

Treatment of Anorectal Abscess With or Without Primary Fistulectomy

Results of a Prospective Randomized Trial

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To determine whether primary fistulectomy should be performed or not at the time of incision and drainage, a prospective, randomized study in 70 patients with anorectal abscess was conducted. Thirty-six patients underwent incision, drainage and fistulectomy with primary partial internal sphincterectomy (group I), whereas in 34 patients anorectal abscess was treated by incision and drainage alone (group II). After a median follow-up of 42.5 months, the combined recurrence or persistence rate was 2.9 percent in group I and 40.6 percent in group II ($P < 0.0003$, log-rank test). Recurrent abscesses or persistent fistulas were treated by secondary partial internal sphincterectomy. Comparing anal continence before and 1 year after definite treatment, we found increased anal function disturbances in 39.4 percent of the patients in group I and in 21.4 percent of the patients in group II ($P < 0.106$, Fisher-exact test). The combined recurrence or persistence rate of 40.6 percent indicates that more than half of the patients with anorectal abscess will have no further problems after simple incision and drainage. This finding, as well as the increased anal function disturbances after partial internal sphincterectomy (either primary or secondary) are the main reasons to reserve fistulectomy as a second stage procedure if necessary. [Key words: Anorectal abscess; Primary fistulectomy]

Anorectal suppuration is usually caused by cryptoglandular infection. The anal glands, arising at the level of the crypts, penetrate through the internal sphincter muscle into the intersphincteric plane. Obstruction of the ducts of these glands results in stasis and infection, which may lead to the development of an intersphincteric abscess. Usually, this abscess may extend downwards into the intersphincteric plane to emerge at the border

of the anal canal as a low intersphincteric (perianal) abscess or laterally through the external sphincter muscle to enter the ischiorectal space and give rise to a transsphincteric (ischiorectal) abscess.

Usually, these abscesses are treated by simple incision and drainage under local anesthesia on an outpatient basis. Some authors recommend immediate fistulectomy or fistulotomy in the acute abscess stage in order to eradicate the intersphincteric origin, thereby eliminating the development of what they believe is an inevitable recurrent abscess or persistent fistula.¹⁻⁴ However, the recurrence rates as reported in the literature are almost exclusively based on data obtained from retrospective studies. Therefore, the exact number of recurrent abscesses and persistent fistulas after incision and drainage is still unknown, and controversy continues to exist as to whether primary fistulectomy or fistulotomy is indicated or not. To answer these questions a prospective, randomized study was conducted and the results are presented.

PATIENTS AND METHODS

Between October 1984 and May 1986, 70 patients presenting with primary anorectal abscess were entered into the study. All patients, referred during the same period with a recurrent abscess after previous incision and drainage were excluded. After admission the patients with primary anorectal abscess were randomly allocated into two different treatment groups. Thirty-six patients (group I) underwent incision, drainage, and fistulectomy with primary partial internal sphincterectomy (PPIS). In 34 patients (group II) anorectal abscess was treated by incision and drainage alone. Subsequent abscesses and fistulas in this group were treated by secondary partial internal sphincterectomy (SPIS) at the time of incision and drainage or fistulectomy, respectively.

Anal continence was assessed preoperatively using a special questionnaire concerning soiling

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and incontinence for flatus and feces. Of the original 70 patients, 66 were available for review after a median follow-up of 42.5 months (range 12–57 months). These 66 patients included 54 males and 12 females (ratio 4.5:1), with a mean age of 37.6 years. The anorectal abscesses were classified as intersphincteric in 28 patients (42 percent) and transsphincteric in 30 patients (45 percent). In 8 patients (13 percent) the abscess remained unclassified. No complex supra- and extrasphincteric fistulous abscesses were found. The characteristics of the patients in both groups are listed in more detail in Table 1.

