Family Practice Grand Rounds

An Adolescent Enuretic: Primary Care Management of the Patient in a Multiproblem Family

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DR. RICK SHEPARD (*pediatric resident in the Department of Community Medicine*): At today's Grand Rounds, the problem of an adolescent with enuresis in a multiproblem family will be presented. Dr. George Mellendick, pediatrician in the Department of Community Medicine and Director of the Adolescent Clinic, will speak about the incidence, diagnosis, and management of enuresis in everyday practice. This will be followed by open discussion.

The Gonzalezes (name has been changed) are a nuclear family. The father, mother, and eight children share a five-room apartment, with three bedrooms. Previously they had lived in a deteriorated area of the Bronx, and had been burned out of their homes several times. The children have attended many different schools, as the family has moved from one district to another. The family has numerous health problems, none particularly uncommon or bizarre. There are a variety of social problems as well. Health care services for the Gonzalezes have been, as we might expect, fragmented. A variety of agencies and hospitals have been involved at different times. Arturo Gonzalez, the index case, was brought to our primary care clinic one year ago. By now we have seen all the family members and have begun to pull the situation together.

Mr. Gonzalez is 40 years old and disabled by an old hip injury. Mrs. Gonzalez is 30, obese, and hypertensive. She has "dizzy spells" followed by drowsiness and by 15-minute naps. She has severe pains in the neck when angry or upset, a common event. She appears to love and worry about her children, but at first was not able to appreciate them as individuals because their problems were overwhelming and chronic: the burn scars on her 15-year-old daughter; the enuretic son; the child with the heart murmur; and his brother, a postsurgical patient for tetralogy of Fallot; the poor reader; the one who rocks in bed all night; even the one with two front teeth missing (Figure 1).

Arturo is a 12-year-old boy. When we first met him we found him likeable but withdrawn. He apparently had never had complete bladder control. There was no problem during the waking hours, but he wet his bed regularly at night. The past medical and perinatal histories were negative. There was no urinary tract infection, allergy, diuretic usage (including caffeine, cola, and tea) or increased thirst. Neither his mother nor his teachers felt that the boy had a behavior problem. There

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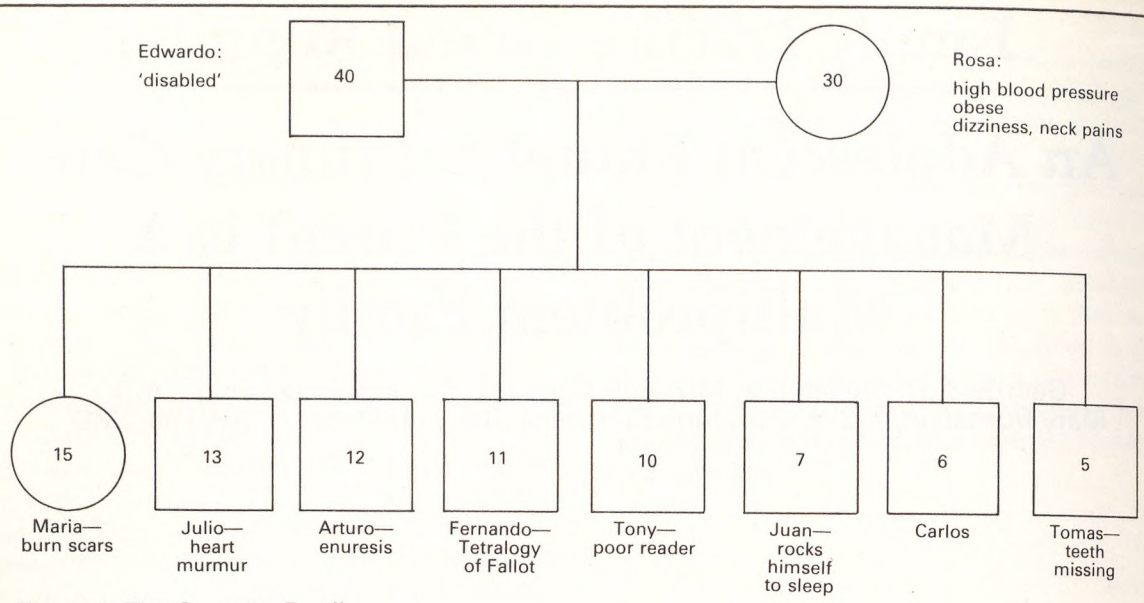

