	0	0.0
11–20	0	1	1	2.0
21–30	8	6	14	28.0
31–40	8	9	17	34.0
41–50	7	7	14	28.0
51–60	0	2	2	4.0

Continued.

Variables	Fistulectomy	Fistulotomy	Frequency (%)	Percentage (%)
61–70	2	0	2	4.0
Sex				
Male	21	20	41	82.0
Female	4	5	9	18.0

The majority of participants were laborers (38.0%), followed by shopkeepers (26.0%) and farmers (18.0%). Smaller proportions were service workers (10.0%), housewives (6.0%), and students (2.0%) (Table 2).

Table 2: Occupational distribution of study participants (n=50).

Occupation	Frequency	Percentage (%)
Labour	19	38.0
Farmer	9	18.0
Shopkeeper	13	26.0
Service	5	10.0
Housewife	3	6.0
Student	1	2.0

Previous anorectal abscess was the most common predisposing factor for fistula in ano. Among these, 80% were due to spontaneous rupture, while 20% had a history of incision and drainage (Table 3).

Table 3: Ano-rectal pathology among study participants (n=50).

Condition	Percentage (%)
Anorectal abscess (spontaneous rupture)	80.0
Anorectal abscess (incision and drainage)	20.0

The most common presenting complaints were perianal discharge (96.0%), pain (80.0%), and swelling (64.0%). Pruritus ani was observed in 16.0% of participants. Regarding the type of discharge, purulent discharge predominated (90.0%), followed by blood mixed (6.0%) and serous discharge (4.0%) (Table 4).

Table 4: Presenting complaints and type of discharge among study participants (n=50).

Variables	Frequency	Percentage (%)
Presenting complaints		
Swelling	32	64.0
Discharge	48	96.0
Pain	40	80.0
Pruritus ani	8	16.0
Type of discharge		
Purulent	45	90.0
Blood mixed	3	6.0
Serous	2	4.0

Among the study participants, posterior fistulae were more common (70.0%) compared to anterior fistulae (30.0%) (Figure 1).

Associated conditions observed in the study participants included pruritus ani (16.0%), diabetes mellitus (8.0%), and lower incidences of fissure in ano (4.0%) and hypertension (4.0%). Hypertension and diabetes were well controlled preoperatively as per physician guidance (Table 5).

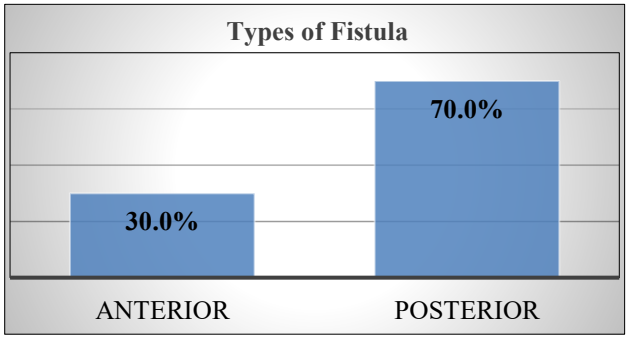

Figure 1: Distribution of types of fistulae among study participants (n=50).

Table 5: Associated diseases among study participants (n=50).

Disease	Frequency	Percentage (%)
Pruritus ani	8	16.0
Fissure in ano	2	4.0
Hypertension	2	4.0
Diabetes mellitus	4	8.0

Patients who underwent fistulectomy experienced higher postoperative pain with a mean score of 8.88, compared to 5.20 in those who underwent fistulotomy ($p<0.001$) (Figure 2).

Pain was managed with injectable analgesics in the first 24 hours, after which additional strong analgesics were generally not required. One patient in the fistulectomy group required catheterization postoperatively, while 18 patients experienced temporary retention of urine that resolved with analgesics. No retention was observed in the 24–36 hours range for either group (Figure 3).

The mean hospital stay was longer for patients who underwent fistulectomy (4.65 days) compared to those who underwent fistulotomy (4.08 days), with a statistically significant difference ($p<0.001$) (Figure 4).

