

One stage treatment of anal abscesses and fistulas

A clinical appraisal on the basis of two different classifications

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Abstract. In a five year period 227 patients with anal abscesses and/or fistulas of suspected cryptoglandular origin were observed and treated by one surgeon. In 201 patients the primary opening or the crypt of origin of the abscesses and/or fistulas were identified. These lesions were evaluated according to two classifications [1, 2]. The aim was to verify whether primary abscesses and/or fistulas may spontaneously loop all the external sphincters and the puborectalis muscle as reported by Parks et al. [1] or whether the formation of tracks which loop all the striated sphincteric complex (Parks' supra- and extra-sphincteric fistulas) derives exclusively by the incorrect treatment of more superficial lesions, as suggested by Eisenhammer. Not one of the primary suppurative lesions (acute or chronic) looped the striated sphincteric complex (external sphincter-puborectalis muscle). Supra- and extrasphincteric tracks were observed only in the lesions which recurred after previous surgical treatment. The one-stage treatment of primary abscesses and fistulas (fistulotomy drainage or one-stage lay-open) with a few exceptions is a definitive (2% recurrence rate) and safe (4% prolonged impairment of continence rate) procedure.

Résumé. Durant une période de 5 ans 227 malades ayant un abcès et/ou une fistule d'origine crypto-glandulaire suspectée ont été observés et traités par un chirurgien. Chez 201 malades, l'orifice primaire ou la crypte d'origine de l'abcès et/ou de la fistule furent identifiés. Les lésions ont été évaluées selon deux classifications [1, 2]. Le but fût de vérifier si un abcès primaire et/ou une fistule peut spontanément avoir un siège supra-sphinctérien comme rapporté par Parks et coll. [1] ou si la formation de trajet supra ou extra-sphinctérien provient uniquement d'un traitement incorrect de lésions plus superficielles comme cela est suggéré par Eisenhammer. Aucune des lésions suppurées primaires (aiguës ou chroniques) n'encerclait le complexe musculaire sphinctérien strié (sphincter externe et muscle pubo-rectal). Des fistules supra et extra-sphinctériennes furent observées uniquement au cours de lésions qui récidivaient après un premier traitement chirurgical. Le traitement en un temps des abcès et des fistules primaires (fistulotomie-drainage

et mise à plat en un temps) est, à peu d'exception près, définitif (2% de récurrence) et sûr (4% de défaut prolongé de la continence).

Introduction

In 1976 Parks et al. [1] proposed a classification for fistula in ano. Almost all suppurative anal lesions were presumed to be of anal gland abscess origin in the intermuscular intersphincteric plane. Two years later, Eisenhammer [2], on the basis of the same pathogenetic principles, proposed a very different and simpler classification which included the acute and chronic forms. The basic differences between the two papers was the prevalence of fistulas which looped all the external sphincters and the puborectalis muscle. The latter (Parks' extra- and supra-sphincteric fistulas) are the most difficult to treat; in Parks' experience these fistulas accounted for 25% of the overall number. In contrast, according to Eisenhammer, these were non-existent. Indeed, he explained this on the basis that abscesses and fistulas were present initially in a few characteristic forms, but that they never invaded the supralelevator space. The spread of a cryptoglandular suppurative lesion to the supralelevator space, as reported for Parks' suprasphincteric and extrasphincteric fistulas, was possibly of iatrogenic origin [2].

Thus, true primary cryptoglandular abscesses and fistulas can be treated with one-stage fistulotomy drainage without any great risk of subsequent incontinence, since the puborectalis muscle and anorectal ring remain intact. Moreover, in the acute phase, the suppurative process can be better traced because of the presence of pus [2]. The efficacy of a once only treatment for primary abscesses has also been confirmed by clinical experience [3, 4]. However, the chance of a spontaneous occurrence of supra- or extrasphincteric tracks, as suggested by Parks, together with the possible increased risk of incontinence if a fistulotomy is performed in the presence of gross inflammation [5], has limited the acceptability of one-stage fistulotomy drainage.

Thus, a prospective study of suppurative anal lesions of suspected cryptoglandular origin was carried out over a 5-year-period to try and evaluate the clinical usefulness of the two classifications, and the applicability of a radical approach (one-stage lay-open) in the treatment of primary abscesses and fistulas.

Patients and methods

This study examined 227 consecutive patients (165 males, 62 females) with an age range of 5–77 (mean age: 44 years), seen between January 1981 and December 1985 for suppurative anal disease of suspected cryptoglandular origin.

