PART E
Elimination Disorders

11 Elimination Disorders: Functional Encopresis and Functional Enuresis

Essential Concepts

- A biological etiology must be ruled out in all cases of enuresis and encopresis.
- Nocturnal enuresis may be developmental and tends to run in families.
- New onset of nocturnal or daytime enuresis or encopresis in a child that has previously been toilet trained needs to be investigated for medical issues as well as trauma or severe psychosocial stress.

CLINICAL DESCRIPTION

Elimination disorders first come to the attention of pediatricians when a child is having difficulty with toilet training. Children are toilet trained at widely different times depending upon development, culture, and techniques utilized to help the child learn. Functional encopresis is fecal soiling in clothes or inappropriate places at least once monthly for at least 3 months in a child that is 4 years old or older, when full bowel control is developmentally expected. Functional enuresis is repeated voiding of urine during the day or at night at least twice weekly for at least 3 months, causing functional impairment and with an age (chronological or mental age) of at least 5 years.

KEY POINT

Some children do not learn to use the toilet within an expected time frame. This is called primary enuresis or encopresis.

Children who are toilet trained but revert back to soiling or urinating during the day or at night after being continent for at least 1 year are said to exhibit secondary enuresis or encopresis. Both sets of disorders require a medical workup to rule out medical causes.

TIP

Extreme stress or abuse (particularly sexual abuse), as well as a new onset medical condition (such as diabetes), should be suspected and assessed in all cases of secondary enuresis or encopresis.

FUNCTIONAL ENCOPRESIS

Encopresis typically occurs during the day. Many children may deny soiling, even when stool is discovered in their underwear or the odor is obvious. Primary encopresis constitutes about half of the cases and is more common with boys with developmental delay. Children with secondary encopresis experience higher levels of psychosocial adversity and may demonstrate conduct problems.

There are two types of encopresis—that with constipation and overflow incontinence (called retentive encopresis), and that without. Children with retentive encopresis often respond positively to treatment of constipation.

Epidemiology

An estimated 1% of 5-year-olds suffer from encopresis, with boys 2.5 to 6 times more commonly affected than girls. Children with lower cognitive functioning and lower socioeconomic status tend to have higher rates as well.

Etiology

Retentive encopresis often starts with a child who has toilet-related fears, inadequate or punitive toilet training, or constipation which makes defecating painful. This may set into motion a cycle of increased avoidance of using the toilet.

When constipation is more severe, colon motility decreases and, in severe cases, megacolon with decreased sensation may result. Liquid stool leaks around the impaction and the child is unaware and unable to exert control. Stress-induced diarrhea may also cause encopresis. Nonretentive encopresis is the deliberate soiling in inappropriate places. Deliberate soiling suggests that the child is experiencing extreme distress which he/she is unable to communicate directly (e.g., anger, fear of abuse, or severe psychosocial stress) or may be secondary to anal masturbation, sexual abuse, or severe conduct issues. Nonretentive encopresis is more difficult to treat.

Assessment

The assessment includes a standard complete psychiatric evaluation. Additionally, a detailed history of bowel function, nature and pattern of soiling, attempts to train or treat, bathroom habits, and environment is needed. This is a prototype disorder for pediatric–child and adolescent psychiatric collaboration. Physical disorders (Hirschsprung disease or congenital megacolon, irritable bowel or inflammatory bowel disease, thyroid disease, hypercalcemia, lactase deficiency, spina bifida or other neurological disorder, rectal stenosis, anal fissure or anorectal trauma) need to be checked and ruled out.

The psychiatric evaluation includes assessment for associated emotional disorders. Phobic or anxious children may avoid using the toilet (especially in public places), with soiling when they can no longer "hold it." Highly impulsive children with ADHD or other disorders may not stop to go to the bathroom. Oppositional, angry, or abused children may soil willfully. Mentally retarded children may have difficulty with hygiene and have difficulty learning to use the toilet appropriately.

Treatment methods for functional encopresis are provided in Table 11.1.

FUNCTIONAL ENURESIS

Bedwetting is more common than daytime incontinence. Most children achieve daytime bladder control 1 to 2 years prior to nighttime control. It is unusual for a child to display daytime enuresis without nocturnal enuresis. Children with encopresis often also display enuresis. The constipation may lead to vesico-ureteric reflux and chronic urinary tract infections as well.

TABLE 11.1. Treatment of Functional Encopresis

	Retentive Type	*Nonretentive Type*
Medical	Laxatives and bowel cleanout Stool softeners to prevent constipation Cisapride a possible treatment	No specific medical intervention
Education	Educate about bowel function Educate about bowel hygiene	
Psychosocial	Relaxation training Regular toileting routine Behavioral treatment Biofeedback Psychotherapy for associated disorders	Behavioral shaping Regular toileting routine Parent-management training Assessment and treatment if abuse or high environmental stress Individual and family therapy

There are three types of enuresis: nocturnal only, diurnal only, and both nocturnal and diurnal. Primary enuresis (85%) is more common than secondary (15%) enuresis.

Epidemiology

An estimated 5 to 10% of 5-year-olds and around 3 to 5% of 10-year-olds suffer from enuresis. This rate decreases to 1% by adolescence and adulthood. Boys display more primary enuresis than girls. For both boys and girls, there is a spontaneous decline of 5 to 10% of cases per year. Secondary enuresis has similar incidence in boys and girls.

Etiology

There seems to be a strong genetic factor for primary enuresis. Approximately 70% of children with enuresis (especially boys) have a first-degree relative with functional enuresis.

It may be "maturational," as children with primary enuresis tend to have small-volume voiding, low mean bone age, delayed sexual maturation, and short stature. The relationship between emotional upset and enuresis is not clear. Children with anxiety disorders may avoid bathrooms, with resulting incontinence. Children with ADHD tend to have higher rates of enuresis. The relationship between sleep architecture and nocturnal enuresis is unclear, but under investigation.

Assessment

Initial medical evaluation is required to rule out medical causes (urinary tract infection, urethritis, diabetes mellitus and insipidus, sickle cell trait, seizure disorder, neurogenic bladder, genitourinary abnormality, some medications). Family history should concentrate on other family members with a history of enuresis, as well as on family history of diabetes or renal disease.

The psychiatric evaluation should concentrate on the assessment of associated psychiatric symptoms (especially anxiety and ADHD), recent psychosocial stressors or trauma, and family concern about management of the symptoms. Early psychoeducation should stress low emotionality toward the child when he wets and helping the child learn to care

TABLE 11.2. Treatment of Functional Enuresis

	Nocturnal	*Diurnal*
Medical	Bladder training Bell and pad Desmopressin Tricyclic antidepressant	Bladder training TCA
Educational	Hygiene and cleanliness training Fluid restriction at night Waking the child to void in the night	Hygiene and cleanliness training
Psychosocial	Monitoring and reward for staying dry Avoid punishment or ridicule Psychotherapy for associated disorders	Behavioral program Regular toileting times Psychotherapy for associated disorders

for himself. Additionally, addressing issues of distress, embarrassment, and affront to self-esteem is required.

The medications used to treat nocturnal enuresis include tricyclic antidepressants (usually imipramine) and desmopressin (DDAVP), which is an analog to antidiuretic hormone and decreases urine output. The bell and pad is a devise that sounds an alarm when it becomes damp. When a child urinates in his sleep, the alarm sounds and wakes up the child and family. Through a classical conditioning paradigm, the child then begins to wake up spontaneously before voiding.

Treatment methods for functional enuresis are provided in Table 11.2.