would justify on that ground spending money on vocational training for general practice, on Briggs training for nurses, and on training social workers and following through the Merrison recommendations on postgraduate training." Extending skills meant, for instance, seeing that GPs were involved in community hospitals—a very important aspect of using skills in a different way.

How much of the consultants' work could be taken over by non-medical staff was less certain. If North American experience suggested that surgical procedures could be performed to a high standard by technicians then there was no reason why the same should not be done here. There were many procedures done by doctors that could be done by non-medical staff: there was no legal bar to a surgeon who wished to organise his team so that technical operative procedures were carried out by non-medical assistants.

Of course, said Dr Owen, the moment he made comments of that kind someone always came along to say they had made the necessary changes years before. "I am only too aware," he explained, "that if we could universalise the best practice in the NHS overnight we would solve practically all our problems—almost everything that needs to be done in the NHS is being done in some localities—and if we could generalise the best standards our difficulties would disappear."

Problems of growth

Many of the problems facing modern society were the problems of growth, said Dr Owen. These were seen in the growth of bureaucracy and in the growth of techniques—everything was an addition and there was no shedding of the load. "The reason this Department is so vast is that there is no shedding—everything comes up to us and once here it stays." Similarly in clinical medicine, new techniques and methods were developed and once incorporated into clinical practice they tended to stay.

Demands for these new technical procedures, such as total hip replacement, would continue to grow and put the NHS under increasing pressure. How could such a demand be rationed? Rationing could not be imposed by the DHSS: the decision had to be made by the orthopaedic surgeon on the basis of the degree of disability—a clinical judgement. Of course, the hospital budget imposed external constraints on the amount of work it could do, putting a ceiling on expenditure.

"One thing I hope I have done," said Dr Owen, "is openly to discuss this whole question of priorities in health care. In the past it has been shovelled beneath the table—people have not wanted to discuss it. There has been a belief that you are admitting a deficiency in the Health Service if you face up to the problem that you can't have everything."

Private sector

If, then, economic factors forced some sort of rationing procedure (though the respectable word was priorities) and some patients who might benefit from an operation seemed unlikely to have it done through the NHS, why should they not step outside the Health Service and buy the treatment?

"I certainly would not ban them from buying it outside the NHS," was Dr Owen's answer. "We live in a democracy: it's untidy, and there are difficult areas of priority—it's very tricky to decide between conflicting claims. One way of coping with fringe areas, in a system of pluralist values, is to have a small private sector separate from and outside State provision."

Problems of Childhood

Constipation and soiling in childhood

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Bowel problems in childhood are common but often difficult to manage. As in many other childhood ailments the boundary between the physical and emotional factors is blurred, especially in long-standing problems. This confusion has led to many controversies between children's physicians, surgeons, and psychiatrists over managing these children. Definition of the terms should help and I use the following convention: (a) constipation—difficulty or delay in the passage of stools; (*b*) soiling—frequent passage of loose or semi-solid stools in clothing; and, (*c*) encopresis—passage of a normal stool in an abnormal place.

It is essential to recognise the difference between acute and chronic constipation, as in most acute cases there is no underlying bowel abnormality and the prognosis is better than in chronic cases.

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Normal physiology and normal variations

The rectum and anal canal have two tasks—to store faeces temporarily and evacuate at a socially convenient time. This is carried by the anorectal reflex, supported by the voluntary external anal sphincters and monitored by sensory stimuli. In the anorectal reflex the distension of the rectum evokes a wave of contraction of the rectum and simultaneous inhibition of the tone in the smooth muscle of the internal anal sphincter associated with a sensation of wanting to defaecate. As rectal distension increases anal inhibition increases, and the stool moves into the upper part of the anal canal stretching the sensitive zone and producing an urgent desire to defaecate. This reduction of anal tone is only just overcome by the external sphincter and levator ani muscles in the normal person. The action of these voluntary muscles probably temporarily holds the stool away from the sensitive zone, but rectal waves and anal inhibition recur often with the sensation of urgency until defaecation occurs.