OPERATIVE PROCEDURE

All patients were hospitalized and explored in the prone jackknife position under general or spinal anesthesia. In patients allocated to treatment by incision and drainage alone, no attempt was made to locate the internal opening. The abscess was simply drained by a radial incision over the point of maximal fluctuation. Skin edges were excised and all loculations were broken down. Packing and antibiotics were not employed. Postoperatively, patients were instructed to take sitz-baths and stool softeners. In patients allocated to treatment by primary fistulectomy with PPIS, a Parks retractor was introduced into the anal canal to provide good exposure. Before incision and drainage an attempt was made to locate the internal opening, which could be identified when, under slight pressure above the abscess, purulent material was found oozing from a corresponding crypt. When the internal opening was identified, the abscess was drained and the lower part of the internal sphincter muscle was excised at the site of the internal opening. In some patients, however, it was difficult to determine the internal opening due to the presence of inflammatory edema. In such cases it was

still possible to perform PPIS because, when dealing with an intersphincteric abscess, that part of the internal sphincter muscle overlying the abscess was excised. In case of a transsphincteric abscess, the presumed origin could be identified following Goodsall’s rule (fistulous abscesses in the posterior half generally follow a curved course towards the posterior midline, whereas those with an external opening in the anterior half follow a radial course). Following the fistulous tract in patients with a transsphincteric abscess, the point of origin in the intersphincteric plane could be found in almost all cases.

RESULTS

Sixty-six patients were available for evaluation after a median follow-up of 42.5 months (range 12–57 months). Recurrence was assessed by life-table analysis as described by Kaplan-Meier⁵ and comparison was made using the Log-rank test (Fig. 1). In group I only one patient treated by primary fistulectomy at the time of incision and drainage developed a persistent fistula during the follow-up period. Of the 32 patients treated by incision and drainage alone (group II), 10 patients developed a recurrent abscess and three a persistent fistula. The difference between the cumulative recurrence rate in group I (2.9 percent) and group II (40.6 percent) was statistically significant ($P < 0.0003$, Log-rank test). Recurrent abscesses and persistent fistulas in group II were treated in 11 patients performing SPIS in combination with incision and drainage or fistulectomy, respectively. As indicated above, anal continence was assessed using a special

Table 1.
Comparison of Patient Characteristics in Both Treatment Groups

	Group I (n = 34)	Group II (n = 32)
Men/Women (n)	28/6	26/6
Mean age (years) (range)	40.8 (23–72)	34.2 (10–57)
Classification of abscesses (n)		
Intersphincteric	15	13
Transsphincteric	17	13
Unclassified	2	6

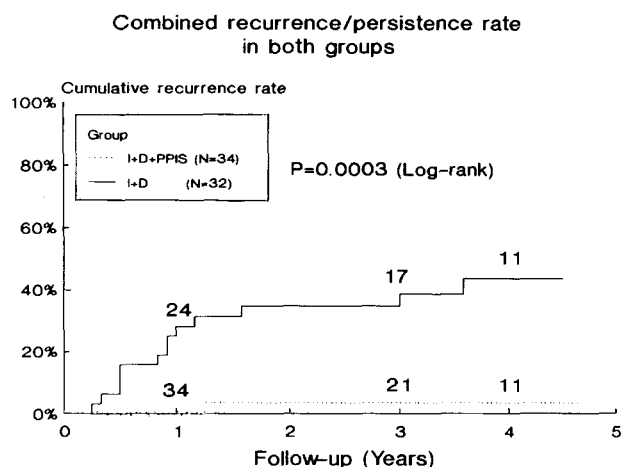


Figure 1. Cumulative, combined recurrence and persistence rate in both treatment groups.

questionnaire. Preoperatively, none of the patients was incontinent for feces. However, soiling and incontinence for flatus were found in 20.6 and 21.8 percent of the patients in group I and II, respectively. One year after initial treatment, the state of anal continence was assessed once again using the same questionnaire. All patients in both groups were still continent for feces. However, after primary fistulectomy control of flatus and soiling deteriorated in 13 (39.4 percent) of 33 patients, in whom anorectal abscess was treated adequately by this one-stage procedure. In group II, 19 patients (59.4 percent) could be treated adequately by simple incision and drainage. Only two of these patients (10.5 percent) were found to have increased anal function disturbances. In 10 of 13 patients (77 percent), recurrent abscess or persistent fistula occurred within one year after the initial drainage procedure.

During the same year this recurrence was treated successfully in nine patients performing SPIS at the time of incision and drainage or fistulectomy, respectively. This procedure resulted in further deterioration of control of flatus and soiling in four patients (44.5 percent). Thus, 28 patients in group II could be treated definitively within one year after the initial drainage procedure. This treatment finally resulted in increased anal function disturbances in six patients (21.4 percent) (Table 2).

