

Surgical Management Of Perianal Abscesses: A Trainee's Perspective

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Citation

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Abstract

Aim: To compare the surgical management of perianal abscesses carried out by Basic Surgical Trainees (BSTs) and Higher Surgical Trainees (HSTs).

Subjects and methods: The study comprised two groups of subjects: 50 BSTs (Group 1) and 50 HSTs (Group 2). All participants were interviewed regarding their preferred method of 'incising and draining' perianal abscesses. This was done by means of a telephone questionnaire. The data was recorded and sorted using Microsoft Excel. The results were compared with the consensus view of four colorectal surgeons which identified a 'gold standard' method of surgical management. Statistical analyses were carried out using Prism. P values less than 0.05 were considered significant.

Results: All subjects completed every section of the questionnaire. Only 10% of BSTs and 12% of HSTs met the 'gold standard' as defined by the consultant surgeons. There was no statistical difference in the responses given by the two groups with regard to choice of anaesthesia; incision; curettage, de-roofing and packing of cavity; probing for fistulae, rectal examination and follow up. HSTs tend to send tissue for histology ($p=0.003$), whilst BSTs were more likely to washout the cavity ($p=0.023$). In addition, responses given by trainees within their groups were also not consistent.

Conclusion: There is a need for a protocol for incision and drainage of perianal abscesses, which is one of the most common emergency procedures undertaken by surgical trainees.

INTRODUCTION

A perianal abscess is the suppurative of tissues in the perianal space. The majority are caused by cryptoglandular infection^{1,2,3} but other causes include Crohn's disease, malignancy and tuberculosis.⁴ The first event is infection of the anal glands, which spreads to the intersphincteric space and then extends to emerge at the border of the anal canal as a perianal abscess. Although this affects all age groups, there is a larger incidence in patients between the age of 30 and 49 years.⁵

Incision and drainage of perianal abscesses is one of the most common unsupervised procedures carried out by surgical trainees. Simple drainage of an abscess leads to immediate symptomatic relief but other procedures should be carried out in order to optimise the treatment and reduce the risk of recurrence. Several methods have been described in the literature, which include; traditional incision, drainage

and packing,⁴ drainage and primary fistulotomy,^{6,7} de Pezzer catheter drainage,^{8,9} and incision, drainage and primary suture with or without local antibiotic.^{10,11} There seems to be no general consensus regarding the optimal surgical management of this condition.

This telephone survey was performed to compare the techniques of simple incision and drainage of perianal abscesses between surgical trainees, and also against the 'gold standard' treatment identified by four consultant surgeons.

SUBJECTS AND METHODS

50 BSTs and 50 HSTs were selected at random via the different hospital switchboards in the London region and interviewed by telephone using the questionnaire (see Appendix). Staff grades were excluded from the survey due to the diversity in their baseline training. The data was recorded and sorted using a Microsoft Excel spreadsheet.

Statistical analyses were carried out using Prism. A p value less than 0.05 was considered significant. All participants completed every section of the questionnaire and there were no refusals.

Four Consultant Colorectal Surgeons were interviewed regarding their preferred method of incision and drainage. The trainees' responses were then compared with this 'gold standard' of surgical management.

RESULTS

The representation from different years amongst BSTs and HSTs is shown in Figure 1 below.

The results from different sections of the questionnaire are outlined below.

Figure 1

Table 1: The different types of anaesthetic techniques considered by BSTs and HSTs (in)

Anaesthetic	Preferred		Sometimes		Never	
	0	0	5	7	44	43
Ethyl chloride spray	0	0	5	7	44	43
Local	2	0	20	19	27	31
General	48	50	0	0	0	0

Figure 2

Table 2: The different types of incisions used by BSTs and HSTs (in)

	Cruciate incision		Stab incision	
	21	22	12	6
Full length of abscess cavity	21	22	12	6
Limited length of abscess cavity	12	13	5	9

Figure 3

Table 3: Other technical differences between BSTs and HSTs from the questionnaire

Technique (from questionnaire)	Basic Surgical Trainee	Higher Surgical Trainee	P value
Pus swab sent routinely	47	47	1.32
Histology sent routinely	11	26	0.003
Curettage of abscess cavity	40	37	0.64
De-roof cavity	33	32	1.00
Washout of cavity	42	31	0.02
Packing of cavity	47	45	0.72
Probe fistulae	23	17	0.31
Routine rectal exam	43	49	0.06
Routine rectal biopsy	0	2	0.49
Follow up outpatient	38	42	0.45

There was a mixture of responses from both groups of trainees with regard to washout and packing of the abscess cavity. 84% of BSTs used washout while only 62% of HSTs opted for this intervention (Table 4). The majority of trainees packed the abscess cavity after drainage (Table 5).

