ENURESIS IN CHILDHOOD

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NOCTURNAL enuresis is one of the commonest disorders encountered in general practice and paediatrics. The one incontrovertible fact about the disorder is that it almost invariably spontaneously remits with the passage of time. In the meantime, however, it often leads to parental feelings of inadequacy, concern, or even despair, and child distress and embarrassment. The domestic burden and strain are obviously greater for those mothers whose social circumstances are poorer. Physicians have long concerned themselves with this problem. Nevertheless the major advances in knowledge have occurred only over the past two decades, during which period the condition has been more systematically studied (Kolvin and Taunch, 1973). Comprehensive reviews of recent advances in knowledge of bladder control and enuresis, which have been long overdue, have begun to appear in the Anglo-American literature (e.g. Lovibond and Coote, 1971; Kolvin, Mac Keith and Meadow, 1973).

TYPES OF ENURESIS

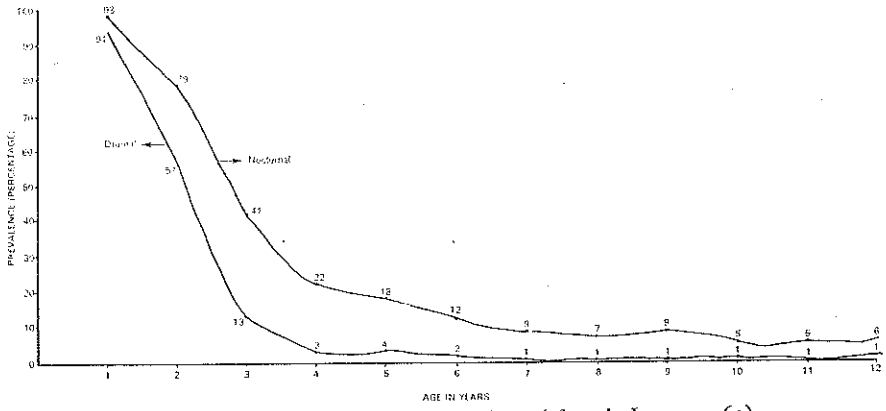
Enuretic patients are not homogeneous in type or etiology. There are several types of enuresis, but the presence of one type in a child does not necessarily preclude another type. Primary (or continuous) enuresis refers to a child who has never learnt to be consistently dry. Secondary (or onset) enuresis refers to the child who has been reliably dry for at least a year, and who then starts wetting again. Nocturnal enuresis obviously refers to night wetting, and diurnal to day wetting. Some consider that any of the above classifications need to be supplemented by a further categorization, namely into those with and without emotional disturbance (Kolvin, Mac Keith and Meadow, 1973). More recently, workers have been attempting to identify patterns of etiology, natural history, prognosis and response to treatment of the different types of enuresis.

DEFINITION

Considerable confusion exists as to the criteria for describing a child as a nocturnal enuretic. By general agreement urinary incontinence must be excluded from consideration. If we seek a simple age criterion, we are confronted with the fact that at one age bedwetting is indubitably normal or physiological, whereas at another it is abnormal. At what stage precisely does it become abnormal? One can list a series of criteria but it has to be appreciated that these are essentially arbitrary. Nevertheless, such distinc-

tions need to be made both for clinical purposes and to allow research to be undertaken in a systematic and meaningful way. More popular is the age/statistical prevalence criterion which defines as enuretic the children who wet the bed at an age at which the symptom is statistically uncommon. Some clinicians are not in favour of this criterion in view of the fact that there is a smooth decline in the age prevalence curve which makes any dividing line essentially arbitrary (Werry, 1965). Similarly, etiological criteria have been discarded because of lack of knowledge or agreement as to what is pathological.

