

THE RE-EDUCATIVE TREATMENT OF BOWEL DYSFUNCTION IN INFANTS AND CHILDREN

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A regular bowel rhythm contributes to the enjoyment of life and to mental and physical efficiency.¹

Where regularity has been disturbed an examination should be made to establish the cause; an essential prerequisite to rational treatment. As stated by Burgess,² nowhere in medical practice are these precepts more often disregarded than in the treatment of bowel dysfunction (? constipation), and so long as the bowels have been moved, the means are often of little consideration. Some 47 years of medical practice in several countries has revealed much to me to confirm this.

The rational medical management of bowel dysfunction requires treatment which will not only produce a 'predictable' laxative response, but which will also restore *neuromuscular* sensitivity and thus re-activate the normal reflex mechanism of evacuation—in short, a *re-educative* treatment.

Common experience indicates that the usual laxatives in use fail to accomplish this goal, and that in consequence their use leads to a dependence on them and to the hazards of purgation. Reid, in 1959, said in this respect: 'A careful biochemical assessment of these hazards revealed the depletion of electrolytes, and the interference with intestinal motility and the absorptive functions of the large bowel, and also with vitamin absorption'.¹³

In recent years, however, in Great Britain, some other European countries, the USA, and South Africa, new knowledge of the physiological mechanisms of bowel motility has been gained and new methods of restoring normal rhythm in cases of dysfunction have been successfully applied.

The main purpose of our work at welfare clinics, where we see large numbers of mothers and children, is to give advice which will aid parents in bringing up their children in the best possible way; physically, emotionally and socially. The health visitor has an invaluable part to play in this work.

We encounter our first difficulties in the feeding problems, although many of these could be avoided if there was closer cooperation between the paediatric, obstetric and preventive fields of medicine.

In a recent article on infant feeding, Emdin³ stated that breast feeding was still 'the feeding of choice', and that among artificially-fed babies the incidence and severity of gastro-enteritis and, indeed, the death rate, are appreciably higher than in breast-fed babies, especially in the non-European population.

Unfortunately, with the increasing demand for hospitalization and the shortage of maternity beds, antenatal clinics are often so overburdened that there is little time for advice on preparation for breast feeding and neonatal paediatrics.

As a result, mothers have to be sent home too soon after delivery, and when difficulties arise, they often fail to seek advice early enough and breast feeding is abandoned or a breast abscess develops. Not infrequently changes are made from one food to another; this can result in severe upset of the infant's digestive system with accompanying bowel dysfunction.

It is important to note that there are variations in the acquisition of a rhythmic bowel movement, and that it is essential to interfere with the child's natural tendencies as little as possible, since any bowel upset at this early stage is of far-reaching importance in the mental and physical development of the child.

When a mother says her baby is constipated, it is important to ask her what she means by this, for constipation implies the passing of hard, dry faeces. In many cases she merely means that the bowel has moved every second day or so; this is not indicative of constipation, providing the stools are normal in consistency. If the baby is gaining weight satisfactorily and the intake of fluid and the dietary factors are adequate, there is no need for interference.

CAUSES OF BOWEL DYSFUNCTION

Organic, Congenital and Infectious

Under this heading are included those conditions where bowel dysfunction is secondary and where careful attention must be given to the primary causes. These include: congenital stricture, anal stenosis, hiatus hernia, rectal polyp, fissure-in-ano, neurological lesions, severe mental

deficiency, recurrent attacks of gastro-enteritis, and round-worm infestation.

All these conditions can cause disturbance leading to chronic dysfunction. Valuable time can be saved and unnecessary treatment avoided if attention is given to such primary causes.

Idiopathic megacolon and lack of tone in abdominal and intestinal musculature in premature babies would previously have been considered under this heading, but a recent study by Coekin and Gairdner⁴ has shown that colonic sensitivity can be restored slowly by a prolonged course of treatment with standardized senna.

Functional

There remains a far larger number of cases where the bowel dysfunction is due to a disordered rhythm, usually designated as functional constipation. These are grouped under the following headings:

(i) Dietary

In many children bowel dysfunction is an occasional upset due to some error in diet, such as too little fluid, or lack of essential vitamins, fruit, fruit juices or vegetables. Usually an adjustment can be made here easily, although it is unwise to recommend an excessive use of bulking foodstuffs, since a normal diet will contain all the bulking material that is necessary.

(ii) Ritual Use of Purgatives

This is a common cause of chronic dysfunction. Many mothers add milk of magnesia to the baby's bottle and, later on, administer regular amounts of one or other of the many purgatives that are available. Many of these are highly undesirable for prolonged use.