Figure 4

Table 4: Types of washout used

Washout	Basic Surgical Trainee (n=42)	Higher Surgical Trainee (n=31)
Saline	18	12
Saline + Betadine	3	4
Betadine	7	5
Hydrogen peroxide	11	8
Chlorhexedine	3	2

Figure 5

Table 5: Types of packing used

Material used	Basic Surgical Trainee (n=47)	Higher Surgical Trainee (n=45)
Ribbon Gauze (+ Proflavine)	33 (20)	25 (14)
(+ Betadine)	(9)	(6)
(+ Saline)	(3)	(5)
(+ Hydrogen peroxide)	(1)	(0)
Kaltostat	12	14
Sorbitol	2	3
Gelonette	0	1
Aquasol	0	2

Forty-nine HSTs (98%) said that they would perform a rectal examination during the procedure either alone (n=3), or in combination with proctoscopy (n=6) or rigid sigmoidoscopy (n=10), and proctoscopy and sigmoidoscopy combined (n=30). A comparison with the results obtained from BSTs and HSTs are summarised in Table 6.

Figure 6

Table 6 : Rectal examination

Type of examination	Basic Surgical Trainee (n=50)	Higher Surgical Trainee (n=50)
None	7	1
DRE alone	12	3
DRE + P	5	6
DRE + S	18	10
DRE + P + S	8	30

DRE=digital rectal examination; P=proctoscopy; S=rigid sigmoidoscopy

Both groups of trainees recommended a variety of dressings for the district nurse (Table 7).

Figure 7

Table 7: Dressings recommended to the district nurse upon discharge

Type of dressing	Basic Surgical Trainee	Higher Surgical Trainee
Aquasael	0	4
Ribbon Gauze	3	5
+ Betadine	3	1
+ Saline	2	1
Blue Gauze	6	5
Gelonette	0	2
Intrasite	0	1
Kaltostat	8	18
Sorbitol	2	6
None	10	4
Don't know	16	3

All of the Consultant Colorectal Surgeons agreed on the following management. "The abscess should be drained under a general anaesthetic with a full length cruciate incision. Pus swabs are sent routinely. The cavity is curettaged, de-roofed, washed out using saline and packed with aquasael or kaltostat. Under no circumstances should trainees probe a fistula. Finally a full rectal examination under anaesthetic should be performed and all patients followed up in the clinic". Only 6 HSTs (12%) and 5 BSTs (10%) met these standards.

DISCUSSION

In recent decades, more than one surgical procedure has been proposed for the treatment of acute perianal abscesses. The most common procedures are drainage alone and drainage with fistulotomy. Surgeons who regard drainage alone as the best alternative feel that most of the abscesses do not possess proven internal openings and therefore do not lead to relapses.⁴ They state that anal incontinence is a complication, which can occur after fistulotomy in 39.4% of cases.¹² In addition, most abscesses are drained by non colorectal surgeons which can lead to a large number of

functional disturbances of the anus.⁴ Alternatively, primary fistulotomy at the time of drainage has been shown to result in fewer persistent fistulae and does not add the risk of faecal incontinence.⁷ Several randomised controlled trials have shown different results. Ho et al ⁷suggested that surgeons should perform primary fistulotomy at the time of incision and drainage of perianal abscesses. Tang ⁶ reported that incision and drainage alone showed a tendency for recurrence but it was not statistically significant compared to concurrent fistulotomy. On the other hand, Shouten¹² concluded that surgeons should reserve fistulotomy as a second stage procedure if necessary as it increases the incidence of functional anal disorders.

Nonetheless, simple incision and drainage is undoubtedly the most popular way to treat this condition.^{6,12,13,14,15} This approach is favoured as it is an easy technique to learn with short hospital stays. Primary fistulotomy has not gained widespread popularity in the United Kingdom although some good results with regard to recurrence rates and functional outcome have been produced.^{15,16} The greatest disadvantage of this approach is the possibility of an unnecessary fistulotomy.^{12,18} In addition an iatrogenic fistulous track may inadvertently be created by searching an underlying fistula by careless probing.

It seems from the arguments outlined above that a considerable number of patients do not have further problems after simple incision and drainage of perianal abscesses. This treatment could therefore be carried out in the first instance with definitive fistula surgery in the future if warranted. This is the approach in the United Kingdom. Interestingly, there are no randomised controlled trials in the literature comparing the different methods of simple incision and drainage with respect to recurrence and morbidity. This questionnaire was designed to evaluate the variation in surgical technique in a small sample of surgical trainees. There was no statistical difference in the surgical methods used by BSTs and HSTs, with the exception of washout of cavity and tissue for histology. Overall only 12% of HSTs and 10% of BSTs met the gold standard set by the consultant colorectal surgeons.

Our gold standard was formed on the responses of only four consultant colorectal surgeons. Although their preferred methods do not all stem from randomised controlled trials, this does still indicate the need for a protocol to guide trainees in their surgical management. The consultants suggested that all procedures should be carried out under a

general anaesthetic, which is not only comfortable for the patient but also allows the surgeon to carry out a thorough rectal examination. Although 96% of BSTs and 100% of HSTs indicated that a general anaesthetic was preferred, nearly 40% sometimes opted for a local anaesthetic and 12% suggested that ethyl chloride was permissible. The traditional method of draining abscesses is by utilising a full length, cruciate incision and then de-roofing, curettage, washout and packing of the cavity. Some surgeons argue that a limited incision is adequate for drainage and offers the advantage of a more cosmetic result.²⁵ There are no randomised comparative studies available on the various drainage procedures. Therefore, it was not surprising that only 40% of trainees used the traditional method. Furthermore, there are no randomised controlled trials evaluating the need for curettage, washout or even packing of the cavity.

