ENURESIS IN CHILDREN

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SYNOPSIS

5 children with primary nocturnal enuresis were treated using the responsibility-reinforcement approach. A 60% success rate was obtained which compared favourably with other methods, and was definitely better than not doing anything about the condition. Various factors contributing to success or failure were also discussed.

INTRODUCTION

Enuresis, a developmental disorder, is defined as an involuntary discharge of urine by children over 5 years old. The condition has been attributed to lack of neurological maturation, obstructive lesions or infection of the urinary tract, deep sleep, small bladder capacity, or psychological causes.

The condition usually refers to wetting while asleep at night (nocturnal enuresis) and seldom in the daytime (diurnal enuresis). It usually excludes mentally retarded children who are slower in acquiring bladder and bowel control inspite of toilet-training.

A child who has never been 'dry' is said to have primary enuresis, while one who is dry at least a year prior to the onset of wetting has secondary enuresis. The latter condition usually suggests the presence of some underlying psychological or emotional stress in the child and thus requires a different approach to treatment.

It is estimated that about 15% of 4 to 5 year olds suffer from this condition, with a predominance of males after 5 years of age. Unfortunately, local parents see it as a growing-up problem and do not report to doctors unless specifically asked.

The purpose of this paper is to enlighten doctors, especially general practitioners, to the problem of diagnosis and management of enuresis in our local children.

PRINCIPLES OF TREATMENT

Several treatment methods have been used in helping enuretic children. The treatment methods may be grouped on the basis of whether the child is a passive participant or an active one. Examples of the former would include surgery, medication or use of conditioning devices. Various models of conditioning devices are available but basically they are electrical alarm systems which pairs the act of micturition with the alarm which awakens him. Gradually, the child learns to awake just by the sensation of bladder distension alone. One drawback of such a device is that other members of the family are also awakened when the alarm goes off.

Dramatic cures following surgery and medication have been reported. Surgery usually involves meatotomy or urethral dilatation. Medication either alters the sleep pattern of the child by influencing the activity of the Central Nervous System or acts directly on the bladder. The most commonly used drug for the control of bedwetting is imimpramine hydrochloride. Unfortunately, the drug has rather unpleasant side-effects which discourage doctors from using it as a primary mode of therapy.

The other group of methods requires the child to be an active participant in the treatment programme. The child assumes responsibility for his own behaviour and is aided in the process by reinforcement and response shaping techniques (Bandara and Skinner principles) The success of this "responsibility-plus-positive reinforcement" approach assumes that the child himself is strongly motivated to change his behaviour and achieve his goal. This is the method used in the treatment of the 5 enuretic children reported in this paper.

MATERIALS AND METHODS

The 5 children (4 boys, 1 girl) range in age from 6 years to 11 years. They were not pre-selected for the study and there are no control groups. All except one (Case 2) did not receive any form of previous treatment. They have been wetting since birth and urinary tract infection was excluded. Only one case had a family history of enuresis. They were referred by doctors from the Department of Paediatrics, SGH, to the author for treatment.

Each child was tested on the WISC-R to determine IQ level and all were at least of average intelligence. Mental state examination also did not reveal any emotional disorders. Parents were interviewed to gather information on personal history, family history, social history, educational performance, mother's reaction to child's wetting and frequency of wetting (baseline). Full details of each case is annexed to this paper.

Each child was seen fortnightly initially and then monthly depending on the child's progress. Each child was given a chart for him or her to put a "star" for dry nights. A system of incentives was also worked out for each child to earn in exchange for a certain number of stars (based onthe token-economy principle). Mother were also counselled in understanding their children's condition.

They were also encouraged to help in changing their bedsheets, pyjamas, etc, if they should wet themselves. There was no restriction on the amount of fluid intake at night. Mothers were to avoid waking them up at night to urinate and not to scold them for wetting. In 2 cases, mothers were told to discontinue using nappies on their children, while in another, a change in sleeping arrangement was recommended.

During each session,the children brought along their charts for recording purposes and for assessment of their progress. Lavish praise was given when appropriate. They were also asked to explain the likely causes of their wetting. The reward system is specially tailored to reward them at each successive level of improvement.

The cure criterion is 14 consecutive dry nights irrespective of period of therapy.

RESULTS AND DISCUSSION

Improvement, either in the form of reduced frequency of wetting or volume of urine discharged, were recorded in all cases within a month. However, beyond this stage, the program varied in each child.

Cases No. 1 and 4 reached the cure criterion within 3-4 months, and have stopped treatment. Case No. 5 showed remarkable improvement after resuming treatment and is still on follow-up. Cases No. 2 and 3 improved about 40% and then either levelled off or relapsed.

