Original Article

The Impact of Delayed Presentation and Inadequate Treatment on the Prognosis of Chronic Anal Fissures in a Bangladeshi Population

*Huda AKMK,[1] Sheme ZA,[2] Hossain MA,[3] Islam MT,[4] Islam ABMA[5]

1. **Dr. AKM Kamrul Huda**
   Assistant Professor
   Department of Surgery
   Army Medical College Rangpur
2. **Dr. Zinat Afrin Sheme**
   Associate Professor
   Department of Biochemistry
   Army Medical College Rangpur
3. **Prof. Dr. Md. Anowar Hossain**
   Professor and Head
   Department of Surgery
   Rangpur Medical College and Hospital
4. **Lt. Col. Dr. Md. Tarikul Islam**
   Classified Surgical Specialist
   CMH, Rangpur
5. **Dr. A B M Ariful Islam**
   Associate Professor
   Department ofCommunity Medicine & Public Health
   Army Medical College Rangpur

Correspondence to:
Dr. AKM Kamrul Huda
Assistant Professor
Department of Surgery
Army Medical College Rangpur
Rangpur, Bangladesh
Email: doctorapple2109@gmail.com
Mob: 01717442344

Submission Date : 10 March 2026
Accepted Date : 08 April 2026

Abstract:

Background: Chronic anal fissure is a common anorectal condition characterized by severe anal pain, bleeding during defecation, and sphincter spasm. Early treatment improves healing rates; however, delayed presentation and inadequate treatment are common in developing countries. This study evaluates how delayed medical consultation and inappropriate prior management influence disease severity and treatment outcomes among Bangladeshi patients. **Methods:** A prospective observational study was conducted involving 50 patients diagnosed with chronic anal fissure at Rangpur medical college hospital in Bangladesh between January and December 2016. Demographic data, symptom duration, previous treatment history, clinical findings, and treatment outcomes were recorded. Statistical analysis was performed using the Chi-square test with significance defined as $p<0.05$. **Results:** Most patients (62%) presented after more than three months of symptoms. Inadequate prior treatment was identified in 44 patients (88%). Patients presenting after three months demonstrated significantly higher rates of sentinel pile formation, fibrotic fissure edges, and severe pain ($p=0.02$). Conservative management was successful in 83% of patients who previously received adequate therapy compared with 45% among those with inadequate treatment ($p=0.03$). **Conclusion:** Delayed presentation and inadequate early management significantly worsen the prognosis of chronic anal fissures. Early diagnosis, proper conservative therapy, and patient education are essential to reduce disease chronicity and the need for surgical intervention.

Keywords:
Chronic anal fissure, Delayed presentation, Conservative treatment, Bangladesh, Anorectal disorders.

Introduction:

Anal fissure is defined as a longitudinal tear in the anoderm distal to the dentate line and is one of the most frequently encountered benign anorectal disorders in surgical practice. Although not life-threatening, chronic anal fissure can cause significant morbidity due to severe pain during defecation, rectal bleeding, and associated constipation, which may substantially impair a patient's quality of life.[1,2] The disorder is often classified into acute and chronic forms based on symptom duration and clinical characteristics. Acute fissures typically last less than six weeks and may heal spontaneously or

respond to conservative management, whereas chronic fissures persist beyond six weeks and are frequently associated with fibrotic edges, sentinel pile formation, and hypertrophied anal papilla, reflecting chronic mucosal injury and internal sphincter hypertonia.[3,4]

The pathophysiology of chronic anal fissure is multifactorial. Persistent internal anal sphincter hypertonia increases resting anal pressure, leading to decreased anodermal blood flow and impaired tissue healing.[5] Ischemia of the posterior midline anoderm, which is particularly vulnerable due to relatively poor vascular supply, is considered a key factor in chronicity.[6] Repeated trauma to the anoderm during defecation, often compounded by constipation, further aggravates fissure development. Low dietary fiber intake, dehydration, and sedentary lifestyles are recognized predisposing factors, especially in developing countries.[7,8] Additionally, chronic fissures can be complicated by secondary features such as sentinel piles, papilla hypertrophy, and associated hemorrhoids, which may contribute to ongoing discomfort and impede healing.[9,10]