In clinical work it would seem wise to seek practical definitions. For instance, by defining nocturnal enuresis as nocturnal bedwetting in a child in



Age-prevalence curve in bedwetting boys (after de Jonge, 1969)

whom the act of voiding otherwise occurs in the normal way, Poussaint and Ditman (1965) avoid the necessity of having to take into consideration the minimum age or frequency of the act. Werry's practical solution is to define it as night wetting in the school-age period: first because of its relatively low prevalence at this age, secondly because spontaneous remission is at its minimum, and thirdly because the child is becoming concerned by the sympton (Werry, 1967). Even if we adopt one of these two practical definitions, we are left with the question of frequency. In other words, how often does a child have to wet the bed per week or per month to be considered as enuretic? The most sensible solution is that of Hallgren (1956) who operationally defines enuresis as wetting occurring at least once a month.

PREVALENCE

The prevalence of bedwetting decreases with increasing age. Whilst there are variations in terms of prevalence at different ages, the prevalence being dependent upon the definition of bedwetting used, or in which country the study is undertaken, the pattern of the age-prevalence curve is pretty

constant. The accompanying graph, which is based on de Jonge's (1969) epidemiological survey data, has this characteristic pattern.

The maximum diminution of wetting (or spontaneous emergence of dryness) occurs between the ages of about 1½ and 4½ years. At each age, the bedwetting prevalence rates tend to be slightly higher for boys than for girls. The prevalence of diurnal wetting decreases at a much faster rate with age than does nocturnal wetting, with the maximum reduction between the ages of 1 and 3 years. In the north of England, Miller (1973) from the '1000 family study' reports a rate of 17 per cent at 5 years of age, 11 per cent at 11, and 2 per cent at 15 years. In fact, in two separate Newcastle studies (Kolvin *et al.*, 1972; Miller, 1973) there is evidence that children with enuresis tend to come from families with high loadings of social handicap. Workers in the south of England, however, report only a weak and inconsistent association with such social factors (Rutter *et al.*, 1973).

ORIGINS AND THEORIES

A wide variety of explanations have been offered for enuresis. Some of these are clearly contradictory, whilst on closer scrutiny others appear to be complementary. Some of these theories are supported by hard facts whilst others are on more shaky ground, being little supported by empirical data and often incapable of generating testable hypotheses. The following is a brief (and superficial) account of the major theories or those which have implications for clinical practice.

NOCTURNAL ENURESIS AS A DEVELOPMENTAL DELAY

Some school-going bedwetters appear to be otherwise normal. This has led to the theory that there is a subgroup of nocturnal enuretics who have an 'isolated' milestone delay analogous to the so-called developmental speech delays, the primary fault being a type of neurophysiological immaturity of structures subserving bladder control (Kolvin and Taunch, 1973). This theory is supported by the known tendency towards spontaneous improvement (Bakwin, 1961; de Jonge, 1969) and the fact that nocturnal enuretics are more likely to have a family history which is suggestive of a genetic determination of the maturational delay. A list of other biological and psychological facts in favour of this theory is available elsewhere (Kolvin and Taunch, 1973). Mac Keith (1973), however, argues that maturational delay may be the explanation for bedwetting in children under 5 but not in those over 5.

ENURESIS AS A DISORDER OF LEARNING

Another view is that enuresis is determined by a poor or deficient learning of a habit pattern. It is more likely, however, that neurophysiological maturation of the physical equipment and learning are complementary components in achieving bladder control (Werry, 1965; Kolvin and Taunch, 1973).

A SENSITIVE PERIOD FOR THE EMERGENCE OF DRYNESS

It has been noted that dryness is acquired particularly commonly during the period from 18 months to 54 months, but less commonly before or after this period. Mac Keith (1964, 1968) explains this phenomenon by postulating that there is a 'sensitive period' for acquiring bladder control. One can then postulate that any interference, even of a transient nature, with the acquisition of control during this period between 18 months and 54 months may leave the child without control for a number of years, during which the learning of control will apparently be more difficult (Kolvin and Taunch, 1973).