Patients with inflammatory bowel diseases were excluded. Lesions such as infected haematomas, furuncles and hidradenitis suppurativa were also excluded. The lesions were divided into three groups: (1) primary acute abscesses; (2) primary fistulas or chronic abscesses; (3) abscesses and fistulas which re-occurred after surgical treatment. Lesions which had never been treated surgically were termed primary abscesses and fistulas. Any previous treatment, even the slightest incision and drainage, prompted exclusion from this group. Patients with primary acute abscesses were examined under regional or general anaesthesia and then evaluated for immediate fistulotomy drainage. Horse-shoe extensions were either treated with a U-incision or radial counter incisions; in both cases, the main track was always laid open.

A less aggressive approach was used in the treatment of recurrent abscesses which had previously been treated surgically. These were simply drained and the operative was postponed to a later date, i.e. usually one week later.

A one-stage lay-open procedure was used to treat primary fistulas. Fistulas which recurred following surgery were treated in the same manner. However, if a conspicuous amount of striated muscle was present, a staged procedure (loose seton technique) was preferred [6]. A stage operation was also adopted for all patients with an obvious or suspected sphincter function impairment, for women with anterior abscesses and/or fistulas and episiotomy incisions, and for high anterior transphincteric abscesses and fistulas.

A fistulectomy was performed in cases in which an internal opening was lacking. The track was cored out as far as the anal canal or rectum and special care was taken not to open the mucosa.

An attempt was always made to classify the lesions using both classifications. All patients with more complex fistulas or abscesses than the low intramuscular or low transphincteric types were reviewed one year after healing, and again 3 to 9 years later (average period: 64 months). The other patients were either reviewed directly or contacted by phone. A total of 10 patients died of causes which were unrelated to the anal pathology, and in another 4 cases the information was incomplete.

Results

Primary acute abscesses

A total of 66 primary acute abscesses were observed: 9 of these ruptured spontaneously either internally or externally a few hours prior to the operation. In 58 cases (88%), the primary internal opening or probable crypt of origin was identified.

In 8 cases (12%), the internal opening was not identified and the abscesses were simply drained. In just one of these (12%), the incision-drainage was effective for 6 years. In the remaining 7 cases, recurrent abscesses and/or fistulas occurred over a period ranging from 6 months to 3 years.

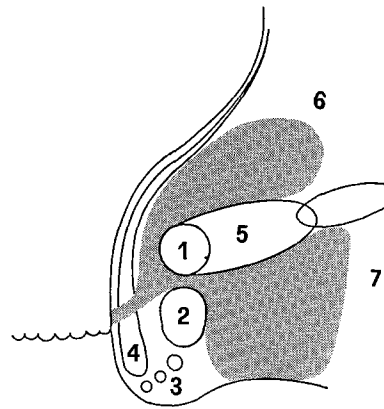


Fig. 1. Transphincteric ischioanal abscess with high intermuscular and supralelevatorial extension. 1, puborectalis muscle; 2, superficial external sphincter; 3, subcutaneous external sphincter; 4, internal sphincter; 5, levator plate; 6, pelvirectal space; 7, ischioanal space

Only the 58 cases with an identified origin were matched for the two classifications. Of these, 51 underwent primary fistulotomy and drainage. The fistulotomy was postponed in the other 7 cases (i.e. in 3 females with an episiotomy scar, in 2 elderly patients and in 2 cases of high anterior transphincteric fistulas) following the placement of a loose seton around the tracks. Also these tracks were always found to be below the puborectalis muscle.

In the 58 abscesses with an identified primary opening, no recurrence was observed. Furthermore, in the 51 patients who underwent a primary fistulotomy drainage, no major degree of incontinence was registered. Post-operative flatus control impairment occurred in 9 patients (17%). After a period of 3 years, three of these still complained of impaired flatus control and 2 of them reported some leakage.

The types of abscesses observed on the basis of the two classifications are reported in Table 1. Four cases of supralelevator extension did not correspond to Eisenhammer's classification. However, all of these involved the lateral spread of high intermuscular abscesses.

In two cases a concomitant transphincteric-ischioanal involvement was found, and the communication between the two compartments ran medially to the puborectalis (Fig. 1).

Primary fistulas or chronic abscesses

In the group with chronic primary lesions, 109 fistulas were found. Of these, 99 (91%) were classified (Table 1).

Ten cases were excluded for the following reasons: 4 involved double fistulas with 2 separate internal primary openings: 3 were mucocutaneous tracks, and 3 did not reveal any primary opening. An immediate lay-open was carried out on 84 patients. A staged procedure was employed in 15 (3 elderly patients, 7 high anterior transphincteric track cases and 5 females with anterior fistulas and an episiotomy scar). In the three cases which had no internal opening, a fistulectomy was performed.

