Manipulative and Antisocial Behavior in an 11-Year-Old Boy with Epilepsy

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CASE: Brian is an 11-year-old boy who presented to the emergency room with suicidal ideation and hearing voices. In the preceding weeks, he had escalating symptoms of oppositional defiant disorder, attention-deficit hyperactivity disorder (ADHD), and bipolar disorder. His medical history was notable for complex partial epilepsy with onset at age 4 that had been well controlled with divalproate. He had several mental health diagnoses by various practitioners including oppositional defiant disorder, ADHD, and bipolar disorder. Brian’s family and social history was notable for the absence of identifiable risk factors for seizures or psychiatric problems. Over the course of a week-long psychiatric hospitalization, his complaints of depression and hearing voices seemed incongruent with his behavior. His parents endorsed a long history of Brian manipulating family and friends, such as conning his friends into stealing money and giving it to him. There was increasing suspicion that Brian was contriving his presenting symptoms for secondary gains. When his parents visited, he consistently bargained for prized items such as a long sought after cell phone and his own bedroom to improve his mood. His prior diagnoses (ADHD, a mood disorder, and oppositional defiant disorder) did not capture what seemed to be his core problem—an ability and willingness to manipulate others for his own self-serving purposes.

Three months later, he was seen in the pediatric neurology clinic for increased seizure frequency. In the interim, he had several very serious altercations including setting fire to his family church, an attempted break-in-and-entry, assaulting his principal and resisting the arresting officer, and a malicious planned attack on his father where he struck him in the head with a crescent wrench “in cold blood, without any emotion.”

DISCUSSION

Martin T. Stein, MD

This challenging case was submitted by Dr. Aaron Boes who was part of the medical team caring for this child. I asked Dr. Jeffrey Rowe, a child and adolescent psychiatrist, to write the first commentary without prior knowledge of the full medical evaluation and outcome.

Jeffrey Rowe, MD

This case is a good reminder that often when you see a child in the course of an illness is just as important as the current clinical presentation. In this case, the clinical signs and symptoms move you in multiple directions—at first mania, depression, or psychosis; later malingering or conduct disorder or antisocial traits; and then seizure-related (or tumor-related) illness.

So, in this case, Brian presents with serious behavioral, psychological, and sociological symptoms embedded in a history of complex partial epilepsy. His behaviors seem planned, focused on achieving control of others or obtaining material objects, but these behaviors are not very sophisticated or designed to avoid blame. His emotional reaction to being caught is not shame or guilt but is described as indifference. His psychological symptoms are described as mood-related (depression and suicidal ideation), but his affect does not match his complaints. He also is describing hearing auditory hallucinations, but he does not appear as anxious, fretful, or upset with these experiences as would be expected for an 11-year-old boy. A diagnosis of attention-deficit hyperactivity disorder (ADHD) combined type is made, but signs and symptoms of this disorder are not present.

Just on the face of the behavioral, psychological, and sociological symptoms, one would not be convinced there is a mood disorder, psychotic disorder, or attention disorder. One would be considering conduct disorder, malingering, or antisocial personality disorder traits (even in someone this young). It is unlikely that an 11-year-old could be so sophisticated as to manipulate...
their presentation (present false or exaggerated symptoms) the way someone older than 20 years might.

Brian’s signs and symptoms do not suggest a psychiatric disorder at this point. The escalation of symptoms to frank aggression toward property, the principal, a police officer, and finally his father without a context of extreme emotional upset, evolving psychosis, or clear mania again leads us away from a mainly psychiatric hypothesis for his condition.

What is of major concern is a progressive neurologic disorder affecting the mood centers, social relations centers, and areas associated with auditory hallucinations. A repeat neurological evaluation with an electroencephalogram and brain imaging studies needs to be done to rule out progression of a neurologic disorder. Partial complex seizures, brain tumors, and degenerative neurologic conditions can sometimes present with mood, thought, and behavioral problems.

If no progressive or serious neurological illness is found at this time, the biopsychosocial approach I would recommend is placement in a residential treatment center that can provide individual, family, and milieu therapy as well as the careful use of low-dose antipsychotic medication. This clinical case has not yet declared itself and so careful, safe management of his aggression and faulty behavioral reasoning is the best current approach.

