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Advanced Pediatric Psychopharmacology: Clinical Case Presentation

Psychopharmacology in the School Setting: Therapeutic Challenges in an Adolescent with Attention Deficit Hyperactivity Disorder, Possible Bipolar Disorder, and Other Comorbidity

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INTRODUCTION

In communities in which child and adolescent psychiatric consultation is available to schools, the psychiatrist-consultant is often beset with a variety of challenging clinical issues. As the awareness and recognition of childhood psychopathology in schools has grown, teachers are frequently asked to manage children with disruptive behavior and other symptoms in their classrooms. The child and adolescent psychiatrist-consultant is thus often called upon to help with "behavioral management" of these youth. However, although one of the more powerful and effective therapeutic tools is pharmacotherapy, many parents are unwilling to accept recommendations for medication for their children.

John, whose case is described below, illustrates some of these challenges and dilemmas.

CASE PRESENTATION

Chief complaint

John is a 14-year-old Latino boy who had been disruptive in class for the past 2 years, resulting in frequent suspensions. Recently he recorded disturbing, provocative content and pictures in his school journal, and his teacher was very concerned about his inappropriate sexualized comments. John was subsequently referred for psychiatric consultation by his teacher.

History of present illness

For the past 2 years, John has been described as disruptive and provocative in school, particularly when he was asked to stay on task or perform for his teacher. His teacher reported that he had made sexual remarks, such as "I hate you, you are a lesbian, and you suck," "my balls are sore," or disrespectful comments such as "the teacher is stupid." He was described as laughing about a movie in which a woman was beaten. When the teacher read John's journal entries, she was alarmed by the content, which included a picture of a tree that looked like a penis and other inappropriate sexual content.

The assistant teacher described an incident in which John "threw the teacher's sweatshirt on the ground." Once when he was asked to leave the room, he reportedly swore at the teacher and security was called. He subsequently slammed the door and pushed a table. When the principal put her hand on his shoul-

der and asked him to stop, he accused her of "choking him and tearing his shirt."

In addition, teachers have apparently described periods of "grandiosity" in which John would see teachers as "inferior" and himself as "the leader." He was often distractible but had periods of hyperactivity and impulsivity, resulting in quiet room assignment more than half the day. He has often been described as hypervigilant as well.

In the initial psychiatric interview, mother described an on and off relationship between John and his father. She reported that she and John's father often had physical altercations during which police would be summoned to the home. More troubling, John's father had been incarcerated for indecent assault when he was a young child. Although John had known that his father had been in jail, mother thought that he did not know the reason, although he was aware. Mother tended to attribute John's behavioral difficulty to the lack of a male role model at home.

Psychiatric history

John began about 2 years of treatment with an individual therapist for disruptive behavior when he was in first grade. The therapist noted bizarre and unusual language production, raising the question of possible thought disorder. There was no evidence of thought disorder on neuropsychological testing at that time.

Mother reported that John and her family were involved in a 6-month intensive home-based service 2 years ago. In the past year, John had frequent visits to the psychiatric emergency room when his behavior was difficult to manage at school. John was reportedly evaluated at a tertiary hospital within the past 2 years and was given diagnoses of attention deficit hyperactivity disorder (ADHD) and bipolar disorder. There have been no psychiatric hospitalizations.

Neuropsychological testing

John was shown to be notable for borderline range of intellectual functioning and discrepancy between verbal and performance scores, with better nonverbal abilities. Significant language processing and production difficulty were also noted. It was felt that John needed extra time to process and produce academic work, including small segments of work with repetition and clarification and organizational assistance. Individualized instruction to address development of language-based academic skills was recommended.

Developmental history

John was mother's second pregnancy. There was no prenatal exposure to toxins or drugs, and the pregnancy was full term. John had jaundice at birth, which was treated with phototherapy.