DISCUSSION

Anorectal abscesses are usually treated by simple incision and drainage. The reported incidence of recurrent abscesses and persistent fistulas subsequent to this initial form of therapy varies considerably (from 35 to 95 percent),^{1, 6-11} probably due to different patient populations and differences in operative technique. Furthermore, these data are

obtained from retrospective studies. Despite these facts, the reported recurrence rates indicate that a substantial proportion of patients will have no further problems after incision and drainage of an anorectal abscess. Those who favor a more conservative approach argue that this is an important reason to prefer simple incision and drainage at the initial sitting.^{6, 9} This method of treatment has the benefits of simplicity and convenience, because it can be performed on an ambulatory basis. Furthermore, primary fistulectomy or fistulotomy is potentially hazardous, especially in the presence of acute inflammation.^{9, 12} Overzealous attempts to find a fistula in friable tissue may result in the creation of a false passage as well as unnecessary division of sphincter muscle with its potential risk of alterations in continence.¹² Some surgeons, however, prefer a one-stage procedure in which incision and drainage are combined with primary fistulectomy or fistulotomy.^{1-4, 8} Proponents of this approach state that one of the reasons responsible for recurrence is an undiagnosed fistula present at the time of abscess drainage. According to Waggener, for example, simple incision and drainage are incomplete for the majority of patients because "chronic fistula-in-ano almost always follow simple drainage of a peri-anal abscess."¹ In an earlier study we also found a high recurrence rate (85 percent after simple incision and drainage).¹³

However, this finding was based on data obtained from a retrospective study including patients with primary as well as recurrent abscesses. It has been reported that patients with a previous history of anorectal abscess are more prone to develop suppurative problems subsequent to incision and drainage than those who never had a previous episode of anorectal pathology.^{9, 14} Therefore, it might be possible that the high recurrence rate as demonstrated in our previous study did not represent the exact number of recurrent abscesses and persistent fistulas after the initial drainage procedure in patients with first-time anorectal abscesses. Our present study, which was conducted to shed more light on this issue, demonstrates that 40.5 percent of patients presenting with a first-time anorectal abscess (without a previous history of anorectal suppuration) developed a recurrent abscess or persistent fistula subsequent to the initial drainage procedure. So, more than half of the patients (59.5 percent) could be treated adequately by simple incision and drainage. Another reason to prefer this conservative approach is the risk of

Table 2.

Increase in Anal Function Disturbances after Definitive Treatment of Anorectal Abscess

Group	Treatment	Increase in Anal Function Disturbances (% of patients)
I	Incision, drainage and immediate fistulectomy (PPIS)	39.4*
II	Incision, drainage	10.5
	Fistulectomy at later date (SPIS)	44.5
	Total	21.4*

* $P < 0.106$ (Fisher-exact test: statistically nonsignificant).

alterations in anal continence when sphincter muscle is divided at the initial sitting. To elucidate this risk, it is necessary to know the exact state of anal continence before surgical treatment. None of our patients included in this present study had problems with fecal control before operative treatment. However, minor alterations in continence such as soiling and imperfect control of flatus were encountered in no less than 14 of 66 patients (21 percent) before surgical treatment became necessary. Anorectal abscess could be treated definitively by primary fistulectomy in 33 of 34 patients. After this one-stage procedure, further deterioration of anal continence, as compared with the preoperative state, occurred in 39.4 percent of these 33 patients.

In contrast, definitive treatment of anorectal abscess in group II was associated with further deterioration of anal continence in 21.4 percent of the patients (10.5 percent after incision and drainage, 44.5 percent after SPIS). Thus, definitive treatment of anorectal abscess was associated with an increase in anal function disturbances in a substantial proportion of the patients in both groups (39.4 *vs.* 21.4 percent). This difference is not statistically significant ($P < 0.106$, Fisher-exact test), which might be due to the small number of studied patients. However, in our opinion this difference is clinically important.

Our data illustrate that more than half of the patients presenting with a first-time anorectal abscess can be treated adequately by simple incision and drainage. Furthermore, it has also been shown that fistulectomy (either primary or secondary) is associated with a clinically important increase in anal function disturbances. Therefore, we would like to recommend a conservative approach in the treatment of primary anorectal abscess, whereby fistulectomy should be reserved as a second-stage procedure if and when necessary.

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