The use of microbiological pus swabs and routine follow-up in the management of perianal sepsis. Is there any need?

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Abstract

Background: Pus is often sent routinely for microbiological examination after draining primary perianal abscesses. Growth of enteric organisms is associated with underlying fistulae and authors have argued that pus swabs should therefore influence further management. We examined the management of acute primary perianal sepsis and the benefits of routine microbiological cultures and follow-up. Methods: Records of 105 patients undergoing drainage of primary perianal abscesses presenting to the Royal Berkshire Hospital were analysed. Patients with complex perianal or colorectal disease were excluded. Operative findings, documentation of the use of microbiological pus swabs and subsequent follow-up was noted. Results: 86 (82%) patients had a pus swab taken. Of these 63 (73%) grew gut organisms. Only 4 (5%) patients had documentation of follow-up of these results. 36 (34%) of patients underwent follow-up in a surgical clinic (50% ‘routinely’); 19 of them (53%) required a repeat operation of which 17 (89%) were symptomatic. Of those requiring further operations, 10 (53%) had evidence of fistulae – 9 (90%) of whom had persisting symptoms and 9 (90%) had grown some form of gut organism on initial culture. Of the patients who did not require any further surgery, 50 (59%) had grown some form of gut flora on initial drainage of their abscess. Only persisting symptoms were found to be significantly associated with the presence of underlying fistulae (p<0.005). Conclusions: The routine use of microbiological swabs at initial drainage of primary abscesses has little influence on the overall management of patients. Follow-up and further surgery should be largely determined by clinical symptoms.

KEYWORDS: perianal, abscess, fistula
Introduction:

Although guidelines for the treatment of acute anorectal sepsis exist\(^1\), specific details of drainage technique and recommended subsequent follow-up are limited.

Primary drainage of the abscess with microbiological culture is routine in most hospitals, however, both the practice of examination under anaesthetic (EUA) and the management of identifiable fistulae at initial presentation are variable\(^2-6\).

There is widespread variation in following up the results of pus swabs and initiation of management based on the microbiology.

The association has been well documented between the presence of gut organisms and the coexistence of perianal fistulae\(^7,8\). Reports vary on the frequency of underlying fistulae from 5 to 66%, and accurate diagnosis may depend on the experience of the surgeon performing the EUA\(^7,9-14\). The importance of sending pus for culture at primary drainage has been stressed and it has been suggested that all patients in whom enteric organisms have been grown should undergo further EUA to exclude the presence of fistulae\(^15\). The natural history of perianal fistulae, however, is not clear and a number of fistulae may heal spontaneously without any surgical intervention.

We examined the management of acute primary perianal sepsis, and particularly the use of microbiological culture and subsequent follow-up, in a DGH setting.
Patients and Methods:

The records of 105 consecutive patients with primary perianal sepsis requiring surgery presenting to the Royal Berkshire Hospital, Reading (RBH) were examined. Patients were excluded if they had a history of previously surgically treated perianal sepsis, fistulæ, inflammatory or neoplastic colorectal disease.

Information noted included; initial operative findings, the grade of person performing surgery, documentation of swabs taken, any action taken based on microbiology reports, follow-up, presence of persisting symptoms, and any further surgery undertaken. All records were examined a minimum of 5 months (median 18 months) after initial treatment of the abscess, thus allowing adequate time for recurrence of symptoms to have occurred.

Frequency of the presence of underlying fistula demonstrated at follow-up EUA and the association with organisms grown on initial pus drainage, and with post-operative symptoms, was analysed with chi-square and Fisher’s exact test \(^{16}\). P values <0.05 were taken as being significant.
Results:

105 patients were identified with primary perianal sepsis. Of these 105 patients, 86 (82%) had a swab taken at the time of initial drainage. Sixty-nine (80%) of these grew some form of organism, of which 67 (97%) were classified as gut floral microbes.

