

Perianal Abscess; Simple Drainage versus Drainage and Fistulotomy

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Abstract: *Introduction:* Perianal abscess is one of the most common general surgical emergencies encountered in clinical practice and the initial treatment is simple incision and drainage, other surgical procedures as fistulotomy may be required as a definitive measure for treating fistula because about 40% of patients present with a fistula after simple incision and drainage of their perianal abscesses. The aim of this study was to detect the outcome of simple drainage versus drainage and fistulotomy for perianal abscess as regard to abscess recurrence, fistula formation and time off from work. *Patients and Methods:* A total number of 200 patients of both sexes; 100 for each group, their ages ranged between 21- 65 years were enrolled to this parallel prospective randomized clinical trial where patients were divided randomly into two main groups; A and B. Group A patients [N =100] were subjected to simple incision & drainage and those of group B [N = 100] were subjected to drainage & fistulectomy for acute perianal abscess. *End Points:* The primary end points were abscess recurrence, fistula formation and incontinence. The secondary end points were time off from work, wound discharge, wound healing and patients' satisfaction. *Results:* Patient's satisfaction of the treatment maneuver in relation to abscess recurrence and fistula occurrence was 80 % and 95% of group A and B respectively. *Conclusion:* The present study showed that treatment of perianal abscess through the combined maneuver of incision – drainage with fistulotomy at the same time significantly reduced the likelihood of persistent abscess, recurrence and need for repeat surgery. Patient's satisfaction after treatment with this combined method showed a significant value than incision – drainage only as regard disease recurrence, time of wound discharge and the incidence of fistula formation.

Keywords: Perianal Abscess, Simple Drainage, Fistulotomy

1. Introduction

Perianal abscess is one of the most common general surgical emergencies encountered in clinical practice and its surgical management is one of the most common surgical emergency procedures performed by the surgical team [1]. Perianal abscesses arise from anal glands which have a predisposition to get obstructed and suppurated leading to abscess formation. Perianal abscesses and anal fistula are often found together [2]. While the initial treatment of perianal abscess is simple incision and drainage, other surgical procedures as fistulotomy may be required as a definitive measure for treating fistula because about 40% of patients present with a fistula after simple incision and drainage of their perianal abscesses [1, 3]. Surgical intervention is recommended in case of spontaneous

perforation since insufficient drainage may cause abscess recurrence or fistula formation. Conservative treatment options, particularly antibiotic treatment, are unlikely successful and are not considered appropriate [4]. After simple incision drainage of perianal abscess, the incidence of fistula occurrence is reported as 16% and abscess recurrence rate as 13% [3, 5, 6]. The aim of this study was to detect the outcome of simple drainage versus drainage and fistulotomy for perianal abscess as regard to abscess recurrence, fistula formation and time off from work.

2. Patients and Methods

2.1. Patients

A total number of 200 patients of both sexes; 100 for each

group, their ages ranged between 21- 65 years were enrolled to this parallel prospective randomized clinical trial where patients were divided randomly into two main groups; A and B. Group A patients [N = 100] were subjected to simple incision & drainage and those of group B [N = 100] were subjected to drainage & fistulectomy for acute perianal abscess. The study started from January 2005 to December 2009 and included all patients having first attack of perianal abscess. Patients with recurrent abscesses or presence of fistula at the time of presentation were excluded. Written consents were obtained from all patients before the study. The steps of both operative interferences were explained to all patients. The local ethics committee had approved all operative procedures. Ethical approval for this study was granted by the ethical review committee under supervision of the general director of Port-Fouad general hospital, Port-Fouad, Port-Said, Egypt.

2.2. Randomization

Randomization was performed prior to study commencement as follows: Opaque envelopes were numbered sequentially from 1 to 200. A computer-generated table of random numbers was used for group assignment; if the last digit of the random number was from 0 to 4, assignment was to Group A (simple incision & drainage), and if the last digit was from 5 to 9, assignment was to Group B (drainage & fistulectomy). The assignments were then placed into the opaque envelopes and the envelopes sealed. As eligible participants were entered into the trial, these envelopes were opened in sequential order to give each patient his or her random group assignment. The envelopes were opened by the operating surgeon after patient consent and just prior to the surgery.

