The role of the nurse in behavioural therapy (biofeedback)

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The clinical nurse specialist plays an essential role in the treatment of patients with functional bowel disorders, a group of patients who are traditionally difficult to manage medically or surgically.

Behavioural therapy (biofeedback) is a nurse-led service at the authors' institution. It is a holistic therapy that encompasses symptom assessment, bowel and muscle retraining, behavioural therapy, education and psychological support. It is primarily used in patients where organic disease has been excluded, i.e. in functional bowel disorders. The aim of biofeedback therapy is to normalize bowel function. Patients are referred to, assessed, treated and discharged by the nurse specialist. The majority of patients undergoing biofeedback in the department are not seen by a doctor.

The team comprises a nurse consultant, three nurse specialists and a physiotherapist. This team is supported by a wider team of physicians, radiologists, other clinical nurse specialists, clinical scientists, researchers, dieticians and, importantly, a team of psychologists, a psychiatrist, counsellor and social worker. The support of all these groups allows a biofeedback service to operate effectively while remaining a nurse-led service.

Approximately 70–80% of patients report subjective improvement following biofeedback therapy (Ko et al, 1997; Norton and Kamm, 1999) and improvement has been found to be largely maintained long term (Chiotakakou-Faliakou et al, 1998; Ryn et al, 2000).

PATIENT GROUP

A wide range of patients with functional bowel disorders of evacuation or continence can be treated using behavioural therapy (biofeedback).

A functional bowel disorder can be defined as the presence of symptoms with no underlying pathology. There is no disease to treat, therefore the patient is managed symptomatically. For ease of assessment and understanding, two subgroups are broadly defined: evacuation disorders and faecal incontinence. Those who can be offered behavioural therapy (biofeedback) in each subgroup are shown in *Tables 1* and *2*.

EVACUATION DISORDERS

Idiopathic constipation

Constipation can be defined as a bowel frequency of less than three times per week or the need to strain more than 25% of the time during defaecation (Thompson et al, 1999). Idiopathic constipation has no structural, dietary or systemic cause but the majority of patients presenting with symptoms are women and many have adjunct psychopathology (Drossman, 1992). This encompasses both slow and normal transit gut function. Patients may also report symptoms including abdominal pain, bloating or discomfort.

TABLE 1.
Evacuation disorders which may be treated by biofeedback

Idiopathic constipation
Solitary rectal ulcer syndrome
Disordered defaecation
Idiopathic megarectum/megacolon
Childhood functional bowel disorders
Irritable bowel syndrome (constipation predominant)

TABLE 2.
Causes of faecal incontinence

Obstetric injury
Iatrogenic injury
Structural abnormalities
Neurological disease
Irritable bowel syndrome (diarrhoea predominant)

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Solitary rectal ulcer syndrome

Solitary rectal ulcer syndrome is a chronic, benign disorder associated with abnormal defaecatory behaviour, sigmoidoscopic findings of erythema or ulceration and the passage of blood and mucus (Malouf et al, 2001).

Disordered defaecation

This is difficult and incomplete evacuation as a result of pelvic floor incoordination and/or structural abnormalities such as prolapse, rectocele or perineal descent. This group includes patients with difficulty evacuating following formation of an ileoanal pouch.

Megarectum and/or megacolon

Patients who present with megarectum and/or megacolon usually have a long history of bowel dysfunction and have presented in childhood with an enlarged rectum and distal colon. Presenting symptoms include severe constipation, abdominal pain and distension, and faecal soiling.

Children

Less frequently treated in the authors' unit are children with functional bowel disorders. Chronic constipation and soiling in this group can be contributed to megarectum and/or megacolon as previously stated. However, the role of psychological factors cannot be excluded. Stress and anxiety around toileting by parents in early life can contribute to the development of problems, as can poor toilet facilities, sexual abuse and the child or teenager not wishing to take responsibility for their toileting.

Irritable bowel syndrome

Irritable bowel syndrome is well defined as a functional problem and is characterized by a combination of abnormal stool frequency and consistency, abdominal pain, bloating, straining, urgency and incomplete evacuation (Thompson et al, 1999).