PHYSIOLOGY

One of the prominent theories in the past was that enuretics have smaller 'functional bladder' capacities (Muellner, 1960). Muellner views bladder control as being determined by an ability to hold urine for longer and longer periods, together with an increasing tolerance by the bladder for retaining larger volumes of fluid (and thus an increased functional bladder capacity). The support for this theory is slim, however, both because children with reduced bladder capacities do not necessarily wet the bed and because Muellner does not countenance the possibility that the lowered functional bladder capacity could be due to enuresis.

PHYSICAL FACTORS

There have been reports of urinary-tract defects being responsible for enuresis but doubt has been cast on their presence and even on their significance when present (Barbour *et al.*, 1963; Angell, 1969; Meadow, 1970). Other sources (e.g. Kolvin and Taunch, 1973) suggest that physical defects or other physical factors may hamper rather than prevent learning. Urinary infection is relatively common in enuresis, especially in schoolgirls: 1 in 20; the incidence increases to 1 in 10 if the girl wets practically every night (Stansfeld, 1973). Hence the necessity to check for such infection, especially in secondary enuretics.

DEEP-SLEEP PATTERNS

One of the most popular theories regarding enuresis is that it is due to the child's lack of response to bodily stimulus because of unusually deep sleep. In contrast to clinical impressions, however, electroencephalographic studies do not support this theory, as they have demonstrated that enuretics wet during all electrophysiological stages of sleep except during rapid eye movement (REM) sleep.

FACTORS LIKELY TO INHIBIT OR PROMOTE LEARNING OF BLADDER CONTROL

These are of particular importance during the so-called 'sensitive period' and also at a later age. In some cases, they appear to be associated with very poor home conditions where even elementary toilet-training measures have

not been applied, and hence the concept of the 'under-trained wetter' (Kolvin and Taunch, 1973). In addition, Douglas (1973) has reported on how a series of adverse experiences at this age is associated with a higher incidence of bedwetting at a later age. On the other hand, certain authorities have claimed that early toilet training hampered the learning process, but Blomfield and Douglas (1956) and Young (1964) found a correlation between early 'potting' and early bladder control. Finally, any adverse experience at this stage of development may have a twofold influence: by interfering with learning at the 'sensitive period', and by accentuating a pre-existing developmental delay. This has been explained as follows:—

> The delay may be exaggerated 'by errors of learning at the toilet training era, by inhibition of learning by transient emotional factors' (Mac Keith, 1968), or 'by the presence of minor anatomical abnormalities creating increased difficulties in learning' (Kolvin *et al.*, 1972).

PSYCHOLOGICAL FACTORS

There is ample evidence that the incidence of psychological disturbance is higher in enuretics than in the general population, especially in girls. As yet, however, no characteristic association has been found between enuresis and a specific psychiatric syndrome, and 'the vast bulk (71 per cent) of enuretics proved to be psychiatrically normal . . .' (Kolvin *et al.*, 1972). Other authors have claimed that there is a more evident psychogenic basis for secondary enuresis. The stresses so far identified in secondary enuretics have proved non-specific, and occur in only 50 per cent of these children (de Jonge, 1969), but such children often have a pre-existent emotional disorder which may be a factor in the genesis of enuresis. As to mechanisms, Werry (1967) suggests that anxiety can lead to bladder irritability, and can have a major disruptive effect on the learning of bladder control in those children constitutionally predisposed towards enuresis. Nevertheless, the search for antecedent or coincident specific stresses has met with conspicuously little success (de Jonge, 1969).

Whilst psychoanalytical explanations have now been widely rejected as a common basis for primary enuresis, a more general psychogenic theory has been advanced by Mac Keith (1968). He makes a distinction between transient adverse early life experiences which have prevented the emergence of bladder control at the 'sensitive period of learning' already described, and current stresses which may be perpetuating the enuresis. In fact, the epidemiological research of Douglas (1973) supports Mac Keith's view by providing evidence of an excess of stress during the third year of life.

