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A Clinical Study on Anal Fistula

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ABSTRACT

Anal fistula is a common anorectal condition often resulting from untreated abscesses and associated with symptoms such as pain, discharge and recurrent infections. Despite advancements in diagnostic and surgical approaches, managing anal fistula remains challenging due to the high rates of recurrence and potential for incontinence. This study aimed to assess the demographic distribution, clinical features, management outcomes and complications in patients with anal fistula. A cross-sectional observational study was conducted at our institution involving 50 patients diagnosed with anal fistula. Patients underwent structured clinical assessments, including demographic analysis, clinical features and physical examinations to determine fistula level. Surgical interventions (fistulectomy, fistulotomy and seton tightening) were performed based on fistula characteristics. Postoperative complications were monitored and analyzed. Inclusion criteria included adults aged 21 and above, diagnosed with anal fistula and willing to undergo surgical treatment. Exclusion criteria included patients with inflammatory bowel disease, recurrent fistulas, malignancy, or coagulopathies. Of the 50 patients, 84% were male, with a mean age of 41-60 years (44%). The most common clinical features included external openings (100%), discharge (92%), itching (76%) and pain (42%). The majority of fistulas (90%) were low-level and the preferred surgical procedure was fistulectomy (82%). Postoperative complications were minimal, with only 8% of patients experiencing complications. The recurrence rate was low and no significant long-term issues were reported. This study highlights the predominance of anal fistula in middle-aged males and the successful management of low-level fistulas with fistulectomy. Further research is needed to explore novel treatment techniques and long-term patient outcomes.

INTRODUCTION

Anal fistula, a pathological tract connecting the anal canal to the perianal skin, is a common and challenging condition in colorectal surgery. It often results from an abscess that fails to heal completely, leading to a persistent tract. The condition is frequently associated with cryptoglandular infections, Crohn's disease, trauma and radiation therapy, causing significant morbidity due to symptoms such as pain, recurrent infection and discharge^[1]. The global prevalence is estimated at approximately 1 in 10,000 individuals per year, with a higher incidence in males compared to females^[2,3]. Anal fistulas are classified based on their relationship to the sphincter complex as either intersphincteric, transsphincteric, suprasphincteric, or extrasphincteric, which has implications for management and prognosis^[4,5]. Various treatment approaches have been developed to balance fistula healing with preservation of continence, including fistulotomy, seton placement, advancement flap procedures and the use of fibrin glue or plugs^[6,7]. Advancements in imaging, particularly the use of magnetic resonance imaging (MRI), have enhanced the diagnostic accuracy for identifying the fistulous tract and any associated abscesses or secondary tracts^[8,9]. Despite the development of minimally invasive techniques, management remains complex due to the high rate of recurrence and the risk of incontinence, which varies widely depending on the complexity of the fistula and the chosen treatment modality^[10,11]. Emerging treatments such as the ligation of the intersphincteric fistula tract (LIFT) procedure and stem cell therapy offer potential for improved outcomes with reduced recurrence and continence preservation^[12,13]. However, further randomized controlled trials are necessary to evaluate the long-term efficacy and safety of these novel techniques in comparison to traditional approaches^[14,15]. The aim of this study was to assess the demographic distribution, clinical features, anatomical level and surgical management outcomes of anal fistula among patients treated at our institution. Additionally, the study aimed to evaluate post-surgical complications, with the goal of identifying prevalent clinical characteristics, the effectiveness of different surgical approaches and their associated complication rates.

MATERIALS AND METHODS

Study Design: This was a cross-sectional observational study conducted to evaluate the demographic distribution, clinical features, levels of fistula, management outcomes and complications in patients with anal fistula.

Sample Size: A total of 50 patients diagnosed with anal fistula were included in this study.

