

SECTION VII
Management

CHAPTER 21

Practical Aspects of the Management of Nocturnal Enuresis

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Nocturnal enuresis is a rewarding condition to treat in childhood. There are few conditions which cause such family turmoil for so many years, and yet have an appreciable spontaneous remission rate and such a high cure rate with enthusiastic management.

This chapter deals with the routine management of a child who has been brought to the doctor because of bedwetting. It has been written following the findings and discussion of the Newcastle Colloquium and in the light of several years' personal interest in the subject.

Management can be divided into four sections, all of which are initially necessary, and all of which can be included in a 20- to 30-minute consultation.

(1) History

A full history is required and, in particular, the following details must be sought.

Present Condition

What is the longest period for which the child has been dry at night? (It is very rare to find that the child has not been dry for periods of at least two nights, and for practical purposes this means that there is no 'leak in the plumbing' and that, anatomically and physiologically, continence is possible.) Is the nocturnal enuresis primary, or secondary (that is, occurring after at least a year of dryness)? An overt precipitating stress is more likely to be recognisable with secondary nocturnal enuresis. Is the wetting entirely nocturnal, or is the child one of the 10 per cent who also wets by day?

Details of micturition are required. Frequency, dysuria or a poor stream of urine on voiding are all features which may be associated with urinary tract abnormalities or infection.

Enquiries about general health and behaviour should reveal any other problems. Neurological causes of enuresis are likely also to disturb bowel function, or to interfere with normal activities such as running and playing.

The attitudes both of the parents and of the child have to be explored, for example what they think is the cause of bedwetting, and how they react to it; enquiries should also be made about what happens when the child wets the bed, *i.e.* who gets up, who changes the bed clothes, who moves to whose bed, and what is said to the child about having been wet.

It is important to find out exactly why the parents are consulting you at this moment. It may be because the mother has become acutely depressed by it all,

or because they fear the boy won't be able to go to the summer camp, or to boarding school. It is sometimes because of fear that it will interfere with future employment—the R.A.F. will not allow a man with nocturnal enuresis to become a pilot.

A record of previous therapy is useful because it gives some idea of the parents' attitudes and anxieties—for instance fearsome punishments sometimes come to light. It also ensures that the form of therapy suggested is not one which has been a dismal failure already.

Family History

It is common to find a history of nocturnal enuresis in the siblings or parents. This may help the parents to understand the problem better. Sometimes one parent may feel that he or she is to blame for having passed this trait on to the child.

Developmental History

Has the child been slow at acquiring any other skills?

Social History

This ranges from details of the sleeping arrangements at home to the location of the toilet (is it on the landing outside the bedroom or outside at the end of a dark yard?).

Previous History

Were there any severe stresses, *e.g.* mother-child separation, hospitalisation, or home moves, at about the age of three years, when the child would ordinarily have been becoming dry? This is not simply of historical or academic interest, for parents like explanations to problems, and may be reassured by them because they no longer feel deserving of blame.

(2) Examination

The doctor knows that physical examination is highly unlikely to reveal any abnormality. But the parent and child do not know this, and for them a general physical examination is reassuring and therapeutic. It will, of course, include the ceremonial application of the stethoscope to the child's chest, but more important it will include careful abdominal palpation for enlarged obstructed kidneys or bladder, or for evidence of severe constipation. The lower spine should be examined for dimples, naevi and other external markers of spina bifida occulta. However, spina bifida occulta or diastematomyelia severe enough to cause enuresis would also cause other neurological symptoms or signs. Ankle jerks and gait should be observed routinely, and, if a neurological cause is likely, saddle area sensation should be tested.

(3) Investigation

The only obligatory investigation is examination of the urine. A dipstix test for glucose will exclude diabetes mellitus. Microscopy is a good screening test for bacteriuria. If the doctor is not confident at diagnosing bacteriuria from microscopy,

he should send a freshly collected clean urine specimen for culture. This is essential, as 10 per cent of children with severe enuresis have a urinary tract infection, cure of which will sometimes alleviate the enuresis (Stansfeld, this volume Chapter 13).

Spine x-ray is not indicated unless there are neurological symptoms or signs. Ten per cent of children's spine x-rays will reveal some degree of spina bifida occulta. In the neurologically symptomless child further neuroradiological investigation is not indicated.

Intravenous urography and cystography are not indicated, unless there is a strong suggestion of a major anatomical fault or there is a proven urinary tract infection. The policy of requesting intravenous urography on every bedwetting child over the age of eight years has not been shown to be justified.

