Faecal incontinence in children with spina bifida: The best conservative treatment

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Incontinence is one of the major stigmata affecting the quality of life of the myelodysplastic patient. The appropriate management of the neuropathic bladder has led most patients to survive with good conditions. Major advances have also been made in the treatment of faecal incontinence for enabling patients to achieve their full potential, to become integrated in society and to be as independent as possible. We present the results of the Retrograde Colonic Enema (RCE) in 33 patients suffering neurogenic faecal incontinence. We believe that the RCE is one of the best conservative methods of treatment for relieving faecal incontinence originating from spina bifida and other neurological problems with intestinal dysfunction.

Keywords: spina bifida; faecal incontinence; retrograde continence enema

Introduction

Myelomeningocele is a congenital neural tube defect involving the interruption of some of the nerve tracts in the lower spinal cord. The external sphincter and levator ani muscles, which depend on sacral nerves 2, 3 and 4 are dysfunctional; the internal anal sphincter may also be affected in these patients and most children with spinal cord disease or injury have decreased intestinal motility.^{1,2} Various techniques have been tried to manage the faecal incontinence and constipation that these patients have.^{3–10}

We present the results after a long follow up of the Retrograde Colonic Enema (RCE), a modification of the enema continence catheter designed by Shandling,³ in 33 patients suffering neurogenic faecal incontinence.

Subjects and methods

For the last 3 years 33 Retrograde RCE procedures were performed in 16 males and 17 females aged from 5–22 years old (an average age of 11.9) suffering spina bifida. All of them, selected and well-motivated patients, were independent walkers only needing some kind of aid for standing up or walking alone using crutches. None of them were in a wheelchair and bowel management was a priority for them. The level of the lesion and frequency is shown in Table 1. Other children, including those in a wheelchair, abandoned

the study within the first few weeks because of inability to adhere to the program for different reasons.

We classified the patients as follows: Incontinent patients showing the passage of liquid or solid stools in their clothing at an undesired time and place and Continent patients if defecation was controlled. According to this classification all of our 33 patients were in some way incontinent or suffered encopresis. Even those with infrequent incontinence were handicapped by its unpredictability. All medical recommendations which included a high-fiber diet, regular toileting, stool softeners, biofeedback and manual disimpaction or enema had no success so we began the use of RCE with a special 100% silicone catheter with balloon (Figure 1) which is placed in the rectum preventing an escape of enema fluid from the incontinent anus. The administered liquid consisting of lukewarm water to which one teaspoon of salt per 500 ml was added, was run into the colon (15–20 ml/kg). So many myelodysplastic patients were constipated we prescribed for the first toileting program phosphate enema mixed with water when the child was older than 3 years. After 5–10 min of having administered the total volume, the balloon was deflated, the catheter removed and the liquid contents of the colon were immediately expelled in the appropriate place. The procedure was carried out in 30 min (a range of 15–45). The RCE was administered at first daily but after achieving continence the therapy was only needed every 48 h. The necessary time for obtaining full continence took an average of 4 weeks (range from 1–7 weeks).

Results

At the beginning all our patients were incontinent. With the use of RCE we achieved continence in all our patients with only one exception, a 9 year old girl with three previous operations for rectal prolapse. She showed the passage of solid stools in her pad at unwanted time, totally unpredictable from 3–6 h after administering the RCE. None of the children developed allergic phenomena or side effects with its use. Despite performing the procedure every 48 h no child had any problems with post enema soiling. No differences related to the age of the child were found. After achieving social continence the follow up has been 30

Table 1 Patients affected by spina bifida in each one of the levels of lesion

Medular level defect	Number of patients
L2-L3	3
L3-L4	5
L4-L5	12
L5-S1	8
S1-S2	3
S2-S3	2
Total	33 patients

Figure 1 Catheter for performing the Retrograde Colonic Enema

months (range 24–35 months) maintaining the same degree of success. Until now, only the two oldest patients (18 and 22 years old) perform the toileting program on their own. The others are trying to get the necessary balance for doing it as well.

Discussion

Bowel dysfunction occurs in most children with spinal cord impairment from disease or injury. Although many different regimens have been used to manage this problem none has had universal success. 'Biofeedback' was introduced for use in children with intact rectal sensation¹¹ but recent trials have reported less encouraging results.¹² 'Digital disimpaction' is unpleasant to perform and only succeeds in emptying the distal rectal ampulla. A 'Neuroprosthesis' has been recently described in the therapy of these patients but the persistence of continence control and tolerance of the patient need to be evaluated for a prolonged period of time.⁶ Shandling reported 100% success in using the enema continence catheter in the management of his patients with spina bifida.³ This stimulated us to use it in our children, achieving similar results to his with a modified device. At the beginning the patient's constipation was treated with behaviour modification and laxatives but they failed to achieve an acceptable result because of the persistence of soiling. We found that administering a small dose of laxatives alone accomplished nothing while administering a large dose to an incontinent patient only resulted in profound embarrassment.^{1,3}

Bearing in mind that none of our patients could resist the push of peristalsis, the most effective therapy is the emptying of the colon which takes at least 24–48 h to refill again. In neurological faecal incontinence the standard enemas are difficult if not impossible to administer because there is inability to retain the enema which flows out involuntarily through the weak anus during its instillation. The aim in any bowel program in spina bifida must be to make the patient as independent as possible and the RCE achieves this.

An operation has been developed in which the appendix or a tubular cecal flap is used for providing continent catheterizable access to caecum through which antegrade continence enema (ACE) can be administered. Results are excellent in patients with spina bifida and is easier to use than RCE.^{4,7,8,10,13,14} A 'Percutaneous cecostomy' for achieving similar results has been recently published.⁹ The 'Artificial Anal Sphincter' has a limited usage in patients with spina bifida where the voluntary control is very often abolished and the slow transit colon time produces hard stools.

We agree with the experts in faecal incontinence: 'many doctors talk about continent patients when what we mean is a clean patient, because a clean child does not mean continent'.¹⁵ We have tried to make our patients clean. With the RCE our children keep

clean and dry despite the fact that their continence will never be 100% normal.

We must offer patients the conditions for becoming more independent. In this way both treatments, ACE procedure and RCE can be the best options for achieving the best social integration. For wheelchair users and other selected patients the Antegrade Continence Enema (being faster and easier) is better than the Retrograde Continence Enema which needs some help in its use.^{7,8,10,13,14}

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