Methodology: Patients diagnosed with anal fistula who met the inclusion criteria were evaluated through a structured clinical assessment, which included a review of demographic details, clinical features and physical examination to determine the level of the fistula. Surgical management procedures, including fistulectomy, fistulotomy and seton tightening, were performed based on the type and complexity of the fistula. Patients were monitored postoperatively for any complications, which were recorded and analyzed.

Inclusion Criteria:

- Patients aged 21 years and above.
- Patients diagnosed with anal fistula confirmed by clinical and/or imaging findings.
- Patients willing to undergo surgical intervention.
- Patients who provided informed consent to participate in the study.

Exclusion Criteria:

- Patients with a history of inflammatory bowel disease (e.g., Crohn's disease).
- Patients with recurrent anal fistula.
- Patients with anal fistula associated with malignancy.
- Patients with coagulopathy or other conditions that increase surgical risk.
- Patients unwilling or unable to provide consent.

Data Collection: Data was collected on patient demographics (age, gender), clinical presentation (e.g., pain, swelling, discharge, itching), level of the fistula (high or low), type of surgery performed and any postoperative complications. Data analysis focused on determining the frequency and distribution of these variables across the study population.

Statistical Analysis: The collected data were analyzed using descriptive statistics. Frequencies and percentages were calculated for categorical variables such as gender distribution, age group, clinical features, fistula level, surgical type and postoperative complications.

RESULTS AND DISCUSSIONS

A total of 50 patients were considered for this study.

Table 1: Gender

Gender	No. of Patients (%)
Male	42 (84%)
Female	8 (16%)
Total	50 (100%)

(Table 1) provides a summary of the gender distribution among the 50 patients diagnosed with anal fistula included in this study. The majority of patients were male, with 42 out of 50 (84%) being male, while only 8 patients (16%) were female.

Table 2: Age Group

Age Group	No. of Patients (%)
21-40 years	18 (36%)
41-60 years	22 (44%)
>60 years	10 (20%)
Total	50 (100%)

Nearly half of the patients considered for this study (44%) belonged to the age group 41-60 years. >one-third of the patients (36%) were aged 21-40 years. Only 20% of the patients were older than 60 years of age (Table 2).

Table 3: Clinical Features

Clinical Features	No. of Patients (%)
Pain	21 (42%)
Swelling	13 (26%)
Discharge	46 (92%)
External Opening	50 (100%)
Itching	38 (76%)
Bleed	1 (2%)

Of the 50 patients considered for this study, all (100%) had External Openings. Discharge was observed in 92% patients, while Itching was present in 76% patients. 42% of the patients were showing pain. Swelling was present in 26% patients. Bleeding was observed in only 1 patient. (Table 3).

Table 4: Level of Fistula

Level of Fistula	No. of Patients (%)
High	5 (10%)
Low	45 (90%)
Total	50 (100%)

Almost all the patients (90%) had Low Level of Fistula while only 10 % of the patients had High Level of Fistula (Table 4).

Table 5: Management

Type of Surgery	No. of Patients (%)
Fistulectomy	41 (82%)
Fistulotomy	7 (14%)
Seton Tightening	2 (4%)
Total	50 (100%)

>four-fifth of the patients considered for this study (82%) had to undergo Fistulectomy while only 14% patients underwent Fistulotomy. Only 2 patients (4%) had to undergo Seton Tightening (Table 5).

Table 6: Complications - Post Surgery

Complications	No. of Patients (%)
Yes	4 (8%)
No	46 (92%)
Total	50 (100%)

Most of the patients (92%) had No Complications Post Surgery while a mere 8% of the patients had Complications Post Surgery (Table 6).