SOCIAL, FAMILY AND SEX FACTORS

The importance of social pathology (de Jonge, 1969) has been emphasized in most studies. In addition, bedwetting is more common in the lower social classes (Miller, 1973; Kolvin *et al.*, 1972; Stein and Susser, 1965). Kolvin and Taunch (1973) see social factors as exerting their effect via poor

training experiences, but in view of the significantly high family incidence the possibility of a genetic basis cannot be ignored. Finally, nocturnal enuresis is more common in boys than in girls.

A DUAL THEORY

Kolvin and Taunch have advanced a simple theory: that nocturnal enuresis consists of two disorders They suggest that primary (or continuous) enuresis has a mainly biological basis, especially in terms of a disorder of neurophysiological maturation of structures subserving bladder control, whilst secondary (or onset) enuresis has, in the main, a psychogenic basis. They advance much evidence in support of the theory but admit that these two enuretic populations overlap somewhat, and they finally conclude that a simple theory can do no more than explain some of the major facts and hence can have only moderate validity.

EXAMINATION AND INVESTIGATION

The one lesson to be learnt from the previous sections is that multiple factors in varying combinations appear to play a part in different clinical cases. In such circumstances it becomes necessary to consider all these factors when investigating a particular case. This implies the necessity for a full history and examination. The family and social history should seek to uncover evidence of: a familial basis, or a developmental basis (was the child somewhat delayed in developing other skills?); the social conditions of the home; general care of the child and evidence of previous or intercurrent stresses. Whilst organic causes are rare, parents often need the reassurance that comes from a physical examination to show that these have been excluded (Meadow, 1970).

The type of enuresis soon becomes evident. If it is secondary or diurnal, physical factors including infection must be excluded. Frequency, dysuria or a poor urinary stream all provide hints of a possible physical basis. Neurological causes are likely to be associated with other physical symptoms. When these are absent, however, it is wise at least to check the lower limb reflexes. In addition, the abdomen (especially suprapubic and penial areas) should be palpated and any suggestive evidence of spina bifida occulta sought (Meadow, 1970). The urine should always be tested. Microscopical examination of the urine constitutes a crude screen test, and in secondary enuresis of recent onset it is well worth while to culture a freshly collected 'mid-stream' specimen of urine. Whilst the urine should be tested to exclude diabetes mellitus, more dramatic investigations should not be undertaken unless there are adequate symptoms and signs to support this course of action.

By this time it should also be evident whether one is dealing with a monosymptomatic condition, or whether it is part of a more widely based multisymptomatic disorder, and also there should be some indication of the

combination of likely contributory causes in the particular case. It should also be remembered that the original causes may have been transient and hence no longer operative, and the symptoms may be self-perpetuating or, at a later age, perpetuated by the parent's or child's secondary reactions to the symptom.

TREATMENT

From the previous sections it is clear that only a few of the children with nocturnal enuresis have any psychological problems or a neurological or genitourinary disorder. In the main, we are dealing with healthy children who wet the bed. As already outlined, a careful history and routine urine examination should be the first line of treatment. Thereafter, if there are any queries regarding a physical basis or important psychogenic factors, or if simple measures prove ineffective, it is reasonable to enlist the aid either of a local paediatric clinic or, when available, an enuresis clinic (which is usually run by knowledgeable enthusiasts). If the rare physical factors can be excluded, one can consider treatment under the headings of simple measures, 'bed-buzzers', drugs and psychotherapy.

SIMPLE MEASURES

Experienced family practitioners always tend to start with simple measures, which in my view constitute the treatments of choice in the pre-school child. The more dramatic techniques of drugs and buzzer training are inappropriate and ill-advised before the age of 5 years. Simple measures can be preventive or interventive.

