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BRIEF REPORT

Brief Report: Exposure and Response Prevention for Obsessive Compulsive Disorder in a 12-year-old with Autism

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Abstract Obsessive Compulsive Disorder (OCD) involves exaggerated or excessive worry about threatening and non-threatening stimuli coupled with impairing rituals believed to reduce anxiety. Autism Spectrum Disorders (ASD) are characterized by impairment in social and communicative activities as well as restricted and repetitive behaviors. Approximately 2% of children with ASD are also diagnosed with OCD. Although there is extensive research demonstrating the effectiveness of behavioral interventions for pediatric OCD, little is known about how effective these treatments are for children who have a dual diagnosis of OCD and ASD. This report describes a 12-year-old male with Autism who was treated successfully with cognitive behavioral therapy with exposure and response prevention. This case study provides initial support that cognitive-behavioral therapy is effective in symptom reduction for children with comorbid autism and OCD.

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Introduction

Obsessive compulsive disorder (OCD) is characterized by intrusive thoughts or images (obsessions) and repetitive behaviors or rituals (compulsions) to relieve anxiety, which interfere with daily functioning (American Psychiatric Association 2000). Symptoms of OCD often impair social relationships, ability to complete tasks like schoolwork and hygiene, and impact familial relationships (Piacentini et al. 2003). The established first line treatments for OCD are Cognitive Behavioral Therapy (CBT) with Exposure and Response Prevention (Pediatric OCD Treatment Study Group 2004; Storch et al. in press) and Serotonin Reuptake Inhibitors (see Storch and Merlo 2006 for a review).

Autism is a neurodevelopmental disorder characterized by impairment in social interaction, deficits in communication, and a restricted range of activities, interests, and behaviors with an onset prior to age three (American Psychiatric Association 2000). Many children who have Autism engage in a significant number of repetitive behaviors (e.g., hand flapping, lining up toys) (Carcani-Rathwell et al. 2006; Kanner 1943). It can be challenging to diagnose OCD in children who have Autism due to the difficulty in discerning repetitive behaviors from obsessions and compulsions associated with OCD as it can be challenging to demonstrate that the symptoms are ego-dystonic to the child (Baron-Cohen 1989). There is some evidence, however, that the content and quality of the repetitive behaviors differs in these groups (McDougle et al. 1995). Typically, cleaning, checking, and counting

are not found in children with Autism alone but are common in children with OCD (Reaven and Hepburn 2003).

Little information is available regarding treatment options for repetitive behaviors in children with Autism (Bodfish 2004). Similarities between the repetitive behavior in Autism Spectrum Disorders (ASD) and OCD suggest that treatments effective for OCD may be effective for similar behaviors in ASD (Rapport and Inoff-Germain 2000). Researchers have suggested at least three mechanisms by which the comorbidity of OCD and ASD may exist. The first identifies disruption in 5-HT in OCD and Autism (Apter et al. 1991). The second suggests that abnormalities in the frontostriatal system are similar in children with OCD and children with ASD (Santosh 2000). The final mechanism is a genetic link between OCD and ASD (Berg et al. 1994). While none of these has shown conclusively the etiology of OCD and ASD, they provide evidence that biomedical systems are similar and that effective treatments for OCD should be examined in children who are dually diagnosed. Two reports of psychopharmacological treatment for OCD symptoms in children with Autism Spectrum Disorders have produced positive results (Damore et al. 1998; Storch 1999). Only one report of CBT in a child with Autism has been published (Reaven and Hepburn 2003). There are a limited number of studies examining CBT in adolescents with Asperger's Disorder that have had positive results (e.g., Lord 1995; Sofronoff et al. 2005). Sofronoff et al. (2005) found that, with minor modifications, a brief CBT intervention significantly decreased anxiety in children with Asperger's Disorder. These studies provide preliminary evidence that CBT can be an effective treatment for anxiety and OCD symptoms in children and adolescents with Asperger's Disorder. However, given the significant comorbidity, it is surprising that more research has not been conducted on effective treatments in children with Autism and OCD.