Table 1. Distribution of 201 cryptoglandular anal abscesses and fistulas according to Parks' and Eisenhammer's classifications

		Primary acute abscesses (n=58)		Primary fistulas (n=99)			Recurrent abscesses and fistulas (n=44)		
		Ant. ^c	Post. ^c	Ant.	Post.	Lat. ^c	Ant.	Post.	Lat.
<i>Parks et al. 1976</i>									
Intersphincteric ^a	Simple	11	20	12+(1)	45+(3)	1	3+(1)	4+(1)	1
	High blind track								
+ Low	High track opening in the rectum		2		1			1	
	High track with pelvic extension		(2)		(1)			(1)	
Transsphincteric	High track without perineal opening	3			2		1		
Transsphincteric	Simple		10+(8)	6+(1)	9+(5)		1	7+(6)	
	Supralelevator extension						(1)	(1)	
Suprasphincteric	Simple								
	Pelvic extension								
	Ischiorectal extension							(1)	
Extrasphincteric	Secondary to transphincteric							1	
	Others								
Transsphincteric with high intermuscular Supralelevator extension ^b			1+(1)	2	2+(2)		2	5+(3)	
<i>Eisenhammer 1978</i>									
Low intermuscular + superficial ischiorectal		11	20	12+(1)	45+(3)	1	3+(1)	4+(1)	1
High intermuscular		3	2	3	6		2	3	
Intermuscular transphincteric			10+(8)	6+(1)	9+(5)		1	1+(6)	

^a Fistulas crossing the subcutaneous external sphincter are grouped with the intersphincteric

^b This type of fistulous abscess described by Hanley [12] was considered as a separate group

^c Anterior posterior lateral, refers to the site of primary openings

() Horseshoe

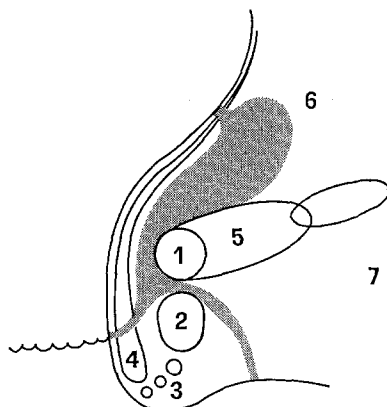


Fig. 2. Transsphincteric fistula with supralelevator extension and re-entry in the rectum

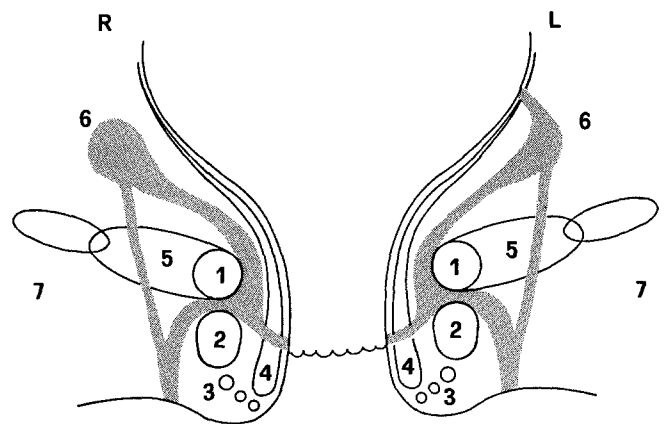


Fig. 3. Suprasphincteric fistula (right) and extrasphincteric fistula (left) observed

In the overall group of 99 patients, 3 recurrences (3%) appeared 6, 8 and 12 months after the operation.

Incontinence to solid stool was never seen. Minor degrees of incontinence were registered shortly after the operation in 17 (18%) of the 99 patients (10 females, 7 males) and in 12 (14%) of the 84 treated with the primary lay-open procedure.

After 3 years, 5 patients still complained of flatus loss and leakage, and 2 of them had difficulty retaining liquid stools. Four of these were women who were operated on for anterior fistulas; 3 had an episiotomy scar.

Table 1 contains the distribution of the primary fistulas according to the two classifications.

Seven fistulas had a supralelevator extension. In 6 of these cases there was a concomitant transsphincteric track and in 2 a rectal re-entry at a distance of 1 and 3 cm above the primary opening at the dentate line (Fig. 2). No case of translevator, suprasphincteric, extrasphincteric track was observed.

Recurrent fistulas and abscesses

Finally, 52 cases of abscesses and/or fistulas which recurred after one or more previous treatments were observed. In eight of these (3 abscesses, 5 fistulas) a primary

opening was not found. They were not classified and were treated with simple incision/drainage or a fistulectomy coring-out procedure. In the other 44 cases, an immediate lay-open was employed in 30 and a staged procedure was used in 14 cases.

