Non-surgical management of faecal incontinence

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Faecal incontinence is a common symptom causing reduction in quality of life and social isolation. Conservative treatments should be used as first and second lines of therapy and can also be of use as adjuncts to surgical treatment. This article reviews the current status of these modalities of treatment.

Faecal incontinence is a common and disabling condition. The prevalence of faecal incontinence in the general population is approximately 2% (Nelson et al, 1995), rising to 40% in the elderly and those in residential care. However, only a small proportion of individuals suffering with incontinence seek medical help.

In hospital practice, the commonest identifiable cause of faecal incontinence is trauma to the anal sphincter following either vaginal delivery (Sultan et al, 1993) or anorectal surgery. Idiopathic degeneration of the internal anal sphincter has recently been described (Vaizey et al, 1997); this may be one of the commonest causes of faecal incontinence in the community. The assessment of patients with faecal incontinence relies on the clinical history and examination. If further investigation is required, endoanal imaging and anorectal physiological testing provide information on sphincter structure and function. The aim is to quantify patients' symptoms and to identify functional and structural defects. For those with an anatomical defect in the external anal sphincter, an operative sphincter repair is an effective treatment (Engel et al, 1994). Defects of the internal anal sphincter are not amenable to direct surgical repair and are usually treated non-surgically (Leroi et al, 1997).

There is a range of non-surgical treatments for patients with faecal incontinence comprising pharmacological, behavioural and physical modalities (*Table 1*). These may be useful in patients unsuitable for surgery or as an adjunct

TABLE 1. Non-surgical therapies for faecal incontinence

Modality	Treatments	
Conservative	Pads	
	Dietary modification	
	Biofeedback	
	Sphincter exercises	
	Anal plug	
	Electrical sphincter stimulation	
Pharmacological	Constipating agents	Loperamide
		Codeine phosphate
	Hormone replacement therapy	
	Evacuation aids	Suppositories
		Enemas
		Wash-outs
New treatments	Internal sphincter injection augmentation	
	Topical phenylephrine	

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to operative treatment. This paper reviews the current status of conservative treatments for faecal incontinence.

DRUG TREATMENT

Antidiarrhoeal agents

Constipating agents, such as loperamide, codeine phosphate and co-phenotrope (diphenoxylate and atropine sulphate), are valuable agents in the management of faecal incontinence. Loperamide (*Figure 1*) is the favoured drug because of its low side-effect profile (Gattuso and Kamm, 1994). It reduces stool weight (Herbst et al, 1998) and small and large bowel motility. There appears to be minimal effect on anal resting pressure in humans (Sun et al, 1997). Initially, small doses (1–4 mg daily) are titrated according to clinical symptom response. It is possible to use even smaller doses by titrating the syrup preparation for patients who become constipated on small doses. Patients with liquid stools, e.g. after ileoanal pouch surgery, may require much higher doses.

Codeine phosphate is used in a similar way, although side effects such as drowsiness and the possibility of addiction may limit its use. In resistant cases, a combination of both agents is useful. Co-phenotrope (a proprietary mixture of diphenoxylate with atropine sulphate) is not favoured because of the high incidence of side effects, particularly those related to the atropine component.

Hormone replacement therapy

There may be an association between the menopause and the onset of faecal incontinence. Results of a pilot study suggest that the incontinence may be ameliorated by hormone replacement therapy (Donnelly et al, 1997), but this needs further investigation.

Figure 1. Loperamide, a safe and effective drug for the treatment of faecal incontinence.

Evacuation aids

Suppositories (such as those containing glycerine) or enemas (sodium citrate or, rarely, sodium phosphate) may have a role to play in the treatment of patients with incomplete rectal emptying associated with post-defecatory soiling. Retrograde washouts with tap water or phosphate solutions are an alternative. Some patients with poor resting anal tone are unable to retain an enema; in such cases, proprietary devices with a balloon to occlude the anal canal may permit retrograde rectal washouts with minimal spillage. This is mainly employed in patients with congenital abnormalities or neurological disease and can be followed by the use of a constipating agent, such as loperamide.

