

Encopresis in an Adolescent Treated by Imipramine: A Case Report

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ABSTRACT

Although encopresis is a rare disorder that is virtually absent by 16 years of age in children who show normal cognitive function, this condition creates abundant distress for patients and their families. There is a strong relation between encopresis and enuresis, and they share some of the same etiologies and treatment, but they differ in other ways. Information regarding pharmacologic treatment of encopresis remains very limited, and all studies are case reports. Herein, I described a boy with persistent adolescent encopresis and enuresis who was treated principally with imipramine. At the end of our observation period, we were pleased to note a very favorable response regarding encopresis, and a complete response regarding enuresis. We thus wish to supplement the currently available literature in this area with this novel result.

Keywords: Encopresis, Children, Adolescent, Enuresis, Neurons

INTRODUCTION

The developmental milestones in controlling bowel and bladder function are complex processes that involve motor and sensory functions, are coordinated through frontal lobe activities, and are regulated by neurons in the pons and midbrain areas. Proficiency in bowel and bladder function is thus achieved over a period of months for the typical toddler. Control of daytime urination is usually complete by the age of 2.5 years, and control of night-time urination by 4 years of age when bowel control is also usually accomplished¹. Toilet training is affected by many factors-including a child's intellectual capacity and social maturity, cultural determinants, and psychologic interactions between the child and parents¹. The ability to control bowel and bladder functions depends upon the maturation of neurobiological systems, such that children with developmental delays may also display delayed continence with respect to both bowel and bladder². When children exhibit incontinence of urine or feces on a regular basis, this is alarming to both the child and family, and it is often misunderstood as voluntary misbehavior.

Encopresis is defined as both voluntary and involuntary passage of feces in inappropriate places in a child aged 4 years or older, after organic causes have been eliminated³. Encopresis is even more stigmatizing than enuresis and urinary incontinence, and it is associated with high levels of distress for both children and parents.

According to DSM-5, encopresis is diagnosed when feces are passed into inappropriate places on a regular basis (at least once a month) for 3 months⁴. Ninety percent of chronic childhood encopresis is considered to be functional¹. Children with this disorder typically withhold feces by contracting their gluteal muscles, holding their legs together, and tightening their external anal sphincter. In some cases, this is an entrenched behavioral response to previously painful bowel movements owing to hard stool, and it leads to fear of defecation and withholding behaviors. Encopresis also involves an often-complicated interplay between physiologic and psychologic factors that lead to an avoidance of defecation^{5,6}.

Evidence indicates that some encopretic children experience lifelong inefficient and ineffective sphincter control, while others experience soil involuntarily, either because of an inability to control the sphincter

adequately or because of excessive fluid caused by retentive overflow. In approximately 5% of cases, fecal incontinence is caused by medical conditions that include abnormal innervation of the anorectal region, ultrashort-segment Hirschsprung disease, neuronal intestinal dysplasia, or spinal cord damage³. One study revealed that encopresis occurred with significantly greater frequency among children who underwent known sexual abuse or other psychiatric disorders, compared with a sample of healthy children. Encopresis, however, is not a specific indicator of sexual abuse.

Encopresis can in some cases be considered secondary, i.e., emerging after a period of normal bowel habits in conjunction with a disruptive life event, such as the birth of a sibling or relocation to a new home. When encopresis is manifested after a long period of fecal continence, it may reflect a developmental regressive behavior based upon a severe stressor such as parental separation, loss of a best friend, or unexpected academic failure. Encopresis has been estimated to affect 3% of 4-year-olds and 1.6% of 10-year-old children, with incidence rates for encopretic behavior decreasing drastically with increasing age. Between the ages of 10 and 12 years, encopresis is estimated to affect 0.75% of typically developing children, but it is virtually absent by the age of 16 years in youth with normal intellectual function^{7,8}. Males are found to be from three to six times more likely to experience encopresis than females, and a significant relationship exists between encopresis and enuresis^{5,9}.

