Original Research

The impact of specialist experience in the surgical management of perianal abscesses∗

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A B S T R A C T

Perianal abscesses are one of the most common general surgical emergencies and the management of this can be variable. The aim of our study was to assess the management strategy used by different grades of surgeons in the surgical management of an acute perianal abscess.

Material and methods: A retrospective analysis was carried out of all patients presenting with an abscess in the perianal region over a two-year period from January 2006 to December 2007. Patient demographics and co-morbidities were noted. The management strategies of different grades of operating surgeon were analysed.

Results: During the two-year period, 147 patients presented with a perianal abscess of whom 52 (28%) had recurrent abscess. Fistulae were identified in 30 patients, with more than half picked up by consultants (P = 0.00001). Consultants performed fistulotomy and Seton insertion in 50% and 17% of patients respectively, whilst registrars performed these procedures in only 4% and 8% of patients (p < 0.00001).

Conclusion: Whilst surgical management of the perianal abscess is one of the most common surgical emergency procedures performed by the surgical trainees, input from a senior clinician improves the identification and definitive management of an underlying fistula. This study reinforces the importance of involvement of senior surgeons in the management of this common condition.

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1. Introduction

Perianal abscesses arise from anal glands, which penetrate through the internal sphincter muscle. These glands have a predisposition to obstruction and suppuration, leading to abscess formation. Perianal abscesses and fistula in ano are often found together. These abscesses are one of the most common surgical emergency procedures performed; particularly during out of hours and these are usually performed by junior surgical trainees. Whilst, the initial treatment of perianal abscess is incision and drainage, other procedures may be required depending upon identification of an underlying fistula and this depends upon the experience of the surgeon. About 40% of patients present with a fistula after simple incision and drainage of such abscesses.1−4 However it is not entirely clear which patients go on to develop a fistula. Some studies have proposed that positive cultures of gut related organisms at the time of surgery, increases the likelihood of an underlying fistula, while others found that this is of no predictive value.5,6

Though perianal abscess frequently co-exist with fistula in ano, incision and drainage is a simple procedure that can be done by a relatively junior surgical trainee. However, failure to deal with an internal opening may result in chronic fistulation and recurrent abscesses.7−10 Such morbidity can be reduced if the fistula tract is identified and treated at primary operation. Recurrent abscesses can increase the risk of incontinence compared to careful fistulotomy.11 It is important to realise that fistulotomy should be carefully carried out in selected patients by an experienced surgeon, as it has the potential to increase morbidity. However some randomised studies and a recent Cochrane review have found it safe to do deal with the fistula at the same time with no significant morbidity.12,13

The aim of our study was to assess the presentation and management of these patients at our institution, and in particular to evaluate the impact of the experience of the surgeon on identification of an underlying fistula and hence, selection of the surgical procedure.

∗ What is new in the paper: Experienced surgeon should perform or supervise the junior surgical trainees while performing operative procedure for perianal abscesses for improved patient management.

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2. Material and methods

This study was a retrospective analysis of all patients who presented to our hospital with an abscess in the perianal area over a two-year period from January 2006 to December 2007. The patients were identified from the hospital coding system database using the search item “perianal abscess”. All relevant data was collected by a case note review. Patients with pyoderma skin infections, pilonidal abscesses and rectovaginal fistulas were excluded. Patient demographics, presentation (primary or recurrent), previous fistulas, and associated co-morbidities (diabetes, inflammatory bowel disease) were noted. All patients underwent surgery within 24 h of admission. Patients were operated upon by various grades of the surgical team, varying from a consultant to specialty registrars at various stages of their training. The patients were consented for an “Incision and Drainage of the perianal abscess” and for a possible fistulotomy or placement of a loose seton in case of identification of an underlying fistula. Findings were recorded on a special fistula sheet intra-operatively. Operative details in terms of the grade/s of surgeons involved, type of procedure (Incision and drainage of abscess alone and a fistulotomy or placement of loose seton) were identified from the operation notes.

The data was collected and analysed using Microsoft Excel 2003 spreadsheet. Age was presented as mean (95% confidence interval), with differences between the ages of patients operated on by registrar and consultant comparing using a two-tailed unpaired t-test. The incidence of males, smokers, diabetics and patients with inflammatory bowel disease was compared between patients operated on by consultant and registrar using a Z-test for two proportions, with a significance level set at 95%. Statistical comparisons were also done using the Chi-square test and Fisher’s test, with $p < 0.05$ considered as significant.

3. Results

During the 2-year study period, 147 patients with perianal abscesses were managed in our unit. Consultants were involved with operations on 32 patients with a mean age of 43.3 years (range 39.9–44.7) while Specialty Trainees operated upon 115 patients with mean age of 42.3 years (range 39.9–44.7). As shown in Table 1a, there was no significant difference in patient demographics between patients operated by consultants and registrars. However, as is evident from Table 1a, a higher proportion of patients with history of inflammatory bowel disease were treated by consultants (although this difference was not statistically significant).

Out of 147 patients, 52 patients (28%) presented with recurrent perianal abscesses. There was no significant difference in patient demographics including age, sex, smoking and incidence of diabetes in patients with primary and recurrent perianal abscesses. Five patients with inflammatory bowel disease presented with perianal abscesses, out of which fistulae were identified in three patients. Inflammatory bowel disease was present in 5.1% of patients with recurrent perianal abscesses, compared to 1% of patients with primary perianal abscess ($p = 0.42$).

