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Anal Fissure: medical or surgical treatment?

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Introduction

The general trend over time is for surgery to give way to non-invasive treatment. One of the most dramatic examples of this was the fundamental change in practice when H2 receptor antagonists were introduced for duodenal and gastric ulcer (terms that now seem very out of date).
Over the course of very few years, all the acid-reducing surgery from gastrectomy to vagotomy died out. Surgical departments which had built their reputation on research in the field had to turn to other areas.
This was undoubtedly to the great advantage of the patient. In coloproctology there are several current examples where the interface between surgery and conservative treatment is changing. The change of treatment of anal carcinoma from major surgery to chemoradiotherapy is an example of how this can be beneficial since both treatment modalities have similar cure rates. In other cases such as incontinence, fistula in ano, inflammatory bowel disease including anal Crohn's disease, rectal cancer and fissure in ano the benefit of the changing interface between invasive and non-inbasive treatment is, however, less obvious. At the moment many of the non-surgical treatments available are not particularly successful. This not to say that new developments will prove more effective in the future but at present biological treatments in inflammatory bowel disease, for example, are not curative although responses can sometimes be dramatic.

The question is whether this trend is in the patient's interest.
The answer to this can only be based on quality of life assessment.
For example this is the only way to determine whether in using the example of stenosing terminal ileal Crohn's disease, early operation is preferable to medical treatment delaying surgery until absolutely necessary.
Unfortunately quality of life data are not available in this particular circumstance and it is difficult to see how they could be given the huge difficulty in conducting a prospective study on the subject.
This its true for many of the clinical situations facing the clinician in whatever circumstance.

Changes in the Treatment of Anal Fissure

With regard to anal fissure we are in a similar position. Its treatment has changed greatly in recent years.
Not so long ago lateral sphincterotomy was the procedure of choice having been shown to be more effective than posterior sphincterotomy or anal dilatation.It must be said however that this conclusion was largely based on the results of non prospective non controlled data. When reports of the rates of continence disturbance after lateral sphincterotomy began to appear in the literature,however, treatment turned towards non surgical methods partly owing to the fear of legal action by patients. Many studies of the effect of so called "chemical sphincterotomy" were published. Glyceryl trinitrate ointment applied topically to the perianal skin was the first agent to be evaluated[(1, 2), (3-6)] and this was followed by calcium channel blockers such as diltiazem and nifedipine[(7) (8, 9)] and then by botulinum toxin injection[(10-14) (15)] around the lower anal canal.
Since the early description of the use of glyceryl trinitrate over ten years ago[(1)] lateral sphincterotomy has had a difficult career. Reports that it could lead to incontinence in over 20% of patients have changed the public perception of surgery for fissure as a glance at the numerous websites will confirm.
The word "incontinence" is emotive and absolute and there is usually no more detailed description of what is meant by the term in the individual case. Indeed many of the reports of lateral sphincterotomy do not include a statement of the patient's continence before surgery.

The overall effect has however been a fall in the use of lateral sphincterotomy in favour of non-invasive treatment or, more recently, operations which do not involve any sphincter division. Is this development in the best interest of the patient?

Acute versus Chronic

The literature of conservative management goes back many years. For example, Lock and Thomson in 1976[16] reported that a fissure lacking signs of chronicity including an external anal tag, an internal papilla at the level of the dentate line, undermining of the edges and internal sphincter fibres visible in its base, would have a 50% chance of spontaneous healing. Conversely it was felt that a fissure accompanied by these features would not heal without surgery which included removal of a tag or papilla when present. This distinction between "acute" and "chronic" fissure is still relevant in clinical practice but many of the reports of the effect of treatments do not divide the lesions into these two groups. Often the term 'chronic' is used without any definition.
The method of diagnosis is by inspection. The fissure is seen, it is not felt. Thus digital examination per anum will only cause the patient pain without adding to the assessment. It is poor clinical practice to cause pain needlessly, which will only diminish the patient's confidence in the doctor.