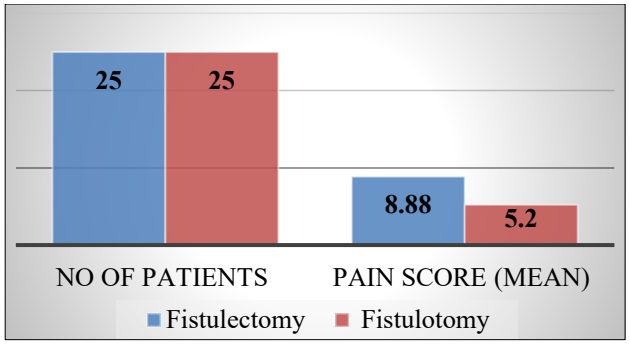

Figure 2: Pain score on first postoperative day among study participants (n=50).

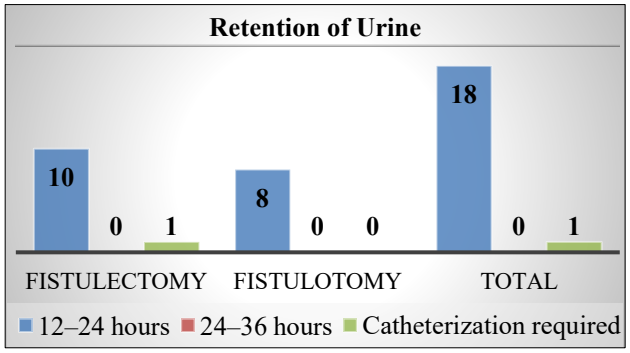

Figure 3: Postoperative retention of urine among study participants (n=50).

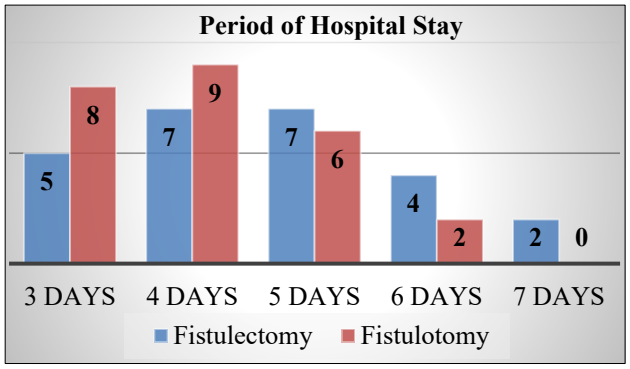

Figure 4: Period of hospital stay among study participants (n=50).

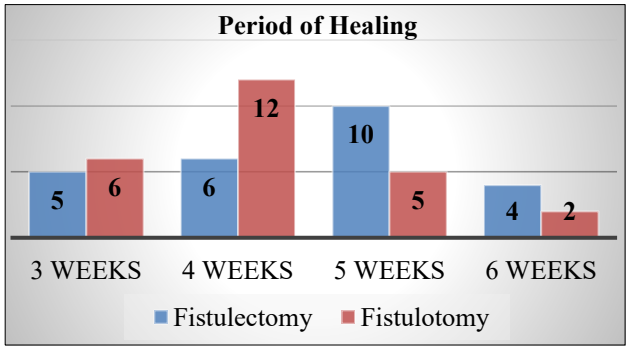

Figure 5: Duration of wound healing among study participants (n=50).

The mean duration for complete wound healing was slightly longer in the fistulectomy group (mean 31 days) compared to the fistulotomy group (mean 29 days), with a statistically significant difference (p=0.001) (Figure 5).

DISCUSSION

This study compared the outcomes of fistulectomy and fistulotomy in patients with low variety perianal fistula admitted at a tertiary care center in Bangladesh. A total of 50 patients were evaluated, with equal numbers undergoing each procedure. Most participants were young to middle-aged males, reflecting the demographic predisposition of fistula in ano. The predominant presenting complaint was perianal discharge, often associated with prior anorectal abscess. Our findings demonstrated that fistulotomy was associated with lower postoperative pain, shorter hospital stay, and faster wound healing compared to fistulectomy, although both procedures were effective in managing the condition.

