

Incidence of Anal Fistula and Recurrent Abscesses following Management of Perianal Abscess

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Abstract

Introduction: Most perianal abscesses originate from an infected anal gland. Obstruction of these glands leads to stasis, bacterial overgrowth and ultimately abscess. Approximately 10% of perirectal abscesses are thought not to be due to infected anal glands. It is unclear why some patients completely heal and others have recurrent disease.

Objective: To assess the incidence of anal fistula and recurrent abscess after incision and drainage of perianal abscess.

Materials and Methods: A prospective observational study was done on 140 patients operated upon for perianal abscess in Combined Military Hospital, Dhaka. They underwent for one group only drainage, for other group drainage with primary fistulotomy under general or spinal anesthesia over two years from January 2015 to December 2016. The patients were followed up for an average 13 months (range, 4-18 months) after abscess drainage or until a fistula appears and abscess recurs. Their duration of hospital stay was 1–3 days. After discharge from hospital, they were examined in follow-up within 7 to 14 days. Subsequently, they were examined on a monthly basis until drainage ceased or until it became obvious that a fistula-in-ano had developed.

Results: Total 140 patients were treated for perianal abscess. Those patients were divided into two groups. The first group of 84 patients (60%) who underwent incision and drainage only. The second group consisted of 56(40%) patients who had low fistulas identified at the time of abscess drainage and underwent primary fistulotomy. The incidence of fistula formation after the operative procedures were 37(44.05%) in incision and drainage group and 5(8.93%) were in primary fistulotomy group. The most common site of abscess formation was posterior to anus. The incidence of recurrent abscess were

7(8.33%) in incision and drainage group; 2(3.57%) in primary fistulotomy group. The overall fistula formation (44.05% and 8.93%) and recurrence of abscess (8.33% and 3.57%) is low in primary fistulotomy group.

Conclusion: In this study the overall incidence of anal fistula is much higher than recurrence of perianal abscess following management of perianal abscess. Primary fistulotomy at the time of drainage for perianal abscess result in a fewer persistent fistulas and recurrence of abscess.

Key-words: Perianal abscess, Anorectal Abscess, Primary Fistulotomy.

Introduction

Most perianal abscesses originate from an infected anal gland. Obstruction of these glands leads to stasis, bacterial overgrowth, and ultimately abscesses that are located in the intersphincteric groove¹. When the abscess is drained, either surgically or spontaneously, persistence of the septic foci and epithelialization of the draining tract may occur and lead to a fistula-in-ano. Approximately 10% of perirectal abscesses are thought not to be due to infected anal glands but to be a consequence of more specific causes such as Crohn's disease, trauma, human immunodeficiency virus initiation, sexually transmitted diseases, radiation therapy or foreign body².

Anorectal abscesses are defined by the anatomic space in which they develop and are more common in the perianal and ischioanal spaces and less common in the intersphincteric, supralelevator and submucosal locations³. Fistula-in-ano is a tract that connects the perineal skin to the anal canal. In patients with an anorectal abscess, 30% to 70% present with a concomitant fistula-in-ano and in those who do not, one-third will be diagnosed with a fistula within months to years after abscess drainage^{1,4,5}. Patients with a first-time perianal abscess often inquire

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about the cause of their condition and about measures to potentially reduce risk of recurrence. However, it is unclear why some patients completely heal and why others have recurrent disease. To date, the risk factors contributing to recurrent disease and the effectiveness of potential preventive measures remain unknown⁶.

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)^{4,5,7}.

The aim of this study was to assess the incidence of anal fistula and recurrent abscess after incision and drainage of perianal abscess in patients of Combined Military Hospital Dhaka and to see the outcome of a primary fistulotomy performed at the time of incision and drainage of anorectal abscesses.

Materials and Methods

A prospective observational study was conducted on the patients operated upon for perianal abscess. They underwent drainage only and drainage with primary fistulotomy under general or spinal anesthesia over two years from January 2015 to December 2016 in Combined Military Hospital, Dhaka. The inclusion criteria of patients was having solitary abscess that was recognized by erythematous swelling and was well localized around the skin of the anal verge. The exclusion criteria were abscess with known fistula, multiple or bilateral (complicated) abscesses, crohn's disease, immunosuppression, malignancy, necrotizing fasciitis and tuberculosis.

Written informed consents were obtained from all patients with perianal abscess. The patients were followed up for an average 13 months (range, 4-18 months) after abscess drainage or until a fistula appears and abscess recurs. Their duration of hospital stay was 1-3 days. After discharge from hospital, they were seen in follow-up within seven to 14 days. Subsequently, they were seen on a monthly basis until drainage ceased and it became obvious that fistula-in-ano had developed. If they were well, they were discharged with advice for regular follow-up and told to return if problems arose. For the purposes of this study, some patients were interviewed by telephone to determine their state of health.

Those patients who complained of any symptoms in the anorectal area were subsequently examined.

Results

Total 140 patients were treated for perianal abscess. Their ages ranged from 14 to 74 years (mean 40.44 ±13.8) and males (86.43%) were more than females (13.57%). These patients were divided into two groups. The first group included of 84 patients (60%) who underwent incision and drainage only. The second group consisted of 56 patients (40%) who had low fistulas identified at the time of abscess drainage and underwent primary fistulotomy. The incidence of fistula formation after the operative procedures were 37(44.05%) in incision and drainage group (Table-III); 5(8.93%) in primary fistulotomy group (Table-IV). The most common site of abscess formation was posterior to anus (Table-V). The incidence of recurrent abscess were 7(8.33%) in incision and drainage group and 2(3.57%) in primary fistulotomy group. The overall fistula formation (44.05% vs.8.93%) and recurrence of abscess (8.33% vs. 3.57%) were low in primary fistulotomy group.