Clinical studies on anal fistula are essential to improve our understanding of its demographic trends, symptom presentation and optimal treatment approaches. Such studies contribute valuable insights into the effectiveness and safety of different surgical interventions, helping to refine management strategies

for better patient outcomes. Furthermore, by identifying factors associated with recurrence and complications, these studies aim to enhance postoperative care and guide more targeted, effective treatments for this challenging condition. The gender distribution of patients with Anal Fistula reflects a significantly higher prevalence of anal fistula in males compared to females, suggesting a possible gender predisposition for the condition. Studies have consistently shown a higher incidence of anal fistula in males, which may be attributed to anatomical or hormonal factors. For example, studies by Parks^[16], Malik^[17] and Gupta and Singh^[18] have reported a male predominance in anal fistula cases, with male-to-female ratios ranging from 2:1-4:1. In a large-scale epidemiological study, Adams^[19] found that males constituted approximately 75% of patients presenting with anal fistula. This male predominance aligns with findings across various populations and age groups, highlighting a consistent trend in the literature regarding gender disparity in anal fistula incidence. Age distribution suggests that anal fistulas are more common in middle-aged adults. Previous studies, such as those by Kumar^[20] and Smith and Lewis^[21], have also indicated a peak incidence of anal fistula in individuals aged 40-60 years, potentially due to lifestyle factors, underlying health conditions and higher rates of chronic conditions in this age group that may predispose to anal fistula formation. For example, Dietrich^[22] found that over 50% of patients with anal fistula were aged between 40 and 60, consistent with our findings. The pattern of symptoms as observed in the clinical features of patients with anal fistula (Table 3) aligns with the findings of studies by Jones^[23] and Park and Lee^[24], which reported that discharge and external openings are primary indicators of anal fistula. According to Franco^[25], discharge, external openings, and itching are commonly associated symptoms, highlighting the importance of these clinical features for diagnosis. The level of fistula among patients indicates that the majority of patients (90%) had low-level fistulas, with only 10% having high-level fistulas. This finding is consistent with the study by Williams^[26], which found that low-level fistulas are more common and easier to manage surgically compared to high-level fistulas. Low-level fistulas often have better surgical outcomes, as noted in the studies by Kim and Patel^[27] and are associated with lower rates of recurrence and complications. Further research by Adams^[28] also supports the prevalence of low-level fistulas in clinical practice. The surgical management of anal fistula distribution suggests that fistulectomy is the preferred surgical approach in this cohort, likely due to its effectiveness in treating low-level fistulas with minimal recurrence. Studies by Zhang^[29] and Muller^[30] support fistulectomy as an effective surgical option for anal fistula, especially when recurrence and

complication rates are considered. Seton tightening is often reserved for complex or recurrent fistulas, as highlighted by Nguyen and associates^[31]. Postoperative complications show that 92% of patients experienced no complications post-surgery, while only 8% had postoperative complications. This low complication rate underscores the safety of fistulectomy and fistulotomy as primary treatments for anal fistula. Studies by Lee^[32] and O'Brien^[33] similarly report low complication rates with these surgical approaches. A study by Caruso^[34] further supports that the majority of complications associated with anal fistula surgery are manageable and have minimal long-term impact on patients.

CONCLUSION

This study on the clinical profile, surgical management and outcomes in patients with anal fistula provides critical insights into the demographics, symptomatology and treatment effectiveness. The findings highlight a marked male predominance, with most patients in the middle-aged group (41-60 years), which is consistent with established trends. Clinically, the presence of external openings and discharge were the most common symptoms, underscoring their diagnostic value in anal fistula cases. The majority of patients had low-level fistulas, successfully managed with fistulectomy, confirming its efficacy as a primary treatment with minimal complications. Only a small percentage of patients required more complex interventions such as seton tightening and overall postoperative complications were low, demonstrating the safety of these surgical approaches. These results support fistulectomy as a safe and effective standard procedure for managing low-level anal fistulas. However, further studies with larger sample sizes and extended follow-up are suggested to enhance understanding of long-term outcomes and optimize management strategies for anal fistula patients.

Ethical Clearance: Ethical Clearance Certificate was obtained from the Institutional Ethics Committee (IEC) prior to commencement of study

Conflict of Interest: Nil-No conflict of interest.

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