Presentation with Severe Pain
All surgeons who have used lateral sphincterotomy will be aware of the relief of pain which immediately follows the operation. They will also be aware that the pain of anal fissure can be very severe indeed. It can be so severe that other pathology should be thought of such as acute abscess which can co-exist with fissure, or severe ulceration due to carcinoma or inflammatory bowel disease. In this circumstance the correct management is to carry out an examination under anaesthetic to make a diagnosis, followed by appropriate action for the pathology found. If a fissure is the cause of the patient's severe pain it is entirely reasonable to perform a lateral sphincterotomy having, of course, fully discussed the possibities with the patient preoperatively.

Differential Diagnosis
Everybody knows that anal fissure is associated with other pathology. In Crohn's disease it is the commonest anal lesion increasing in incidence the more distal the intestinal involvement by the disease. Other diseases causing anal ulceration such as carcinoma and sexually transmitted diseases must be excluded.

Treatment

Non-Surgical
There is a large literature on non-surgical treatment of anal fissure.
Local creams and ointments and botulinum toxin injection have been studied by randomised controlled trials (RCT) comparing different agents among themselves, against placebo and against surgery.

The results of these treatments are reported in a Cochrane Review carried out by Nelson[17] who carried out a meta-analysis of the results of 53 randomised controlled clinical trials (RCT) of a large range of therapies.
This scholarly study was extremely detailed and comprehensive and included 48 Forrest plots comparing the various treatments.
The review was updated this year.

Anal Creams and Ointments
The study by Nelson concluded that GTN, calcium channel blockers and botulinum toxin all had a similar efficacy but when GTN was compared to placebo there was only a 'marginal' improvement in healing. Furthermore recurrence of an initially healed fissure occurred in about 50% of patients. Glyceryl Trinitrate resulted in headache in about 20% of patients, a complication which did not occur after calcium channel blockers[9].

Botulinum Toxin
In a meta-analysis[18] three RCTs[14, 15, 19] comparing Botox and GTN were found in the search including 25 *vs* 25, 15 *vs* 15 and 50 *vs* 50 patients respectively. Besides the small numbers, one of the trials[15] followed the

patients for 2 months, hardly an adequate period. The study in which patients were followed for 36 months[14] contained 15 patients in each group, again hardly adequate numbers but it is noteworthy that at 36 months only a third to two fifths of the patients in each treatment group still had a healed fissure.

Surgical Treatment

Lateral Sphincterotomy

In a systematic review of the surgical treatment, Nelson[20] showed that surgery in the form of sphincterotomy was markedly superior to any form of chemical sphincterotomy[12, 21-29]. Cure occurred at a rate of 85% which was likely to be an underestimate owing to the drop out of patients followed up (some of whom would have been sucessfully treated) and recurrence at 1 year was around 3% with no further recurrence at 2 years. Incontinence rates after surgical sphincerotomy were 8% in the studies comparing this with GTN (not significantly different) and 11% in those compared with Botox. This was however not a uniform finding with continence disturbances after surgery being no different or even less than in the chemical group in some studies (see below).

A meta-analysis reported on four RCTs[12, 23, 29, 30] which compared Botox with surgical sphincterotomy[31]. The follow up ranged from 6 to 36 months. The authors pointed to the large heterogenecity between the studies resulting in wide confidence intervals, indeed so wide that no significant difference in continence rates was found. Of the four studies one favoured Botox and the other three surgery. Overall it was concluded that the rate of healing was higher and recurrence lower after surgery. Looking at the crude figures from the four trials 130 of 136 patients were healed after sphincterotomy and 100 of 143 after Botox and recurrence occurred in 9 and 36 patients respectively. The authors stated that the 'mean incontinence rate' after sphincterotomy was 2.7% (zero after Botox) and that this recovered completely during follow up. Owing to the wide confidence intervals any difference in continence was not significant.

Despite the defects of the trials included in these meta-analyses particularly regarding numbers and duration of follow up, the general conclusions appear to line up with Nelson's. Thus there was little difference in the healing rates after Botox or GTN treatment and surgical sphincterotomy was superior to Botox for both healing and recurrence. The question of continence disturbance was less clear. While there was no statistical difference between surgery and Botox, this was not a reliable inference since the data were inadequate. Nevertheless the incidence of 5-10% may reduce with time and may also be a reflection of the extent of the sphincterotomy which is unknown. In any case the 'incontinence ' is usually minor.