Table 1b shows the treatments offered to patients by different grades of surgeons. Identification of an underlying fistula was higher in the consultant group compared to the trainees (50% Vs 12%, $p = 0.00001$). It also shows that in addition to the drainage of the abscess, definitive treatment of fistulotomy was performed in a third of patients operated upon by consultants and approximately a further 1/6th of patients had a seton insertion. In contrast, registrars performed these additional procedures only in a small proportion of patients, limiting their management predominantly to incision and drainage. This difference was statistically highly significant ($p < 0.00001$).

4. Discussion

Perianal abscesses, recurrent abscesses and perianal fistulae seem to represent various points on the spectrum of the same disease process. Male sex and smoking did not show any association in our case series with recurrence or fistula formation. Patients with inflammatory bowel disease showed increased incidence of recurrent abscess formation, possibly due to persistent underlying causes. The incidence of fistulae in our series was 20%, whilst that of recurrent abscesses was 35%.

In a typical on-call setting, drainage of perianal abscess is commonly considered a minor procedure. As such, these patients are mostly operated upon by registrars and sometimes by junior trainees under supervision. This approach evidently will have an impact on the findings noted above. When the operating surgeon was a consultant, fistulae were identified in half of patients in this series. This higher incidence can be partly attributed to the increased skill of consultants in carrying out a systematic examination and identifying the relevant pathology. While registrars performed the maximum number of procedures, they identified an internal opening in only 12% of patients. This lower incidence may reflect the relative inexperience of junior staff at identifying fistulae at the time of examination under anaesthesia, and also due to involvement of non-colorectal trainees. Case selection with consultants performing relatively complicated cases may also be responsible for his lower identification rate by registrars.

The treatment offered to the patients depends on the experience of surgeons and also on the surgeon’s preference, as it is not entirely clear which approach is better. The most important aspect in the management is to drain the abscess and not to explore for a fistula unless the trainees are taught how to look for an underlying fistula as creation of false passages during exploration is deemed to create more problems. Successful surgical management of anal fistula depends upon accurate knowledge of anal sphincter anatomy and the course of the fistula. As a result, classification of the pathology is extremely important. The anatomy and the significance of the internal anal sphincter were first established by Eisenhammer, who introduced the procedure of lateral internal sphincterotomy developing a new approach of management for anal abscesses and fistulas. He proposed that satisfactory treatment of perianal abscesses depend upon the fact that anal abscesses and fistulas are the same identical pathological situation, and therefore proposed the treatment of fistulotomy as primary choice of treatment with very low recurrence rate. The most comprehensive and practical classification, and one which is widely used, was devised by Parks and colleagues based on treatment of 400 fistulas. This classification divided fistulas into four main groups namely intersphincteric, trans-sphincteric, suprasphincteric and extrasphincteric. In our study, the fistulae were not classified on a consistent basis, possibly due to varied experience of the operating surgeon.
Fistulotomy can be performed at the time of initial operation if the fistula is simple. Results of a meta-analysis comprising five randomized controlled trials comparing drainage alone with drainage plus fistulotomy demonstrated a significant reduction (83%) in the rate of recurrent fistulae formation with immediate fistulotomy and without significant risk of incontinence.12 Another RCT involving 200 patients showed a recurrence rate of 5% in patients with fistulotomy for low fistula, compared to 29% of patients with drainage only, and showed a continence-disturbance rate of 2.8% in the fistulotomy group.16 While a further RCT involving 52 patients showed no recurrence in the fistula group compared to drainage only (25%), it suggested that drainage puts few patients at risk of recurrence.19 Knoeobel et al showed that the risk of developing incontinence increases with recurrent anal orectal disease and not with careful fistulotomy, thereby suggesting that experienced surgical input is always needed to improve the outcome.11 They also showed that the risk to develop incontinence increase with recurrent disease.

Due to the varied follow up in our group patients, we were unable to comment on the outcome of the definitive treatment, which is a limitation of a retrospective study. However, the focus of our study was not on the outcome of the management but primarily on the identification and initial management of an associated underlying fistula highlighting the need for involvement of experienced surgeons at the time of operation. Current guidelines in United Kingdom recommend that immediate fistulotomy should be carried out in patients where an internal opening is identified in submucosal or intersphincteric fistula, as this involves minimal sphincteric complex and reduces complications. Seton insertion should be used in patients with complex abscesses, abscesses involving significant sphincter bulk or high abscesses where internal opening can be seen.21 A recent meta-analysis also supports definitive treatment in carefully selected patients.13 Drainage alone remains a safe procedure for the relatively inexperienced surgeons. The findings from our study also makes us recognize that the surgical trainee should be better supervised and trained to look for underlying fistula if more patients are to undergo a definitive treatment for the fistula in the same sitting.

5. Conclusion

Whilst surgical management of perianal abscess is one of the most common surgical emergency procedures performed by the surgical trainees, input from a experienced surgeon improves the identification and definitive management of an underlying fistula. It is particularly important to closely supervise the more junior trainees as they perform most of these procedures.

Conflict of interest
None declared.

Author contribution
All the junior authors were involved in data collection and literature review. While the first author was the main author who conducted the study and prepared the article, there has been valuable contribution from junior authors in data collection and review process. This project was accomplished under the supervision of senior author Mr. S. Valamarith.

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