In the child who is afraid to use the non-locking, wet, and smelly school lavatory, it is not surprising that occasionally the rectum overcomes the external sphincter just as he arrives

home with the all-too-common "pooh in pants" of the infant school child, which should be considered a normal variant if infrequent. Attention should be paid to the school sanitary conditions rather than to the child's bottom.

There is, naturally, a wide variation in physiology and and development, as may be seen in the age range of success at pot training.

The fetus rarely defecates before labour and the neonate has a wide variation in the time of the passage of meconium. Considerable delay is nearly always associated with abdominal distension. The anorectal reflux is developed even in the preterm baby although a functional obstruction (to be distinguished from imperforate anus and Hirschsprung's disease) is common, especially in stressed babies. Straining is very marked in the newborn and often convinces mothers that their baby is constipated whereas it is usually just his exaggerated response to the "desire to defaecate" sensation. Plantar flexion of the toes is an excellent objective sign at all ages of this desire.

Constipation in babies

The breast-fed baby often changes from a stool after every feed to one stool every 7-10 days, but this stool is of normal quality (unpleasantly likened to scrambled eggs) but larger quantity. Dry hard stools passed with difficulty and sometimes with traces of fresh blood often occur in the bottle-fed baby. Attention to water intake and perhaps the addition of extra sugar (brown sugar is better sympathetic magic) is usually a sufficient remedy. Magnesium hydroxide mixture BP (Milk of Magnesia) is often effective if the sugar fails, provided the dose and frequency are kept low—10 ml is a maximum daily dose in babies.

Persistent constipation at this age should alert the doctor to consider the following: (*a*) a mother who incorrectly describes symptoms as constipation; (*b*) an anal anomaly—for example, stenosis, stricture, malposition; (*c*) a spinal anomaly, such as, spina bifida, sacral agenesis; (*d*) Hirschsprung's disease; (*e*) hypothyroidism; (*f*) hypercalcaemia; (*g*) coeliac disease, which may present with constipation; (*h*) lead poisoning.

Again, abdominal distension should alert more suspicion and alternating constipation and diarrhoea, with some abdominal distension, may indicate Hirschsprung's disease. It must be remembered that it is the spectre of Hirschsprung's disease, with its potential mortality from necrotising enterocolitis, that should make those dealing with children look twice before disregarding the complaint of constipation at this age.

Potty training may bring problems. Many mothers are fortunate to have babies who within the first year defaecate after a particular meal. The baby performs when balanced on his pot as a result of the gastrocolic-rectal reflex. There may be complaints when the baby develops more control and ceases to be "potty trained."

To produce a stool at will is one of the child's first major achievements, and most children gain more satisfaction from framing their success in a pot. If too much persuasion is provided, however, especially if the child has only partial control, his own profound disappointments are compounded with disapproval and hostility from his parents. He may well reject the pot and produces the very natural but infuriating "complaint" of defaecating just beyond the pot—very natural, as the stress of the pot can temporarily assist in holding back she pressures of the anorectal reflex, but the relief of leaving the pot produces the stool. Delicate handling of the problem, usually by cooling the parental ardour until the child is old enough to control his bowels, is often effective. Many children (like adults) seek solitude for defecation and this often helps with pot training.

Children who persist in pot rejection, faecal smearing, and encopresis, especially if previously trained successfully, should alert one to seek an underlying emotional problem.

Acute constipation

Acute constipation often occurs from changing the environment or diet or after a febrile illness, especially when food intake has been low; the postoperative period is an obvious time. A fissure causing both pain and sphincteric spasm may be found, although finding a small anal tag and a history of a slight trace of blood on the stool seem fairly common events in childhood. Most acute constipation remits spontaneously but in a few instances it may go on to problems of chronic constipation especially if rather prone to constipation before the acute episode, so gentle treatment may be used:

dioctyl sodium sulphosuccinate syrup (Dioctyl-Medo) to a maximum of 2 ml/kg body weight^{-1} day^{-1} in 3-4 doses given with plenty of fluids helps to soften the stool;

standardised senna (Senokot) is effective but should not be used with Dioctyl-Medo as there is some evidence that myenteric damage may occur if these are mixed. Doses of 5-10 ml of syrup (and up to 20 ml if necessary) may be given although colic may occur on higher doses.