BEHAVIOURAL THERAPIES

Dietary manipulation and fibre supplements

There are little available data on the efficacy of dietary manipulation in faecal incontinence. Fibre supplements are often prescribed in an attempt to increase stool bulk. However, this may lead to an increase in stool volume and further episodes of incontinence. It is the authors' practice to manage patients by reducing dietary fibre intake in order to produce a smaller and firmer stool. No published controlled data exist to justify either approach. Caffeine is a particularly potent stimulant of colonic motility and reduction of intake substantially helps some patients.

Biofeedback

A number of studies attest to the efficacy of biofeedback in the treatment of faecal incontinence (Norton and Kamm, 2001). However many do not differentiate between sphincter exercises and biofeedback. Strictly, biofeedback involves the use of an auditory or visual representation of a biological measurement (in this case anal canal pressure). In practice, biofeedback is only part of a package of care, which includes dietary advice, sphincter exercises and careful titration of antidiarrhoeal agents. There are no published randomized controlled trials comparing biofeedback with other modalities. It is currently unclear which component of biofeedback therapy is most effective and which patients are suitable for this therapy.

Recent work suggests that patients both with and without sphincter defects can benefit from biofeedback treatment. In a study prospectively assessing 100 consecutive patients with faecal incontinence of varied aetiology treated by biofeedback (Norton and Kamm, 1999), two thirds were subjectively cured or improved at the

end of treatment. Although patients with structurally intact sphincters were the most likely to benefit (80% if both sphincters were intact), some with structural damage also benefited (79% if the external sphincter was abnormal, 64% if the internal sphincter was abnormal and 44% if both sphincters were abnormal). Patients with urge incontinence alone fared better than patients with passive incontinence alone (55% *vs* 23%). This would suggest that the treatment may be of benefit in a range of underlying abnormalities. Currently, the use of biofeedback is largely limited to specialized centres. As experience grows, it is likely that the place of biofeedback will become more defined and its availability more widespread.

PHYSICAL TREATMENTS

Anal plug

The anal plug has been used in a number of studies in patients with severe refractory incontinence not amenable to surgical correction (Mortensen and Humphreys, 1991; Christiansen and Roed-Petersen, 1993). Several design variations have been employed, but essentially the plug is a device which is inserted into the anal canal and then expands, creating a watertight seal (*Figure 2*). The results are reasonable in those patients who tolerate the plug without complications. Failure tends to occur because of either discomfort or inability to retain the device (Christiansen and Roed-Petersen, 1993). It may have a particular role in patients with neurological disease in whom impaired anorectal sensation facilitates better tolerance of the device.

Electrical stimulation

Electrical stimulation can be used either alone or as an adjunct to biofeedback therapy. It involves the insertion of a fitted electrode into the anal canal and stimulation of the muscle of the anal sphincter (*Figure 3*). This is normally done twice a day by the patient, the objective being to improve the bulk and function of the external sphincter. It has been shown to improve the squeeze pressure generated by the external anal sphincter by 23% (Pescatori et al, 1991) and also the compound anal muscle action potential, reflecting functioning muscle, by 50% (Jost, 1998). The limited reported studies suggest that this treatment can improve continence in approximately 60–70% of patients.

NOVEL TREATMENTS

Sphincter injection augmentation

Passive soiling as a result of internal anal sphincter weakness is difficult to treat by conventional means. There is evidence to suggest that injection of a bulking agent can improve those patients with refractory incontinence resulting from a weak internal anal sphincter. Various materials have been used, including autologous fat (Shafik, 1995), polytetrafluoroethylene paste (Shafik, 1993) and gluteraldehyde cross-linked collagen (Kumar et al, 1998). These studies have shown an improvement in continence in approximately two thirds of patients, although the long-term results of this technique are as yet unknown.