(4) Therapy

General Measures

Good Doctoring. The participants at Newcastle were unanimous in placing the doctor's attitude as the first therapeutic tool. The doctor needs to show concern and involvement, to quieten and relax what may be a disastrously tense home situation, and then to calmly promise cure. If the doctor believes in his own plan of campaign, cure is likely within six months.

Private Interviews. All parents and children need explanation as well as reassurance and help. They need it independently, and at some stage parent and child must be seen separately, to give each the opportunity to voice their theories and worries, and to receive appropriate explanation of the epidemiology, cause, natural history and treatment of enuresis. Unless the child is seen alone, one is unlikely to find out the full details of the home—who comforts, who scolds, and who threatens (an eight-year-old told me tearfully, 'My Mam says she'll put her head in the gas oven if I've not stopped wetting by Christmas'). The interview with the child will include a section on the following lines:

Doctor: 'How many children are in your class?'

Child: '36'

Doctor: 'Do any of them know you wet the bed?'

Child: 'No.'

Doctor: 'Do any of them wet the bed?'

Child: 'No, I don't think so.'

Doctor: 'Well I know that three of them do, but they don't tell anyone because they don't like it either.'

(This remark is usually met with a look of relief and pleasure by the child.)

Doctor: 'I'm glad you've come to me because I can help you stop wetting the bed.'

You will have stopped wetting the bed by the end of the Summer holidays.'

(This is important and good news to parent and child; like all important information it needs to be repeated at subsequent visits.)

This sort of initial ventilation, reassurance and explanation is essential in all cases. Individual therapeutic regimes will vary according to the problem, the child, the family, and the beliefs and experience of the doctor. Most doctors agree that it is important to involve the child directly in the therapy so that he cures himself—the

doctor merely helps. Many of the regimes outlined below allow a lot of child co-operation and involvement.

Follow-up Visits. If the doctor expects a prompt cure, and wishes the parent and child to expect it, he has to see the child many times at short intervals. The remark 'Come back in three months' carries pessimistic implications for both parent and child. It is best to see them weekly or fortnightly at first. A few months of energetic therapy is more effective and less troublesome for everyone than years of sporadic half-hearted management.

Fluid Restriction. This is not necessary. Apart from avoiding excessive intake—several bottles of squash—last thing at night, normal fluid intake is allowed. It is common to find that the parents have already tried fluid restriction and found it valueless. A few doctors still advise fluid restriction, but there is no evidence that it helps.

Rewards and Punishments. The child has to want to get dry, and to know that his parents want him to be dry and that they understand that he will do so. Usually there is no good reason for doubt about this, and punishments and threats may create such great tension that learning is interfered with. A small minority of mothers are so chaotic and happy-go-lucky that they need to show a bit of mild disappointment at wetting, combined with expressed expectation that their child will become dry. In such families, a little stress may improve learning and co-operation in their households. However, most children are already acutely aware and anxious about their problem, and their parents' feelings about it, without any need for punishment or rewards.

Interval Training. Diurnal frequency may be present in young enuretic children, some of whom may void ten or more times in a morning. Such children have a small functional bladder capacity, and some are helped by interval training. The mother is instructed to take the child to the toilet every half an hour on the first day, and to watch the child void there. The next day she takes the child every one hour, the next every one and a half hours, and so on. The interval is increased by half an hour per day until the child is going three to four hours between voiding. At this stage some children stop wetting the bed. Interval training needs a conscientious mother with an alarm clock and a week or so to devote to the training regime.

Charts and Stars. These records kept by the child serve a dual purpose. The doctor needs a detailed record to assess progress; people's memories about bedwetting are inaccurate. Secondly, a diary record, kept by the child, involves the child in the treatment. Emphasis should be on recording the successful dry nights, not highlighting wet ones. Young children enjoy using coloured markers and stars with clear rules, e.g. 'Stick in a yellow star by each night you are dry. Four yellow stars in one week earn a green star. If you get seven yellow stars in one week, draw a picture on the opposite page'. Some five- to eight-year-old children become completely dry after using such a chart for a few weeks, without recourse to drugs or buzzer alarm. Older children are given a notebook and asked to keep an accurate progress record in it; it is usually possible to praise their neatness or writing, if nothing else!

Lifting and Waking. Parents sometimes find that if they awake the child when they go to bed, or lift him on to a pot to void, the bed is likely to be dry in the morning.

