

Original Article

Treatment of Anorectal Abscess with Identified Anal Fistula: One-stage or Two-stage Operation

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Key Words

Anorectal abscess;
Anal fistula;
Incision and drainage;
Fistulectomy

Background. Whether the underlying fistula of anorectal abscess should be treated when the abscess is drained remains controversial. A retrospective chart review was undertaken to assess the treatment outcomes of fistulectomy in terms of the clinical parameters.

Methods. We used a retrospective study to clarify whether primary fistulectomy can be performed in the management of patients with anorectal abscess with an identified anal fistula. The choice of the surgery was dependent on surgeon preference. One patient group underwent drainage and a primary fistulectomy and the other group underwent incision and drainage initially, followed by a secondary fistulectomy. The outcome variables analyzed were postoperative recurrence and persistence, anal function disturbance, wound-healing time, hospital stay, mean postoperative pain score, and complications.

Results. Thirty-seven patients with an anorectal abscess with an identified anal fistula underwent incision and drainage with a primary fistulectomy (group I), and 27 patients were treated with a two-stage fistulectomy (group II). The operation times were 42.41 minutes for group I and 56.44 minutes for group II, which are significantly different ($p = 0.004$). There was no significant difference in the hospital stays, wound-healing times, mean postoperative pain scores, recurrences, postoperative complications of the two groups.

Conclusion. Anorectal abscess with identified anal fistula can be managed with a one-stage operation, and this treatment did not differ from the two-stage operation. The one-stage operation required less time than the two-stage operation. Patients with anorectal abscess could try to locate the internal opening of the anal fistula, and underwent a one-stage operation of primary fistulectomy without another admission.

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Anorectal abscesses are usually the result of cryptoglandular infections, and are the most common proctological disorder requiring immediate surgery in an emergency room. They constitute a frequent reason for surgery in hospitals.¹ According to

the cryptoglandular hypothesis suggested by Parks and Eisenhamer,² the anal glands situated in the intersphincteric space are the sources of the infections that cause most abscesses. Obstruction of the ducts of these glands results in stasis and suppuration, which

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may lead to the development of intersphincteric abscess. This abscess usually extends downwards into the intersphincteric plane to emerge at the border of the anal canal, as a low intersphincteric (perianal) abscess, or extends laterally through the external sphincter muscle to enter the ischiorectal space, giving rise to a transsphincteric (ischiorectal) abscess.

Fistula-in-ano is known to occur frequently with anorectal abscesses. Incision and drainage followed by either delayed or concurrent fistulectomy are the options in treating acute anorectal abscess with an anal fistula. Some authors recommend an immediate fistulectomy in the acute abscess stage to eradicate the intersphincteric origin, thereby eliminating the development of what they believe is an inevitable recurrent abscess or persistent fistula.^{1,2} However, this may increase the incidence of fecal incontinence.³ The performance of a primary fistulectomy when treating an acute anorectal abscess with an identified anal fistula has not been well described. Therefore, we undertook a retrospective chart review to evaluate the effectiveness and morbidity of both options in the management of acute anorectal abscess with an identified anal fistula.

Materials and Methods

In total, 150 abscesses of the anal region were treated between July 2004 and December 2007 at the Tri-Service General Hospital, Taipei, Taiwan. Patients with a history of surgery in the anorectal region and those previously diagnosed with Crohn's disease or ulcerative colitis were excluded from the study, as were those who presented with any sort of incontinence to flatus or stools. None of the patients in the study had problems with fecal control before the surgical treatment. Patients who were lost to follow up with data unavailable from the chart review, or those who had no additional anal fistula formation after the incision and drainage procedure, were also excluded from the study. Sixty-four patients with anorectal abscess with an identified anal fistula tract and an internal opening were included in this retrospective study (51 men, 13 women).