2.3. Operative Techniques

Operations were performed in Port-Fouad general hospital, Port-Fouad, Port-Said, Egypt and in the university hospital, department of surgery, Faculty of medicine, Suez Canal University, Egypt. Really our patients were oriented to the type of operation and the other observers also were aware to operative techniques of the study groups. All the operative maneuvers were performed under general anaesthesia with patients in the lithotomy position. Patients were discharged on the first postoperative day and were advised regarding oral medication, maintenance of local hygiene, sitz bath after defecation, dressings, and regular follow-up.

1. In the simple incision & drainage patients, per rectal examination was performed to detect the while size of the abscess. Cruciate incision was made to allow proper abscess drainage with examination of the abscess cavity by the opposite index finger. Lastly secured hemostasis was achieved by proper packing.
2. In the drainage & fistulotomy patients, proper abscess drainage was done as before and the internal opening was searched using the anal probe. Then fistulotomy was done. Hemostasis was achieved.

2.4. End Points

The primary end points of the study were abscess recurrence, fistula formation and incontinence. Abscess recurrence and fistula formation were diagnosed on the clinical background according the decision of two examiners. Incontinence was assessed by using the Fecal Incontinence Severity Index (FISI), that allow patients to record the frequency of accidental leakage with gas, mucus, liquid, and/or solid stool:

- 1) No accidental leakage from anus (no fecal/flatal incontinence [no FI/FL]),
- 2) Leakage of gas only (isolated flatal incontinence only [isolated FL]), or
- 3) Accidental leakage of mucus, liquid or solid stool with or without leakage of gas (fecal incontinence [FI] with or without flatal incontinence) [7].

The secondary end points were time off from work, wound discharge, wound healing and patients' satisfaction. Time off from work was defined as the number of days between the day of surgery and the first day a patient returned to work [8]. Postoperative wound discharge was defined as a non-infected sero-sanguinous secretion coming from the open wound while complete healing of the postoperative wound was defined as full epithelialization of the wound [9]. and patients' satisfaction was measured according to abscess recurrence, fistula formation and occurrence of incontinence.

2.5. Statistical Analysis

The statistical tests were run on a compatible personal computer using the Statistical Package for Social Scientists (SPSS) for windows 15. Chi-square distribution was used for studying the frequencies of recurrence, pain, hospital stay and postoperative complications. The values were expressed as means±standard errors of deviation. The mean values of the groups were compared by one-way analysis of variance (ANOVA) and paired comparisons of the groups were done using the paired student *t* test. $P < 0.05$ was considered significant.

3. Results

Concerning the demographic data as shown in table 1, there was no statistical significant difference between the two groups regarding age, sex, body mass index (BMI) and diabetes. In our series, 79% of our patients were gentlemen, 38% were ≥50 years old and 36.5 % were diabetics. There was neither operative nor 30 days postoperative mortality.

Table 1. Showed the demographic data of both groups.

Group	Age (years)		Sex		BMI (kg/m ²)			Diabetes	
	≤50	≥50	Male	Female	<25	>25-30	>30	yes	no
A	60	40	80	20	20	65	15	38	62
B	64	36	78	22	19	64	17	35	65

The operating time for the procedure was calculated from the start of abscess drainage to the beginning of dressing of

the postoperative wound. The mean operative time in patients of group A was 23 ± 5.21 minutes and that for patients of group B was 25 ± 4.68 minutes with statistically insignificant distribution $\{P \geq 0.0996\}$. Abscess recurrence occurred in 11 patients (11%) and in only 3 patients (3%) in group A and B respectively while in fistula occurrence, 9% and 2% in both groups respectively were observed with statistically insignificant distribution $\{P \geq 0.05\}$. Patient's satisfaction of the treatment maneuver in relation to abscess recurrence and fistula occurrence was 80 % and 95% of group A and B respectively.

Regarding the occurrence of fecal incontinence, no permanent cases were reported in our series but temporary incontinence was observed only in 2 patients in fistulotomy group B. According to Fecal Incontinence Severity Index, none of our patients showed fecal incontinence and only the two of group B were temporarily incontinent to gases that subsided gradually and these two patients were women above 50 years. We detected that 100% and 98% of group A and B respectively were satisfied of the treatment maneuver.