Some doctors oppose this action, saying that the parents are teaching the child to micturate whilst still half asleep. It is true that there is no statistical evidence that 'lifting' teaches children to be dry. However, if the doctor had spent as many nights changing the sheets followed by days washing them, he would be more sympathetic to the parents' solution. It is only fair to allow parents to perform this labour-saving procedure until the physician is confident that its omission will not result in wet beds, or until treatment such as a buzzer is used which requires a wet bed as the stimulus. If I am managing a child whose parents do lift the child each night, I persuade them every six weeks or so to stop lifting for two weeks to find out how the regime is succeeding. The child can not be considered cured until he is dry without the need for lifting.

Apart from lifting, it is necessary to find out if the parents are taking any other measures to save the laundry. Sometimes these need altering. One twelve-year-old had been made to wear nappies for the previous three years. Within three weeks of the first consultation—and the advice to remove nappies—he never wet the bed again. Other parents may need practical guidance about where to purchase plastic mattress covers.

Age to Start Treatment. There are some dogmatic opinions given about the age at which treatment should be begun. One professor of paediatrics proclaims that nocturnal enuresis is not a medical problem below the age of five years (perhaps he should do the laundry for a few months). Most doctors act on the assumption that the best time to help someone is when they need help. The mother who consults the doctor about her 3½-year-old's bedwetting should get reassurance and helpful advice about toilet training, the development of dryness, and the need to avoid excessive coercion. The mother of the enuretic twelve-year-old is more likely to be happy if she leaves the clinic clutching a buzzer alarm. Regardless of age, help can be given, and Brazelton (this volume Chapter 28) points out that if doctors took the initiative before the parents asked for help much enuresis might be prevented.

Hospital Admission. Enuresis can be treated successfully in general practitioners' surgeries, school clinics, and hospital out-patient departments. A minority of paediatricians regularly admit up to 10 per cent of enuretic referrals to hospital (Noble 1971). It is not clear whether they do this because of shortage of time in the out-patient clinic, or to ensure that the child co-operates with a new form of therapy (e.g. the buzzer), or to prove to the child with severe enuresis that dry nights are possible. Clearly it is pointless achieving ten consecutive dry nights in hospital, unless there is careful follow-up to ensure continued progress once the child is home. In Britain it is unusual for the doctor and nurses who have most contact with the child in hospital (the house physician and ward sister) to have much contact with children as out-patients. Therefore true continuity of care is rare. Enuresis should be regarded as an out-patient problem, and not a reason for hospital admission.

Drugs

A great variety of drugs, ranging from stimulants to sedatives, have been used. Their action and efficacy are reviewed in detail by Blackwell and Currah (this volume Chapter 25). It is noteworthy that the tricyclic anti-depressants are the only drugs

shown to be superior to placebo in the treatment of enuresis. However, many other drugs have not been the subject of satisfactory controlled trials. Advocates of other drugs can be forgiven for using them, if in their hands they are effective.

At the present time, the tricyclic antidepressants are the drugs of first choice. No particular tricyclic drug has been proved to be more effective than another, but imipramine has emerged as a convenient and palatable drug. It is marketed under several trade names ('Tofranil' is made by Geigy, who also supply a record chart and stars for the child to keep). It is now listed in the British National Formulary, and is most economically prescribed as 'imipramine hydrochloride'. It is marketed as a 10 mg or 25 mg tablet, or as a syrup with 25 mg in 5 ml. The syrup is more expensive—one month's treatment could cost between £3 and £4.

Benefit from imipramine is usually seen within the first week, if it is going to occur. This contrasts with the two-week delay in benefit when it is used in the treatment of depression, and favours the theory that its action in enuresis may be partly anticholinergic, relaxing the bladder wall and tightening the sphincter.

Girls benefit more than boys, but over-all less than 50 per cent achieve total remission whilst on the drug, and after stopping the drug many relapse. Continued remission two months after stopping the drug is achieved by only 10 to 30 per cent of children given the drug.

The dose needed and tolerated varies considerably. Alderton (1970) found that children who wet before midnight benefitted most if it was given at 5 p.m. rather than at bed time.

I start off by prescribing 25 mg to young children, or 50 mg to those over eight years. The dose is increased in 25 mg stages, at one or two-week intervals according to response, up to 100 mg. The commonest side effects causing cessation of the drug treatment have been irritability, sleep problems and mood changes. Frank anticholinergic effects, such as a dry mouth, have been uncommon. I try the drug for six weeks, and, if there is no improvement, stop it. If improvement is occurring, it is continued for twelve weeks and then gradually stopped. If the child usually wets before midnight it is given at 5 p.m., or in divided dose between 5 p.m. and bedtime. Other children have the total dose at bedtime. Very anxious or upset children are sometimes given a small morning dose in addition.