Management of anal fissure depends on early diagnosis and an individualized therapeutic approach. Acute fissures generally respond well to conservative therapy, which includes high-fiber diets, adequate hydration, stool softeners, sitz baths, and topical vasodilators such as glyceryltrinitrate or calcium channel blockers.[11,12] Conservative therapy aims to reduce internal anal sphincter pressure, improve anodermal perfusion, and facilitate healing while minimizing the need for surgical intervention. Healing rates with medical therapy range from 50% to 80%, although success is heavily influenced by duration of symptoms, patient compliance, and adequacy of early management.[13,14]

In contrast, chronic fissures are often resistant to conservative therapy and may necessitate surgical intervention, most commonly lateral internal sphincterotomy, which is highly effective in reducing sphincter tone and promoting healing.[15] However, surgical treatment carries potential risks such as minor fecal incontinence and wound complications, underscoring the importance of early identification and proper medical management to prevent progression to chronicity.[16,17]

Despite well-established treatment protocols, delayed presentation and inadequate prior treatment remain common challenges in many low- and middle-income countries, including Bangladesh. Cultural stigma, embarrassment, lack of awareness about anorectal disorders, and reliance on self-medication or traditional remedies often result in patients seeking medical attention only after prolonged symptoms.[7,18] Delays in presentation are clinically significant because prolonged exposure to high anal pressure and repeated trauma can induce irreversible changes in the anoderm, reducing responsiveness to conservative therapy and increasing the likelihood of surgical intervention.[19,20] Inadequate prior treatment, including incomplete medical therapy or inappropriate home remedies, may further exacerbate chronicity and adversely affect outcomes.

Several international studies have highlighted the impact of delayed presentation and prior management on treatment success. Patients who present early and receive guideline-based conservative therapy demonstrate higher healing rates and lower rates of surgical intervention, whereas patients with delayed presentation or prior inadequate treatment frequently require surgery and exhibit slower recovery.[11,15,19] However, there is limited published data from Bangladesh regarding the influence of these factors on disease progression, severity, and outcomes. Understanding these factors is crucial for developing targeted interventions to improve early detection, optimize medical management, and reduce the burden of chronic anal fissure in this population.

The primary objectives of this study are to:

1. Assess the prevalence of delayed presentation among patients with chronic anal fissure in Bangladesh.
2. Describe prior treatment patterns before hospital consultation.
3. Evaluate the association between delayed presentation and disease severity, including sentinel pile formation, fibrotic edges, and symptom intensity.
4. Examine the impact of prior treatment adequacy on treatment outcomes, particularly the success of conservative therapy versus the need for surgical intervention.

By systematically analyzing these variables, this

study aims to provide evidence-based insights to guide clinical practice, improve patient education, and support the development of effective strategies for early intervention and management of chronic anal fissures in the Bangladeshi population.

Materials and Methods

Study Design

This prospective observational study was conducted at a rangpur medical college hospital in Bangladesh over a 12-month period from January to December 2016.

Study Population

A total of **50 patients** diagnosed with chronic anal fissure were included in the study.

Inclusion Criteria

- Patients aged ≥18 years
- Clinically diagnosed chronic anal fissure (>6 weeks duration)
- Patients providing informed consent

Exclusion Criteria

- Acute anal fissure
- Previous anal surgery
- Associated anorectal malignancy
- Inflammatory bowel disease

Data Collection

Data were collected using a structured questionnaire and clinical examination.
The following variables were recorded:

- Age
- Gender
- Occupation
- Dietary habits
- Duration of symptoms before consultation
- Previous treatment history
- Clinical findings (sentinel pile, fibrotic edges, severe pain)
- Treatment outcome

Treatment Protocol

Patients initially received conservative therapy including:

- High-fiber diet
- Stool softeners
- Sitz baths
- Topical vasodilators (glyceryltrinitrate or diltiazem)

Patients who failed conservative treatment underwent lateral internal sphincterotomy.