Table-I: Age and sex distribution of patients (n=140)

Age group (years)	Male	Female
11-20	09(7.44%)	04(21.05%)
21-30	21(17.35%)	01(5.26%)
31-40	31(25.62%)	08(42.11%)
41-50	31(25.62%)	03(15.79%)
51-60	19(15.70%)	02(10.53%)
61-70	09(7.44%)	01(5.26%)
>70	01(0.83%)	-
Total	121(86.43%)	19(13.57%)

Table-II: Operative procedures for perianal abscess (n=140)

Sex	Incision and drainage only	Incision and drainage With Primary fistulotomy
Male	74(52.86%)	47(33.57%)
Female	10(7.14%)	9(6.43%)
Total	84(60%)	56(40%)

Table-III: Outcome of incision and drainage of perianal fistula (n=84)

Sex	Cure	Fistula formation	Recurrent abscess
Male	35(41.67%)	34(40.48%)	5(5.95%)
Female	5(5.95%)	3(3.57%)	2(2.38%)
Total	40(47.62%)	37(44.05%)	7(8.33%)

Table-IV: Outcome of primary fistulotomy of perianal fistula (n=56)

Sex	Cure	Fistula formation	Recurrent abscess
Male	41(73.21%)	4(7.14%)	2(3.57%)
Female	8(14.29%)	1(1.79%)	-
Total	49(87.5%)	5(8.93%)	2(3.57%)

Table-V: Site of perianal abscess (n=140)

Site	Male	Female	Total
Posterior	75(53.57%)	12(8.57%)	87(62.14%)
Right lateral	14(10%)	2(1.43%)	16(11.43%)
Left lateral	26(18.57%)	5(3.57%)	31(22.14%)
Anterior	6(4.29%)	-	6(4.29%)

Discussion

Anorectal abscess is a potentially debilitating condition and remains one of the more common anorectal conditions encountered in practice. Infection of glands in the intersphincteric space of the anal canal is thought to underlie both in acute anorectal abscesses and anal fistulas. The exact cause or mechanism of infection has not been fully elucidated and it is not clear why certain cases of perianal sepsis are limited to abscess formation whereas others are associated with fistula formation⁸. 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 entity⁷. It is widely accepted that adequate surgical drainage is the optimal treatment for acute abscesses and that antibiotics are indicated only for treatment of surrounding cellulitis⁹.

Most publications on the subject reflect authors' experience from a single institution; this does not address the incidence of the disease. Also, it is difficult if not impossible to accurately assess the incidence of anorectal abscesses because they often drain spontaneously or are incised and drained in a physician's office, emergency room or a surgicenter⁷. The incidence of abscess is reportedly between 0.4 and 5% of patients undergoing operative management translating to 8.6–20 patients per 100,000 population and yielding between 68,000 and 96,000 cases of anorectal abscess each year in the USA¹⁰.

Regarding age and sex, it was found in a study, most patients were present between the ages of 20 to 60 with the mean age of 40 in both sexes⁷. In this study most patients (82.85%) were in the same age range of 20-60 years and mean age was also similar (40.44 ±13.8 years).

The primary treatment of anorectal abscess remains surgical drainage. After simple incision and drainage, the overall recurrence rate ranges from 3% to 44%, depending on the abscess location and the length of follow-up¹¹. Inadequate drainage, failure to break up

loculations within the abscess, missed abscess, horse shoe-type abscess and failure to perform primary fistulotomy have been identified as risk factors for recurrent anorectal abscess^{3,11}. Following effective abscess drainage alone, the incidence of recurrent abscess was reported to be 30% and subsequent fistula formation between 26 and 50%¹⁰. Ho YH et al¹² had observed incidence of 4% recurrent abscess after abscess drainage alone. This is in agreement with results; in this study recurrent abscess 8.33% and fistula formation 44.05% in those who underwent incision and drainage alone.

A controversial topic is the role of "primary fistulotomy" during incision and drainage of an abscess as thirty to seventy percent of patients with anorectal abscesses present with a concomitant fistula-in-ano³. A study of Malik Al et al¹³ included 6 trials demonstrating that sphincter division (via fistulotomy or fistulectomy) at the time of incision and drainage was associated with a significant decrease in abscess recurrence, persistence of fistula or abscess and the need for subsequent surgery, but an increased, albeit statistically insignificant, incidence of continence disturbances at 1-year follow-up.

Tang CL et al¹⁴ had 24 patients in fistulotomy group and none had recurrent abscess on fistula. Ho YH et al¹² showed none had persistent fistula but incidence of recurrent abscess was 4% in primary fistulotomy group. Schouten WR et al¹⁵ had only one persistent fistula (2.7%) out of 34 patients who were treated by primary fistulotomy. In this study, the incidence of fistula formation (8.93%) and recurrent abscess (3.57%) after primary fistulotomy is higher compared to other studies. The likely reason of the high recurrence rate is that the operations were performed by a heterogeneous group of surgeons like resident surgeons, general surgeons and colorectal surgeons. In terms of location, most abscesses were located posteriorly (62.14%) and on the left side (22.14%) of anal canal. Ramanujam et al⁵ and Vasilevasky et al¹⁶ found that the incidence of abscess in posterior location was 52.7% and 36.89% respectively. The common posterior location is due to the fact that more frequent anal glands are located posteriorly^{17,18} and more commonly found in males than females¹⁹. Thus disease is more common in males than females.

Conclusion

The overall incidence of anal fistula in a sample of defined group patients who were admitted in CMH Dhaka with perianal abscess was 30% (42/140) and

percentage of recurrence of perianal abscess was 6.43% (9/140). Primary fistulotomy at the time of drainage for perianal abscesses results in fewer persistent fistulas and recurrence of abscess.

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