

D. W. Oliver · M. W. C. Booth · V. F. M. Kernick  
T. T. Irvin · W. B. Campbell

## Patient satisfaction and symptom relief after anal dilatation

Accepted: 14 September 1998

**Abstract** Anal dilatation is used as a simple method of treatment and has been used for both anal fissure and haemorrhoids. This study examined longer-term results among a cohort of 162 patients, 132 of whom responded to a detailed questionnaire, an 82% response (66 patients were male; age range 17–75 years, median 42 years). Follow-up ranged from 16 months to 36 months (median 27 months) after anal dilatation (68 patients for fissure, 32 for haemorrhoids, and 32 for both). In the early months after dilatation, 83% had symptomatic improvement and 76% remained improved. Five (7%) patients with fissure and 11 with haemorrhoids (17%) required further hospital treatment, while 10% and 17%, respectively, had received further treatment from their general practitioners (GPs). Seventy-one percent said they would have a further anal dilatation if symptoms recurred. There was no difference in results obtained by surgeons of different seniority. Complications – bleeding (29%) and difficulty controlling flatus (15%) or faeces (8%) – resolved in all cases. The results of anal dilatation for fissure are generally satisfactory in the longer term, with a trend toward better symptom relief in patients with fissure compared with those with haemorrhoids. We do not recommend anal dilatation as the sole treatment of patients with haemorrhoids, but it may be a useful adjunct to other treatments such as banding or sclerotherapy. Morbidity was generally acceptable and the majority of our patients would be prepared to have this procedure again if their symptoms were to return.

**Key words** Anal dilatation · Anal fissure · Haemorrhoids

### Introduction

Anal problems such as fissure and haemorrhoids are common, and there are a number of management strategies. These include conservative measures such as topical local anaesthesia [1, 2] or surgical treatment including anal dilatation [3], internal sphincterotomy [4, 5] and haemorrhoidectomy [6]. Relief of symptoms is the most important outcome measure. Despite a number of studies assessing the efficacy of anal dilatation for fissure or for haemorrhoids [6–9], few have looked at patient satisfaction as a measure of success. The aim of this study was to assess symptom relief and patient satisfaction both in the short and longer term after anal dilatation.

### Patients and methods

A surgical computer database was used to identify all patients who had undergone manual dilatation of the anus between 1 July 1993 and 31 March 1995 for anal fissure, haemorrhoids, or both. Patients undergoing anal dilatation for other reasons such as anal stenosis or Crohn's disease were excluded. There were 162 patients, of whom eight were excluded due to death, mental infirmity, age under 16, unfamiliarity with spoken English or imprisonment.

Patients had been selected for anal dilatation following their initial out-patient appointment by a consultant or other senior clinician. Nearly all patients with anal fissure had a posterior fissure, except one with an anterior fissure who subsequently experienced recurrence. Patients treated for haemorrhoids had first- and second-degree haemorrhoids only.

Data collected from the case records included duration of preoperative symptoms, operative diagnosis, grade of surgeon, adjunctive procedures, number of days in hospital, drugs on discharge and subsequent procedures. All patients were sent a questionnaire (Appendix).

Non-responders were contacted by telephone where possible. For the remainder, GPs were contacted to obtain a current address, and a further questionnaire was then sent, followed if necessary by a telephone call. Results were analysed by chi-squared testing.

D. W. Oliver · M. W. C. Booth · T. T. Irvin · W. B. Campbell (✉)  
Departments of Surgery, Royal Devon and Exeter Hospital,  
Barrack Road, Exeter, EX2 5DW, England

V. F. M. Kernick  
Clinical Audit, Royal Devon and Exeter Hospital,  
Barrack Road, Exeter, EX2 5DW, England

**Table 1** Presenting symptoms

Symptom	Number of patients (132 total)	Percentage of patients
Pain and bleeding	72	55
Pain	48	36
Bleeding	11	8
Irritation	1	1

## Results

There were 162 patients who underwent anal dilatation during this period; 116 completed questionnaires were received and a further 16 patients were questioned by telephone, giving a total of 132 replies (82% response), from 66 men and 66 women (age range 17–75 years, mean 42 years). Of the 30 patients who did not reply, 8 were not sent a questionnaire, 22 had moved from the area and could not be contacted by telephone or via their GP. Sixty-eight (52%) patients had undergone the procedure for anal fissure, 32 (24%) for haemorrhoids and 32 (24%) for both.