Father lived in the home until John was 2, and he has had sporadic contact since then. Father was incarcerated for 3 years when John was between ages 2 and 5. Parents had a volatile relationship, and John and his siblings were intermittently exposed to domestic violence. The Department of Social Services had been involved for allegations of physical abuse and neglect, but the allegations were unsubstantiated. There was no known history of sexual abuse, although father had reportedly spanked John on the buttocks, which resulted in an investigation by the Department of Social Services.

Educational history

John first attended daycare at age 2 to 3 years. He was subsequently referred to a specialized preschool that he attended between ages 4 and 5 where he received speech and language therapy. He had about eight different placements for elementary school. He showed an academic decline in fourth grade, as he became more physically aggressive and uncooperative. He is currently in a seventh/eighth-grade class with about 10 students with two staff members on an individual education plan.

Social history

John currently lives with his mother and his three younger siblings. Siblings include a

brother, age 13, who is mildly cognitively delayed, and a sister, age 11. The youngest sibling, age 9, is an unrelated, adopted child who mother took in as an infant when John was 5.

Mother works at a legal firm as a paraprofessional. Mother had another male friend who has not been present during the past year because he was in jail in Maine. She also had a strong connection with her own mother who died the past summer—a significant loss.

Family history

Both biological siblings have had speech difficulties. A maternal uncle has ADHD and learning disabilities in reading, spelling, and expressive language. This uncle has apparently been arrested (charge unknown). Father was incarcerated for indecent assault. There is a family history of diabetes.

Medical history

John was diagnosed with cellulitis at age 4 months and received antibiotics. John experienced several accidents, including a fall from a bunk bed at age 5 with a subsequent broken leg, a second accident in which he broke his foot, and dislocation of his arm at age 6. He has had no head trauma or loss of consciousness. There have been no surgeries or hospitalizations, and immunizations were up to date. He had no known drug allergies. Substance abuse was denied.

Medication history

Currently, John is not taking any medications. As for past medication trials, mother is unclear of dates, but apparently all trials have occurred in the past year. John was apparently briefly treated with Ritalin® (which led to loss of appetite) and Concerta® (which led to nausea and vomiting). He had a trial of Zyprexa® and was described as calmer, with some improvement in sleep and mood, but "zombie-like." He was tried on Geodon® and his behavior reportedly improved temporarily, but then it seemed to "wear off." Interestingly, John apparently asked for the Geodon after it was discontinued, but mother felt it made him more "edgy." A mood stabilizer was suggested, but John did not want to have blood drawn. Mother is currently reluctant to try another medication.

Mental status exam

John was a heavyset 14-year-old with considerable motor activity, frequently getting up from his seat. He was alert and oriented. He was affectionate and respectful with his mother. Speech was pressured at times, particularly when he talked about his desire to be with his father. He revealed a full range of affect. Mood was irritable without lability. There was neither looseness of associations nor evidence of delusions or hallucinations. Thought content centered on his wish to be with his father and concerns about the conflicts between his parents. There was no evidence of suicidal or homicidal ideation. His memory was grossly intact, and he was able to spell "world" backwards and count backward by threes. Judgment and insight were felt to be adequate, although he tended to externalize blame.

DIFFERENTIAL DIAGNOSIS AND FORMULATION

John is a 14-year-old adolescent boy who presents with longstanding signs and symptoms of ADHD, as manifest by the hyperactivity, impulsivity, and difficulty staying on task. The ADHD is likely complicated by the presence of a significant language-based learning disorder and borderline intellectual functioning. The mixed expressive-receptive language disorder puts him at more risk for low frustration tolerance and impulsivity. In addition, John has grown up in a family characterized by chronic conflict between his parents, culminating in domestic violence; thus he is at risk for posttraumatic stress disorder, as manifest by hypervigilance, impulsivity, and aggressive behavior, which could represent a replaying of his own exposure to violent behavior. Furthermore, John appears to be showing some symptoms of adolescent-onset bipolar disorder, as evidenced by grandiosity, mood lability, and inappropriate sexual preoccupation.