Aaron D. Boes, MD, PhD

I met Brian at the time of his initial psychiatric hospitalization. I was a medical student assigned to child psychiatry at the time. I was also on the pediatric neurology service 3 months later when he presented with increased seizure frequency. We decided to obtain a magnetic resonance image (MRI) study of the brain at this time even though Brian had a reportedly normal MRI done at another hospital at the onset of his seizures at age 4. The MRI done at age 11 showed cortical dysplasia of a small sector of his left frontal lobe, along the midline on the ventral surface (Fig. 1). Upon discovering this lesion, we subsequently reviewed his MRI done at age 4, and we were able to demonstrate that the same lesion was present. We felt confident that it was a congenital malformation in an area of the frontal lobe known as the ventromedial prefrontal cortex. This region has a well-known role in empathy, social behavior, and decision making. Damage to this area is known to cause impaired moral judgment and antisocial behavior in humans.1

The identification of Brian’s brain lesion on MRI was fortuitous in many ways. We were at the University of Iowa where much of the pioneering work on this region of the brain was done through studies of patients with focal injury to this area. At the time of the diagnosis, I recently completed my doctoral work studying this region of the brain and its relation to antisocial behavior in children. Following the identification of Brian’s brain lesion, I enlisted the help of pediatric neuropsychologist Steve Anderson, PhD, who had expertise in this brain area. He and Amanda Grafft (see below) did additional neuropsychological testing that showed Brian’s behavioral and neuropsychological profile matched very closely with others who have damaged this part of the brain. We were able to say confidently to the parents that this congenital lesion of the ventromedial prefrontal cortex was the culprit for Brian’s antisocial behavior and his unusual psychiatric presentation. Now the question was what to do with this information?

Although the identification of this brain lesion was not good news to the family, it did help the parents cope with understanding why Brian had such profound behavioral difficulties since age 6. They had spent years second-guessing and blaming themselves for his bad behavior despite their ability to raise his siblings without any similar problems. The seizures continued despite further anticonvulsant trials, and we eventually undertook an extensive presurgical workup that involved 2 inpatient video electroencephalogram hospitalizations and then invasive intracranial monitoring. There was evidence that this brain lesion was the likely source of his seizures and it was surgically resected along with a small portion of his medial temporal lobe. The aim of the surgery was improved seizure control, but the family hoped that his behavior would improve as well. The surgery was 6 months ago and Brian has had a complete resolution of the seizures. His antisocial behavior unfortunately continues unabated. He is a compulsive liar and steals without remorse. He cannot maintain friendships and his parents have concerns that he is too much of a danger to live in their home for much longer. There are serious concerns about what will happen when he turns 18. Despite all that we have learned about the ventromedial prefrontal cortex and how its dysfunction can cause antisocial behavior, we remain at a loss for effective therapeutic interventions. Further details of the case.

Figure 1. A magnetic resonance image of patient’s brain (T2-weighted coronal projection). The pathologically thickened gyrus rectus is indicated by the arrow. The white matter underlying this lesion is bright and tapers as it extends toward the ventricle, a feature often seen with focal cortical dysplasia.
presentation along with detailed behavioral and neuropsychological testing can be found in a previously published case report.2

REFERENCES


Amanda Grafft, EdS, and Patricia Espe-Pfeifer, PhD

Damage to ventral medial prefrontal cortex (VMPC) in adults produces severe impairments of emotion, decision making, and social behavior. One of the remarkable features of this syndrome is that it can occur in persons with normal intellectual abilities, memory, and language. Even common tests of executive function (e.g., Wisconsin Card Sorting Test) may not reveal impairments. Research also has shown that damage in the VMPC early in life places individuals at risk for failure to develop normal social competencies, due to chronic emotional disruption and impairments of decision making, planning, and behavior regulation.1,2

The behavioral abnormalities associated with abnormalities in the VMPC present diagnostic and treatment challenges. When onset is in childhood, these individuals typically present with gradual onset of significant behavioral difficulties, mood disorders, and emotional dysregulation; they are frequently evaluated by numerous professionals. Various psychiatric diagnoses before the identification of the neurologic lesion are common. In Brian’s case, he was hospitalized for worsening mood symptoms, suicidal ideation, and escalating behaviors. Neuropsychological tests of intelligence and executive functioning in the hospital revealed normal performances. His presentation was notable for emotional dysregulation.

