Case Study: Exposure and Response Prevention for an Adolescent With Tourette's Syndrome and OCD

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ABSTRACT

Using recently refined diagnostic criteria, the authors hypothesized that the frequent touching of others by a 16-year-old male adolescent with Tourette's syndrome was a compulsion and not a tic. Consistent with the study's hypothesis, the authors applied exposure and response prevention, a procedure empirically supported for treatment of compulsions but not for tics, to the touching. Results showed a significant decrease in touching attempts, overt anxiety, and subjective anxiety across time. *J. Am. Acad. Child Adolesc. Psychiatry*, 2000, 39(7):904–907. **Key Words:** Tourette's syndrome, obsessive-compulsive disorder, exposure and response prevention, behavioral treatment.

Tourette's syndrome (TS) and obsessive-compulsive disorder (OCD) are often comorbid, and the highly repetitive behaviors that compose cardinal diagnostic criteria for both conditions can be topographically similar (King et al., 1999a; Miguel et al., 1995). Empirically supported treatments for the repetitive behaviors in OCD are substantially different from treatments for the behaviors in TS, however, and thus distinguishing one from the other is critical, though sometimes difficult (King et al., 1999b; Stanley and Turner, 1995). Historically, the distinction between the two was based primarily on the repetitive behaviors, with simple, seemingly purposeless, involuntary behaviors characterized as the tics of TS and more complex, seemingly purposeful behaviors as the compulsions of OCD (Campbell, 1996). Some tics are complex, however, and thus definitions that operationalize only the repetitive behaviors can be insufficient to guide accurate diagnosis. Definitional refinements incorporating the phenomenology of tics and compulsions have been made available in recent years (American Psychiatric Associa-

tion, 1994). Yet neither they nor studies using them have yielded a method for unambiguously distinguishing complex tics from compulsions. Particular difficulty has been noted when patients have comorbid TS and OCD (Leckman et al., 1994; Shapiro and Shapiro, 1992), and the difficulty is compounded when those patients are children (Leonard et al., 1992).

A recent study showed that inspection of the antecedents of the symptomatic repetitive behaviors could aid attempts to determine whether the behaviors were tics or compulsions (Miguel et al., 1995). The antecedents included cognitive phenomena (e.g., obsessive thoughts or images), anxiety, and sensory urges (e.g., sensations similar to the urge to sneeze). Briefly, the repetitive behaviors in OCD patients were preceded by cognitive phenomena and anxiety but not by sensory urges, whereas in the TS patients the behaviors were preceded by sensory urges but not by cognitive phenomena or anxiety. The Miguel et al. study included only adult patients who fit criteria for TS or OCD but not for both. Our case study attempts to extend this research by examining an adolescent with comorbid TS and OCD, using differential antecedents to distinguish compulsions from tics and applying to the compulsions a treatment that has been empirically supported for OCD.

METHOD

Participant

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Jason, a 16-year-old white male adolescent of normal intelligence, received a diagnosis of TS at age 10 and OCD at age 11. He also had

chronic asthma, which was well controlled with medication. According to his parents, Jason began exhibiting troubling repetitive behaviors at age 2. By fifth grade these behaviors were so disruptive he was placed in a self-contained classroom. He subsequently began to engage in delinquent acts and was placed in a partial hospitalization program in 1997. His condition worsened with the continuation of previous symptoms and the onset of major depression. He was placed in full-time residential care at Boys Town in the fall of 1998, at which time he had been receiving haloperidol (1 mg b.i.d.) and fluoxetine (20 mg t.i.d.) for at least 6 months. These medications were not changed during our case study.

The primary model at Boys Town involves a family-style program in which 6 to 8 resident youths live in freestanding homes with highly trained married couples who serve as full-time surrogate parents (Coughlin and Shanahan, 1991). Although Jason's depression was partially responsive to medication, other features of his clinical presentation were so extreme that he was denied admission to the primary program and placed in a restrictive special group home at Boys Town with shift staff, higher staff-to-resident ratios, and secure access. His multiple, frequent, repetitive motor behaviors included banging his elbows and knees together, rolling his eyes, kicking, and head jerking. His frequent vocal behaviors included shouting, coprolalia, and complex phrases that were situation-specific but highly inappropriate. Although these repetitive behaviors were severe and composed the basis for his TS diagnosis, the repetitive behavior that resulted in his more restrictive placement at Boys Town involved his tendency to touch others inappropriately. Four months after placement Jason's touching was unabated, and because staff felt it was a threat to others, program managers insisted either that it be substantially reduced through direct treatment or that he be transferred to another program.