Statistical Analysis

Data were analyzed using statistical software SPSS v25.Descriptive statistics were used for demographic variables.Associations between variables were evaluated using the Chi-square test. Statistical significance was considered when:$p < 0.05$

Results:

Statistical Tables

Table-I: Demographic Characteristics of Study Participants (n=50)

Category	Number (n)	Percentage
Age Group (years)		
18–30	14	28
31–40	16	32
41–50	12	24
>50	8	16
Sex		
Male	32	64
Female	18	36
Occupation		
Sedentary job	21	42
Manual labor	17	34
Homemaker	9	18
Others	3	6
Dietary Habit		
Low fiber diet	33	66
Adequate fiber diet	17	34

Table-I the study population consisted predominantly of males (64%), with the largest age group between 31–40 years (32%). A significant proportion of patients reported low dietary fiber intake (66%), which is a known risk factor for chronic anal fissure development. Sedentary occupations were common among participants, suggesting a potential lifestyle contribution to constipation and fissure persistence. These demographic characteristics are consistent with previously reported epidemiological patterns in colorectal disorders.[1,3,6]

Table-II: Duration of Symptoms Before Medical Consultation

Duration of Symptoms	Number (n)	Percentage
<1 month	7	14
1–3 months	12	24
3–6 months	18	36
>6 months	13	26

Table-II a large proportion of patients (62%) presented after more than 3 months of symptoms, indicating delayed healthcare seeking behavior. Only 14% sought treatment within the first month of symptom onset. Delayed presentation is known to contribute to chronicity due to persistent sphincter spasm and impaired mucosal healing. Similar trends of late presentation have been reported in several developing country settings.[2,5,9]

Table-III: Types of Initial Treatment Received Before Hospital Presentation

Treatment Type	Number (n)	Percentage
No treatment	11	22
Self-medication (OTC drugs)	15	30
Traditional remedies	8	16
Inadequate medical therapy	10	20
Proper medical management	6	12

Table-IV: Association Between Delayed Presentation and Disease Severity

Duration Before Consultation	Severe Pain (%)	Sentinel Pile (%)	Fibrotic Edges (%)	p-value
<3 months (n=19)	8 (42%)	4 (21%)	5 (26%)	
≥3 months (n=31)	23 (74%)	20 (65%)	21 (68%)	0.02

Table-V: Treatment Outcome According to Prior Treatment Adequacy

Prior Treatment	Patients (n)	Conservative Cure	Required Surgery	p-value
Adequate treatment	6	5 (83%)	1 (17%)	
Inadequate treatment	44	20 (45%)	24 (55%)	0.03

Table-III the majority of patients (68%) either received self-medication, traditional remedies, or no treatment, which may contribute to delayed healing and progression to chronic fissure. Only 12% received guideline-based conservative therapy such as stool softeners, topical nitrates, or calcium channel blockers. Inadequate treatment practices are often influenced by lack of awareness and limited access to specialized colorectal care.[4,7,10]

Table-IV patients presenting after 3 months showed significantly higher rates of chronic pathological features, including sentinel pile formation and fibrotic fissure edges. The association between delayed consultation and disease severity was statistically significant (p=0.02), suggesting that prolonged untreated fissures may undergo structural changes that reduce responsiveness to conservative therapy. These findings support previous studies highlighting the importance of early intervention.[3,8,12]

Table-V patients who previously received adequate guideline-based treatment showed a significantly higher rate of successful conservative management compared with those who had inadequate treatment (83% vs 45%). Conversely, surgical intervention such as lateral internal sphincterotomy was required more frequently in patients with prior inadequate therapy. The statistical association between treatment adequacy and outcome was significant (p=0.03). This emphasizes the importance of proper early management to prevent chronic complications.[6,11,14]

Discussion:

Chronic anal fissure is one of the most frequently encountered benign anorectal disorders in surgical practice. Although the condition is not life-threatening, it can significantly affect quality of life due to severe pain during defecation, fear of bowel movement, and associated constipation. The present study aimed to evaluate the influence of delayed presentation and inadequate prior treatment on disease severity and treatment outcomes among patients in a Bangladeshi population.