In the present study, patient ages ranged from 20 to 70 years, with a mean age of 40 years. The age distribution corresponds closely with the mean age of 38.3 years reported by Goyal et al and is also in agreement with the findings of Sainio et al, who reported a mean age of 38.3 years in a 10-year epidemiological survey.[11,12] Similarly, Li et al observed median ages of 36 years for males and 35 years for females in a large retrospective series, further supporting the consistency of our results.[13] Male patients predominated, accounting for 82% of cases with a male-to-female ratio of 4:1. This distribution aligns with the ratio of 1.8:1 reported by Goyal et al, and is further supported by Sainio et al who noted approximately 64% males, as well as Li et al, who reported a higher male predominance of nearly 6:1.[11-13] Regarding socioeconomic status, 70% of patients were from lower socioeconomic backgrounds, while 30% belonged to relatively higher groups. This trend likely reflects contributing factors such as illiteracy, limited awareness, and poor hygiene, findings that align with those reported by Goyal et al.[11]

In this study, the most frequent presenting symptom was perianal discharge, observed in 96% of patients, followed by pain in 80% and swelling in 64%. These findings are in close agreement with Patel et al, who observed perianal discharge in 93.3% of cases, pain in 50%, and pruritus ani in 25%, highlighting the predominance of discharge as the main symptom and confirming its clinical significance.[14] Javed et al similarly reported that 75% of patients presented with perianal discharge, 60% experienced pain, and 25% presented with swelling; their study also emphasized a male predominance of 89% and a mean age of 42.3 years, both of which are comparable to the demographic trends seen in the present series.[15] Collectively, these studies reinforce the observation that perianal discharge remains the most frequent and defining feature of low variety perianal fistula, while pain and swelling, though common, are somewhat less prevalent,

thereby strengthening the external validity of the present results.

In terms of fistula location, 70% of external openings were posterior and 30% anterior. Zhao et al similarly reported a predominance of posterior openings in their magnetic resonance imaging (MRI)-based study, with 31.8% located on the left buttock, 31.0% on the right buttock, and 16.3% along the midline, while only a small fraction was found in the perineal region.[16] Our study categorized only anterior and posterior openings. Associated comorbidities included anal fissure in 4%, diabetes mellitus in 8%, and hypertension in 4% of patients. These findings collectively reinforce the consistency of posterior predominance across different populations and diagnostic modalities.

Postoperative outcomes showed that pain was higher in the fistulectomy group (median score 8.88) compared to the fistulotomy group (median 5.20), with a statistically significant difference ($p<0.001$), in line with Bhatti et al.[17] One patient required catheterization after fistulectomy, while none required it following fistulotomy. Temporary urinary retention was reported in 10 patients after fistulectomy and 8 after fistulotomy, all resolving with analgesics.

Patients who underwent fistulectomy had a longer mean hospital stay (4.65 days, range 3–7) compared to those treated with fistulotomy (4.08 days, range 3–6), with the difference reaching statistical significance ($p<0.001$). Wound healing occurred over 3–6 weeks, with a median of 31 days for fistulectomy and 29 days for fistulotomy ($p=0.001$). Haider et al, in a JCPSP prospective study (n=110), consistently reported longer healing with fistulectomy: 38.9±4.7 days for fistulectomy versus 26.2±4.5 days for fistulotomy ($p<0.001$).[2] In our study, patients were followed up for a duration of only six weeks.

No major complications such as hemorrhage, stricture, sphincter incontinence, or recurrence were observed. This is likely due to the inclusion of only low variety perianal fistulae and meticulous surgical technique that preserved sphincter integrity.

Limitations

This study had some limitations, such as the study was conducted at a single-center hospital and may not reflect the situation across the country, the study was carried out over a short period of time and the sample size was small and a larger sample could provide more robust conclusions.

CONCLUSION

Anal fistula is a frequent cause of chronic perianal irritation, and successful management relies on thorough knowledge of normal anorectal anatomy, fistula pathoanatomy, and the available treatment options. Identifying patients at risk of postoperative incontinence or with complex/high fistulae allows referral to specialist proctology units. Although well-controlled trials on anal fistula management are limited, such studies are necessary to better evaluate treatment modalities. Fistulectomy, while effective, is associated with longer healing times, increased hospital visits, higher costs, and greater patient burden, including loss of working days. In contrast, fistulotomy for low variety perianal fistula demonstrates shorter hospital stays, faster healing (typically within four weeks), fewer dressing visits, reduced expenses, and decreased workload for healthcare providers. Therefore, fistulotomy is a preferable approach for low variety perianal fistula, optimizing patient recovery and resource utilization.

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