

Obsessive-Compulsive Disorder and Comorbid Attention-Deficit/Hyperactivity Disorder: A Complex Diagnostic Disentanglement and Treatment

Presenter: Juan D. Pedraza, MD
Discussant: Barbara Coffey, MD, MS

Chief Complaint and Presenting Problem

T. WAS AN 11-YEAR-OLD CAUCASIAN BOY with a long history of psychiatric symptoms and a diagnosis of attention-deficit/hyperactivity disorder (ADHD) and generalized anxiety disorder (GAD), who was referred for diagnostic evaluation and treatment recommendations.

History of Present Illness

His parents reported that T. had experienced onset of anxiety symptoms at ~4 years of age. He had been given a diagnosis of separation anxiety when he started nursery school, and has been engaged in psychotherapy since then. T. has had longstanding difficulty functioning at school because of multiple symptoms, including hyperactivity, impulsivity, blurting out answers (and noises) before questions have been completed, interrupting others, not paying attention, and disrupting the class. T. has no history of self-harm, cruelty toward animals, or other conduct disorder behavior.

His mother reported that at age 5, while in kindergarten, T. developed a very elaborate imaginary “Mystery World,” with a school classmate; reports indicate that he may have had trouble delineating reality from fantasy at that time. T. reportedly used this fantasy world as a resource to soothe himself. Currently, he no longer focuses on these fantasies and is able to clearly differentiate fiction from reality. There is no history of auditory or visual hallucinations or delusions.

His parents reported that, currently, T. had significant anxiety symptoms in the context of daily routines; he was constantly worried about contagious diseases, being “weird,” “the end of the world,” and moral issues. He has had severe compulsions that included asking other people (for example, his mother and school psychologist) if children like him, if different words/messages mean that the world is going to end, and if ghosts really exist. He has avoided sharing utensils and kitchenware with his family members, and he has made multiple lists in order to remember things. T. has avoided any type of news (i.e., newspapers, TV news, and news in taxi cabs) because it made him anxious. He has avoided going to playgrounds where he would be exposed to other children, because he questions if they are contagious or if they really like him. T. has also had trouble getting into the subway because he wants to avoid germs.

T. has had severe obsessions that include constantly thinking that he is doing something embarrassing (“kids are going to think I am

weird”) and worrying that he may be responsible for some catastrophic event such as the end of the world. He has worried about differentiating what is right from what is wrong, and about how to be a “good boy,” and he has had constant worries about being contaminated by germs or contagious diseases. His parents reported that he was unable to watch parental guidance (PG) movies or scary television shows, and that he became very anxious when he was alone in a room or when his mother was away because he worried “she may be harmed.” His parents reported that his obsessive compulsive symptoms significantly limited his functioning at home and school. T. was not aware that these symptoms were intrusive thoughts, but he was able to describe them and reported that they caused him distress.

There was no history of tics or abnormal movements.

Over the past 2 years, T. had also experienced moodiness and symptoms, such as sadness and tearfulness almost every day, poor sleep, and difficulty sleeping in his own bed. T. was reported to have a good appetite; he was reported to be interested in daily activities and has denied suicidal ideation, although he recently expressed feelings of not wanting to be alive. There was no history of mania or hypomania.

Past Psychiatric History

T. has been in weekly supportive and play psychotherapy since he started kindergarten. His therapist reported that T.’s symptoms have been worsening over the past few years, which has resulted in significant problems with daily functioning. T. had been evaluated by two different psychiatrists in the preceding 3 years, and he had been given a diagnosis of ADHD and “psychotic disorder.” One of the psychiatrists diagnosed childhood-onset schizophrenia. T. has never been admitted to a psychiatric unit.

Psychometric rating scales

Child Behavior Checklist (CBCL), Conners’ Parent Rating Scale-Revised:Long (CPRS-R:L), Children’s Yale-Brown Obsessive Compulsive Scale (CY-BOCS), Vanderbilt teacher assessment scale, and the Quotient ADHD test (an objective test for the assessment of ADHD) were conducted. T. scored in the severe-extreme range on the CY-BOCS for obsessive compulsive symptoms, and in the clinically significant range for ADHD and oppositional defiant disorder (ODD) on the CPRS-R:L and CBCL. He also had trouble performing on the

Quotient ADHD test, although he was not hyperactive during the assessment. T. was reported to have a full-scale intelligence quotient (IQ) of 122 on the Wechsler Intelligence Scale for Children.