Figure 1. The Gonzalez Family

was no acting-out, lying, stealing, or drug or cigarette use. There was compulsive nailbiting, however. Performance in school was poor, and there was some question about promotion to the next year.

There was no family history of enuresis, diabetes, or otologic or renal disease, although a distant relative had renal insufficiency. The initial physical examination, which was conducted after the mother left the room, revealed a well-developed, well-nourished, normotensive boy without specific complaint; he was in the 50th percentile and 75th percentile for height and weight, respectively, and Tanner stage IV[1] with normal genitourinary findings.

Despite these normal findings, we recognized that this child had serious disorders. Not only did he have enuresis, but his school problems were of great magnitude as well. His grades were Ds and Fs. He really could not read or write. He had passed upward from grade to grade chiefly because he was not a behavior problem. He was a "good" student according to his teachers, although he could not do the class work.

DR. GEORGE MELLENDICK (*pediatric attending physician, Department of Community Medicine and Director, Adolescent Clinic*): It was important that you performed the first physical examination in privacy with this adolescent boy. When the complaint is enuresis, issues of self-worth and value as a person are raised. You are more likely in a one-to-one situation to engage the adolescent, get at his feelings, learn how he reacts to the bedwetting. You may also gain some insight into his view of his own place within his family. Furthermore, the first contact is the crucial time to initiate a relationship and to establish a contract, an essential part of any management plan in a case of enuresis in the adolescent.

Just as the child with enuresis, especially the

older adolescent, requires a certain special approach, so too does the parent. The shame and embarrassment associated with this problem must be dealt with. Parents often feel responsible for the symptom and waver greatly in their response to it. This accounts for the well-documented[2] parental inconsistencies that arise in response to the enuretic child. These inconsistencies make it immensely difficult for the child to fathom precisely what is going on.

DR. SHEPARD: The enuresis was only one of many problems in this family. It was felt, however, that this was the problem that should be focused on first. At the same time, plans were made for continuing education of the parents for their own health care and for management of the other children in the family.

An approach to the problem of enuresis will be addressed, followed by a discussion of total family care management.

DR. MELLENDICK: Enuresis is really a lack of bladder control. In primary enuresis, control was never obtained; in secondary enuresis, there was a period of control, subsequently lost. When we use the term "enuresis" we usually mean "nocturnal enuresis." "Diurnal enuresis" is used to describe daytime, waking enuresis.

The causes of enuresis are multifactorial, involving issues of development, environment—including stress of various sorts—and familial tendencies. Difficulties of socialization and psychiatric disorders have also been recognized as causes. There is general agreement that organic etiologies by themselves are uncommon; only about five percent of all enuretic children will be found to have any significant physical cause.[3] Although, of this group, most difficulties are in the urinary tract, only one to three percent of all enuretic children have any urologic abnormality of major significance.[4]

The sex incidence varies with age. At six years of age, there are approximately equal numbers of male and female enuretics; at age eleven, the ratio of male to female is 2 to 1.[5]

Enuresis is common, at one time or another affecting from 10 to 16 percent[6] of all school-aged children. The incidence decreases to three percent in adolescence. In the 18 to 19-year age group, it falls to one percent.[6] In most cases, enuresis is self-limited, with spontaneous remissions occurring most frequently during the 6 to 7-year age period and at puberty.[7] Remissions correlate with periods of neurophysiological maturation of the urological system.[8] Furthermore, as many as 25 percent of all children may at one time or another experience relapse bedwetting.[9]

Less than ten percent of all enuretics are daytime wetters.[2] Although it is not so in Arturo's case, one can often elicit a family history in as many as 40 percent of families. Note that if there is a child with enuresis in a family, then there is about a 70 percent chance that another child will also have the problem.[10]

DR. KATHY KIRNON (*pediatric resident, Department of Community Medicine*): When does one make the diagnosis in a child?