Follow-up ranged from 16 months to 36 months (mean 27 months). Presenting symptoms are shown in Table 1. Eight (6%) patients had undergone previous anal dilatation. Twenty-three (17%) patients had a history of out-patient treatment for haemorrhoids by injection, sclerotherapy or banding. Seventy (53%) patients had been symptomatic for over 12 months, while 24 (18%) had had symptoms for less than 6 months.

Thirty-five (55%) of the patients with haemorrhoids or both haemorrhoids and fissure had adjunctive procedures: haemorrhoidectomy in four, sclerotherapy/banding of haemorrhoids in 31. A further eight (6%) patients also underwent laying open of fistulae or removal of skin tags. Twenty-six (20%) procedures were performed by a consultant, 46 (35%) by a registrar or staff grade and 60 (45%) by a senior house officer. One hundred and twelve (85%) patients were treated as day cases. On discharge, 60% were prescribed analgesia and 31% laxatives.

One hundred and one patients (76%) were given a clinic appointment between 3 weeks and 12 weeks after the operation; of these 84 attended (83%). Among those who attended the clinic, improvement was recorded in 70 (83%), while 11 (13%) patients had reported that they were the same or worse. Inadequate data were recorded for the remaining three (4%) patients.

Thirty-eight (29%) patients reported some bleeding immediately after the procedure and 20 (15%) had some difficulty controlling flatus. Forty-one percent of these symptoms resolved within 1 month, 60% within 2 months, 88% within 6 months and 97% within 12 months. Ten (8%) patients had some degree of faecal incontinence (six men and four women), but this resolved within 6 months in all cases, and eight of these patients would have dilatation again if their symptoms were to return. There were no significant differences in the age or gender of the patients, or grade of

**Table 2** Change in symptoms recorded from the questionnaire in the months following anal dilatation

Change reported	Number of patients (132 total)	Percentage of patients
Much worse	1	1
A little worse	5	4
No change	17	13
A little better	56	42
No further symptoms	50	38
Can't remember	3	2

**Table 3** Responses to "How are your symptoms now?" recorded from the questionnaire

Response	Number of patients (132 total)	Percentage of patients
Much worse	2	1
A little worse	5	4
About the same	21	16
A little better	37	28
I have no symptoms	63	48
No response	4	3

**Table 4** Indication for initial anal dilatation in the 28 (21%) patients who would not have the dilatation repeated if their symptoms were to return

Indication	Fraction of patients with indication who would not repeat dilatation	Percentage of patients with indication who would not repeat dilatation
Anal fissure	15/68	22
Haemorrhoids	8/32	25
Haemorrhoids and fissure	5/32	16

operating surgeon between those who developed complications and those who did not.

Table 2 shows the alteration in symptoms over the months following anal dilatation as reported in the questionnaire, and current symptoms are shown in Table 3. Of the six patients who said they were worse following the procedure, all had haemorrhoids (two combined with fissure). All had reported improvement at their out-patient visit a few weeks after operation and had developed recurrence of their haemorrhoids since that time.

Ninety-four (71%) patients said they would have a further anal dilatation if their symptoms were to return, 28 (21%) would not and 10 (8%) were undecided. Table 4 shows the surgical diagnosis of those patients who said they would decline further dilatation if their symptoms returned: four (12%) of these had experienced relief of symptoms following dilatation.

Following anal dilatation, five (7%) patients with anal fissure had required further in-patient treatment, one had had an anterior fissure, four underwent lateral sphincterotomy, one anal dilatation. Seven (10%) had received topical treatment from their GP. Of the 64 patients with haemorrhoids or haemorrhoids and fissure, one underwent

haemorrhoidectomy and one further anal dilatation. Nine of these patients (14%) had further out-patient treatment for haemorrhoids, such as sclerotherapy or banding, and 11 (17%) had received treatment from their GP – for example, topical creams and laxatives.