Dauthion is a readily acceptable laxative to children; 5-10 ml of standard mixture, or 5 ml Dorbanex forte bisacodyl (Dulcolax) 5-10 mg should be given.

Senokot, dauthion, and bisacodyl are best taken before bedtime.

Children vary in their sensitivity to these oral laxatives. It is better to start oral treatment early, even if occasionally unnecessarily, than to miss the boat and have to go on to treat by the rectum:

glycerine suppositories are usually effective;

bisacodyl suppositories are more potent;

Biojex suppositories produce gas and so more potent rectal distension than the others;

Micralax enemata are small in volume and simple to administer;

phosphate enemata should be reserved as a last resort.

Obviously it is wise to start with the more gentle measures and move on if unsuccessful. It must be remembered that a child who has eaten little may have little residue; abdominal palpation and the discovery of faecal masses, especially when associated with previous colicky pain, is probably the best indicator of the need for treatment. The course of laxatives must be as short as possible so that the child may get back into his own rhythm rather than a pharmacological rhythm.

If the child, when he presents with acute onset constipation, shows evidence of intestinal obstruction or the faecal mass is so large that an enema would be too stressful, manual removal of faeces under anaesthetic is preferable. Careful explanation and reassurance should be given to the child who is already feeling upset at the loss of one of his vital functions, and parents should be adjured never to threaten the child with the treatment so identifying enemas and suppositories with punishment.

If a child seems prone to constipation a high bulk diet is recommended as in the child with chronic constipation.

Chronic constipation

Chronic constipation is defined as persistent delay and difficulty in defaecation often associated with soiling. Symptoms may be temporarily eased by laxatives but relapse if this treatment is withdrawn.

The classical description is of a child in his early years of school with a history of delay in passing stools for up to three weeks, after which a large stool is passed, with frequent fluid stool soiling between these evacuations. Symptoms of constipation frequently date back to babyhood in the severe group. On examination a mildly distended abdomen is visible, a large faecal collection is palpable per abdomen, and the perineum

is soiled. Rectal examination usually shows hard stools (but sometimes semi-solid if the terminal inspissated rock has been recently passed) close to the anal verge. Most children have been given a variety of laxatives. Some have had enemata and manual removals. Often the persistent faecal soiling has been a dominant complaint and the underlying rectal loading has been overlooked.

Those children who fail to respond to an initial clearance faecal mass by the methods described in the treatment of acute constipation, or who cannot be weaned off laxatives without relapsing, should be further investigated.

Barium enema shows a megarectum in most of these children and occasionally a surgical anomaly is detected—for example, short segment Hirschsprung's disease. It has become apparent since the introduction of anorectal manometry that some of these children have ultra-short segment Hirschsprung's disease, despite no suspicion on the *x*-ray film.

The psychological stress of being unable to defaecate at will and the pressure of peer group rejection because of soiling takes a toll on the child's emotional stability. This should not obscure any underlying physical problem so full investigation should be instituted.

TREATMENT

Careful physical examination should exclude obvious anal anomalies such as strictures, stenoses, covered anus, and major spinal anomalies like sacral agenesis. The child should then be treated, initially by attempting to empty the bowel, preferably by oral laxatives, but going on to suppositories, rectal washouts, or enemata if necessary. Once the rectum is empty, a regular habit should be encouraged and the use of a bulk purgative such as methyl cellulose (Cologel, Cellucon or Calevac) with a stimulant like Senokot in sufficient doses (5 ml to 25 ml at night) to obtain a daily stool is very useful.

Many children fail to respond or rapidly relapse with this treatment alone. Recently it has been shown that if these children are subjected to anal manometry about 10% are found to have ultra-short segment Hirschsprung's disease (confirmed on rectal biopsy, when histological examination shows absence of ganglion cells in the myenteric plexus and hypertrophy of the nerve trunks). In those patients who were not thought to have Hirschsprung's disease anorectal manometry suggested a considerable hypertrophy of the rectum and especially the internal sphincter. A vigorous anal dilatation (to take four fingers under general anaesthesia) to combat the internal sphincter hypertrophy was found to be successful in 40% after one stretch and in a further 10% after further dilatation or sphincterotomy. Most of the remainder could defaecate more easily and required less treatment and only three patients out of 105 were still dependent on enemata.