Twenty-four (35%) patients with positive microbiology were followed up. Twelve were seen ‘routinely’ – of whom 2 had symptoms; and 12 were re-referred for symptomatic reasons. Of these patients 15 underwent a further operation (14 of whom were symptomatic); a fistula was present in 9 (only 1 of whom was asymptomatic) (see Figure 1).

Of the 45 patients with positive culture who were not followed up, none underwent any further surgery or had documentation of fistula at any further stage of this study.

Of the remaining 36 patients (in whom either a swab was not taken or the growth was sterile) 12 were seen in clinic; 5 for ongoing symptoms and 5 ‘routinely’ (asymptomatic), 1 routine follow-up patient failed to attend and in 1 patient it was unclear from the records as to the specific reason for follow-up.

Four of the patients seen for symptoms had a further EUA during which one was found to have an underlying fistula (no swab had been taken on initial drainage). Of the other 3, 2 had no swabs taken on initial drainage and 1 had no growth.

The presence of gut organisms grown at initial drainage was not found to be associated significantly with the presence of an underlying fistula at subsequent EUA (p=0.070, chi-square; p=0.090, Fisher’s exact); however, recurrent symptoms were (p<0.005).

44 (42%) operations were performed by a surgical SPR, 30 (29%) by a specialist nurse practitioner, 22 (21%) by an SHO (CT1-ST3) surgical trainee and 6 (6%) by a consultant. In 3 it
was unclear from the notes who the primary operator was.

None of the patients had a fistulectomy or placement of a seton as part of their primary procedure.
Discussion:

The majority of primary perianal abscesses did not cause any further problems following initial drainage, in spite of the high incidence of gut organisms cultured at the time of initial surgery. Although this does not necessarily imply that these patients do not have an underlying fistula, what it does suggest is that even if they do, only a few present with symptoms. Our study found that very few clinicians acted on the results of pus swabs taken at the time of initial drainage and that subsequent follow-up and management was largely determined by the presence of persisting symptoms.

Perianal sepsis is a common condition and the cost implications of routine pus cultures and follow-up is not insubstantial. As symptomatic patients are at significant risk of having an underlying fistula then it would seem reasonable to limit follow-up to these patients. A history of a positive culture, although a frequent finding in patients with fistulae, is not particularly specific for this, being associated with a large proportion of patients with negative EUAs.

In our Hospital, the majority of these operations were performed by surgical trainees or specialist nurses; they tended to be limited procedures without fistulectomies or placement of seton sutures. Although it is likely that a more extensive procedure with more accurate identification and treatment of underlying fistulae would be performed if the primary operator was a consultant and/or colorectal specialist, whether this is indeed necessary is controversial. A recent Cochrane review has suggested that it may be safe to perform fistulectomy at the time of initial abscess drainage, however, this would require an experienced surgeon. Historically, these procedures have been carried out by junior surgical trainees and it seems unlikely that this practice will change considerably in the future. The association between anal stretch and
incontinence has been well documented\textsuperscript{19} and although there are very few studies examining the effects of anal retraction devices - and even rigid sigmoidoscopy - on anal sphincter function it seems sensible to avoid over zealous examination if unnecessary. Simple incision and drainage - without extensive EUA - performed by junior trainees appears to be safe and adequate for the majority of patients presenting with primary perianal sepsis.

Conclusions

Primary perianal abscesses can be safely managed with straightforward incision and drainage, without the routine sending of pus for culture and with follow-up reserved for those with ongoing symptoms.
References


7. S. J. Eykyn and R. H. Grace. The relevance of microbiology in the management of anorectal


16. SPSS for Windows (11.0). 2001


Legend

Flow chart of patient follow-up

105 patients

Non-routine
N=18

Positive swabs
N=12
(all symptomatic)

12 reops:
7 fistulae

Negative swabs
N=5
(all symptomatic)

4 reops:
1 fistula

Positive swabs
N=12
(2 symptomatic)

3 reops:
2 fistulae

‘other’
N=1

DNA
N=1

Routine
N=18

Negative swabs
N=5
(no symptomatic)

No reops