The preventive approach (Brazelton, 1962, 1973) in essence consists in holding a watching brief so that the family practitioner is poised to deal with intercurrent stresses in the pre-school years, or, when indicated, to give support to the anxious parent or to the vulnerable child. The importance of stresses occurring in the so-called 'sensitive period' must be borne in mind and, when these exist, ways of diminishing them need to be sought. Complementary to this is the guiding of parents in child management and rearing over the toilet-training era. When indicated, the watching brief extends into a simple type of supportive psychotherapy which consists in a concerned involvement with the family and allowing adequate time for discussion and ventilation of anxieties.

Pertinent to the preventive approach is advice about 'potting'. In the past, coercive 'toilet training' was often incriminated as a cause of nocturnal enuresis. Brazelton is of the opinion that bladder control can be promoted by the reduction of parental pressure. The child's inability to gain bladder control may lead to greater pressure by the parents, which in turn generates anxiety in the child, and thus we see a vicious circle which prevents or undermines the emergence of nocturnal bladder control. He recommends allowing the child more time for maturation and mastery of each emergent skill in an environment relatively free of anxiety and con-

flict. Essentially, Brazelton's technique consists in seeking ways of reducing the child's anxiety over the toilet-training era, and this, he claims, leads to over 98 per cent of children being dry by the age of five.

The opposite view is that the importance of coercive toilet training has been overemphasized, and indeed, as has already been described, there is evidence to support this contradiction (Blomfield and Douglas, 1956; Young, 1964), and thus a strong argument in support of early toilet training. Such contradictions could easily lead to confusion in the mind of the family practitioner as to which approach to adopt. An essentially pragmatic solution consists in using one's clinical judgment about what to advise a particular family. If they are reasonably relaxed, stable and sensible, with a comfortable, uncomplicated mother/child relationship, it is unlikely to do any harm, and possibly some benefit will derive from early 'potting'. On the other hand, if the mother is a somewhat anxious, fussy personality, or over-intense about child rearing, or if there has been some concern about the mother/child relationship, it is probably wise to follow a Brazelton-type approach.

Simple interventive measures are indicated for the pre-school child who is bedwetting (but not yet considered enuretic) if there are significant intercurrent stresses, excesses of parental concern and/or evidence of child distress or psychological disturbance. They are also indicated for the older bedwetter who is considered to be enuretic, and who presents for the first time. The sequence which is outlined in the following paragraph is the model used in my clinical practice, but I see it only as a useful framework for other practitioners.

Careful history-taking is essential as it will provide the facts or clues upon which decisions regarding treatment will be made. During this time, mothers can be helped to appreciate both how common the symptom is and the multiple factors which play a part in its determination, many of which are beyond the parents' influence. Such an exercise often helps to increase the parents' confidence, to elicit their understanding and assuage their guilt. One of the most important therapeutic contributions the general practitioner can make is to show concerned involvement with the family (Meadow, 1973) and a sense of optimism. This will increase the sense of trust the family has in him, and will help to dissipate any intercurrent anxiety. In fact, whatever the mechanisms involved, it would seem wise to reduce such anxiety whether it is one of the causes of enuresis or a reflection of it (Mac Keith, 1973). This, in a sense, constitutes the supportive psychotherapy already alluded to.

Before discussing enuresis as such, a word of warning needs to be given against seeking too assiduously for evidence of intercurrent anxiety or causes. All too often this can prove to be a wild goose chase, as more often than not there are no original causes and even when these did exist they may no longer be operative, and the habit is self-perpetuating. Unless such

factors are immediately evident, the practitioner should assume that he is dealing with an enuretic child who is otherwise essentially normal.

Parental attitudes are crucial. An over-critical parental attitude, scolding or punishment often increases anxiety and can perpetuate the enuresis rather than lead to its disappearance. Punishment is more likely to lead to further problems whilst praise and approval for 'dry nights' and the ignoring of 'wet nights' always tends to have a beneficial influence on parent/child relationships, even when it does not immediately lead to dryness. The counselling of patience is necessary but not easy to accept by parents whose domestic facilities are poor. A simple reward system, such as the use of stars on a calendar for dry nights and/or a small token, is often effective with infant schoolchildren, provided that when it does not work it does not generate a sense of failure and hence greater anxiety in the child.

