Comorbid psychiatric disorders in 201 cases of encopresis

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Although encopresis is a common and complex disorder, relatively few studies have evaluated the comorbid psychiatric disorders in this condition. This study was performed to investigate the comorbid psychiatric disorders in encopresis. One hundred and sixty boys (79.6%) and 41 girls (20.4%) fulfilled the diagnostic criteria for encopresis according to DSM-IV. There was at least one comorbid diagnosis in 149 (74.1%) patients. The most frequent comorbid diagnosis was enuresis (55.2%). Clinical and demographical data were compared between patients with comorbid disorders and others. Primary encopresis was significantly more frequent in patients with comorbid disorders, and the mean age at admission was lower in these patients. The mean interval between the onset of symptoms and the diagnosis was significantly shorter in secondary encopretic patients with comorbid disorders. Furthermore, there were significantly more psychiatric disorders in the first-degree relatives of patients with comorbid disorders. Encopresis is frequently accompanied with a psychiatric disorder. Clinicians need to inquire about symptoms of other psychiatric disorders in patients who present with encopresis and vice versa.

Key words: encopresis, comorbid disorders, children.

Defecation at inappropriate times and places in a child who is at least four years old, either intentional or involuntary, is defined as encopresis. According to DSM-IV[1], it is required that the behavior is present for a minimum period of three months with a rate of at least once in a month, and that it is not due exclusively to the direct effect of a substance or a general medical condition. There are two subtypes of encopresis: with or without constipation and overflow incontinence. Constipation and overflow incontinence (retentive encopresis) may be present in two-thirds of the patients but may not accompany the disorder (nonretentive encopresis) in the remaining third[2].

The prevalence of the disorder has been estimated to be 1% to 3% in the general pediatric population[3,4], with higher rates (4%) in developing countries than in western countries[5]. Although this condition has long been recognized as common and problematic in pediatric clinics, the physiological and psychiatric correlates of encopresis have not been sufficiently studied. The research on physiological factors has focused primarily on pathophysiological factors related to the anal sphincter. Anal manometry and electromyography studies have demonstrated abnormal defecation dynamics such as nonrelaxation, lower pressures at rest and with squeezing[6,7] or paradoxical constriction of the external anal sphincter during attempted defecation[8]. Although there are reports that find little evidence to suggest a primary psychological problem[9,10], these reports are lacking a systematic psychiatric evaluation. Moreover, there are also reports claiming that abnormal defecation dynamics seem to not play a crucial role in the pathogenesis of childhood constipation[11]. Encopresis may occur in children with adequate bowel control who for a variety of emotional reasons, including anger, anxiety or fear, do not deposit the feces appropriately[12]. Inadequate or inappropriate toilet training[13], behavioral problems, early separation from the family[5], poor social competency and low self-esteem were demonstrated in children with encopresis[14-18].

Although there are some reports about the association of encopresis and having a psychiatric disorder[5,12], there are few systematic studies on psychiatric comorbidity in encopresis. Thus, the

aim of this study was to assess the psychiatric comorbid disorders in encopresis in relation to demographical and clinical variables such as age, gender, subtypes of the disorder, and frequency and chronicity of symptoms.

Material and Methods

In this report, clinical charts of patients with fecal soiling who were referred to the Department of Child Psychiatry in five consecutive years (1995-1999) were evaluated. These patients were assessed initially in the pediatric outpatient clinics to rule out physical disorders by physical examination, appropriate laboratory tests and consultations with pediatric subspecialties. Out of 7,480 patients who were seen in the outpatient clinic of Child Psychiatry in these years, 201 (2.7%) patients fulfilled the diagnostic criteria for encopresis according to DSM-IV. Measures consisted of retrospective analyses of clinical charts. The researchers independently re-evaluated the symptoms in these charts and confirmed the diagnosis of encopresis and comorbid disorders according to DSM-IV diagnostic criteria. Both authors were in complete agreement about the diagnoses in all of the cases. Statistical analysis was performed with a computer package program (SPSS 10.0.1999). The associations of the clinical and demographical data were calculated using chi-square test, t-test and ANOVA depending on the type of data. Specific effects of some comorbid disorders on the comparisons were controlled with multivariate analyses. All tests were two-tailed and values were considered significant at p less than 0.05.