The choice of surgery was dependent on surgeon

preference. In group I (n = 37), incision and drainage of the anorectal abscess were performed under adequate local anesthesia attempting to locate the internal opening of the anal fistula. If successful, primary fistulectomy was performed at the same time, whereas in group II (n = 27), only drainage of the abscess was performed initially under adequate local anesthesia, with a secondary fistulectomy performed one month later, after the inflammatory episode had subsided. All patients underwent the operations of fistulectomy in a prone jackknife position under heavy sedation (an intramuscular injection of meperidine and midazolam) and with a pudendal nerve block. All patients had colon prepare and prophylactic antibiotics before surgery.

The internal opening was confirmed when pressure was exerted on the abscess. The location of the fistula tract was systematically determined with a probe, avoiding the use of forceful maneuvers that might create a false tract. In group I patients, the abscess was drained and the lower part of the internal sphincter muscle was excised at the site of the internal opening. In cases of transsphincteric abscess, the presumed origin was identified following Goodsall's rule. In group II patients, the abscess was simply drained with a radical incision over the point of maximal fluctuation. The skin edges were excised and all the loculations were broken down. Secondary fistulectomy was performed one month later.

Postoperative antibiotics, nonsteroidal anti-inflammatory drugs, together with stool softeners, were prescribed from the first postoperative day. Subjective postoperative pain was surveyed on the mornings of the postoperative days. The sex and age of the patient, type of fistula, operative time (the total time for incision and drainage plus the time for the staged fistulectomy in group II patients), duration of hospital stay (the total time for hospital stay in group II patients with two admissions), and complications were all recorded. A 10-point visual analogue score was used to evaluate postoperative pain.

After their discharge, all the patients were given an advice sheet and outpatient appointments with the same surgeons, who were qualified and well trained. Thereafter, as long as the patients remained symptom free, they underwent a digital examination or ano-

scopy once a month to identify any adverse symptoms, such as fecal incontinence, recurrence or persistence of the anal fistula, or incomplete wound healing (complete healing was defined as full epithelialization and wound healing time was recorded as total time of two admissions in group II patients) (Fig. 1).

Results

We identified 64 patients who had undergone surgical treatment for anorectal abscess with an identified anal fistula during a three-year period. Fifty-one (79.7%) of the patients were men, and the mean age at

presentation for surgical treatment was 40.5 years (range, 21-66 years). The anal fistulas were classified as 29 intersphincteric types and eight transsphincteric types in the group I patients, and 23 intersphincteric types, four transsphincteric types in the group II patients. The mean operation time was 42.41 minutes for group I and 56.44 minutes for group II, which are significantly different ($p = 0.004$). There were no significant differences in the duration of hospital stays ($p = 0.944$), wound-healing times ($p = 0.620$), or mean postoperative pain scores ($p = 0.371$) of the two groups after surgery. Of the 37 patients in group I, who were treated with primary fistulectomy at the time of incision and drainage, three experienced a recurrence (two transsphincteric types and one intersphincteric type) 13, 15, or 15 months after surgery (8.1%). In the 27 patients in group II, no recurrence occurred after the two-stage fistulectomy. The difference in the recurrence rates of the two groups was not statistically significant ($p = 0.130$). The recurrent anal fistulas in the group I patients were all resolved after a second fistulectomy. Five (13.5%) of the patients who had undergone a one-stage fistulectomy and three (11.1%) who had undergone a two-stage fistulectomy suffered postoperative transitory incontinence to flatus and liquid stools, but all of them were continent at the one-year follow-up. Two group I patients suffered complications after surgery, including wound bleeding and inadequate drainage, whereas no complications occurred in the group II patients ($p = 0.220$). These two patients recovered well after the anal bleeding was stopped and adequate drainage was established (Table 1).