Medical history contributes multiple accidents and bone fractures, consistent with the ADHD picture, although the history of domestic violence and allegations of physical abuse raise other questions. Family history contributes a diathesis for ADHD, both on the maternal pedigree and in father. Unfortunately, both father and maternal uncle appear to show evidence of antisocial personality disorder, one of the long-term sequelae of untreated ADHD (Mannuzza et al. 1998).

From the psychological/developmental perspective, John longs for a strong male attachment figure; however, given the antisocial behavior and inconsistent presence of his father, and his mother's inability to help him modulate his impulses and aggression, he is at high risk for the development of antisocial personality himself, especially because the ADHD has not been adequately treated.

Most likely diagnoses are ADHD, combined type versus hyperactive-impulsive type; oppositional defiant disorder; and mixed expressive-receptive language disorder. Conduct disorder, posttraumatic stress disorder, and adolescent-onset bipolar disorder need to be ruled out.

DISCUSSION

John's course and symptoms are illustrative of the maladaptive sequelae of untreated ADHD, complicated by a language-based learning disorder. It is unfortunate that mother has been resistant to medication trials, though fortunate that John has been able to be maintained, at least until recently, in fairly intensive special education settings. Although the therapeutic educational setting may be appropriate for his learning disabilities, at the very least, unless his ADHD and possible mood disorder are treated, it will be difficult for him to make progress educationally and psychiatrically.

John's clinical course is further complicated by the symptoms suggestive of adolescent-onset bipolar disorder. Bipolar disorder and ADHD can often be difficult to differentiate, particularly because they are frequently comorbid in clinical settings (Biederman et al. 1996; Geller et al. 2002). Although there is no documented family history of mood disorder, bipolar disorder cannot be entirely ruled out, and his mood and associated symptoms will need to be monitored closely.

From the psychopharmacological perspective, John is a candidate for treatment of his ADHD and the potential mood disorder. The first issue is the order of initiation of pharmacological trials. If the mood disorder becomes more clearly defined, one would consider starting another atypical neuroleptic with reasonable benefit/side-effect ratio, such as quetiapine. It is also likely that an atypical neuroleptic would reduce aggression, independent of the etiology. Given the family history of diabetes and John's overweight status, risperidone and challenge with olanzapine would be risky. Although a mood-stabilizing anticonvulsant such as valproic acid might be a consideration, John's refusal to allow venipuncture would complicate this approach.

Alternatively, given that most of John's behavioral difficulties in school are at least in part secondary to his ADHD, cautious rechallenge with a stimulant would also be reasonable, and some would consider this a first-line approach. There are few data regarding the adequacy of his previous stimulant trials. There is considerable evidence to suggest that stimulants reduce irritability and aggression in children with ADHD (Barkley et al. 1990; Connor et al. 2002; Greenhill et al. 2001; Klein et al. 1997). Because he has only had previous exposure to methylphenidate derivatives, a trial of long-acting dextroamphetamine salts might be tried. Second-level ADHD treatment would include atomoxetine or bupropion if a series of careful stimulant trials is not beneficial.

Although the use of stimulants in youth with comorbid ADHD and bipolar disorder is controversial, most recent evidence suggests that stimulants are not likely to induce a switch into mania if used appropriately (Biederman et al. 1999). Galanter et al. (2003) reported that children participating in the 1-month methylphenidate titration trial of the Multimodal Treatment Study of Children with ADHD were stratified by those with and without some manic symptoms. Presence of manic symptoms in these children with ADHD was not associated with adverse re-

sponses to methylphenidate (Galanter et al. 2003). Likewise, Carlson and Kelly (2003) reported that the presence and severity of stimulant rebound is not related to bipolar spectrum symptomatology.

Finally, given the complexities of this case, intensive special educational services within a therapeutic milieu, speech and language therapy, and individual and family therapy are also indicated. Although it appears that John may be headed toward residential treatment, effective pharmacotherapy should reduce the need for more restrictive treatment and poorer outcome in general.

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