Results

The sample consisted of 160 boys (79.6%) and 41 girls (20.4%). The mean age was 8 years (SD=2.5, range 4-16). Most of the patients came from nuclear families with moderate income level (80.6%, n=162). Mean schooling time was 9.3 years (SD=3.9, range 0 to 14) for mothers and 11.3 years (SD=2.9, range 5 to 14) for fathers.

The mean encopresis frequency was 20.2 per month (SD=11.5, range 1-30). Of the 201 patients, 62 (30.8%) had primary encopresis and 139 (69.2%) had secondary encopresis. The average age of onset for secondary encopresis was 6 years (SD=2.0, range 4-14), and the mean interval between the onset of symptoms and the diagnosis was 26.3 months (SD=22.0, range 1-108).

Constipation was reported in 44 (38.3%) patients. There was at least one comorbid diagnosis in 149 (74.1%) patients according to DSM-IV. These diagnoses (cumulative rates) were: enuresis (55.2%, n=111), oppositional defiant disorder (30.8%, n=62), attention deficit hyperactivity disorder (7.0%, n=14), stereotypic movement disorder (childhood masturbation) (6.0%, n=12), mental retardation (5.0%, n=10), anxiety disorders (3.5%, n=7), conduct disorder (3.0%, n=6), stuttering (3.0%, n=6), depression (1.5%, n=3), adjustment disorder (1.5%, n=3), tic disorders (1.5%, n=3), autism (0.5%, n=1), and trichotillomania (0.5%, n=1).

Clinical and demographical data were compared between patients with comorbid psychiatric disorders and others (Table I). Primary

Table I. Demographical and Clinical Correlates of Comorbid Psychiatric Disorders

	Comorbid Psychiatric Disorders		
	Present (n=149)	Absent (n=52)	Statistics
Gender (male %)	80.5	76.9	$x^2=0.31^{NS}$
Age (years)	7.9 (2.4)	8.6 (2.6)	$t=-2.07^*$
Interval between the onset of symptoms and the diagnosis (years)	1.9 (1.6)	2.7 (2.1)	$t=-2.07^*$
Father's education (years)	11.2 (3.0)	11.9 (2.7)	$t=-1.52^{NS}$
Mother's education (years)	9.2 (3.8)	9.5 (3.9)	$t=-0.35^{NS}$
Type of encopresis (primary %)	35.6	17.3	$x^2=6.027^*$
Encopresis frequency (per mo)	19.6 (11.5)	21.7 (11.5)	$t=0.35^{NS}$
Constipation (%)	61.4	74.6	$x^2=2.26^{NS}$
Psychiatric disorders in the first-degree relatives (%)	89.2	69.7	$x^2=8.91^{**}$

* $p<0.05$ ** $p<0.005$ ^{NS}Not Significant   All of the numbers in brackets are SD.

encopresis was significantly more frequent in patients with comorbid disorders, and the mean age at admission was lower in these patients. The mean interval between the onset of symptoms and the time of diagnosis was significantly shorter in secondary encopretic patients with comorbid psychiatric disorders. Furthermore, there were significantly more psychiatric disorders in the first-degree relatives of patients with comorbid disorders. These associations did not continue to be significant if controlled for patients with enuresis but not for patients with oppositional defiant disorder. Patients with and without comorbid psychiatric disorders did not differ in terms of other demographical variables like gender, parental education, socioeconomic status (SES) and clinical parameters like frequency of encopresis and presence of constipation.