Continence after Lateral Sphincterotomy

If lateral sphincterotomy is overwhelmingly more effective than local treatment, then the key question is whether in truth it leads to a significnt incidence of continence disturbance. The data reporting continence after sphincterotomy are poor. As can be seen in Table 1,[32] [21] [25] [33] [34] [35] [27] [12] [23] [36] [26] of the eleven studies which dealt with continence after sphincterotomy, only four had recorded continence before the operation. It seems therefore unreasonable to maintain that the postoperative state was a change from what pertained before. The recording of continence after sphincterotomy was hardly precise. Even using the Wexner scale which was done in four of the studies, a change in score from 2 to 4 for example does not given any useful idea about the individual case or the actual risk of a continence disturbance. Furthermore there is almost no statement of the duration of any continence disturbance when it occurred. It should be concluded therefore that the data relating to continence after lateral sphincterotomy are inadequate. There are two studies[34, 35] in which continence was recorded before and after sphincterotomy. In the first, the score rose in 7/10 but fell in the remaining three. In the second study, there was no change in score in three, an increased score in three and an improvement in two.

A tailored sphincterotomy has been advocated[27, 37-39] whereby the sphincterotomy is carried out to the level of the upper border of the internal sphincter. It has been maintained that this results in less risk of a continence disturbance. In the RCT carried out by Ho and Ho[27], lateral sphincterotomy (n=48), tailored sphincterotomy (n=43) and nifedipine (n=44) were compared. Continence scores did not change significantly after treatment (range 0.2

to 0.8) in any of the groups. Persistent fissure formation at 4 months was 0%. 2.5% and 14%.

Other Operations

Anal Advancement Flap

In an attempt to avoid any sphincter division altogether, anal advancement flap procedures have been used[40, 41]. The results appear to be good. The former study was an RCT and healing occurred in 20/20 patients after sphincterotomy and 17/20 after a flap procedure with no disturbance in continence. The latter was an observational study of 51 patients followed for 6[3-27] months. Early breakdown occurred in three and recurrence in another three patients there was no disturbance of continence.

Controlled Anal Dilatation

The use of an endoscopic balloon to produce a controlled dilatation has been reported to result in healing without the risk of continence disturbance[42] [43]. More information on this treatment is required.

Management Strategy

The evidence shows that local medical treatments of anal fissure are far less effective than surgery in the form of lateral sphincterotomy. The continence disturbance relating to lateral sphincterotomy has not been well documented. Examination of the data indicate that it is uncommon and probably no more likely than the risk following botulinum toxin. The use of the word “incontinence” should be replaced by the term “continence disturbance” since this is a truer reflection of the symptom if, indeed, it can follow a well carried out sphincterotomy. It may be that anal skin advancement flap procedures are effective although more data are required. Continence does not appear to be disturbed by this procedure.

In the patient presents with severe pain, an examination under anaesthitic is the correct management. This will allow confirmation of the diagnosis and also the identification of any other pathology such as abscess or tumour. It will allow immediate relief for the patient by a lateral sphincterotomy when a fissure is present.

In other cases, a non surgical approach should be tried in the first instance but a time limit should be placed on this depending on the severity of the pain and other symptoms such as irritation and bleeding. It is not in the patient’s interest to continue conservative treatment beyond a point when it is proving ineffective. The symptoms of fissure are often severe and when this is so, it is not right for the patient to suffer given that surgery has such a high chance of achieving long lasting relief. As can happen in the management of anal fistula, the fear of a continence disturbance, although of low incidence following surgery may overide the the need to relieve the symptoms despite being so severe as to make the patient’s life intolerable. As in all diseases the clinician must exercise common sense and good judgement in weighing up the advantages and disadvantages of the available treatments. The evidence base strongly shows that lateral sphincterotomy is the most effective treatment for fissure at present although other treatments such as flap procedures and posssibly controlled dilatation should be considered.

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