The demographic findings of the current study revealed that the majority of patients were between 31 and 40 years of age, with a clear male predominance (64%). Similar age distribution has been reported in previous studies, which have shown that chronic anal fissure commonly affects young and middle-aged

adults who are socially and economically active.[1,3,5] The higher prevalence among males observed in this study may reflect occupational and lifestyle factors such as sedentary work patterns, irregular dietary habits, and higher prevalence of constipation. However, other studies have reported relatively equal gender distribution, suggesting that the condition affects both sexes comparably.[6,8,12]

Dietary habits were also found to play an important role. A large proportion of patients in this study reported low dietary fiber intake (66%), which is a known risk factor for constipation and increased straining during defecation. Constipation leads to increased anal canal pressure and trauma to the anoderm, predisposing individuals to fissure formation.[2,4] Previous studies have similarly demonstrated that low fiber intake and irregular bowel habits contribute significantly to both the development and persistence of anal fissures.[6,13]

One of the most important findings of this study was the high prevalence of delayed medical consultation. More than 60% of patients presented after three months of symptoms, and only a small number sought treatment within the first month. Delayed presentation is a common problem in many developing countries where awareness of anorectal disorders is limited and patients may feel embarrassment or stigma regarding anorectal symptoms. Furthermore, limited access to specialized colorectal care may also contribute to delayed diagnosis.[7,11]

Delayed presentation has important clinical implications. In the early stage, acute anal fissures are often superficial and can heal with conservative therapy. However, persistent fissures undergo pathological changes such as fibrosis, sentinel pile formation, and hypertrophied anal papilla, which characterize chronic fissures.[2,9,16] In the present study, patients presenting after three months of symptoms demonstrated significantly higher rates of sentinel pile and fibrotic fissure edges. This association between delayed presentation and disease severity was statistically significant ($p=0.02$). These findings are consistent with earlier studies which demonstrated that prolonged disease duration leads to chronic structural changes in the anoderm, making conservative therapy less effective.[10,14]

Another major finding of this study was the high prevalence of inadequate prior treatment. Most patients reported either self-medication, traditional remedies, or incomplete medical therapy before presenting to the hospital. Only a small proportion received proper conservative management such as stool softeners, topical vasodilators, and dietary advice. This pattern reflects the healthcare-seeking behavior in many low- and middle-income countries where patients often rely on over-the-counter medications or non-medical treatment methods before consulting a physician.[8,10,13]

The consequences of inadequate treatment were clearly reflected in treatment outcomes. Patients who had received adequate conservative therapy prior to presentation demonstrated a significantly higher healing rate with continued conservative management compared with those who had received inadequate treatment (83% vs 45%). Conversely, surgical intervention was required more frequently among patients who had not received appropriate early therapy.[6,8] This finding highlights the importance of early evidence-based management to prevent disease progression.

Conservative therapy remains the first-line treatment for chronic anal fissure. Medical treatment aims to reduce internal anal sphincter pressure and improve anodermal blood flow. Topical nitrates, calcium channel blockers, and botulinum toxin have been shown to reduce sphincter hypertonia and promote healing.[11,15] Healing rates with medical therapy vary between 50% and 80%, depending on disease duration and patient compliance.

When conservative therapy fails, lateral internal sphincterotomy remains the gold standard surgical treatment. This procedure reduces sphincter pressure, allowing improved blood flow and healing of the fissure. Surgical success rates exceed 90%, although complications such as minor fecal incontinence may occur in a small proportion of patients.[16,18] In the present study, surgical intervention was required in patients with advanced disease or failure of conservative therapy, particularly among those with prolonged symptom duration.

The findings of this study emphasize the importance of early recognition and treatment of anal fissures. Public health education may help improve awareness of anorectal disorders and encourage patients to seek medical consultation earlier. Additionally, primary healthcare providers should be trained to recognize early fissures and initiate appropriate conservative therapy.

Improving dietary habits is another important preventive strategy. Increasing fiber intake, maintaining adequate hydration, and promoting regular bowel habits can reduce constipation and prevent recurrence of fissures. Lifestyle modification should therefore be an essential component of management.