Discussion

The findings of the present study suggest that most of the patients (74.1%) with encopresis had comorbid psychiatric disorders. Some of these disorders were seen more frequently than in the general population. Enuresis was the most frequent comorbid disorder (55.2%), two-fold greater than expected in the clinical population of this department and seven-fold greater than in the normal population, which is 7.8% in seven-year-olds[19]. These results are comparable with previous reports; most of the studies that evaluated the comorbidity of enuresis and encopresis reported similar rates. It was stated that half of the patients (50.4%) with encopresis were enuretics and 25% of the patients with enuresis had encopresis[5]. Primary encopresis was significantly more frequent in our patients with comorbid disorders. Similarly, Foreman and Thambirajah[20] found that boys with primary encopresis were more likely to have developmental delays and enuresis than boys with secondary encopresis. It is reported that constipation and encopresis interfere directly with bladder function[21], and that fecal retention, leading to hardening of the feces, can be a predisposing factor for urinary tract infection and enuresis[22].

Comorbid diagnoses with distruptive behavior patterns like oppositional defiant disorder (30.8%), attention deficit hyperactivity disorder (7.0%) and conduct disorder (3%) were also prevalent in our series. It is known that encopresis may be associated with other neurodevelopmental problems including easy distractibility, short attention span, low frustration tolerance, hyperactivity and poor coordination[12]. Furthermore, Cox et al.[23] had speculated that inattentive/impulsive children would be less able to recognize and respond to rectal distention cues or urges to defecate. In Johnston and Wright's study[24], 23.4% of children with encopresis had high scores on the hyperactive subscale. In another study, children with encopresis had significantly more attention problems and rated higher on the subscales measuring delinquent behavior when compared with nonsymptomatic children[23]. Foreman and Thambirajah[20] found that children with secondary encopresis had experienced more "psychosocial adversity" and were more likely to have comorbid conduct disorder. Regardless of whether the psychological issues or the encopresis occurs first, it is important to consider disruptive behaviors, because they likely affect the child's compliance with treatment[25]. Treating children with attention problems would help them to become more attentive to the internal cues associated with bowel movements, to resist the impulse to get up and leave the toilet prematurely, and to comply with regular toilet sitting[23].

The mean age at admission and psychiatric disorders in first-degree relatives were found to be related with the presence of comorbid disorders. The mean age at admission was lower in these patients. The mean interval between the onset of symptoms and the diagnosis was significantly shorter in secondary encopretic patients with comorbid disorders. Multivariate analyses revealed that these associations were significant if the child had comorbid enuresis. The genetics of enuresis is well documented; therefore it is predictable that there were significantly more psychiatric disorders in the first-degree relatives of these patients. However, it is not easy to understand why admittance for and diagnosis of encopresis alone was unacceptably late. It can be speculated that enuresis, when compared with encopresis, is a more discomforting but less embarrassing symptom for the parents, which may lead to a relatively early admittance.

On the other hand, demographical variables like gender and SES were not significantly different between patients with and without comorbid disorders. It is known that encopresis and most of these psychiatric comorbid disorders are predominately seen in males and that SES has little effect on their prevalence[2].

This study shares the limitations of retrospective studies in general. Accordingly, data relating to clinical parameters such as defecation dynamics, detailed psychosocial stressors or toilet training could not be determined systematically for each subject. Another limitation of the study is that it was carried out in a secondary psychiatric setting, which may limit the generalization of the findings. Nevertheless, the size of the current series and the comprehensive initial evaluation constitute the strengths of this study.

Physicians may miss comorbid disorders in children with encopresis. In addition to the medical evaluation, the pediatrist should focus on the individual/family medical history, developmental and dietary history, emotional/psychological factors, toilet training, and parental attitudes/responses to accidents[22]. Whether such disorders are causally related or the result of encopresis, these children require a much more intensive, multidimensional therapy.

In summary, encopresis is frequently accompanied by a psychiatric disorder. Clinicans needs to inquire about symptoms of other psychiatric disorders in patients who present with encopresis and vice versa.

Acknowledgement

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