TABLE 3.
Symptom assessment (evacuation disorders)

Perceived main problem
Stool frequency
Stool consistency
Straining
Incomplete evacuation
Digitation (rectal/vaginal/perineal support)
Frequency of attempts to defaecate
Abdominal/rectal pain
Bloating
Blood and mucus
Laxative use

FAECAL INCONTINENCE

Obstetric injury

The majority of patients presenting with faecal incontinence are women. It is calculated that up to one third of women suffer structural damage to the anal sphincter during their first vaginal delivery (Sultan et al, 1993). As the process of continence is more complex than sphincter structure alone, a large number of these women will not experience immediate symptoms of incontinence.

Iatrogenic injury

The second largest cause of faecal incontinence is iatrogenic sphincter trauma following surgery such as sphincterotomy and anal stretch.

Structural abnormalities

Faecal incontinence is commonly attributed to anorectal abnormalities such as perineal descent and rectal prolapse.

Neurological disease

Other less common causes are neurological disease such as multiple sclerosis or spinal cord disease.

ASSESSMENT

Before treatment, patients with symptoms of constipation or evacuation disorders are offered a transit study and/or proctogram to assess speed of colonic transit and/or structural abnormalities in the rectum. Those reporting symptoms of incontinence have anorectal physiology and an anal ultrasound scan in order to assess anal sphincter structure and function. Patients are offered a 1-hour initial appointment during which they undergo thorough assessment. This includes a summary of current symptoms (*Tables 3* and *4*), past medical and drug history, psychosocial factors and influences. Physical assessment of pelvic floor coordination is undertaken to determine sphincter strength using pressure manometry or evacuatory techniques using balloon expulsion as appropriate to presenting symptoms.

Evacuation assessment

Pelvic floor coordination during evacuation is assessed by inserting a small deflated balloon into the rectum while the patient is lying in the lateral position facing the therapist. The balloon

is inflated with 50 ml of air. The therapist places one hand on the patient's waist over the abdominal oblique muscle (described as 'brace' muscle to the patient) and the other hand holds the tubing attached to the balloon. The patient is asked to draw the balloon up (as if preventing him-/herself from passing wind). This demonstrates to the patient that he or she has control over this muscle. He/she will then be asked to push the balloon out of their rectum. The therapist is able to feel for pelvic floor contraction and propulsion. At this stage the therapist will be able to detect three possible problems:

1. Paradoxical contraction or anismus – the patient squeezes rather than relaxes their sphincter muscles
2. Straining – the patient holds their breath and uses the upper part of their body to push with. There is often inadequate sphincter relaxation in association with this and straining is relatively ineffective
3. Poor propulsion – the patient demonstrates inadequate propulsive effort.

The patient may demonstrate a combination of these problems.

Anal sphincter assessment

This assessment is performed using air-filled pressure anal manometry attached to a colour monitor (PRS 9300, Neen Health Care, Dereham, UK).

The patient is again lying in the lateral position facing the therapist and the monitor. The pressure probe is passed into the anal canal. The patient is asked to squeeze the probe to assess the amplitude and duration of voluntary anal sphincter contraction. The patient and therapist are able to see the contraction in a graph form on the computer screen.

EDUCATION

Normal gut function and any diagnostic test results are explained using simple language and diagrams. Adequate time should be allowed for questions to ensure understanding. Having knowledge and understanding will reassure the patient and help lessen anxiety (Ley, 1988). It is important to assess the patient's expectations of the therapy and ensure that these are realistic and attainable. At this point an individualized plan of care can be implemented with the patient's cooperation. This may involve a programme of sphincter exercises, evacuation techniques, dietary, lifestyle or behaviour modification, withdrawal of laxatives or introduction of antidiarrhoeal medication as appropriate to symptom management.