Once physical control is established the emotional problems commonly seen often fade away. The precise cause of this non-Hirschsprung's megarectum (termed "anal achalasia" or "congenital constipation") is uncertain. Whether emotional factors produce or result from the megarectum, it is vital that any smooth muscle hypertrophic obstruction should be treated in parallel with psychiatric help if indicated.

Some authorities recommend ignoring the symptoms of constipation and soiling in this group so as to diffuse the parental /child anxiety. Soiling is not well tolerated at school, however, where the child often becomes an outcast. As the treatment to make these children normal is so straightforward, especially as the soiling is the first symptom to disappear after faecal clearance and anal dilatation, it seems a shame to delay this. The old adage that nobody dies from constipation must be upheld only by those who bravely (or erroneously) deny the risks of untreated Hirschsprung's disease.

It should be emphasized that these children benefit from emotional support, and, as in all chronic problems in childhood, care should be taken that the parents and child understand what has happened and any underlying or complicating family psychopathology treated effectively. The child with a megarectum, with his diminished sensation and his failure to reach an imperative desire to defaecate, can, unlike other children, withold faeces deliberately. Any evidence of this needs urgent help if the physical treatment is to succeed. After faecal clearance, or anal dilatation, or both, prolonged use of added bulk is recommended as the megarectum may take many months to diminish and the larger and more frequent the stool entering the rectum the more sensation will be obtained. Similarly Senokot is usually necessary for a few months.

Chronic constipation in handicapped children is a problem, high bulk diets help, and it should be remembered that, apart from the obvious cerebral lack of recognition of rectal sensation, the myenteric plexus may possibly be damaged in any condition that has damaged the brain, such as hypoxia or hypovaslaemia.

Soiling

Soiling as part of the overflow from the chronically loaded rectum is discussed above; this should not be missed although a history of constipation may be elusive because parents who see stools in their child's pants do not think of constipation. The description of the volume of the stool in the pants should help. The larger the stool and more normal its appearance the less likely one is to find a megarectum. Soiling does not, however, exclude Hirschsprung's disease, as was once taught.

Encopresis

Passage of a normal stool in an abnormal place (encopresis) is normal in toddlers and its persistence may simply indicate a maturational delay. Enuresis often accompanies it. The delay in maturation is increased by emotional factors, especially anxiety, as well as by mental subnormality. If bowel control had previously been attained this usually indicates emotional disturbance in the child. Attempts to determine the causes require close liaison with child psychiatrists, educational psychologists, and social workers. Specific learning difficulties, especially when associated with chronic anxiety, is often found. When these problems are discovered and the child's environment improved, the encopresis often responds to the incentive and encouragement of a stool chart which the child fills in himself and periodically presents to his doctor.

Obviously ailments producing diarrhoea may cause soiling. Sensory defects are also responsible in some children.

Conclusion

Doctors dealing with babies and children should realise the variation in time which a child takes to become capable of socially convenient defaecation. Constipation of recent onset should not be disregarded until its cause is found and careful and gentle treatment initiated before it becomes necessary for enemata or manual removals of faeces under anaesthetic. Chronic constipation, whether primarily physical or psychiatric, has components of both. Unless the internal sphincter can relax effectively in response to the rectal distension no persuasion or reassurance can help but may only reinforce his feelings of failure. Likewise physical treatment is only the start of treating a megarectum; the patient risks relapse for many months and is unfortunate to have a permissive anorectum, which he may use as a tool in his disturbed relationships. It should be recognised that in the more intractable cases of chronic constipation, even with soiling and especially (but not necessarily) if a transient neonatal obstruction has occurred, the diagnosis of Hirschsprung's disease should be considered and that barium enama does not exclude ultra-short segment. It is in this intractable group that a simple anal dilatation under an anaesthetic may well produce a remarkable improvement when other treatments have failed to produce a lasting effect.