Topical sphincter stimulants

The internal anal sphincter receives a tonic innervation from the sympathetic nervous system. Studies have shown that topical phenylephrine applied to the anal canal increases resting anal canal pressure in healthy volunteers (Carapeti et al, 1999). Additionally, topical phenylephrine is effective in the treatment of faecal incontinence related to previous ileoanal pouch surgery. In a recent study, half the patients treated with phenylephrine were symptomatically improved and in one third continence was completely restored (Carapeti et al, 2000a). In patients with incontinence resulting from weak internal sphincters, topical phenylephrine 10 mg/100 ml appeared to be less successful

Figure 2. Anal plug.

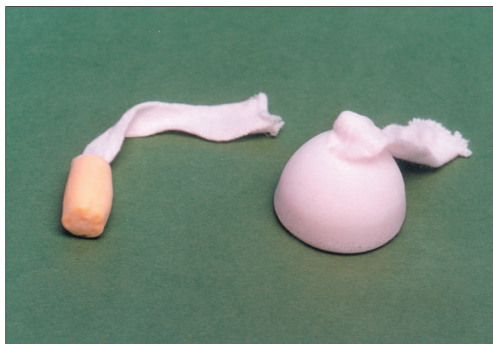
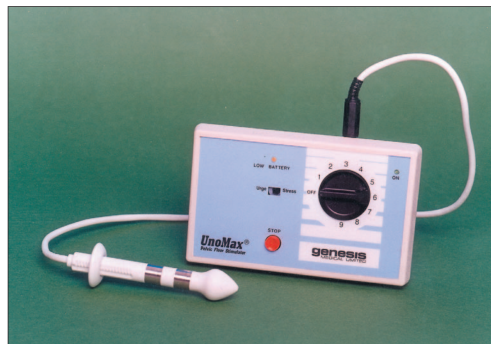


Figure 3. Intra-rectal electrical stimulator.



(Carapeti et al, 2000b); these patients seemed to require higher concentrations of the active drug (Cheetham et al, 2001). Further work to establish the optimal formulation to use in such patients is in progress.

CLINICAL APPROACH TO FAECAL INCONTINENCE

A careful history should be taken from all patients with faecal incontinence. The severity and frequency of symptoms are recorded; distinction should be made between passive faecal incontinence (loss of stool without the patient's awareness) and urge faecal incontinence (loss of stool despite active attempts to defer defaecation). Past obstetric and surgical histories will often suggest a possible aetiology. The anorectum is examined digitally and with rigid sigmoidoscopy to exclude anorectal pathology and faecal impaction, although the examiner should be aware that clinical examination is a poor predictor of sphincter integrity.

If the patient's symptoms are relatively minor, a trial of low dose loperamide (1–2 mg a day), together with a reduction in caffeine and fibre intake, is a reasonable first step. Further investigations (typically endoanal ultrasound and anorectal physiological studies) should be performed for patients who fail initial simple therapy and for those with major symptoms. The results of these tests, coupled with clinical information, allow appropriate therapies to be selected for the patient. More advanced techniques, such as neosphincter formation, should be reserved for those patients who fail to improve with these second-line therapies.

CONCLUSIONS

Faecal incontinence is common and socially disabling, although only a minority of patients present to medical practitioners. Investigative techniques have improved in recent years, and it is now possible to define functional or anatomical deficits accurately. There is a range of conservative treatments for faecal incontinence, comprising pharmacological, behavioural and physical modalities, which should be considered in most patients before embarking upon more invasive therapies. HM

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KEY POINTS

- Faecal incontinence is a common symptom in the community.
- Combined clinical, radiological and functional assessment is important.
- Non-surgical treatment is useful in many patients either alone or together with surgery.
- The use of antidiarrhoeal agents and dietary modification reduces symptoms.
- Behavioural therapy (biofeedback) is successful in well-motivated patients.
- New treatments may further extend the non-surgical management of faecal incontinence.