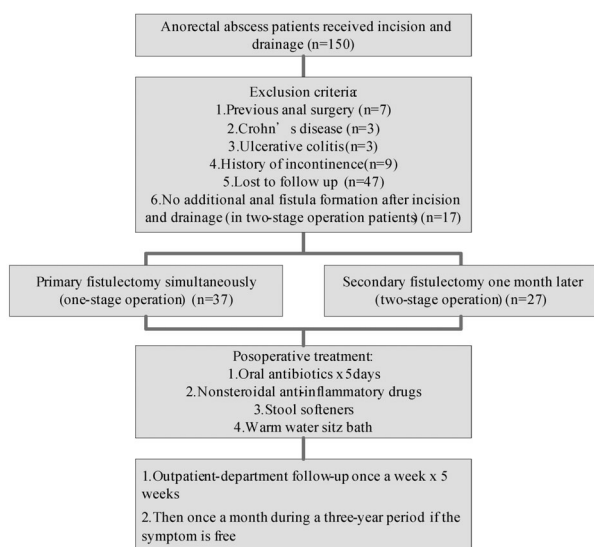


Fig. 1. Flowchart of management in anorectal abscess patients with identified anal fistula

Table 1. Characteristics and comparison of patients with anorectal abscess and identified anal fistula underwent staged surgery

Variables	One-stage operation (n = 37)	Two-stage operation (n = 27)	p value
Age	41 (21-66)	40 (23-56)	
Anal fistula type	I = 29 T = 8	I = 23 T = 4	
Postoperative recurrence	3 (8.1)	0 (0)	0.130
Complication	2 (5.4)	0 (0)	0.220
Mean postoperative pain score	5.7 (4-8)	5.4 (3-8)	0.371
Anal function disturbance	5 (13.5)	3 (11.1)	0.774
Operation time (min)	42 (12-134)	56 (22-102)	0.004
Hospitalstay (day)	4.4 (2-10)	4.4 (2-11)	0.944
Wound-healing time (day)	35 (12-125)	41 (2-196)	0.620

I = Intersphincteric; T = Transsphincteric.

Data are numbers with ranges or percentages in parentheses unless otherwise indicated.

Discussion

The term “fistulous abscess” was introduced in 1954 to stress that anal abscesses and fistulas are part of a spectrum of the same disease process.⁴ Traditionally, an anorectal abscess has been treated with drainage. With the acceptance of the cryptoglandular etiology of anal sepsis, a primary or delayed fistulectomy with the excision of the underlying anal gland has been recommended. An anorectal abscess is considered to be permanently cured only when the crypts and ducts are removed and adequate drainage has been established.

Incision and drainage for acute primary anorectal abscess followed by second-stage fistulectomy is based on the premises that drainage is a simple operation that can be performed safely with a low attendant risk of injuring the sphincter muscles which may entail fecal incontinence, and that fistulectomy is less hazardous at a later stage when the acute inflammation has subsided. However, some authors prefer to treat the abscess and fistula tract at the same time because they believe it significantly reduces the rate of abscess recurrence.^{5,6} The reported incidence of recurrent abscesses after incision and drainage only varies considerably (from 35% to 95%).^{7,8} The surgical treatment of choice should offer the lowest recurrence rate without affecting the prior state of continence.

This study included a selected subgroup of 64 patients with anorectal abscess with an identified anal fistula and an internal opening of the cryptogland, which were demonstrable in 10-35% of patients with primary anorectal abscesses in most series.⁹⁻¹¹ Thirty-seven patients underwent incision, drainage, and primary fistulectomy (the one-stage operation of group I), and 27 patients underwent incision and drainage, followed by a secondary fistulectomy (the two-stage operation of group II). The rates of anal function disturbance associated with transitory postoperative fecal incontinence to flatus and soiling (13.5% and 11.1%, respectively) did not differ in the two groups, and all the affected patients had recovered at the one-year follow-up. There were also no differences between the two groups in the length of postoperative recovery in hospital, wound-healing time, or postoperative anal pain.