DR. MELLENDICK: One should wait until at least the age of five in girls and six in boys to diagnose and proceed with the work-up for enuresis. The extent of the work-up depends on the history and physical examination. Generally a complete blood count, urinalysis, blood glucose, urine culture and sensitivity tests are required. If personal or family history is positive for urinary tract disease, then an intravenous pyelogram and voiding cystourethrogram must be carefully considered, but they should by no means be ordered as part of the initial evaluation of every child who presents with enuresis.

There have been recent reports that many children with enuresis have decreased bladder capacity, bladder instability, and abnormal detrusor function; this has been demonstrated by cystometry.[11,12]

DR. SHEPARD: The fact that this boy was 12 years old, postpubertal, and had a distant family history of renal disease led us to schedule the intravenous pyelogram and voiding cystourethrogram. They were normal.

MS. MARY BURNSTEIN (*social worker, Department of Community Medicine*): Can enuresis be caused by unduly rigid early toilet training?

DR. MELLENDICK: Rigid toilet training may be associated with problems of urinary retention. Too early or punitive training that ignores the child's psychologic and physiologic readiness has been clearly linked to incontinence.[13] One must also correlate problems of bladder control with developmental milestones. In Arturo's case, they were within normal limits.

The varieties of treatment used for enuretic patients are: treatment of underlying physical

cause, if any; use of conditioning devices; bladder distension techniques; and/or drugs.

MS. BURNSTEIN: What about the place of psychotherapy in management?

DR. MELLENDICK: I feel that psychotherapy is not indicated for control or management of enuresis itself. This is not to say, however, that a one-to-one relationship is not valuable in dealing with the enuretic child as a person. Support and encouragement are essential, but so is firmly suggesting, when appropriate, that the child is the one responsible for the bedwetting.

Alarm devices have been used widely, especially in the British Isles. Such devices are based on conditioning principles. A wet bed sets off an alarm. The success rates vary, with some reports of remission as high as 75 percent.[14] Primary enuretics seem to respond more favorably than secondary enuretics. Relapses are frequent, however. The device demands rigid adherance to setting-up instructions. Many of the English studies have been carried out in institutions. This form of dry-bed training is truly an intensive program. There is question about the possible pernicious nature of the device on the child. Difficulties include imporper set-up, burns, and child-parent resistance.

Bladder distention has been used in enuretic children whose capacity is reduced. Studies[11] have shown that maximum and mean bladder capacities in enuretic children are less than in controls of the same age. With bladder distention, however, only about 25 percent of the children remit.[11] The question of pain of distention is also important to consider here.

There has been important success with the use of pharmacologic agents. Imipramine is a tricyclic antidepressant. Its mode of action in enuresis is not clearly understood. It may act through an anticholinergic effect on the bladder detrusor muscle, or through a central nervous system stimulant effect which may in some fashion alter the phases of sleep.

The dosage is generally 25 mg about an hour before bedtime. This may be gradually increased to 75 mg in the older patient.

Approximately 25 to 40 percent of enuretic patients improve on imipramine.[15] Relapse rates may be as high as 50 percent, but can be significantly reduced by decreasing the dosage slowly, after success is achieved, rather than by cutting the drug abruptly. Side effects include nervousness, headache, gastrointestinal upset, and problems in sleeping. Data suggest[16] that imipramine acts as a stimulant in children; this presumably explains the weight loss which is observed in children on this medication.