Pus swabs were sent routinely by 94% of BSTs and HSTs. Microbiology of the acute abscess can give useful information on the risk of fistula formation.^{5,20} Hamalainen et al²³ showed that abscesses growing bowel derived organisms, especially *E. coli*, were most susceptible to fistula formation. They also suggested that histological samples were not necessary unless malignancy or inflammatory bowel disease was suspected. More HSTs (52%) sent samples for histology when compared with BSTs (22%). This may reflect their greater awareness of rare causes of anorectal sepsis other than cryptoglandular infection.

The consultants interviewed in this study strongly argued that probing of fistulae should be reserved to experienced colorectal surgeons. The questionnaire revealed that 46% of BSTs and 34% of HSTs all probed for fistulae at the time of primary drainage. This has been shown to inadvertently create a false fistulous tract in the hands of inexperienced surgeons.^{12,18} In general, an associated fistula is discovered in 6-43 % of primary abscesses^{16,17,18,19,20,21} and 76 % of recurrent abscesses.²² Furthermore, the incidence of recurrence is high after drainage of recurrent abscesses¹⁴ and also those with detectable internal openings.¹⁹ This indicates the need for all patients to be followed up in the outpatient clinic. 84% of HSTs and 76% of BSTs routinely arranged follow up for their patients.

All consultants suggested that a thorough rectal examination was important as part of the management of patients with perianal sepsis. Lunniss et al²⁴ prospectively compared

surgical assessment with microbiological analysis as predictors of the aetiology of the perianal sepsis. Culture of gut organisms was a sensitive method of detecting an underlying fistula but was not particularly specific (80%). Demonstration of sepsis in the intersphincteric space in association with an abscess was 100% specific and 100% sensitive for detection of an underlying fistula. This illustrates the importance of a thorough examination of the rectum under anaesthesia. Although 86% of BSTs and 98% of HSTs routinely performed a digital rectal examination, a complete examination including proctoscopy and rigid sigmoidoscopy was only undertaken by 16% of BSTs and 60% of HSTs. This difference between the two groups was statistically significant ($p=0.0001$)

There is no general consensus in the literature regarding the optimal solution for washout or the best material for packing of the abscess cavity. The confusion in the clinical evidence for this was demonstrated by the variety of responses given by both groups of trainees. HSTs were more decisive in their recommendations to the district nurse as only 3 out of 50 (6%) were unsure of the type of dressings to use as compared to 32% of BSTs. It was interesting to note that trainees still preferred ribbon gauze for packing of the abscess cavity (66% of BSTs and 50% of HSTs), whereas a fewer number used modern hydrofibre dressings such as aquasel (0% BSTs and 4% HSTs). Some prospective randomised controlled trials have shown that hydrofibre dressings, although more expensive than ribbon gauze, facilitated an earlier discharge from hospital.²⁵ Others have shown that Aquacel appears to be at least as effective as wet-to-dry gauze in the healing of open surgical wounds.²⁶ Furthermore, Fry et al looked into four of the most commonly used wound dressing products: Scherisorb (now renamed Intrasite), Kaltostat, Lyofoam and Granuflex. The author concluded that there is no 'ideal' dressing which can be used at all the stages of the wound healing process.²⁷

The 'gold standard' used were the responses of only four consultant colorectal surgeons. More consultants would need to be recruited into the study and their responses used as a basis of further randomised controlled trials, comparing their methods with the ones used by the surgical trainees. The main unanswered question in our minds is whether the variation of techniques used by the trainees has any effect on recurrence rates and morbidity. Unfortunately, this was not addressed in the study and needs to be evaluated further.

Figure 8

Appendix: Questionnaire

Grade SpR / SHO Year

1. What clinical signs do you look for on examination?

 ...

2. Anaesthesia? Would you consider ... (tick one box for each type)

	Preferred	Sometimes	Never
a) Ethyl Chloride spray	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Local anaesthetic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) General anaesthetic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Do you prefer.

a) Stab incision or Cruciate	<input type="checkbox"/>	b) Full length of abscess or Limited length	<input type="checkbox"/>
	<input type="checkbox"/>		<input type="checkbox"/>

4. What specimens, if any, do you send routinely?

5. Do you curettage? Yes No

6. Do you de-roof cavity? Yes No

7. Do you washout? Yes No
 If yes, what do you use?

8. Do you pack the cavity? Yes No
 If yes, what do you use?

Figure 9

If gauze, do you use

Proflavine

Betadine

Saline

Hydrogen peroxide

9. If external opening, would you probe for fistulae? Yes No

11. Do you always perform a rectal examination? Yes No

If yes,

Digital

Proctoscope

Sigmoidoscope

12. Do you routinely take a rectal biopsy? Yes No

13. Follow up in outpatients? Yes No

14. What dressings would you recommend the district nurse to use on discharge?

Thank you for your time.

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