Restricted fluid intake in the evening has been advocated by some but its value denied by others (Meadow, 1970). Sensible fluid limits, together with 'lifting', are often successful with the individual child. The technique consists in ensuring that the child empties his bladder before going to bed, and 'lifting' him two to three hours later. In my opinion this is more likely to be helpful to the child who is already on the verge of dryness, but makes little impact on other enuretics.

Some enuretics come from very poor homes where even elementary toilet-training techniques have not been applied. In such cases simple guidance to the mothers may suffice, but where the home conditions are so primitive or the mothers dull or apathetic, it may be necessary to admit the child to the fairly comfortable environment of the paediatric ward for a brief period of 'toilet training'. Some, however, consider that the operative mechanism is not training, but the lowering of the arousal threshold which occurs while the child is in unfamiliar surroundings.

'BELL AND PAD' OR 'BED BUZZER' TREATMENT OF BEDWETTING

This is technically a type of conditioning method of therapy with the child conditioned to be aroused and so awaken just before he wets the bed. This symptomatic treatment is considered by some (e.g. Kolvin *et al.*, 1973) to be the treatment of choice for primary nocturnal enuresis, but other workers make no such distinction (e.g. Forsythe and Redmond, 1970). The apparatus used has recently become cheaper but can usually be loaned from a paediatric or enuretic clinic. For best results, the apparatus needs to be carefully demonstrated and simple, full, typewritten instructions (Dische, 1973) given to parents on how to reset the apparatus; that the equipment must be used nightly; that the child should not wear pyjama trousers; about how to deal with contingencies, and finally about careful recording of dry and wet nights and regular visits to the clinic.

Most children, if they are going to do so, will respond within the first

two months. Provided a few simple rules are obeyed the results using this technique are usually encouraging. The child should not share a bed, or, if possible, a room. It is also essential that he be old enough and intelligent enough to work the apparatus. If not, the parents must be prepared to remake the bed and reset the alarm. Some children 'sleep through' the alarm, which then is often abandoned as it causes untold distress by awakening the entire household. Again the parents should be advised that the child should be taken to empty his bladder and the equipment reset. Indeed there are considerable demands on parents during this form of treatment which not infrequently are the main reason for discontinuing it. Another reason for inadequate parental cooperation is the poor social circumstances of the family. If there is no dramatic improvement in three months, it is customary to stop treatment. When treatment is successful but relapse occurs later, the child usually responds to another period of treatment. It is often not appreciated that adequate follow-up reveals that relapses occur in about one in three children.

Buttock ulceration can occur when the equipment is faulty or when the child 'sleeps through' the alarm; it is rare with twin wire-mesh electrodes or transistorized alarm. Basic safety requirements have been specified by the Ministry of Health (1968).

Finally, Mac Keith (1973) points out that whilst conditioning is the most effective method of treating established enuretics, it does not mean that 2- or 3-year-olds will respond to conditioning by becoming dry.

DRUGS

The drugs now most widely advocated for use in nocturnal enuresis are the tricyclic antidepressants, namely imipramine and amitriptyline. These are the main drugs which have been shown to be superior to placebo in the treatment of enuretics (Blackwell and Currah, 1973). Their mechanism of action is ill-understood, but is likely to be via their anticholinergic effects (Blackwell and Currah, 1973). These are powerful agents and should be used with caution. The main side-effects are dry mouth, constipation and drowsiness. Our University Department advises that these should not be used in children under the age of 7 years. These drugs are potentially toxic agents, and since poisoning is often difficult to treat (Parkin and Fraser, 1972), care should be taken that toddlers and children with suicidal proclivities have no access to them.