Side effects, such as urinary retention, blurred vision, dry mouth, and constipation, may be attributed to the atropinic effect of imipramine. Often the patient adjusts to these.[17]

Cardiovascular disturbances have also been reported. Hypertension and tachycardia are sometimes seen. Rarely, there are serious arrhythmias, convulsions, and coma. Electrocardiograms may show flattened or inverted T waves. Some arrhythmias may be controlled with the use of parasympathomimetic drugs, such as physostigmine (1 mg intravenously).[18]

Imipramine decreases the alpha activity on electroencephalogram and increases both theta and fast beta activities.[17] Some investigators have felt that the drug's effect in enuresis is due to a lightening of deep sleep periods.

A reversible type of obstructive jaundice, agranulocytosis, and eosinophilia have also been reported as side effects.

In general, however, side effects are minimal and, with increasing availability and use of tricyclic antidepressant blood levels, control and prevention of the more serious side effects should become routine.

DR. PHILIP W. BRICKNER (*Director, Department of Community Medicine*): This case, then, is a 12-year-old boy with primary enuresis in a multiproblem family. His history and physical examination are not particularly revealing. An initial work-up has ruled out systemic, genitourinary, and neurologic diseases unrelated to maturational development. Please discuss the therapeutic approach for this child.

DR. MELLENDICK: The management of the enuretic child, especially in such a family, is a long-term project indeed.

DR. SHEPARD: Because this was a multiproblem family, our approach was multidisciplinary. An attempt was made to engage the family in an organized health care plan by compartmentalizing problems, using our team approach. The social worker was instrumental in giving the parents some structure and continuing support, which led to a remarkably high degree of compliance. The

nurse worked with each member of the family on issues of health maintenance and prevention of problems. In this way, each person in the family had a stake in success and began to see that the family's many serious problems could be handled. As for the boy, after a relationship was established with the physician, imipramine was begun at 25 mg at bedtime each night.

Before therapy, he was bedwetting nightly; afterwards, bedwetting was infrequent, about once in two to three weeks. We feel there has been a ripple effect as well; his self-esteem is improved, he is relating better to others, and is now prepared, with support, to work at the difficulties in school.

MS. BURNSTEIN: The success we have had so far with Arturo cannot be related only to the drug. The parents were given support so they could deal with the problem in a consistent and constructive manner for the child. They were allowed to talk about their fears and anxieties about the bedwetting.

After some of the medical problems were addressed, and the patient and the parents understood the necessity of the action, we contacted the school directly. The teachers and the guidance counselor were helpful in giving us their impressions of the boy.

Clearly, this boy needs much remedial work, tutoring as well as very basic instruction in English; this will be arranged through the school and other community agencies.

MS. CATHY CRIMMINS (*registered nurse, Department of Community Medicine*): It is wise to be nonjudgmental and to convey sincere empathy. In Arturo's case, it was important to appreciate how distressing bedwetting is to a 12-year-old boy, and also to understand how difficult it was for his mother to cope with wet sheets every day, as well as the needs of seven other children, a husband—and two dogs—in a five-room apartment.

DR. BRICKNER: Has the mother been taken care of for her own problem—the hypertension? Is there any question, do you think, of her feeling that she does not deserve to take care of herself?

DR. SHEPARD: Only lately, as some of the specific problems of the children have been dealt with, has the mother recognized the importance of her own health care. And now she seems to be ready and committed to seeking ongoing care for herself.

DR. MELLENDICK: This illustrates a common principle in the primary care approach to the multiproblem family: that with a stable team of health care personnel who have particular and complementary skills, a family with overwhelming problems can be helped.