Three patients suffered recurrence (two transsphincteric type and one intersphincteric type) and two patients had complications in the one-stage operation group, whereas there was no recurrence or complications in the two-stage operation group, although this difference is not statistically significant. A delayed fistulectomy in the treatment of fistulous abscess is based on the premises that the fistulectomy is less hazardous when performed at a later stage, after the acute inflammation has subsided, and that not all patients require a fistulectomy, with its attendant risk of fecal incontinence. However, our results show that a primary fistulectomy can be performed safely, with little anal sphincter injury or the creation of a false passage, in patients with a perianal abscess and an identified anal fistula under adequate local anesthesia.

The major difference between the one-stage and two-stage operations in the treatment of fistulous abscesses in our study was a saving of time. The mean operation time was 42.41 minutes in group I and 56.44 minutes in group II, which differ significantly ($p = 0.004$). When a patient has a fistulous abscess with an identified internal opening, a one-stage operation, in which incision, drainage, and fistulectomy are near simultaneous, can be performed efficiently.

Our data support the use of this approach for patients with subcutaneous mucosal, low intersphincteric, or low transsphincteric fistulas, with low recurrence and complication rates. These findings are consistent with those reported by other authors.^{5,6} However, we cannot assess the efficacy of one-stage surgery for the treatment of high transsphincteric or suprasphincteric fistulas, which were minor anal fistula types in our series. High-type anal fistulas are hard to identify during an acute inflammatory episode, and one-stage surgery might entail high recurrence and complication rates. Further studies are required to define the nature of these types of fistula.

Conclusions

In our opinion, a fistula tract can be found in a primary acute anorectal abscess with fistula, if it is a subcutaneous mucosal, intersphincteric, or low transsphincteric fistula. A one-stage operation in which inci-

sion, drainage, and fistulectomy are performed near simultaneously has a low risk of postoperative incontinence, and when this does occur, it is usually temporary. Regardless of whether an acute anorectal abscess with fistula is treated with a one-stage or two-stage operation, the postoperative wound recovery and prognosis are the same. However, the one-stage operation requires less time. We suggest that patients with anorectal abscess trying to locate the internal opening of the anal fistula, and it is more convenient for the patients if they receive a one-stage operation of primary fistulectomy without another admission and staged operations.

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原 著

肛門直腸膿瘍合併確認之肛門瘻管治療： 一階段或是兩階段手術

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目的 在引流膿瘍時是否需同時處理潛在的肛門瘻管仍有爭議。我們由回溯性病歷分析臨床因素評估瘻管切除治療的預後。

方法 我們藉由一個回溯性的研究來闡明初級瘻管切除術在處理肛門直腸膿瘍合併確認之肛門瘻管是否需要施行，而手術方式的選擇是視外科醫生個人偏好來決定。有一組病患族群接受引流術及初級瘻管切除術，而另外一組病人一開始接受切開引流術及次級瘻管切除術。分析預後的因子包括瘻管切除術後的復發或是持續、肛門功能的影響、傷口癒合時間、住院天數、平均術後傷口疼痛指數及併發症。

結果 37 位肛門直腸膿瘍合併確認之肛門瘻管病患接受一階段同時切開引流及初級瘻管切除術 (組群 I)，另外 27 位病患接受兩階段切開引流及瘻管切除術的治療 (組群 II)。在組群 I 的病人接受手術的平均時間為 42.41 分鐘，而在組群 II 的為 56.44 分鐘，兩者的差別在統計學上有意義 ($p = 0.004$)。兩組病人在住院天數、傷口癒合時間、平均術後傷口疼痛指數、復發及術後併發症之間統計上並無顯著差異。

結論 肛門直腸膿瘍合併確認之肛門瘻管病患可以一階段手術處理，而這種方式和兩階段手術比較上並無差異。此外，一階段手術的施行方式比兩階段手術方式節省手術總時間。肛門直腸膿瘍病患可以嘗試尋找肛門瘻管的內口，且同時接受一階段初級瘻管切除術而避免再次住院。

關鍵詞 肛門直腸膿瘍、肛門瘻管、切開引流術、瘻管切除術。