Enuresis is the repeated voiding of urine into a child's clothes or bed, and the voiding may be involuntary or intentional. For the diagnosis to be made, a child must exhibit a developmental or chronologic age of at least 5 years. According to DSM-5, the behavior must occur twice weekly for a period of at least 3 months or must cause distress and impairment in functioning so as to meet the diagnostic criteria⁴. Enuresis is diagnosed only when the behavior is not caused by a medical condition. The prevalence of enuresis ranges from 5 to 10% in 5-year-olds, 1.5 to 5% in 9- to 10-year-olds, and ~1% in adolescents 15 years and older¹⁰. Enuresis involves complex neurobiological systems that include contributions from cerebral and spinal cord centers, motor and sensory functions, and autonomic and voluntary nervous systems¹¹. Daytime enuresis may also occur in the absence of neurologic abnormalities, resulting from habitual, voluntary tightening of the

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external sphincter during urges to urinate. Genetic factors are believed to play a key role in the expression of enuresis, given that the emergence of enuresis has been found to be significantly greater in first-degree relatives. Psychosocial stressors also appear to precipitate enuresis in a subgroup of children with the disorder. In young children, the disorder is specifically associated with the birth of a sibling, hospitalization between the ages of 2 and 4 years, the start of school, separation of a family owing to divorce, or relocation to a new environment.

Encopresis is principally treated by evaluating its causes and managing it with laxatives when the cause is constipation and using non-pharmacologic options such as toilet training when there is a history of inadequate toilet training or cognitive behavioral therapy if it is a result of underlying neurosis. As for enuresis treatment, this also depends primarily on non-pharmacologic options after ruling out medical causes, including alarm therapy, toilet training, and cognitive behavioral therapy for the patient and family.

IMIPRAMINE FOR ENCOPIRESIS AND ENURESIS

Pharmacologic treatment has not to this point been meaningful in the treatment of encopresis. "There have been only 15 reported cases of children with encopresis who responded to imipramine over the years, and there was a recent report of similar results with amitriptyline. Imipramine¹², however, has been the pharmacologic mainstay of treatment for enuresis since MacLean, an Australian psychiatrist, first reported its efficacy in 1960¹³. Since that experience, it has been used widely for this purpose and has been well studied, while another pharmacologic options, such as desmopressin, has also appeared in use recently.

CASE PRESENTATION

At the time of presentation, A.H. was a 16-year-old Saudi boy, the second of 5 siblings and in his first year of high school, who was living with his parents in southwest region of Saudi Arabia. He was referred to my clinic after his parents booked appointment to assess him regarding persistent involuntary passing of stool and bed wetting since the age of 7. A history obtained from the patient and his parents separately was reliable and informative.

The main concerns of the patient and his parents were involuntary, non-painful, and frequent passing of stool that started at the age of 7 after he had controlled his daytime and nighttime defecation and urination for about 2–3 years. The phenomenon was insidious and without any apparent rationale. The passing of stools was involuntary, differed in amounts at various times, and differed in its frequency from semi-daily to semiweekly, and it occurred mainly in the daytime and very rarely at night. This situation made the boy's life uncomfortable and prevented him from participating in many enjoyable activities. We noted no obvious period of full recovery or cure. The patient's history was negative for constipation, and both he and his parents disclaimed any psychologic difficulties such as a new home, role, sibling, or family conflicts. The patient also contradicted any type of abuse at home or school.

The encopresis affected multiple aspects of his life. He lived in a separate room so as to avoid soiling the furniture, owned his own washing machine, and he and his family no longer attended social gatherings as he previously underwent some embarrassing incidents at his school. The boy's passing of stools was also associated with frequent involuntary nighttime voiding of urine at least once or twice weekly, but he did not display uncontrolled daytime urination. This condition also affected his personal life, but much less than the uncontrolled passing of stools.

Regarding urine voiding, the patient did not reveal a history of frequent fever, flank pain, urgency, or dysuria. The boy also denied delaying urination until his bladder was full. Despite being shy, manifesting low self-esteem, being closely attached to his mother, and becoming anxious when he faced a novel experience, he did not provide evidence of present pathologic anxiety, panic attacks, specific fears, or social-anxiety symptoms. There were no symptoms of low mood, loss of interest, changes in his behavior, or vegetative symptoms. He also refuted experiencing any obsessive thoughts or compulsive actions, or any type of repetitive behaviors. He also refuted having abnormal experiences or symptoms showing impaired reality test.