Developmental History

T. was the product of a full-term, highly complicated pregnancy and delivery. His mother had a diagnosis of placenta previa and was on bed rest for most of the pregnancy. T. was born via Cesarean section. T.'s birth weight was 3 kg. He had an initial Apgar score of 1, and required resuscitation. He was in the Neonatal Intensive Care Unit for ~2 weeks after birth.

Developmental milestones were achieved within normal limits, with mild delays in fine motor skills, muscle tone, and speech articulation. T. is right handed. He was diagnosed with a lateral lisp at age 2 and received speech therapy between 3 and 7 years. T. has a history of sensory difficulties, including noise sensitivity, and as a child he was occasionally overwhelmed by music or busy places.

Educational History

T. was not able to begin preschool at age 3 because of severe separation anxiety from mother, and, therefore, he began at age 4. He continued to show signs of significant separation anxiety, obsessive compulsive behaviors, and difficulty with transitions. T. was subsequently transferred to another school with a more structured learning environment. He was placed in a Collaborative Team Teaching (CTT) class, but he was reported to have experienced significant difficulty interacting with peers and teachers. He was also described as having made noises and having fidgeted in class. T.'s teachers were reportedly concerned about T.'s social interactions, distractibility, and his need for constant adult reassurance. T. had participated in a social skills group at school, but he was highly sensitive to feedback.

T. had been transferred to a therapeutic school almost 2 years earlier at 9 years of age. Since that time, he has been able to sustain friendships, and his self-esteem has improved. However, impulsive, hyperactive inattentive behavior, fidgeting, and oppositional defiant behavior has reportedly continued in school. Nevertheless, he has been reported to have done well academically.

Social History

T. has been living with his parents and 4-year-old brother in a two bedroom apartment in a large city. He still has had difficulty sleeping on his own, and most nights he moved into his younger brother's bed. T. has had a very close relationship with his mother. He has expressed concerns about not being "as good" as his brother.

T. has had difficulty making and sustaining friendships from an early age. He is thought to have had these difficulties because he did not respect others' personal space; he interrupted peers, and has always tried to direct the play. However, he is reportedly not aggressive. He is reported to have been obsessed about other children thinking he is "weird," and, therefore, he has felt uncomfortable around children he does not know well. However, he was reported to have a few good friends. T. has enjoyed constructing games, such as Legos, and he has loved reading.

There is no history of abuse or neglect.

Family History

A paternal uncle is reported to have a history of depressive disorder and has been institutionalized, and T.'s paternal grandfather has a history of depression. Maternal aunts are reported to

have a history of mood disorder, some with previous psychiatric admissions. T.'s maternal grandmother is reported to have a history of depression and ADHD. There is a history of response to sertraline in some maternal family members.

Medical History

T. had surgery to remove his adenoids. He has a history of asthma and has used albuterol as needed. His parents reported that he had not used it since 8 months prior to the evaluation. T. is allergic to pollen.

T. has been evaluated by the neurology department and has no history of seizures. T.'s nutrition was reported to be good, and his weight was 38.5 kg.

T.'s sleep fluctuated, depending upon his level of anxiety; in the past he had slept in his parents' bed every night. At the time of the evaluation, he was sleeping ~8 hours every night, and sleep was restorative.

Medication History

T.'s first medication trial at age 9 was extended release dextromethylphenidate 5 mg daily, which he took for 1 week. This had been associated with irritable mood and increased obsessive thoughts. During that period T. reportedly said, "I do not know what is happening to me; I do not feel like myself." He subsequently became uninhibited, locking himself in a room, reportedly as a result of his extreme anxiety. Medication was stopped immediately.

T. was started on guanfacine extended release (GXR) 1 mg ~1 year earlier, which was recently increased to 2 mg. His parents and teachers reported that T.'s hyperactivity had reduced (as noted in the Quotient ADHD system results) on this medication; they also reported that he had become more self aware, but more concerned with his obsessions and compulsions.

His current medication is GXR 2 mg, a dose that had been maintained for almost 2 years with partial remission of his ADHD symptoms.