For example, liquid paraffin deprives the body of fat-soluble vitamins (A, D, E and K) and interferes with nutrition generally. Milk of magnesia suffers from the disadvantages of saline as well (see below). In addition Knox *et al.*,⁵ in a recent investigation found that 79% of children with intussusception had been given magnesia regularly in some form or other.

Salines, as well as certain other purgatives, e.g. castor oil, podophyllin, jalap and colocynth, all act on the small, as well as the large, intestine. This of course, must have an adverse effect on nutrition, since stimulation of motility in the small intestine must interfere with the processes of digestion and absorption.

In all cases of purgative abuse, intestinal muscle tone is diminished, particularly with substances acting on the small intestine. This may be the basis of the explanation of the association between the ritual dosing with magnesia and intussusception, quoted above.

(iii) Psychological and Emotional

These are causes commonly found in the toddler group of children. Where they exist, both mother and child should be handled with understanding before any treatment is instituted.

Ideally, every mother should care for her own child, but now that so many mothers go out to work, children are often left in the care of others.

Common problems in the home include domestic difficulties between parents and others, and jealousy

caused by the arrival of a new baby. Intolerance of faulty bowel habits is often found; the child is regarded as naughty and is punished. The rebellion caused in a child often leads to resentment and to a refusal to feed and lie down to sleep; both bladder and bowel control are further impaired.

It is perhaps not out of place here to observe that those in charge of infants and young children should be reminded, where necessary, that when the bowels are healthy no laxative is required.

'SENOKOT' STANDARDIZED SENNA

In a previous investigation⁶ the re-educative and curative value of standardized senna was described. Since that time a number of workers have confirmed that the reasons for the choice of this preparation were soundly based. These reasons were:

1. Its safety (strikingly illustrated by Hawkins').
2. The absence of irritation or interference with nutrition.^{8,9}
3. Its neuromuscular action is limited to the lower bowel.¹⁰
4. The large number of satisfactory clinical reports, including that by Braid,¹¹ which described the re-educative value of senna in the treatment of difficult cases of constipation in older children. White and Dennison¹² confirmed that the dose can be reduced gradually and then discontinued, and that there is no habit formation.
5. It is inexpensive.
6. It is easy and pleasant to administer.

Altogether some 150 references have appeared describing the re-educative value of standardized senna in bowel dysfunction.

THE PRESENT INVESTIGATION IN CAPE TOWN

More than 1,500 consecutive cases of infants and children up to 5 years of age were seen at infant welfare centres in Cape Town.

A number of cases of bowel dysfunction did not respond to general treatment; these were treated with senokot and the results obtained are given below:

	No. of unsatisfactory results with general treatment	Restoration of normal bowel function following senokot therapy
Infants	27	27
Children	63	62
Total	90	89

The illustrative case notes which follow demonstrate the dramatic results obtained by the use of standardized senna when required. The objective was not strict training, but rather a restoration of the bowel to its individual normal rhythm.

Group I (3 months - 1 year)

Case 1

A normal baby, born at home. Birth weight 7 lb. 12 oz.

Breast fed; weight at end of 2 months—9 lb. 5 oz. The mother was an over-anxious type.

Before re-visiting the clinic, the mother had taken the baby off the breast and substituted Klim. Unfortunately, this change-over was complicated by otitis media, which necessitated a 2 weeks' stay in hospital, where the baby was put on to cow's milk and vitamins. Up to this time the bowel rhythm had been normal, but now it was extremely upset—the last motion passed being 4 days previously. Hard, dry faeces filled the rectum. This was emptied. The food, fluid and vitamin intakes were adjusted, and senokot granules were given as follows: 1 teaspoonful* before the 6 p.m. feed—first week; $\frac{1}{2}$ teaspoonful before the 6 p.m. feed—second week; $\frac{1}{2}$ teaspoonful twice only in the third week; senokot was then discontinued.

The granules are easily dissolved and palatable in either expressed breast milk or bottle milk, given at the time of the feed. The bowel moved easily and normally each morning and, in spite of another infection (bronchopneumonia), there has been no alteration in the bowel rhythm over the past six months. Both mother and baby are happier.

Case 2

Premature delivery in hospital. Birth weight 6 lb. 8 oz. Baby became cyanosed. Was given oxygen and put into incubator. After 24 hours it was tube fed.

For twelve days it continued on tube and bottle feeds of expressed breast milk. The breast milk failed and the baby was put on to Klim. By the end of 3 weeks it was entirely bottle-fed and could take 3 oz. slowly. It was then discharged from hospital with its weight 6 lb. 8 oz. Within 3 days it was brought to the clinic—the mother could only get the baby to take 2 oz. feeds, and it was losing weight. It was decided to feed on demand. In view of the history, a paediatrician's advice was sought. He agreed with the feeding regime.