Following the hospitalizations, Brian was evaluated by a pediatric neurologist. Follow-up MRI scans revealed cortical dysplasia in the VMPC, which prompted further exploration of brain-behavior relationships. A more comprehensive neuropsychological assessment revealed poor performances on specialized tests of decision making, including the Tower of Hanoi3 which measures an individual’s ability to think ahead and plan. He learned how to complete the task, but he was not able to consistently use the information he learned to make future decisions. Learning from consequences was also a weakness, as evidenced by his performance on the Iowa Gambling Task,4 a card game in which the goal is to win as much money as possible. In this task, some decks are “bad” and other decks are “good,” because some decks will lead to losses over the long run and others will lead to gains. Brian perseverated on the bad decks (which have a higher immediate payoff), even though he knew that he was losing money overall. Perseverative responses were also observed on a design fluency task, which involved generating novel geometric designs. On the Iowa Scales of Personality Development,5 a questionnaire that quantifies real-life difficulties following brain damage, Brian’s mother described significant abnormalities on a number of scales including social inappropriateness, lack of persistence, insight, initiative, and planning. The assessment included the presence of inappropriate emotions, impulsivity, behavioral rigidity, indecisiveness, poor judgment, emotional lability, and inflexibility. These impairments in emotional and behavioral regulation are consistent with his lesion in the VMPC.

This case illustrates the value of a specialized neuropsychological assessment and the insensitivity of commonly used tests to detect prefrontal injury. The case is an example of an interdisciplinary assessment team utilizing multiple sources of information in the care of children with complex psychiatric and behavioral symptoms.

REFERENCES

5. Anderson SW, Barrash J. Iowa Scales of Personality Development: Adaptation of the ISPC for Childhood-Onset Brain Damage. Iowa City, IA: University of Iowa Carver College of Medicine, Department of Neurology; 2005.

Martin T. Stein, MD

Behavioral concerns from parents and teachers are common in all pediatric practices. Behavioral change, in fact, is a universal part of child development. Pediatricians observe large numbers of children and youth with a wide variety of challenging behaviors that are usually adaptations to changes in the environment. We are experts in the spectrum of normal behaviors at each developmental stage.

At the same time, we need to be clinically astute to detect abnormal or extraordinary behaviors. Brian’s behavioral diagnoses somewhere between 4 and 11 years included oppositional defiant disorder, ADHD, and bipolar disorder. The first 2 conditions are common; the latter condition, in my experience, is often overdiagnosed. In the absence of a family history of bipolar disease or other serious psychiatric conditions, bipolar disease in a child is unlikely. However, Brian’s presenting symptoms at 11 years are worrisome including suicidal ideation, hearing voices, stealing, and conning friends and family. The most recent behaviors are consistent with a severe conduct disorder. The clue to the possibility of a neurological disorder was that these behaviors occurred in association with an intractable
seizure disorder and the externalizing behaviors were increasing in intensity.

Developmental and behavioral pediatrics is a specialty where clinicians approach each patient through a biopsychosocial lens. Biology, internal mental process, behavior, and social context are always considered at the onset of a clinical evaluation.1 Certainly, most children with a moderate to severe behavior condition will not require a brain imaging study. An MRI of the brain should be considered cautiously and always with an awareness of what we are looking for. Dr. Rowe astutely pointed out that Brian’s escalating psychological symptoms did not match his affect. Although in this case the repeat MRI of the brain was ordered due to increasing seizure frequency, in retrospect it might have been performed even if the seizures were controlled considering the progression of behavioral symptoms with a seizure disorder. This case is also a reminder to occasionally ask another neuroradiologist to review a previously performed MRI.

A final note: One of the earliest challenging cases in the *Journal* was about a school-age child with a pure behavioral presentation of a brain tumor.2

**REFERENCES**


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**In Memoriam**

**Gregory S. Liptak (1947–2012)**

On March 4, 2012, Gregory S. Liptak, MD, MPH, died at the age of 65 surrounded by his family. For 14 months he fought a lethal and rare form of cancer that kills most people in half that time. A colleague of his at Strong (where he practiced pediatrics for 27 years) once wrote that he was “a unique combination of talent, compassion, brilliance and creativity.” As a world-renowned developmental pediatrician, Dr. Liptak improved the lives of thousands of children and families with rare diseases and disabilities. He authored many articles for the *Journal of Developmental and Behavioral Pediatrics*, including the following:

- *Social Participation in a Nationally Representative Sample of Older Youth and Young Adults with Autism*, May 2011
- *Disparities in Diagnosis and Access to Health Services for Children with Autism: Data from the National Survey of Children’s Health*, June 2008
- *Fathering Behaviors: The Dynamics of the Man/Child Bond*, June 1986
- *Behavioral Problems in Deaf Children: Methodologic and Theoretical Considerations*, March 1981

Dr. Liptak’s contribution as a reviewer was also extensive. He committed his life to serving others as a husband, a father, a teacher, a volunteer and an advocate for those who could not advocate for themselves. Dr. Liptak’s passing will be deeply mourned, but his life and what he stood for will be eternally celebrated through The Liptak Foundation, dedicated to providing compassionate care to ALL patients and their families.