With this in mind, we present a case of a 12-year-old male with Autism and OCD. Interventions were based on the model proposed by March and Mulle (1998) and revised by Storch and colleagues (Lewin et al. 2005; Storch et al. in press). Exposure and Response Prevention (ERP) treatment for OCD encompasses three components: (a) information gathering about present symptoms, (b) therapist initiated ERP, and (c) generalization and relapse training. ERP involves both gradual exposure, in vivo, to feared stimuli and situations based on a hierarchy of the individual's fears and response prevention (Kozak and Foa 1997; Storch 2005). The response prevention component involves the patient blocking or refraining from compensatory rituals during the exposure. Specific modifications made to the treatment protocol based on the needs of the child are discussed below.

Case Example

Jason (pseudonym), a 12-year-old white male, was evaluated at the age of 2 years due to a loss of expressive language functioning, presences of echolalia, preoccupation with household items (rather than toys), repetitive play, and poor social relationships. Jason also evidenced sensory defensiveness toward tactile and auditory stimuli and engaged in moderately severe self-injurious behaviors (i.e., hitting/banging his head, biting himself). A review of his medical history ruled out any possible trauma or medical explanation of his symptoms. Jason was diagnosed with High Functioning Autism by an independent psychologist according to the *Diagnostic and Statistical Manual of Mental Disorders, 4*th *Edition* (DSM-IV, American Psychiatric Association 1994) at the age of 2 years. While this diagnosis was made at a very young age, Jason continued to exhibit Autistic like behaviors throughout his development which lent credence to the initial impressions. He was assessed again at age 5 and the original diagnosis was confirmed at this time. His IQ at this assessment was 92 (average range) as assessed by the Stanford Binet Intelligence Scale-4th Edition (Thorndike et al. 1986). Jason received appropriate services including speech, occupational, and physical therapy in the context of a developmental preschool, following his diagnosis. During elementary and the beginning of middle school, Jason had a full-time aide to assist him with schoolwork. Overall, Jason benefited significantly from the intensive interventions, particularly in the realms of speech, social interaction, and sensory defensiveness.

Assessment of OCD

At the age of 11 years, 9 months, Jason began exhibiting a significant number of ritualistic and avoidance behaviors. It is not unusual for a child to develop symptoms of OCD at this age. Specifically, Jason experienced contamination fears, hand washing rituals, excessive use of hand sanitizer, avoidance of contaminated items (e.g., door knobs, library books, bathroom), contamination related checking behaviors (i.e., repeatedly checking food expiration dates), not sitting on chairs, not using sheets or pillows, and not touching other items (e.g., public benches) due to concerns that they were dirty. Jason reported significant levels of anxiety when prevented from completing his rituals. His symptoms began interfering with his academic, social, and family functioning around his twelfth birthday and beginning of the sixth grade. Specifically, his teachers noticed that he was not able to turn pages with his hands, touch papers that other children had touched, or sit comfortably in his chair. Based on his report and his parents' observation,

Jason spent several hours per day at home washing his hands or worrying about potentially contaminated items throughout the house (i.e., door knobs, bathroom items). Because of these OCD symptoms, Jason was referred by his family physician for evaluation and treatment.

Treatment

Jason was seen for ten 50-min outpatient CBT sessions over 16 weeks. Treatment was based on the model proposed by March and Mulle (1998) and validated in the Pediatric OCD Treatment Study (POTS) (2004) and Storch et al. (in press). Jason's therapist (HDL) was a trained postdoctoral fellow supervised by the second author who had seen over 35 pediatric OCD patients. Pre- and Post-treatment assessment results are discussed below.