According to his parents, there was no evidence of symptoms or signs that suggested the presence of childhood hyperactivity, impulsivity, or inattention, and he did not have any delays in his milestones or the existence of autistic symptoms. He grew normally and was not exposed to risk factors in utero or neonatally. There was no known history of any chronic medical disease such as diabetes, hypertension, asthma, allergy, or seizures, and he had not undergone any surgical or other procedures.

His parents are in their 40's and healthy, with a below-average education. They are very supportive and patient, but because of the scarcity of health services and distance from their residence, they were unable to quickly present their son to a doctor for diagnosis and treatment. There was no family history of mental illness, including encopresis or enuresis.

Also, their financial and social conditions were stable. The academic performance of the patient was moderate and he passed all levels without failure, and he also assisted his family in many ways. Although the patient was shy during the few minutes of interview, he became more comfortable later, and his mental state and physical examination did not require any revision to his clinical findings. He was seen by a neurologist 1 year previously who had performed a brain and spinal MRI with normal results, and the impression upon spinal MRI was "No overt cord or cauda equina abnormality detected".

At the patient's appointment, we decided that before providing a diagnosis of encopresis and enuresis, we would refer him to our general central hospital to eliminate any other medical causes, specifically with respect to gastroenterology. Thus, he was seen by a gastroenterologist, and he underwent colonoscopy, anorectal manometry, abdominal x-ray, and basic investigations—all with normal results and no pathologic findings detected. He also underwent pelvic MRI at the same time without significant results.

DISCUSSION

At this time, we decided to start a provisional diagnosis of encopresis and enuresis, and we discussed with the patient and his parents our diagnosis and explained to them in detail the nature, course, prognosis, and management options with respect to the disorder, with positives and negatives of every option in addition to reassuring and supporting them.

After psychoeducation, we encouraged him to eat a healthy diet replete with fiber despite issuing no complaints of constipation, and to exercise at moderate intensity as much as possible. We additionally motivated the family to create a healthy, safe, and non-punishing environment with positive reinforcement. We advised the boy regarding fluid restriction before going to sleep at night and to avoid diuretic drinks. We unfortunately lack abundant non-pharmacologic options at our hospital, and we do not have a psychologist trained in such cases or

in toilet training; we therefore attempted to explain to him how such training works. Thus, we referred him to a psychologist who introduced behavioral therapy regarding some possible manifestations of anxiety, which helped to improve his self-confidence. We also executed an IQ test, which showed a revised score below the average (73).

When we did not observe any progress in his condition several weeks after all of the procedures were performed, we offered to start the boy on imipramine. We explained to the boy and his parents the doses, course of treatment, and side effects if they accepted. We started him on imipramine at a dosage of 25 mg orally daily 1 hour before sleep, and we followed up with an appointment after 2 weeks. He arrived at his appointment with only slight improvement and no side effects, and we therefore adjusted the dose to 50 mg on the same schedule, with a 2-week follow-up.

At the next appointment, he showed better improvement, but there was still only a partial response without side effects. We then increased the dose of imipramine to 75 mg on the same schedule, with a 3-week follow-up. At this subsequent appointment, we were pleased by a report of a full response and remission regarding enuresis, and a favorable response (about 70–80%) regarding encopresis. He passed stool abnormally only once during the previous 3 weeks, with only a small amount of feces. The results were encouraging and motivated us to continue working with this patient and his parents.

FUTURE PLANS

We will continue to implement the same dosage with frequent follow-ups so as to achieve a full response with respect to the encopresis. We will also coordinate a referral to a specialized child center in another geographic region that could provide more specific services, and that could cover specialized non-pharmacologic aspects of the treatment. The boy will additionally be followed by a urologist a few months later to complete his medical assessment despite we expected no significant results.

CONCLUSION

We have to the present time observed a very favorable response regarding encopresis with imipramine at the specific dose of 75 mg, and we therefore encourage greater research efforts surrounding this rare topic. We noted a full recovery and cure regarding the enuresis.

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