Mental Status Examination

T. was an 11-year-old Caucasian boy who looked his stated age. He was well groomed, wearing a T-shirt and jeans. He had a normal gait. He is right handed, and his speech had normal rate, rhythm, volume, and tone. During his first appointment, he made noises while he was speaking, and he had to ask his mother to complete sentences for him. He did not make any noises and or tic-like movements during the subsequent visits.

He had trouble making good eye contact during his first appointment, but this improved during the following visits. His attention fluctuated. T. was alert and oriented to place, person, time, and situation. He was anxious, and his affect was constricted, but appropriate to situation and ideation. He denied suicidal or homicidal ideation. He denied auditory or visual hallucinations. No delusions were elicited.

Severe obsessions and compulsions were noted. T. reported that he was worried about other children thinking that he was "weird;" he reported a fear of being bullied. He acknowledged that he worried about a catastrophic event happening (such as a hurricane) because it would harm him and his family. He reported that he asked his mother to check the weather for him before he went to school every morning, and asked his school counselor to check online for signs of catastrophic events that may happen in the future. Upon clarification, T. was able to acknowledge that his obsessive thoughts were not reasonable and that his worries were excessive.

T.'s thought process was logical and goal oriented, and he had good insight for age, although his impulse control was slightly impaired. His cognitive skills, memory, and calculations were intact. T. was motivated to receive help for his symptoms.

Brief Formulation

In summary, T. was an 11-year old boy with a long history of separation anxiety, obsessive-compulsive, and ADHD symptoms that had been worsening over the past 2 years. At the time of this evaluation, T. continued to struggle at home and at school. Most of his difficulties with daily functioning appeared to be a function of his obsessive-compulsive disorder (OCD). At age 5, T. constructed and shared an imaginary world with a friend, which served to soothe his anxiety for several years. At the time of this evaluation, there was no indication of difficulty with reality testing or disordered thinking.

In addition to OCD, T. met diagnostic criteria for ADHD, which has been at least partially responsive to an α -2 agonist. Over the past year, perhaps as a result of his struggle with anxiety and ADHD symptoms, he had begun to develop a depressed mood, without loss of interest or impact on his functioning.

From a biopsychosocial perspective, T. had a difficult early start as a result of mother's complicated pregnancy and placenta previa resulting in placement in the neonatal intensive care unit (NICU) as a neonate. Given the family history, T. has a diathesis for the development of mood and anxiety disorders, and possibly ADHD. Medical history contributes asthma and allergy; however, there is no evidence to suggest that use of albuterol has contributed to his symptom picture.

From a psychosocial perspective, the mother's complicated pregnancy and T.'s NICU experience resulted in a very close dyadic relationship, rendering separation anxiety more likely. T.'s ADHD symptoms undoubtedly contributed to his difficulty with peer relations, which may have resulted in his need to create an imaginary world at a developmental stage when the task for children is to master school-related tasks, peer relationships, and a sense of competence. T.'s low self-esteem may be a product of his lack of confidence at mastering these tasks, especially as he compares himself with peers and an apparently healthy younger brother. That said, T. did appear to have some important strengths, such as good academic achievement despite his symptoms, and a supportive and loving family.

Multi-Axial Diagnoses

Axis I:	Obsessive compulsive disorder ADHD, combined type Major depressive disorder, single episode, mild GAD, by history Separation anxiety disorder, by history
Axis II:	Deferred
Axis III:	Asthma
Axis IV:	Difficulties relating to other children, multiple school placements
Axis V:	Global Assessment of Functioning Score: 45

Discussion

This case represents the complexity that many child and adolescent practitioners face in the evaluation and treatment of comorbid internalizing and externalizing disorders. T. had coexisting early-onset, long-standing ADHD symptoms, and moderately se-

vere pediatric onset OCD. This clinical picture is a good example of the challenges of disentangling the "primary" and "secondary" disorders, when both sets of symptoms appear to have emerged at approximately the same time. Although behavioral sequelae, including risk for ADHD, of neonatal complications necessitating intensive care have been reported, it is less well known that internalizing disorders, such as OCD, may also result (Sprich-Buckminster et al. 1993; Amor et al. 2005).