Medium-sized doses rather than heavy doses should be used: e.g. imipramine 10 mg at night for children aged 7 to 10 years, and 25 mg at night for those aged 10 to 12 years. Other authors use 'heroic' doses, but as these preparations are not curative agents I consider this to be most unwise. Most agree that drugs should be used for at least a month, and if there is no effect at the end of this period they should be stopped. In any

event, they should not be used for longer than three months at a time. If there is a relapse, another course can be tried after an interval of one or two months.

When these agents are beneficial they begin to work within the first two weeks. Unfortunately, this benefit ceases almost immediately after stopping treatment and long-term follow-up indicates that full remission occurs in only a small number of cases. It should be noted that in comparison with imipramine, the response to 'buzzer' conditioning is less immediate but more persistent after the end of treatment (Kolvin *et al.*, 1972).

Most of the other drugs used in the past have now been abandoned and Meadow (1970) comments that amphetamine-like agents 'produce more bad tempers than dry beds'. Nevertheless, particularly in children with high levels of 'free floating anxiety', the use of anxiolytics such as chlordiazepoxide ('Librium') during the day can be tried (Salmon, 1973).

Drug treatment of enuresis produces less beneficial results than does the use of the 'buzzer', but it is worth trying drugs when one is wanting a rapid result using an uncomplicated method which is easy or more convenient to administer, or when the child is sharing a room or a bed. Finally, there is some evidence of a better response to imipramine in those with secondary enuresis (Shaffer *et al.*, 1968; Kolvin *et al.*, 1973) and in those enuretics who do not have a family history of enuresis and in whom there is a history of early achievement of other milestones (Kolvin *et al.*, 1973). Finally, enuretic children without other bodily symptoms appear to have a better outcome than those with such symptoms, irrespective of the treatment used.

PSYCHOGENIC FACTORS

It is both impossible and undesirable for paediatric departments, let alone child psychiatric departments, try to cope with the large pool of enuretics in the community. The task must be shared with family practitioners who customarily have accepted the lion's share of the work. The most logical division of labour is for the family practitioner to deal with those cases in which there is no evident organic or major psychogenic component. The remainder of the cases are more appropriately referred to paediatricians and child psychiatrists respectively. The other group of children who should eventually be referred are intractable enuretics.

The psychologically disturbed enuretic.—These are cases in which enuresis is just one symptom of a more widespread emotional disorder. The symptom may contain features usually associated with a neurotic disorder of children, a conduct disorder, or both. It is probably true to say that enuretics who are additionally encopretic or who have a secondary form of enuresis are more likely to have a psychological basis for their enuresis.

After an appropriate assessment, the psychiatrist can, if indicated, initiate psychotherapy or refer the case back to the family practitioner for one of

the forms of treatment previously described. Alternatively he may advise one or other form of symptomatic treatment. The use of psychotherapy, however, does not preclude symptomatic treatment. On the contrary, the two treatments are often complementary because the distress or embarrassment engendered in either the parents or the child by the symptom can seriously hamper psychotherapy. Finally, one's clinical impression is that prognosis in the psychologically disturbed enuretic is not as good as it is for the psychologically normal child, mainly because of the less tractable nature of a multisymptomatic disorder. This impression has some support from one piece of research (Kolvin *et al.*, 1973) which has demonstrated that there is a significant correlation between improvement in enuresis and absence of other bodily symptoms (e.g. headache, abdominal pains) irrespective of whether the child is treated with drugs (imipramine) or the 'buzzer'.

FAILURES

When children come from problem families, cooperation is often poor, and is perhaps the commonest cause of failure. Even with the maximum cooperation, however, we still fail in about one-third of cases (Kolvin *et al.*, 1972). The explanation which is most acceptable to parents is that the bladder is still 'immature'. This should not preclude another course of treatment six to nine months later. Meadow (1973) places his second round of treatment in summer because enuresis is more common in cold weather.

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