Tic or Compulsion? To provide appropriate treatment for the touching, we needed to determine whether it was a tic or a compulsion, which can be difficult because frequent touching is consistent with both diagnoses (King et al., 1999a; Leckman et al., 1999). To aid our determination we used the refined diagnostic criteria for OCD and TS involving 3 domains of antecedents described by Miguel et al. (1995): cognitive, anxious, and sensory. In the cognitive domain, Jason stated that he often obsessed about touching others in specific bodily locations. In the anxious domain, when Jason inhibited the urge to touch or when his attempts to touch were thwarted, he exhibited several behaviors suggestive of anxiety such as loud sighing or rocking his head forward and backward. In the sensory domain, Jason reported that prior to engaging in most of his repetitive behaviors, he felt an urge like an "itch" in the bodily area involved but felt no such itch or sensory urge of any kind prior to or accompanying his desire to touch others. This information on antecedents combined with Jason's preexisting diagnosis of OCD led to our decision to treat Jason's touching as a compulsion rather than a tic.

Data Collection

All sessions were videotaped for data collection, and Jason was aware of the recording. Data were collected on touching attempts, overt anxious behavior, and subjective anxiety. Compulsive touching was defined as any extension of the hand toward a target area on the clinician's body that, in the absence of an avoidant response by the clinician (e.g., blocking), would result in a touch. Touching attempts were scored from videotape with an event frequency method (Barlow and Hersen, 1984).

Overt anxiety was defined as sighing or rocking of the head and was measured by a partial interval recording method (Barlow and Hersen, 1984). Subjective anxiety was measured by a modified Subjective Units of Distress Scale (SUDS) (Wolpe and Lazarus, 1966) with which Jason rated his experience on a scale from 1 (completely relaxed) to 10 (completely anxious or uncomfortable). The SUDS dependent variable was the time it took Jason to reach a rating of 1 in the presence of the anxiety-producing stimuli (described below).

Records of inappropriate touching were also obtained from all of the progress notes and incident reports in Jason's Boys Town file.

Interobserver Reliability. A second observer reviewed 25% of the taped sessions and rated touching attempts and overt anxiety using the same method as the primary observer. Comparisons of ratings from the 2 observers yielded no disagreements.

Procedure

The interviews and observations indicated 3 hierarchically sequenced touching compulsions: (1) touching the chest of another (in the middle of the breastbone), (2) touching the right knee of another, (3) and touching the right shoulder of another. Jason always touched with the index and middle fingers of his right hand. Because of the urgency of the referral, it was not feasible to establish a standard baseline prior to the implementation of the intervention. So, immediately after establishing the hierarchy, we applied exposure and response prevention (ERP), a treatment that has been empirically validated for treatment of compulsions (King et al., 1999b; Stanley and Turner, 1995), to the 3 types of touching. Specifically, during treatment ses-sions the clinician tapped himself on the chest, knee, and shoulder with Jason seated in close proximity. The clinician moved through this sequence during each session, remaining at each bodily location until Jason reached a SUDS level of 1. Response prevention involved instructing Jason to refrain from touching and gently deflecting his hand if he failed to do so.

RESULTS

Touching

Collapsing attempts to touch across bodily locations into one category and counting instances in clinic sessions yielded a mean of 1.3 touching attempts per session during the first 8 sessions that reduced to zero thereafter (Fig. 1). Review of Jason's chart yielded 19 records of inappropriate touching in the 4 months prior to treatment and 2 records in the 5 months following treatment.

Overt Anxiety

During initial sessions, Jason exhibited high levels of overt anxiety when the compulsion-provoking stimuli



Fig. 1 Touching attempts across clinic sessions.

were presented, but these diminished with repeated applications of ERP and reached zero levels by session 6 (Fig. 2).

Subjective Anxiety

During initial clinic sessions, the time it took Jason to reach a SUDS rating of 1 ranged from between 2 and 6 minutes for knee, chest, and shoulder compulsions. By session 6 this time had reduced to mere seconds for all 3 compulsions, and these levels maintained through session 11 (Fig. 2).