Due to Jason's diagnosis of Autism, some aspects of the treatment protocol were modified to address his needs. First, the cognitive component was changed to meet his developmental level. Jason was not able to identify specific obsessions and therefore it was neither possible nor practical to engage in typical restructuring activities and imagined exposures (Attwood 2003). Thus, for Jason, the cognitive component of treatment focused on identifying feelings of distress and learning coping statements to ameliorate his anxiety. Sample statements used include "I know that nothing bad will happen" and "Doing the exposures will help me get better." Additionally, we began ERP in the second session rather than the fourth as recommended by the POTS trial (2004), based on Jason's symptom presentation and his relative difficulty with the cognitive components. Second, based on the work of Barrett et al. (2005), Kendall and Choudhury (2003), and Storch et al. (in press), parents were integral components in treatment to enhance generalization of skills and limit family accommodation. Further, information was provided to teachers regarding treatment to increase their awareness of and participation in treatment with Jason during the school day. This allowed him the flexibility to engage in exposures for repetitive and avoidant behaviors related to school (i.e., contaminated items in the classroom). Finally, rituals in children with autism may be associated with other behavior problems (e.g., Carcani-Rathwell et al. 2006), thus the use of a behavior reward system was implemented to minimize aberrant behavior and improve adherence to exposure homework.

Sessions One and Two

The first session involved an introduction to therapy, psychoeducation, and hierarchy construction. OCD was described as being a set of symptoms separate from Jason that influenced his behavior related to his symptoms but did not impact his other abilities or talents. Jason and the therapist talked about "beating" OCD and not letting his OCD "be the boss." Jason had difficulty identifying specific obsessions. This may be related to the typical symptom presentation of children with ASD (American Psychiatric Association 2000; Kanner 1943). For example, one of the hallmark features of ASD is difficulty with socioemotional cues and self-awareness (American Psychiatric Association 2000). These limitations likely influenced Jason's ability to identify obsessions in session. Jason was asked to monitor thoughts using a thought record to encourage identification of anxious thoughts between sessions. He initially had mild difficulty completing thought records, as expected, due to his inability to identify obsessions. To assist Jason in distinguishing anxiety thoughts from normal concerns, the therapist and Jason devised "rules" about determining if a worry was an obsession or a normal concern. For example, Jason was asked to evaluate if a friend would be concerned about the same thing. Hierarchy items related to contamination concerns were used for the initial therapist lead exposures in the hospital. Typically, ERP is begun in the fourth session, however, for Jason, we began ERP in the second session due to a decrease in the amount of cognitive training occurring in the beginning of treatment. An example of exposures, Jason was required to touch several common items in the hospital where the therapist's office is located (i.e., elevator buttons, door handles) and exposures were repeated until Jason habituated to the anxiety. Though Jason was initially hesitant to comply with exposures, he completed them with encouragement. In fact, Jason reported being "proud" of himself when exposures were completed. The therapist also spoke with Jason and his mother about reassurance seeking, asking Jason's mother to label questions as "OCD" and to refrain from answering.

Sessions Three through Eight

Sessions three through eight began with a review of the homework assigned since the last session which typically included completing exposures in the classroom settings where he experienced difficulty (i.e., passing out papers to the class, using contaminated items). Jason reviewed and practiced his coping statements with the therapist during exposures and as a part of therapy. During treatment, Jason learned to identify coping statements for use when distressed.

Exposures were conducted in each of these sessions with increasingly difficult contamination exposures. During the

exposures, Jason initially reported a high level of anxiety and that his anxiety dissipated after only a few minutes. Careful attention was paid to Jason's physiological indicators of distress (i.e., flushed face, sweating) in addition to his subjective report to ensure that exposures were not terminated prematurely.

Sessions Nine and Ten

Prior to session nine, Jason and his parents reported a significant decrease in Jason's distress and number of symptoms and an increase in his participation in school and social activities. Given his gains and understanding of treatment principles, session nine focused on termination and relapse prevention. The therapist assessed any additional remaining symptoms of OCD (e.g., hoarding tendencies) and asked Jason and his parents to prepare any questions they would like answered for the next session. In session ten, Jason successfully explained treatment methods, rationale, and the gains he made to the therapist. After this, the importance of continued exposures at home was discussed. Jason identified potential triggers for his OCD symptoms (i.e., sickness, increased stress) and solutions for these triggers were discussed.