One hundred and three (78%) patients had been advised to eat more fibre following their anal dilatation, and 86 (65%) patients had continued to follow this advice. Thirty-nine (30%) patients had made no changes to their diet. Seven (5%) did not answer. Eighty-five percent of patients who had increased their dietary fibre reported that they were now better, while 15% of these patients were the same or worse.

---

## Discussion

Anal dilatation is easy to perform, avoids an incision and is therefore often the treatment of choice for anal fissure, particularly in the acute setting. However, views vary about exactly what an adequate anal dilatation involves.

Descriptions of anal dilatation vary, ranging from two to eight fingers, although the latter is no longer recommended [10]. Isbister et al. describe a “gentle” four-finger, 4-min technique with good success rates and no incontinence [11]. Placing a restricting ligature around the operator’s fingers has been suggested [12]. Good results have been reported using a Parks anal retractor and by producing 40-mm recto-sigmoid pneumatic balloon dilatation (12.5 cm circumference) [8]. When patients were dilated with a 30-mm balloon (9.5 cm circumference), only 50% achieved healing, suggesting that a critical degree of dilatation is required for success. Measurement of the four-finger circumferences of the opposed index and middle fingers at the proximal interphalangeal joints amongst our surgeons employed at the time of writing ranged from 11 cm to 16 cm and all used a four-finger technique.

The risk of post-operative incontinence is an important consideration when performing anal dilatation [13], and special care is required when dealing with elderly patients. In our series, 15% had some difficulty controlling flatus and 8% reported minor faecal incontinence. Most recovered within 1 month and all settled within 6 months. No patients reported gross inconvenience from these temporary symptoms.

Our results are in keeping with earlier studies [11, 14, 15], and we did not detect a significant deterioration in results between the initial clinic follow-up visit and longer-term follow-up by the questionnaire except in the patients with haemorrhoids, where improvement was short lived. We therefore do not recommend anal dilatation as the sole treatment for this group of patients. Failure to adopt an increased-fibre diet is associated with lower rates of healing [16, 17]; this was confirmed in our study. This is an important component of management that may be overlooked by surgical staff. We believe long-term results might have been improved if more patients had been encouraged to

take a high-fibre diet and if the dilatations had been more “controlled”.

Anal dilatation is an acceptable form of treatment for most patients, and 94 (71%) of our patients would be prepared to have the procedure repeated if it were required. Failure of the technique to relieve symptoms is likely to be due to poor case selection, and those with haemorrhoids seem to fare less well than those with fissure. All six of our patients who reported that their symptoms were worse in the longer term were being treated for haemorrhoids. This concurs with an earlier study with a failure rate of up to 25% in patients with haemorrhoids [18]. Anal dilatation is normally an effective treatment in over 90% of cases of anal fissure [7, 8, 12] and has the advantage of being relatively simple to perform while confirming the diagnosis under anaesthesia.

---

## Appendix: Patient questionnaire

1. Following the procedure over the next few months, what effect did the anal stretch have on your previous symptoms? Were they:
  - Much worse than before
  - A little worse than before
  - About the same as before
  - A little better than before
  - I no longer have any symptoms
  - Can't remember
2. Immediately after the anal stretch did you suffer from any problems in this area such as: bleeding, incontinence of faeces (soiling yourself), difficulty controlling wind (breaking wind uncontrollably), any other problems
3. If you had any problems how long in months did they last
4. Compared to before the anal stretch how are your symptoms now
  - Much worse
  - A little worse
  - About the same
  - A little better
  - I have no symptoms
5. If your symptoms improved soon after the anal stretch and then again got worse, how long did the improvement last
  - 1 week
  - More than 1 week but less than 1 month
  - More than 1 month but less than 3 months
  - Between 6 months and 1 year
  - My symptoms are still improved
6. Have you needed any further treatment for your symptoms
  - Yes, as hospital in-patient
  - Yes, as hospital out-patient
  - Yes, by my general practitioner
  - I have not needed any further treatment