DISCUSSION

Jason's account of antecedents to his frequent touching was more suggestive of obsession and anxiety than sensory urge and thus was more consistent with compulsion than tic (Miguel et al., 1995). Therefore, we treated his frequent touching with ERP, an intervention validated for compulsions but not for tics (King et al., 1999b; Stanley and Turner, 1995). The results of treatment supported our diagnosis and extend the literature by introducing response to treatment as a source of evidence to consider when attempting to distinguish compulsions from complex tics. Our report also extends the literature because the patient was an adolescent who had comorbid TS and OCD. Miguel et al. (1995) studied only adults with OCD or TS but not with both, and we found no papers reporting exposure-based treatment for adolescents with comorbid disorders.

Although the results of this report are encouraging, there are some limitations to consider. There is no base-



Fig. 2 Minutes to Subjective Units of Distress Scale (SUDS) rating of 1 and percentage of intervals with anxiety across sessions.

line against which to compare the effects of treatment and rule out other sources of control (e.g., placebo). This is a nonexperimental case report; therefore, our data support limited inference and are perhaps better used as an inducement for more research than as a guide for clinical interpretation or treatment application. The pre-post intervention recordings in Jason's chart are indeed supportive of our conclusions; however, retrospective analysis of subjective staff impressions recorded in patient charts is no substitute for analysis-based, prospectively planned, objective, pre-post measures. There was an initial increase in touching, typical of treatments involving ERP, that could be risky when target behaviors are potentially harmful. It is possible that the reductions in touching seen here could have been obtained with less effort, through an increase in Jason's fluoxetine dosage or by changing to a new medication. Finally, that Jason's frequent touching responded well to ERP, a treatment known to reduce compulsions, is insufficient to confirm its status as a compulsion.

These limitations aside, the results do suggest that using an exposure-based treatment for frequent touching produced substantial clinical benefits for Jason. Most obviously, he no longer touches others inappropriately. This change in his behavior led to his move from the restrictive shift staff setting where he was located at the time of referral to a much less restrictive family-style group home on the main campus at Boys Town. He is also now in a regular classroom environment for the first time in more than 3 years. Placing Jason in these less restrictive settings and providing his homemates and classmates with some health education about TS has expanded the normality of Jason's life. He earns good grades, plays sports, and has friends, and these successes appear to stem from his newly established capacity to keep his hands to himself.

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Underascertainment of Child Abuse Mortality in the United States. Marcia E. Herman-Giddens, PA, DrPH, Gail Brown, MD, MPH, Sarah Verbiest, MSW, MPH, Pamela J. Carlson, RN, MPH, Elizabeth G. Hooten, MSPH, Eleanor Howell, MS, John D. Butts, MD

Context: Mortality figures in the United States are believed to underestimate the incidence of fatal child abuse. Objectives: To describe the true incidence of fatal child abuse, determine the proportion of child abuse deaths missed by the vital records system, and provide estimates of the extent of abuse homicides in young children. Design and Setting: Retrospective descriptive study of child abuse homicides that occurred over a 10-year period in North Carolina from 1985-1994. Cases: The Medical Examiner Information System was searched for all cases of children younger than 11 years classified with International Classification of Diseases, Ninth Revision cases E960 to E969 as the underlying cause of death and homicide as the manner of death. A total of 273 cases were identified in the search and 259 cases were reviewed after exclusion of fetal deaths and deaths of children who were not residents of North Carolina. Main Outcome Measure: Child abuse homicide. Results: Of the 259 homicides, 220 (84.9%) were due to child abuse, 22 (8.5%) were not related to abuse, and the status of 17 (6.6%) could not be determined. The rate of child abuse homicide increased from 1.5 per 100 000 person-years in 1985 to 2.8 in 1994. Of all 259 child homicides, the state vital records system underrecorded the coding of those due to battering or abuse by 58.7%. Black children were killed at 3 times the rate of white children (4.3 per 100 000 vs 1.3 per 100 000). Males made up 65.5% (133/203) of the known probable assailants. Biological parents accounted for 63% of the perpetrators of fatal child abuse. From 1985 through 1996, 9467 homicides among US children younger than 11 years were estimated to be due to abuse rather than the 2973 reported. The ICD-9 cause of death coding underascertained abuse homicides by an estimated 61.6%. Conclusions: Using medical examiner data, we found that significant underascertainment of child abuse homicides in vital records systems persists despite greater societal attention to abuse fatalities. Improved recording of such incidences should be a priority so that prevention strategies can be appropriately targeted and outcomes monitored, especially in light of the increasing rates. JAMA 1999;282:463-467. Copyright 1999, American Medical Association.