With reference to the spread of the suppurative process in this group, the following were found: 2 cases of translevator extension with transsphincteric fistulas, 10 cases of transsphincteric fistulas with a supralevator extension running medially to the puborectalis muscle, 1 case of chronic supralevator abscess from the high intermuscular track, 1 case of suprasphincteric and 1 case of extrasphincteric fistula both with a concomitant transsphincteric track (Fig. 3). Recurrence was never observed. Also, in this group incontinence to solid stools never occurred. However, 9 patients including those with a supra- or extrasphincteric fistula still complained of flatus loss and/or leakage 3 years after the operation. Six of these had been treated with a staged procedure. The supra- and extrasphincteric fistulas required, respectively, 6 and 7 operations over a period of 8 and 12 months.

Discussion

As in other clinical experiences [2, 3, 7, 8], this one also seems to confirm Eisenhammer's view of the non-existence of supra- or extrasphincteric tracks of cryptoglandular origin which primarily loop the external sphincters and the puborectalis muscle.

Despite the fact that a number of primary supralevator abscesses were found, these were formed by the lateral extension of high intermuscular abscesses, and never invaded the ischioanal fossa by breaking the levator plate laterally to the puborectalis muscle.

On the other hand, in the largest series of supralevator abscesses reported [9], only 4 out of 46 seemed to have a suprasphincteric track, as they were treated with a staged fistulotomy. Unfortunately, it was not specified if these were primary or recurrent. Eisenhammer's classification is therefore clinically valid in the approach to primary abscesses and fistulas. This is also confirmed by the fact that the one-stage lay-open of primary abscesses and fistulas appears to be a safe procedure, even in the presence of gross inflammation. Only minor degrees of incontinence were registered and these were comparable to those already reported [8, 10]. A prudent approach using a staged lay-open procedure was adopted, however, in a few patients who were considered to have a high risk of becoming incontinent. These included the subjects with high anterior transsphincteric fistulas, elderly patients with a history of continence impairment and those women with anterior fistula and episiotomy scars.

Despite the use of a staged lay-open procedure, long term continence disturbance was noted in 45% of cases.

Some authors [11] challenge one-stage fistulotomy of anal abscesses and report a 34% cure rate by means of simple incision and drainage. This was not the case in the present study. No recurrences were seen in the abscesses treated with a fistulotomy, while there was an 87% recur-

rence rate or fistula formation in those incised and drained. It seems, therefore, that when the anal canal primary opening and/or the crypt of origin are not removed, cryptoglandular infections are bound to recur. The recurrence rate depends on the duration of follow-up. This was also confirmed by the high incidence of recurrence (45%) over a period ranging from 1 to 6 years in all 11 fistulas (primary or recurrent) in which a primary opening was not found.

A particular aspect of the present experience was the frequency with which primary and recurrent fistulas of the type described in 1978 by Hanley [12] occurred (Figs. 1, 2); that is, a transsphincteric (ischioanal) infection concomitant with a high intermuscular (supralevator) track. This would seem to suggest that the supra- and extrasphincteric fistulas found in this series may have been the result of mismanagement at their onset. For example, attempts to drain the supralevator infection through the levator plate laterally to the puborectalis muscle (Figs. 1–3) may have been made without checking for a communication running medially to the muscle.

In conclusion, it appears that a one-stage definitive treatment of primary cryptoglandular anal abscesses and fistulas is clinically valid but there are a few exceptions. These include: (1) elderly patients with a history of continence disturbance; (2) patients with high anterior transsphincteric fistulas and (3) women with anterior fistulas and episiotomy scars. In the latter, a similar approach to that described by Hanley [13] could be used.

Eisenhammer's classification was very useful when treating primary abscesses and fistulas, while Parks' proved useful in the approach to the treatment of abscesses and fistulas which recurred following surgical treatment. Indeed, it was only in this group that supra-, extra- and translevator tracks were found.

There is one further point. It is well known that the majority of abscesses are treated by general surgeons and not by specialists. Thus, abscess exploration in order to find the primary opening is dangerous unless carried out by someone with a sound knowledge of the surgical anatomy of the region. For this reason, in most cases simple incision and drainage is recommended.

It must be remembered, however, that spontaneous translevator "communications" between the ischioanal and supralevator spaces are extremely rare in primary abscesses. Thus, when a bulging mass or induration is felt in the supralevator space after draining an ischioanal abscess it is advisable to identify a "communication" between both spaces which runs medially to the puborectalis muscle, rather be tempted to push the debriding finger through the levators. This precaution would in our opinion eliminate the formation of supra- and extrasphincteric tracks.

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