Within a week the baby was seen again. It had gained 7 oz., but the mother said it passed only 2 small motions each day. On the advice of the grandmother she gave aperients each evening. This upset quite a normal bowel rhythm, and it was decided to substitute senokot granules, 1 teaspoonful after the 6 p.m. feed, for 1 week. At the end of this time the baby passed a normal motion morning and evening. It has continued to do so without any further senokot and has gained weight steadily.

Case 3

A premature baby, birth weight 4 lb. Breast fed for 3 months. Breast milk failed and the baby did well on Nespray until the age of 6 months. Then it had repeated infections and was in and out of hospital. When seen at the age of 10 months, the general development was slow. The baby could not sit up or say any words. Hearing normal. General muscle tone poor. The baby was said to be constipated and had been given various aperients intermittently. The motions remained hard.

Senokot was introduced in the same way as in the previous cases, but it took 4 weeks to establish a regular normal rhythm and to discontinue senokot. Since then, in spite of teething upsets, the bowel has remained regular. Experience has shown that it often takes longer to get results in premature babies, owing to the lack of tone in the muscle of the bowel wall.

Group II (1-3 years)

Case 4

Child aged 2½ years. Mother had brought the child to the clinic because 'she could not manage him'. It was soon obvious that she was the one who required 'management'. The child was listless, difficult at meal times, refusing food, losing weight, unstable and unhappy.

On examination the abdomen was slightly distended, but no abnormality was found. The mother said the child had always been constipated and had to have aperients regularly. She was given advice on how to deal more cooperatively with her child, and after 3 weeks' treatment with senokot

* In all cases—infants and children—a small teaspoon was used as the measure for the doses of senokot granules.

granules the child had a normal bowel movement each morning. His appetite improved, he gained weight, and no further treatment has proved necessary.

An interesting feature here is that the mother has always been constipated, and the younger baby tends to be so as well.

Case 5

Child aged 3½ years. Very underweight for age. He has been under the care of his grandmother, since his mother deserted him. Said to have been constipated since he was a baby and had been brought up on various aperients.

When he was seen at the clinic the child was found to be having a bowel action every third or fourth day, with stools almost as large as those of an adult. The abdomen was distended, but no faecal masses were palpated in the lower abdomen. In this case the diet was inadequate and additions had to be made before attempting to correct the bowel dysfunction.

Senokot was given at night, and a daily movement was achieved each morning. Senokot had to be continued over a period of weeks before any reduction in the dose could be made. The child gained weight rapidly, and now has a regular normal movement each morning without senokot.

Group III (3-5 years)

These children are seen less often at the clinics than the younger children. In nearly every case there was a history of constipation from quite early in life, and the children were found to be 'difficult', capricious in appetite, and often given to temper tantrums. Lack of training and psychological upsets in the home were often found in their history.

Case 6

This child is of special interest since he is mentally defective (5 years). Such children are very difficult to treat owing to their inability to cooperate.

When the child was first seen, the bowels had only moved twice during the past month. The rectum was packed with hard faeces, which had to be removed gradually. He was given 2 teaspoonsful of senokot granules each morning, and now has a regular normal movement each day. One cannot attempt to reduce or discontinue treatment in such children immediately, but the improvement in this child is most satisfactory, and he is much quieter and happier.

The cases of all these children have been reviewed regularly over the past 9 months, and no further treatment has been necessary.

DISCUSSION

It is almost axiomatic that the longer a physiological function remains disturbed the longer it will take for a normal rhythm to be re-established.

Certainly this is true of bowel dysfunction. The important principles in treatment are:

(i) Elimination of organic, congenital and infectious causes.

(ii) Withdrawal of previous treatment, especially laxatives.

(iii) Correction of faulty diet and habits.

(iv) Establishment of sound relations between mother and child, with a minimum of interference.

The introduction of senokot standardized senna is an important step forward in treatment, in that it provides a safe and physiological means of restoring natural function as quickly as possible.

Much, however, remains to be understood of the fundamental causes of many of these cases. For instance, there may be a possible correlation between the variation in rhythm in the development of bowel control and the variation in the acquisition of other skills in the same child. There is often a frequent history of constipation in one or other parent, and this may indicate a familial factor.

SUMMARY

1. Bowel dysfunction in infants and young children represents a serious threat to the happiness and well-being of both mother and child.

2. In a consecutive series of 1,500 children up to the age of 5 years, seen at non-European welfare clinics in Cape Town, 90 cases of bowel dysfunction failed to respond to dietary measures and general treatment.

3. Carefully graded dosage of standardized senna (senokot) was found to be of considerable value in the establishment of normal habits in 89 of these 90 cases. Its use in minimal dosage is re-educative and curative, it is palatable and easy to administer, and treatment can be discontinued quickly in almost all cases.

4. These results are in agreement with the findings of many other workers.

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