Assessment

Jason completed the Children's Yale-Brown Obsessive Compulsive Scale (CY-BOCS; Scahill et al. 1997) at pre- and post-treatment assessments. At the pre-treatment assessment, Jason obtained a severity rating of 18 reflecting moderately severe OCD symptoms. He endorsed clinically significant impairment due to OCD symptoms on the Child Obsessive-Compulsive Impact Scale (COIS = 40) (Piacentini et al. 2003). At post-treatment, Jason's CY-BOCS score reduced to a three which is well within normal limits. Jason's score on the COIS was also well within normal limits (COIS = 3). At a three-month follow-up appointment, Jason and his parents completed similar measures in addition to a clinical interview. All reports indicated that Jason had maintained treatment gains as his scores had not changed from post-treatment levels.

Discussion

This case is unique for several reasons. First, it highlights the clinical presentation of a child with Autism that clearly meets DSM-IV-TR criteria for OCD. Jason's compulsions were the same as other children with OCD as opposed to repetitive behaviors commonly found in Autism. Further, Jason was aware of his desire to "decontaminate" himself and experienced significant distress when he was prevented from doing so. Additionally, although Jason had some difficulty with cognitive restructuring activities, he was able to self-monitor his behaviors by tracking compulsions and times when he resisted his urges to perform a compulsion, which is critical to treatment participation. Second, this case provides evidence that CBT is effective in treating OCD symptoms in children with Autism when appropriate modifications are made to the treatment protocol. Initially, Jason presented with moderate symptoms of OCD which were impairing his ability to function at home and at school. At the end of ten treatment sessions, his symptoms had remitted and he no longer met OCD criteria.

Several modifications were made within the theoretical framework of CBT to make the treatment congruent with Jason's needs. These modifications were similar to those made by Reaven and Hepburn (2003) and Sofronoff et al. (2005) and are compared below. The cognitive components of treatment were modified to be developmentally appropriate for Jason. For example, we used a behavior monitoring chart so that Jason could keep track of his OCD behaviors and improve self-awareness of symptoms and their impact on his functioning. Reaven and Hepburn (2003) also used tracking logs to encourage participation in treatment. Exposures were begun early due to the protracted cognitive component. Parents and teachers were involved in treatment to allow them to act as coaches, limit family accommodation, and encourage generalization of treatment gains. This was cited as an important change to implement when working with children who have dual diagnoses (Reaven and Hepburn 2003; Sofronoff et al. 2005). A behavior chart, which tracked attempted and completed exposures based on homework assignments, was used to encourage Jason to complete exposures and as an aide to demonstrate progress for his parents. He reviewed this chart at the beginning of each session with the therapist and his parents. Other researchers have emphasized using the child's preferred wording for OCD symptoms and treatment (Reaven and Hepburn 2003; Sofronoff et al. 2005). This is a useful modification that may improve the child's willingness to participate in treatment. However, Jason did not voice concerns or appear uncomfortable using the therapist's phrasing in treatment and thus, we did not alter this part of treatment. Taking these studies together suggests the utility of these modifications in working with this population.

It is important to note the limitations of this report. First, as this is a single subject study, results may not generalize. However, it provides preliminary evidence that CBT is effective for children with Autism and OCD and underscores the importance of clinical trials of this type of

treatment. Second, Jason received intensive early intervention services and thus evidenced fewer symptoms of Autism than may be typical. Finally, although we made modifications to the typical treatment regimen based on our clinical judgment, additional or alternate modifications may be warranted. Systematic trials of different treatment protocols would provide this information. Within these limitations, however, this case adds to the emerging literature on the efficacy of CBT for children who are dually diagnosed with Autism and OCD.

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