7. If you needed further treatment what did you have done and by whom
8. Do you use laxatives such as Fybogel, Senokot, or similar preparations  
Yes most days  
Once or twice a week  
Very occasionally  
Never
9. Have you been advised to eat more fibre  
Yes  
No
10. If yes, by whom: hospital doctor, general practitioner, nurse, other
11. Which of the following applies to the food you eat now compared with your diet before your anal stretch:  
Unchanged  
I try to eat brown bread and plenty of fresh vegetables  
I add extra bran or roughage to my diet  
Other
12. If your symptoms returned, would you consider having an anal stretch again  
Yes  
No

---

## References

1. Lund JN, Armitage NC, Scholefield JH (1996) Use of glyceryl trinitrate ointment in the treatment of anal fissure. *Br J Surg* 83:776–777
2. Watson SJ, Kamm MA, Nicholls RJ, Phillips RKS (1996) Topical glyceryl trinitrate in the treatment of chronic anal fissure. *Br J Surg* 83:771–775
3. Watts JMK, Bennet RC, Goligher JC (1964) Stretching of the anal sphincters in the treatment of fissure-in-ano. *BMJ* 2:342–343
4. Pernikoff BJ, Eisenstat TE, Rubin RJ, Oliver GC, Salvati EP (1994) Reappraisal of partial lateral internal sphincterotomy. *Dis Colon Rectum* 37: 1291–1295
5. Oh C, Divino CM, Steinhagen RM (1995) Anal fissure 20 year experience. *Dis Colon Rectum* 38: 378–382
6. MacRae HM, McLeod RS (1995). Comparison of hemorrhoidal treatment modalities. A meta-analysis. *Dis Colon Rectum* 38:687–694
7. Marby M Alexander-Williams J, Buchmann P, Arabi Y, Kappas A, Minervini S, Gatehouse D, Keighley MR (1979) A randomised controlled trial to compare anal dilatation with lateral subcutaneous sphincterotomy for anal fissure. *Dis Colon Rectum* 22:308–311
8. Sohn N, Eisenberg MM, Weinstein MA, Lugo RN, Ader J (1992) Precise anorectal sphincter dilatation – its role in the therapy of anal fissures. *Dis Colon Rectum* 35: 322–327
9. Lund JN, Scholefield JH (1996) Aetiology and treatment of anal fissure. *Br J Surg* 83: 1335–1344
10. MacDonald A, Smith AD, McNeill AD, Finlay IG (1992) Manual dilatation of the anus. *Br J Surg* 79: 1381–1382
11. Nielsen MD, Rasmussen O, Pederson JF, Christiansen J (1993) Risk of sphincter damage and anal incontinence after anal dilatation for fissure-in-ano. *Dis Colon Rectum* 36: 677–680
12. Isbister WH, Prasad J (1995) Fissure in ano. *Aust N Z J Surg* 65: 107–108
13. Speakman CT, Burnett SJ, Kamm MA, Bartram CI (1991) Sphincter injury after anal dilatation demonstrated by anal endosonography. *Br J Surg* 78: 1429–1430
14. Keighley MRB, Williams NS (1993) *Surgery of the anus, rectum, and colon*. Saunders, London
15. Lestar B, Penninckx F, Kerremans R (1987) Anal dilatation: how I do it. *Int J Colorectal Dis* 2: 167–168
16. Jensen SL (1987) Maintenance therapy with unprocessed bran in the prevention of acute anal fissure recurrence. *J R Soc Med* 80: 296–298
17. (1990) The management of anal fissure. *Drug Ther Bull* 28: 3–4
18. Hiltunen KM, Matikainen M (1992) Anal dilatation, lateral subcutaneous sphincterotomy and haemorrhoidectomy for the treatment of second and third degree haemorrhoids. *Int Surg* 77: 261–263