The time taken for wound to heal completely according to the proposed protocol in our methodology was 20-36 days with mean value 28 ± 4.97 days and 21-45 days with mean value 31.8 ± 8 in group A and B respectively with statistically significant distribution $\{P \leq 0.0216\}$. As regard the time taken for complete wound healing, we detected that 20/ 100 patients in group A and 5/100 patients in group B were unsatisfied of the treatment maneuver.

The overall patient satisfaction was calculated in our study as the sum of individual satisfaction for each parameter according the questionnaire prepared by the treating surgical team and signed by the patients themselves. Regarding abscess recurrence and fistula occurrence, patient's satisfaction of the treatment maneuver was 80 % and 95% of group A and B respectively. In case of anal incontinence, there were 100 % and 98 % of patients in group A and B seemed satisfied. For the time taken for wound discharge to cease and that taken for wound to heal completely, patient satisfaction was shown in table 2. Therefore, the overall patient satisfaction mean values were 86.6 ± 11.54 and 96 ± 1.73 for patients in group A and B respectively with extremely statistical significant distribution $\{P \leq 0.0001\}$

Table 2. Showed patient's satisfaction of the treatment maneuvers.

Parameters	Group A	Group B	Significance
Abscess & fistula	80	95	
Incontinence	100	98	$P \leq 0.0001$
Wound discharge	82	74	$T = 8.0041$
Recurrence	80	95	$df = 198$
Total: Mean \pm SD	86.6 ± 11.54	96 ± 1.73	

4. Discussion

In the present study, the male gender predominance (79%) and those with age ≤ 50 years (38%) came in concordance with those reported in studies of same interest [10, 11] and other studies reported that perianal abscesses are seen two times more frequently in men than in women [2, 4, 12]. In

agreement with our finding, it was stated that the peak incidence of perianal abscesses is in the third or fourth decade of life and it is two or three times more common in men than women with diabetes and increased BMI as the major traced risk factors for development of perianal abscesses [13, 14]. Our data reported that higher abscess recurrence and fistula formation after the treatment modalities using incision & drainage of perianal abscess and this finding was in concordance with other published data that reported abscess recurrence rate of 29% incision/drainage group as compared with 5% of the fistulotomy group [15, 16]. Other studies of same interest reported that acute abscess recurrences occur in 10% and development of chronic fistula-in-ano occurs in up to 50% of patients [17] while another stated that 31% of patients developed fistula-in-ano following incision and drainage [18]. The decision of whether or not to perform a fistulotomy during the original incision and drainage of perianal abscess has been debated in the literature [2, 19]. In a randomized clinical trial done by Oliver and colleagues compared simple drainage abscess drainage with and without fistula track treatment to evaluate the effectiveness and morbidity of both operations in the management of acute anal sepsis. They found that drainage of the abscess with fistulotomy can be safely performed in cases of subcutaneous, intersphincteric, or low transsphincteric fistula with a minimal recurrence rate as 5% compared with 29% recurrence rate in patients treated with drainage alone [16]. Incontinence rates following fistulotomy depends on both the amount of muscle divided at the time of operation as well as any preexisting previous sphincter damage causing scarring of the anal canal [2, 20, 21]. Incontinence rates have been reported in previous reports to range from 18% to 52% [2, 22, 23]. Oliver and his colleagues found zero % incontinence in drainage only and 6% in drainage with fistulotomy [16]. Regarding the time to complete healing, the mean time was 18 (range 10-53) days and 26 (range 18-40) days after drainage alone versus fistulotomy respectively [19, 24].

Patient satisfaction after surgery for anal diseases depends on factors like period of hospitalization, postoperative pain and bleeding, return to routine activity, wound care, wound healing time, interference with the anal continence and recurrence. The majority of patients subjected to surgery for anal problems attributed their dissatisfaction to recurrence and anal incontinence following surgery [25]. In our study, satisfaction was much more in patients treated with abscess drainage and fistulotomy than those treated as drainage only as a result of less recurrence, less wound discharge and lower incidence of fistula formation.

5. Conclusion

The present study showed that treatment of perianal abscess through the combined maneuver of incision – drainage with fistulotomy at the same time significantly reduced the likelihood of persistent abscess, recurrence and need for repeat surgery. Patient's satisfaction after treatment

with this combined method showed a significant value than incision – drainage only as regard disease recurrence, time of wound discharge and the incidence of fistula formation.

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