Following assessment of evacuation techniques, patients presenting with evacuation disorders are taught correct evacuation posture, propulsion and sphincter relaxation using balloon expulsion as described above. The patient is taught how to widen their abdominal oblique muscles or brace and to push with these muscles while defaecating rather than strain (Storrie, 1997). If the patient is able to coordinate the pelvic floor correctly the balloon should be expelled. A daily bowel routine should be established, spending usually no more than 10 minutes once per day attempting to defaecate using the taught evacuation techniques. Laxatives are discontinued immediately with the aim of normalizing bowel function without the use of aperients. Rectal laxatives (normally glycerine suppositories) may be used if appropriate. Dietary intake is assessed and patients are advised to eat regularly and to moderate fibre if they experience bloating (Cummings, 1994).

Those presenting with faecal incontinence will be taught anal sphincter exercises using the biofeedback techniques described above. Dietary modification and antidiarrhoeal medication may be used to improve stool consistency. Loperamide syrup used in small, titrating doses is particularly useful. Patients are taught how to 'hold on' using urge resistance techniques and to improve flatus control. Practical management advice is offered and may include pad use, cleansing, skin care and the use of anal plugs.

BEHAVIOURAL THERAPY

Biofeedback therapy aims to normalize bowel function using evacuation techniques or sphincter exercises as described but also by changing

TABLE 4.
Symptom assessment (faecal incontinence)

Perceived main problem
Stool frequency
Stool consistency
Urgency
Urge incontinence
Passive or post defaecation soiling
Flatus control
Blood and mucus
Evacuation difficulties
Nocturnal bowel problems
Pad use

patterns of abnormal behaviour. For instance, solitary rectal ulcer syndrome is associated with straining for excessive periods, rectal digitation and frequent attempts to defaecate (Vaizey et al, 1997). The biofeedback programme aims to change abnormal behaviour by educating the patient to avoid straining, minimize attempts and time spent defaecating and to avoid rectal digitation. Similarly, patients with urge faecal incontinence are advised to remain calm, gently contracting their anal sphincters thus using urge resistance techniques until they can reach a toilet.

Active participation of the patient is essential if biofeedback therapy is to be successful, as changes will have to be made to improve bowel function. Changing behaviour that often has been a pattern for many years is difficult for the patient without continued support, reassurance and advice from the therapist. Norton (2001), in her study of biofeedback for faecal incontinence, found the overriding factor in patient's improvement appeared to be the patient–therapist interaction. This highlights the crucial role of the nurse specialist in enhancing patient progress.

PSYCHOSOCIAL ISSUES

Patients often use the biofeedback sessions to discuss issues of physical, sexual and verbal abuse as well as other adverse life events. The link between adverse events and bowel dysfunction is well documented (Drossman, 1992; Luscombe, 2000). Emmanuel et al (2001) demonstrated that women with a functional bowel disorder had significantly greater psychological morbidity than age-matched healthy controls with greater levels of anxiety, depression, somatization and social dysfunction. Therefore, it is the authors' opinion that a good link with psychological services is essential to any biofeedback service. The authors' unit is fortunate to have a dedicated psychotherapy team to support and advise through regular meetings and, when necessary, can refer directly to the consultant psychiatrist or psychotherapist.

KEY POINTS

- Biofeedback is a nurse-led therapy for people with functional bowel disorders.
- It is a minimally invasive, holistic therapy aimed at normalizing bowel function.
- Patients are managed symptomatically.
- Many patients present with underlying psychopathology.
- Education and psychological support form a major component of the therapy.

CONCLUSIONS

The nurse specialist in biofeedback is ideally placed to holistically assess patients with functional bowel disorders and identify potential physical and psychological problems, referring on as appropriate. Facilitating good communication and explanations on a level the patient can understand improves patient insight and satisfaction.

A major component of the role is providing education, realistic expectations and empowering the patient to take personal responsibility for his or her health needs.

Behavioural therapy (biofeedback) is a successful therapy in the treatment of functional bowel disorders but needs to be undertaken by a therapist who can provide a positive, encouraging approach paying particular attention to the psychological influences at work. HM

Conflict of interest: none.

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