Imipramine poisoning is difficult to treat, and both parents and child should be warned not to leave the drug about where a younger child might accidentally swallow it. In England and Wales, six to ten children die each year as a result of accidental poisoning with tricyclic antidepressants. In most cases the drug has been prescribed for a depressed parent rather than an enuretic child (Parkin and Fraser 1972).

The tricyclic antidepressants are useful in producing a speedy remission in many children; a permanent cure is much less common.

Enuresis Alarms

Alarms have become deservedly popular in the treatment of enuresis. They produce cure in a higher proportion of cases treated than other forms of therapy. An enthusiastic doctor or clinic will cure two thirds of children or more within four months; and even an unenthusiastic doctor will cure more than a third of the children.

Ten to 20 per cent subsequently relapse, but respond fast to a second course of treatment. The practical details of use and supervision of the alarm are of great importance, and are dealt with by Dische (this volume Chapter 24).

Treatment Failures

We all have to admit that a proportion of children remain enuretic, despite our efforts. Particularly difficult to cure are groups such as the mentally handicapped, and those living in deplorable homes perhaps three to a bed with a general uncertainty as to which of the three wet the bed last night. Lack of motivation is an unfavourable factor. Enuretic children detected by school screening programmes are often more difficult to cure than those who have consulted the doctor for help of their own accord. Many of the children referred by school doctors to paediatricians fail to keep even the first appointment (Noble 1971).

We should be honest (or not too dishonest) about our failures. There are few more wearisome tasks that a paediatric registrar or local authority doctor takes on than a clinic to which enuretic children have been coming every two to three months, merely to have recorded in the notes 'Dry 15 out of 60 nights—come again in two months.' The only thing to do is to leap in enthusiastically and start afresh. There will be non-responders. I persevere for four months, sometimes up to six months, trying different methods. If there is still no improvement, I stop treatment and tell both parent and child that 'the bladder is not yet mature', and that they should come and see me in eight months time when 'the bladder will be mature and treatment will produce a cure'. This has to be said with sufficient confidence to impress parent, child and, most important of all, oneself. For many children enuresis is more frequent in cold weather, and cure more easily achieved in the summer (Drew 1966). Therefore, where possible, a second course of treatment should be planned for the early summer.

Some doctors are at the end of the line 'where the buck stops'; others can refer their more difficult cases for a second opinion to another doctor. One 60-year-old paediatrician regularly refers his failures to his registrar, on the basis that an eager young face is more therapeutic than a weary disillusioned one.

Referral to Special Clinics

Enuresis is so common that it must be essentially a problem managed by the doctor of first consultation, *i.e.* the general practitioner. He will refer his failures and more difficult problems elsewhere. If there is a special clinic for enuretics locally, that is likely to be the best clinic, regardless of whether it is run by the local authority education department, the psychology service, or the hospital. Otherwise referral is directed to hospital paediatricians, all of whom are accustomed to many such referrals. In Newcastle, general practitioners refer 10 per cent of enuretic children to paediatricians (Smith 1971). Genito-urinary surgeons are also sent some enuretic children, and I have not met any who welcome them. Genito-urinary surgeons have neither the time nor the inclination to provide a service for non-surgical problems.

Child psychiatrists have a limited but important rôle. Graham (this volume Chapter 27) suggests that their value is for children with severe emotional disorders, whether related to the enuresis or not. Some child psychiatrists will only see enuretic

children who are referred to them by paediatricians. There have been no controlled trials of psychotherapy in enuresis, and it is rarely used.

Conclusions

Most children can be cured of enuresis within six months of consulting the doctor.

A full clinical history and physical examination are necessary, though organic disease is rarely found. The only obligatory investigation is of the urine to exclude infection (common) and diabetes mellitus (rare).

Reassurance and explanation are of great importance to both parent and child, who are best helped by a sympathetic but enthusiastic doctor who has a clear plan of campaign. The details of the campaign will vary according to the situation, and may include rewards, interval training, stars and charts, and lifting and waking the child. Fluid restriction, hospital admission and punishments are not advised.

Tricyclic antidepressants, e.g. imipramine, may induce remission which is rarely sustained when the drug is stopped. Buzzer alarms can achieve permanent remission in two-thirds of children.

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