



A Retrospective Study of Incidence of Fistula after Management of Perianal Abscess

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Abstract: **Background:** Perianal fistulas can present significant morbidity and detriment to a patient's quality of life. Perianal fistula is among the most common anorectal diseases encountered in adults, men are more prone to be affected than women. **Objective:** To determine the incidence of fistula After Management of Perianal Abscess. **Materials and Methods:** A retrospective study of 34 patients with perianal abscess operations conducted in Dept. of Surgery, Sheikh Hasina Medical College and Hospital, Tangail, Bangladesh from January 2017 to December 2021. Their ages ranged from 20 to 68 years (40.21 ± 1.34) males (31/34) (92.64%) were more than females (3/34) (7.35%). Patients were treated with incision over the abscess under anesthesia and drainage of the abscess was done. The patients were followed up for an average 18 months (range 12–24 months) after abscess drainage or until a fistula appeared and abscess recurrence. **Results:** The study group comprised of 34 (92.64%) patients with perianal abscess with a median age 39 years (range 20–68 years). The mean follow-up period was identified to be 18 months (range 12–24 months). Males (31/34) (92.64%) were more than females (3/34) (7.35%). The incidence of fistula formation after follow up, the patients with perianal abscess after incision and drainage was 16/34 (47.07%) and males (15/16) (44.11%) were more than females (1/16) (2.94%). The most common site was posterior then left lateral position. The percentage of patients with recurrent abscess $n = 3$ (8.82%) were lower than fistula formation $n = 16$ (47.07%). The percentage of males $n = 2/3$ (5.88%) were more than females $1/3$ (2.94%). **Conclusions:** The incidence of anal fistula in a sample of Bangladeshi patients with perianal abscess was 47.05% and percentage of recurrence of perianal abscess was 8.82%. To avoid division of anal sphincter muscle, secondary fistulotomy is advised to be done later when anal fistula will be formed.

Keywords: Fistula, Perianal Abscess, Abscess Recurrence.

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INTRODUCTION

Perianal fistulas are common sequelae to perianal abscesses. The most widely accepted theory for the pathogenesis of both is that of the cryptoglandular theory of Eisenhammer and Parks. The theory states that perianal abscesses are a result

of the blockage of an intramuscular anal gland which subsequently cannot spontaneously drain into the anal canal [1, 2]. Subsequently, even if there is spontaneous or iatrogenic drainage, it is hypothesized that the area of the abscess is a nidus for chronic infection which ultimately leads to fistula

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formation [3]. Fistula is among the most common anorectal diseases encountered in adults, Men are more prone to be affected than women [4]. There is a close relationship of abscess and fistula in etiology, anatomy, pathophysiology, therapy, complications and morbidity, it is appropriate to consider them as one entity [5]. A previous history of perianal abscess can usually be mentioned and drained either spontaneously or surgically under local or general anesthesia, thus a fistula-in-ano represents the chronic phase of ongoing perianal abscess [6]. It is a common disease with an incidence of about 2 cases per 10,000 population per year and likely to occur between the ages of 30 and 50 years [7]. Fistula in ano are either associated with perianal abscess from outset or as a later sign in 26–37% of the time [7, 8, 9, 10]. After drainage the abscess, probe the corresponding anal crypt gently, looking for a fistula in ano. Primary fistulotomy may be attempted when it is identified and superficial [11]. About 1000 primary fistulotomies were done during drainage of an abscess with no adverse results [12]. One can suspect development of fistula later on when there is a prolonged drainage from an incision site beyond 2–3 months and abscess heals and recurs at the same first location [13]. Abscess recurrence and later on fistula formation is due to insufficient drainage and late onset drainage [13–15]. The incidence of fistula following an abscess incision and drainage was 26% and incidence of recurrent abscess was 37% [16, 17]. One of the more controversial topics in dealing with anorectal abscess is the role of primary fistulotomy at the time of initial incision and drainage. When a simple fistula is encountered during incision and drainage of an anorectal abscess, fistulotomy may be performed as long as the anticipated benefits (healing) are estimated to outweigh the risks (incontinence) [12, 18]. If a fistula is identified and is quite superficial, primary fistulotomy may be attempted using a loose Seton of braided, nonabsorbable suture that is inserted into the fistula tract, tied loosely to act as a drain. This is termed a “primary” or “synchronous” fistulotomy which is curative and avoid the need for subsequent fistula surgery [11, 12]. On the other hand, about two thirds of perianal abscesses never progress to fistulas and that a primary fistulotomy with its possible complications is usually unnecessary and the patients who are ideal candidates for primary fistulotomy are also the easiest to treat with delayed fistulotomy with subsequent low morbidity [6]. Thus, the prudent rule would be to defer fistulotomy until the fistula becomes obvious.