Based on this small sample, it can be seen that a cure rate of about 60% was achieved using this treatment approach. This compared favourably with the cure rate of other methods reported by Wagner (1): conditioning device (83%), drugs (33%) and spontaneous recovery (8%). A study by Marshall, et al (2), who compared various therapeutic approaches gave the following results: surgery (60%), medication (53%), conditioning device (56%), and responsibility-reinforcement (70%). In studying the spontaneous cure rate among 1129 enuretics, Forsythe and Redmond (3) found that only 15% of them stopped wetting without treatment.

For our purpose, in view of the small sample available, it would be worthwhile to look at possible factors which contributed towards either success or failure in the treatment programme. It was noticed that among the successful ones, the mothers impressed as being more firm and consistent in handling their children. They were able to carry out the programme strictly and followed instructions accordingly. There was also less evidence of maternal anxiety.

The children generally impressed as being motivated and keen to stop wetting. However, in the 2 unsuccessful cases, the children struck me as being immature, demanding and ill-disciplined. They tended to resort to bargaining with their mothers who also appeared rather excitable and over-protective.

Young and Morgan (4) have found that the slow-response group has a higher incidence of maternal anxiety and disturbed family relationships. Children who are less withdrawn and more socially adequate have a better chance of achieving night time continence (1). The latter also found that the relapse rate was higher in those treated with drugs than with other methods. Although they tended to be happier and more sociable after they stopped wetting, Wagner did not find any significant improvement in their emotional and psychological adjustment.

RECOMMENDATION

The number of enuretic children treated locally is rather small probably because it is generally regarded as a growing-up phenomenon in our society. Cultural and racial factors may influence parents' perception of the condition. It is probably more common than what one would expect from the small number of cases actually treated.

As children with this condition can be helped, it is suggested that doctors make an effort to detect it as a matter of routine.

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CASE REPORTS

Case No. 1:

Personal History: LJE, Male, Chinese, 9 yrs 11 mths.
History of failure-to-thrive.
Pr 4, passed exams yearly.
Bright-normal IQ.
Well-behaved and obedient boy.

Family History: Both parents working.
Elder of 2 children, sister 7 years old.
Strict upbringing, regimental.
No family history of enuresis.

Progress: Baseline — wets 2 times every night.
28.1.82 — 1st session.
31.3.82 — 2 wet nights in 1 month.
Patient defaulted follow-up
No report of relapse since then.

Case No. 2:

Personal History: TGK, Male, Chinese, 11 yrs 6 mths.
No significant childhood illness.
Pr 6, passed exams yearly.
Average IQ.
Described as lasy, indifferent to daily activities, playful.

Family History: Youngest of 10 children.
Father working. Mother very protective and helpless type.
No family history of enuresis.

Progress: Baseline — wets 1-2 times every night.
On imipramine for 5 months with poor response.
19.4.82 — 1st session.
25.7.82 — 4 dry nights in 2 weeks.
12.8.82 — 5 consecutive dry nights.
7.9.82 — 5 dry nights in 3 weeks.
Subsequently defaulted.

Case No. 3:

Personal History: LCK, Male, Chinese, 8 yrs 8 mths.
No significant childhood illness.
Pr 3, good student.
Bright-normal IQ.
Rather playful, stubborn, demanding.

Famiy History: Younger of 2 children, sister 12+ yrs.
Father working. Inconsistent discipline.
Mother not firm with him.
No family history of enuresis.

Progress: Baseline — wets once almost nightly.
18.1.82 — 1st session.
26.5.82 — 16 dry nights in 1 month.
28.10.82 — relapsed with only 4 dry nights in 2 weeks.
12.11.82 — Mother requested to see doctor for medication.

Case No. 4:

Personal History: NF, Female, Eurasian, 6 yrs.
No significant childhood illness.
Attending kindergarten regularly.
Average IQ.
Cheerful, friendly, well-mannered.

Family History: Elder of 2 children. Brother 3 yrs old, still wetting.
Father, businessman, had enuresis as a child.
Mother, anxious over child's wetting.

Progress: Baseline — wets 1-2 times every night.
30.4.82 — 1st session.
28.5.82 — 3 dry nights in 1 month.
18.6.82 — 10 dry nights in 3 weeks.
16.7.82 — defaulted.
20.11.82 — Mother confirmed child stopped wetting 2 months ago.
No relapse.

Case No. 5:

Personal History: TKW, Male, Chinese, 7 yrs 9 mths.
No significant childhood illness.
Pr 2, good student.
Average IQ.
Pleasant, obedient boy.

Family History: Elder of 2 boys.
Father, electrician, hot-tempered.
Mother, anxious over child's wetting.
Warm-type.
Uncle has history or bed-wetting.

Progress: Baseline — wets 2-3 times nightly.
4.2.82 — 1st session.
4.3.82 — 20 dry ngihts in 1 month.
Defaulted subsequently because no appointments given.
22.10.82 — Relapsed. Resumed treatment.

17.12.82 — 3 wet nights in 3 weeks.
15.1.83 — 2 periods of 5 consecutive dry nights past 1 month.
On follow-up monthly.

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