The study has several limitations that should be considered when interpreting the findings. First, the sample size was relatively small, which may limit the generalizability of the results. Second, the study was conducted at a single tertiary care center, and therefore may not fully represent the broader Bangladeshi population. Third, long-term follow-up was not performed, so recurrence rates after treatment could not be evaluated.

Despite these limitations, the study provides valuable insights into the clinical patterns of chronic anal fissure in a Bangladeshi population. The findings clearly demonstrate that delayed presentation and inadequate early management significantly contribute to disease progression and poorer outcomes.

Future studies involving larger multicenter populations and longer follow-up periods are needed to further evaluate treatment outcomes and recurrence rates. Such research would help develop more effective national guidelines for the management of chronic anal fissure in Bangladesh.

Limitations

This study had several limitations:

- Small sample size
- Single center study
- Short follow-up period

Larger multicenter studies are required to validate these findings.

Conclusion:

Delayed presentation and inadequate treatment significantly worsen the prognosis of chronic anal fissures. Patients presenting late demonstrate more severe disease and require surgical intervention more frequently.

Early diagnosis, appropriate conservative therapy, and improved patient education are essential strategies for improving outcomes in Bangladesh.

References:

1. Nelson RL, Thomas K, Morgan J, Jones A. Non-surgical therapy for anal fissure. Cochrane Database Syst Rev. 2012;2:CD003431.
2. Schouten WR, Briel JW, Auwerda JJ. Relationship between anal pressure and anodermal blood flow. Dis Colon Rectum. 1994;37:664-9.
3. Lund JN, Scholefield JH. Aetiology and treatment of anal fissure. Br J Surg. 1996; 83:1335-44.
4. Nelson RL. Chronic anal fissure. GastroenterolClin North Am. 2001;30:39-47.
5. Lindsey I, Jones OM, Cunningham C, Mortensen NJ. Chronic anal fissure. Br J Surg. 2004;91:270-9.
6. K ight JS, Birks M, Farouk R. Topical diltiazemvsglyceryltrinitrate. Br J Surg. 2001; 88:553-6.
7 tomare DF, Rinaldi M, Sallustio PL, Martino P. Glyceryltrinitrate therapy for chronic fissure. Dis Colon Rectum. 2000;43:174-9.
8. Gupta PJ, Kalaskar S. Treatment of chronic fissure in ano. World J Gastroenterol. 2005;11:6535-8.
9. Nelson RL, Chattopadhyay A, Brooks W, Platt I. Operative procedures for fissure in ano. Cochrane Database Syst Rev. 2011; 11:CD002199.
10. Jonas M, Neal KR, Abercrombie JF, Scholefield JH. Randomized trial of topical GTN. Lancet. 2001;357:11-4.
11. Poh A, Tan KY, Seow-Choen F. Innovations in chronic fissure treatment. World J Gastrointest Surg. 2010;2:231-41.
12. Arroyo A, Pérez F, Serrano P, Candela F, Calpena R. Surgical vs medical treatment. Dis Colon Rectum. 2004;47:847-52.
13. Madalinski MH. Identifying the best therapy for chronic fissure. World J Gastrointest

PharmacolTher. 2011;2:9-16.

14. Collins EE, Lund JN. Review of chronic anal fissure pathophysiology. Tech Coloproctol. 2007;11:209-23.
15. Lindsey I, Cunningham C, Jones OM, Mortensen NJ. Fissure-in-ano management. Colorectal Dis. 2004;6:468-74.
16. Carapeti EA, Kamm MA, Phillips RK. Topical diltiazem therapy. Dis Colon Rectum. 2000; 43:1359-62.
17. Brisinda G, Maria G, Bentivoglio AR, Cassetta E. Botulinum toxin treatment. N Engl J Med. 1999;341:65-9.
18. Gupta PJ. Treatment patterns of fissure in ano. Int J Colorectal Dis. 2004;19:113-7.
19. Sajid MS, Vijaynagar B, Desai M, Cheek E, Baig MK. Botulinum toxin vs surgery. Am J Surg. 2008;195:212-6.
20. Nelson RL, Manuel D, Gumienny C, Spencer B, Patel K. Medical therapy for anal fissure.is Colon Rectum. 2017;60:769-78.