MATERIALS AND METHODS

A retrospective study of 34 patients with perianal abscess operations conducted in Dept. of Surgery, *Sheikh Hasina Medical College and Hospital, Tangail*, Bangladesh from January 2017 to December 2021. Their ages ranged from 20 to 68 years (40.21 ± 1.34) males (31/34) (92.64%) were more than females (3/34) (7.35%). The inclusion criteria were adults aged 18 years and above who presented with perianal abscess, while the exclusion criteria were patients under eighteen years, abscess with known fistula, complicated abscesses (multiple or bilateral abscess), Crohn's disease, immunosuppression, malignancy, necrotizing fasciitis and disseminated tuberculosis. Written informed consents were obtained from the patients with perianal abscesses. Patients were treated with incision over the abscess under anesthesia (local or general) that allows thorough examination and drainage of the abscess and opening all loculi was done. The patients were followed up for an average 18 months (range, 12–24 months) after abscess drainage or until a fistula appeared and abscess recurrence. Statistical analysis was done using SPSS statistical software version 21.

RESULTS

The study group comprised of 34 (92.64%) patients with perianal abscess with a median age of 39 years (range 20–68 years). The mean follow-up period was identified to be 18 months (range 12–24 months). Males (31/34) (92.64%) were more than females (3/34) (7.35%). All of them had a perianal abscess managed by incision and drainage under anesthesia. Their duration of hospital stay was 1–2 days. The incidence of fistula formation after following up the patients operated for perianal abscess was 31/68 (45.58%) and males (15/16) (44.11%) were more than females (1/16) (2.94%). The most common site was posterior then left lateral position as shown in Table 1. The percentage of patients with recurrent abscess $n = 3$ (8.82%) were lower than fistula formation $n = 16$ (47.05%). The percentage of males $n = 2/3$ (5.88%) were more than females 1/3 (2.94%). The most common site was also posterior to anus. The percentage of cured patients, 16/34 (47.05%) was similar to percentage of patients who developed fistula, 16/34 (47.05%). Males were representing the higher percentage 41.17% than females 2.94%. Posterior abscess represents the common site 37.50% followed by left lateral 31.25% and lastly the right lateral 18.75%.

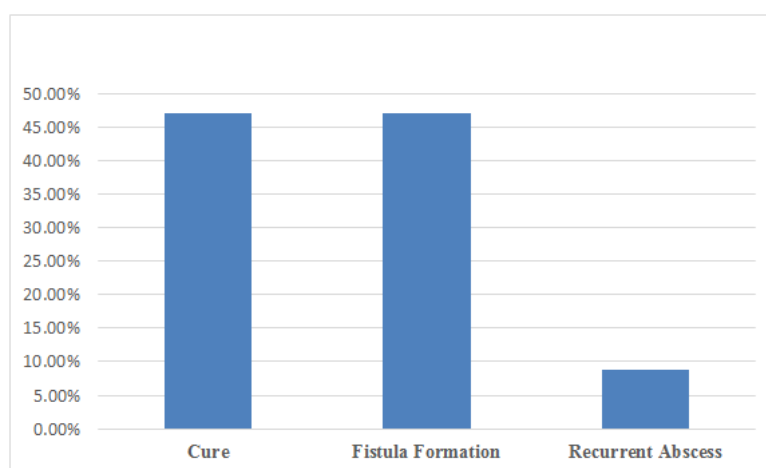


Fig-1: Patients with perianal abscess (n = 34)

Table-1: Incidence of fistula in ano and recurrent abscess after follow-up patients with perianal abscess (N=34)