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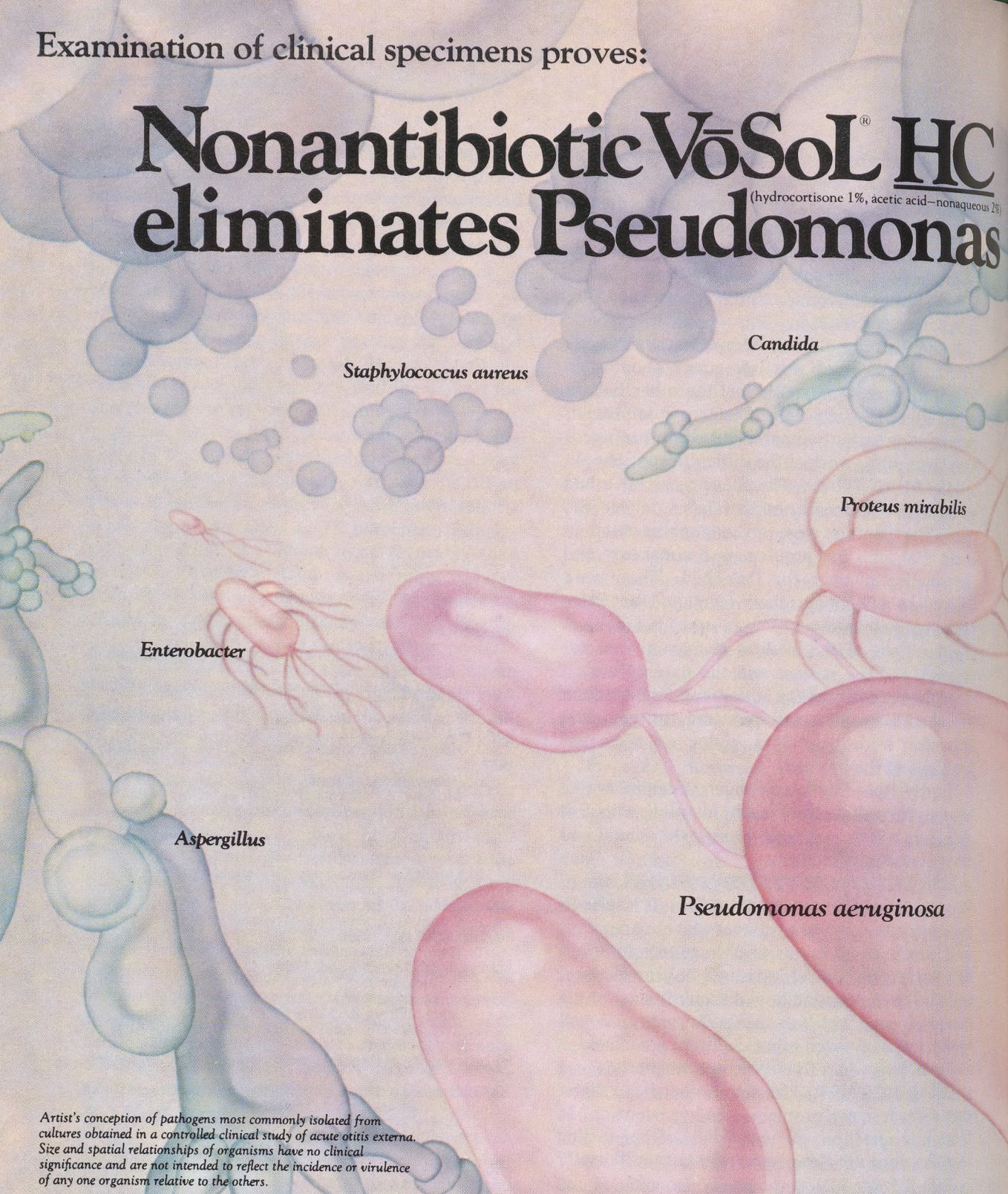

Artist's conception of pathogens most commonly isolated from cultures obtained in a controlled clinical study of acute otitis externa. Size and spatial relationships of organisms have no clinical significance and are not intended to reflect the incidence or virulence of any one organism relative to the others.

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