In retrospect, it is quite possible that T.'s severe separation anxiety in the preschool years was a manifestation of his early-onset OCD; his separation anxiety may have been a manifestation of aggressive obsessions, that is, worries about "bad things" happening to his mother. T.'s separation anxiety was also probably overdetermined by his mother's anxiety around the complications of her pregnancy and T.'s subsequent need for the NICU.

It does appear that both ADHD and OCD contributed to T.'s difficulty mastering the tasks of the school-age period, including academic and social-emotional development. Studies have reported that approximately a third of children with OCD will also meet diagnostic criteria for an externalizing disorder (Langley et al. 2010). When this occurs, the clinician is confronted with the challenge of disentangling primary or secondary, or more severe/impairing versus less severe/impairing symptoms as the clinician must make a rational decision about which symptoms are the first priority for treatment. Although standardized, objective behavioral and psychiatric measures, such as the Achenbach CBCL and the CY-BOCS, may assist in the evaluation of the severity of individual symptom clusters, they are not diagnostic tools.

T.'s imaginary friend and fantasy world that he shared with a peer is not unusual for a 5-year-old child, who is still in the pre-operational phase of development; ability to differentiate fantasy from reality may be fluid, depending upon the circumstances. It does appear that this may have served to reduce T.'s anxiety and sense of social isolation. It would be unusual for these fantasies alone to indicate a diagnosis of psychotic disorder or schizophrenia, in the absence of other symptoms. Although T had very intense worries about "bad things" happening, such as a catastrophic event, these are classic OCD symptoms. As per American Psychiatric Association, *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed., Text Revision (DSM-IV-TR), insight as to the unrealistic nature of the obsessions is not required of children to make a diagnosis of OCD (American Psychiatric Association 2000). Although a severe, delusional OCD may occur, in which the obsession is fixed, it would be very unusual in a young child (Piacentini and Bergman 2000).

In T.'s case, the previous child and adolescent psychiatrist chose to start treatment with a stimulant, suggesting that it was the ADHD symptoms that were the highest priority for intervention. Not surprisingly, as anxiety symptoms were already present, low dose dexamethylphenidate resulted in increased anxiety, mood symptoms, and disinhibition. "Emotional" side effects, or changes in "emotional expression" are not uncommon, and, in fact, are rather frequently reported with the use of ADHD medications, including both stimulants and nonstimulants (Findling et al. 2011; Manos et al. 2011). Irritability, moodiness, crying, and anxiety have all been reported. Findling et al. (2011) describe several likely causes of changes in emotional expression associated with stimulants, including the pharmacodynamic effects of the medication, exacerbation or unmasking of a comorbid disorder already present or an underlying medical disorder, drug-drug interaction, or effects of the underlying medical disorder itself.

In T.s' case, it is most likely that the stimulant exacerbated the underlying anxiety disorder. Interestingly, one study noted that the more mood and anxiety side effects parents reported on methylphenidate, the less improvement they reported on the Clinical Global Impressions (CGI)-Parents (Lee et al. 2011). Several published rating scales for side effects of medication, such as the Subjective Treatment Emergent Symptoms Scale (Guy 1976), the Pittsburgh Side Effects Rating Scale (Pelham 1993), the Barkley Side Effects Rating Scale (SERS), and the Pediatric Adverse Events Rating Scale (March et al. 2007) also include emotional effects.

It is interesting that the decision to switch to another class of medication for ADHD was made; some might have tried another stimulant or class of stimulant first. That said, it appears that the switch to GXR was better tolerated; although one cannot exclude the possibility that it contributed to T.'s depressed mood, it did appear to ameliorate some of the ADHD symptoms, which may have given T. improved impulse control and less restlessness and inattention. Interestingly, perhaps this improvement in inattention allowed him to bring into focus more awareness of his obsessions and compulsions.

T. is clearly a candidate for cognitive behavioral therapy (CBT) for his OCD, recommended by the American Academy of Child and Adolescent Psychiatry as a first line treatment for OCD (Geller and March 2012). Introduction of a selective serotonin reuptake inhibitor would be indicated if he did not respond, or only partially responded, to CBT. Given the family history of response to sertraline, and its indication for use in the pediatric population, that would be the first choice of medication.

Disclosures

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