Patients with perianal abscess, n = 34						
Cure		Fistula formation		Recurrent abscess		
n = 16 (47.05%)		n = 16 (47.05%)		n = 3 (8.82%)		
Males N (%)	Females N (%)	Males N (%)	Females N (%)	Males N (%)	Females N (%)	
14 (41.17)	1 (2.94)	15 (44.11)	1 (2.94)	2 (5.88)	1 (2.94)	
Initial sites						
Site	Males N (%)	Females N (%)	Males N (%)	Females N (%)	Males N (%)	Females n (%)
1. Posterior	6 (37.50)	3 (18.75)	8 (50.00)	2 (12.50)	2(66.66)	1 (33.33)
2. Right lateral	3 (18.75)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
3. Left lateral	5(31.25)	0 (0)	6 (37.50)	0 (0)	0 (0)	0 (0)

DISCUSSION

Perianal fistulas can present significant morbidity and detriment to a patient's quality of life. Abscess and fistula in ano are common cryptoglandular disease which is most common in people aged between 20 and 50 years with four-fold male predominance and an annual incidence of 1 in 10,000 [19, 20]. That is in agreement with our results, males were (31/34) (92.64%) that is more than females (3/34) (7.35%). Their median age was 39 years. Abscess after incision and drainage may manifests later on as fistula in ano and recurrent abscess that require repeat surgical drainage. Thus, treating fistula at the same time may reduce the late sequel but this could affect the function of the anal sphincter in some patients who may not have later developed a fistula-in-ano [21]. Our study showed that incidence of fistula in ano was 16/34 (47.05%) and males (15/16) (44.11%) were more than females (1/16) (2.94%). The most common site was posterior then left lateral position. Regarding recurrent abscess, the percentage of patients was 6/68 (8.82%) that was lower than fistula formation 16/34 (47.05%). The percentage of males 2/3

(5.88%) was more than females 1/3 (2.94%) and the most common site was also posterior to anus. Our results in accordance with other results, that recurrent abscess and fistula formation occurred in 11% and 37% respectively. This supports the rule of secondary fistulotomy to avoid division of sphincter muscle in patients who would not need it [18]. Other report showed that recurrence of abscess was 3.7% and fistula formation was 34.7%, so early aggressive treatment of abscess reduces the possibility of recurrence and further surgery [8]. Lohsiriwat *et al.* [22] found that the incidence of fistula-in-ano following incision and drainage of perianal abscess was 31%. Risk factors like sex, smoking, alcohol, fever; leukocytosis, and location of abscess were not prognostic and predictive of fistula formation. Patients aged less than 40 years and non-diabetic appeared to have a higher risk for fistula formation (43%). Regarding administration of perioperative antibiotics significantly reduced the rate of subsequent fistula formation to (17%). Meta-analysis study demonstrated that fistula surgery with abscess drainage significantly reduced fistula/abscess recurrence and need for further surgery [23]. Sainio *et al.* [4] reported the incidence

of anal fistula during ten years period per 100,000 populations was 8.6 for nonspecific and fistula, 12.3 for males and 5.6 for females. He also reported that nonspecific fistulae accounted about 90.4%, the tuberculous fistulae about 0.2%, the postoperative and traumatic fistulae about 3.3% and fistulae originating in anal fissure about 3.3% and the occurrence of anal fistula after treatment of perianal abscess was 35% while in our study was (47.05%). Other study showed that the incidence of fistula-in-ano following perianal abscesses was 26% diagnosed either during follow-up or within 6 months [24]. The differences of our study with other studies may be due to sample size, criteria of the patients selected in the study, duration of follow up, use of antibiotics, size and depth of the abscess and site of the abscess. In our study the most common location of the abscess was posterior, this is due to more frequent anal glands located posteriorly and more commonly found in males than females [25-27]. Thus disease is more common in males than females. This study performed has its inherent limitations due to the retrospective design and limited patient number. In addition, the follow-up of the patients was limited for many of the patients due to a large number of them being employed in manual labor and would not follow-up after wound healing. None of the risk factors included in our study were found to be statistically significant in the development of perianal fistulas after drainage of perianal abscesses.

CONCLUSIONS

The incidence of anal fistula in a sample of Bangladeshi patients with perianal abscess was 47.05% and percentage of recurrence of perianal abscess was 8.82%. To avoid division of anal sphincter muscle, secondary fistulotomy is advised to be done later when anal fistula will be formed.

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