Unmasking Comorbid Pyromania and Psychosis in a Patient With Anorexia

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Although psychosis is rare in adolescent patients with anorexia nervosa restricting type, the possibility should be explored because it may be the underlying cause of the eating disorder.

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First described by Richard Morton, MD, in 1689,1 the incidence of anorexia nervosa (AN) has been increasing in the past century in Europe and North America. Lifetime prevalence rates in recent years have been reported at 0.3% to 3.7%.2-4 The illness is viewed as a phenomenon of western industrialized countries, although with increasing globalization and the spread of western culture, incidence rates in non-western countries are climbing.5

Affective disorders, anxiety disorders, and obsessive-compulsive disorder are often comorbid with AN restricting type.3 Braun and colleagues6 reported a 41.2% lifetime prevalence of affective disorders in patients with AN restricting type, making affective disorders the most common set of diagnoses comorbid with AN restricting type. Although the current literature describing AN restricting type with comorbid psychosis is limited, this combination was first described in 1939 by Nicolle,7 who noted that an anorexic patient's mental state had a distinct schizoid tendency.8

Comorbid AN restricting type and pyromania is a particularly unexpected combination, given that the 2 illnesses involve very different types of patients: AN restricting type typically occurs in females with internalizing behaviors (eg, constraint, conforming, and perfectionism),8,9 while pyromania typically occurs in male patients with externalizing behaviors (eg, impulsivity, aggression, and delinquency).10-12 Patients with these disorders share some common risk factors, including poor family dynamics, lack of social skills, and decreased appropriate expression of anger and tension.11-13

Case study

A girl aged 14 years was referred to a university child and adolescent psychiatry eating-disorders unit from an outlier hospital. The patient had a 6-month history of eating disorder, with symptoms worsening 2 months before admission. The patient had begun exercising 20 minutes a day and gradually increased this to 90 minutes a day. When she became too weak to exercise the full 90 minutes, she initiated food intake restriction to continue her weight reduction.

On admission, the patient was interviewed and examined. Staff (attending and fellow physicians, registered nurse, and medical students) also interviewed her family and reviewed her medical records. The patient had lost a total of 15 lb, with a 10-lb loss in the 2 months before admission. At admission, the patient was only 68% of her ideal body weight. She denied episodes of binging, purging, or laxative use. She experienced menarche at age 12, but her menses had ceased 4 months before admission.

The patient presented with passive suicidal ideation, expressing that she would be better off dead.10 Two weeks before admission, the patient thought about jumping in front of traffic. She denied having previous suicide attempts, and her family concurred. The patient said she had been miserable for 4 to 5 years but noted more intense daily sadness in the 2 weeks before hospital admission.

The patient's parents described obsessive compulsive symptoms that had been present for 4 years. She was very preoccupied with being on time and said she felt like a failure if she arrived late for anything. She stated that arriving on time would prevent catastrophic things from happening to herself or her family. Her parents did not believe the symptoms were a problem, since they did not conflict with her schoolwork or personal life. They further thought this behavior was actually a positive thing—a sign of responsibility—and had not seen a need to address it.

In her initial evaluation, there were no obvious symptoms of psychosis, posttraumatic stress...
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Discussion

AN was divided into subtypes in 1994 based on differences found in impulsivity, substance abuse, suicidality, and lability of mood. Patients with AN binge-eating/purging type were found to have greater impulsivity, mood lability, depression, frequency of suicide attempts, and self-injurious behavior. Previous studies of impulsivity among patients with eating disorders did not discuss inquiries into specific impulse control disorders such as pyromania.
This patient's display of impulsivity was unexpected because she presented with AN restricting type. However, Eddy and colleagues\textsuperscript{15} found no difference in impulsivity between the binge-eating/purging and restricting types of AN. They also found a younger age of onset in patients with AN restricting type and a 62% crossover rate to the binge-eating/purging type at 8-year follow-up. This may suggest that the restricting type simply represents an earlier phase in the course of AN and one that will eventually progress to the binge-eating/purging type. However, further research must be completed to confirm this theory.

The discovery of symptoms in this patient resulted from careful examination over time. The impulsivity she displayed placed her at increased risk of a suicide attempt and warranted closer attention, especially since she had thoughts of running into traffic.\textsuperscript{17} Her pyromania led to the discovery of her bizarre thoughts, prompting further exploration that, in turn, led to the diagnosis of her psychosis.

Hugo and Lacey\textsuperscript{19} have identified 2 distinct varieties of patients with AN and comorbid psychosis: those in whom the psychosis exists independently from the eating disorder and those in whom the psychosis is transient and may be related to the eating disorder. Dymek and le Grange\textsuperscript{20} have identified 2 competing theories about the relationship between AN and psychosis. One theory defines the psychotic symptoms developing as a result of starvation, while others contend that the anorexic symptoms are secondary to the underlying psychosis.

In this case, the patient's psychotic symptoms became evident as her nutritional status improved. It is possible that the patient's psychosis predated the symptoms of AN. She described paranoid thoughts nearly a decade before her eating disorder manifested, which supports the theory that the eating disorder can occur secondary to psychosis.\textsuperscript{20} It is very important to note that the comorbid pathologies in this patient did improve and remit once the psychosis was treated.

Finally, it is possible that the patient did not meet the criteria for pyromania during the year before admission because of her psychosis. However, she did appear to meet the criteria for pyromania for at least 1 year when it first developed. It is important to make sure that psychosis is not the underlying cause of pyromania, per the exclusionary criteria in DSM-IV.

**Conclusion**

What makes this case unique is the complex group of unusual comorbidities. Psychosis may occur in adolescent patients with AN restricting type, yet its occurrence in such cases is rare. However, the possibility of psychosis should be explored, since it may be the underlying cause of a patient's eating disorder. In this case, the patient's diagnosis of psychosis was not otherwise stated. She may have had prodromal symptoms of schizophrenia.

Identification of psychosis in this patient led to better treatment. Schizophrenia may eventually be diagnosed and early recognition will most likely result in a better outcome for this patient. In addition, the treatment of her psychosis led to a global improvement in this patient's presenting symptoms (ie, AN restricting type, depression, suicidality, homicidality, and pyromania). After treatment, she had no further desire to hurt herself or others, set fires, or restrict her eating. However, she continued to have low self-esteem.

Physicians working with patients with eating disorders need to consider psychosis in their differential diagnosis and thoroughly investigate impulsivity. Assessment of impulsivity can lead to a better understanding of the patient's eating disorder at the time of admission and in future follow-up assessments, if only to discover binge-eating/purging behaviors. It can also help in the assessment of high-risk behaviors, such as suicidality and homicidality. If the impulsivity is severe, the physician may want to ask questions regarding impulse control disorders, including pyromania. The exploration of impulsivity may lead to the diagnosis of psychosis as either the underlying cause of an eating disorder or a distinct comorbid entity.

Appropriate diagnosis and treatment of psychosis should lead to decreased suffering, especially for those who cannot communicate well (eg, young children and patients with developmental disabilities, learning disorders, mental retardation, language processing disorders, or aphasia). Dr Parvin is a board eligible general psychiatrist and a fellow in child and adolescent psychiatry in the division of child and adolescent psychiatry of the department of psychiatry at Penn State College of Medicine and the Penn State Milton S. Hershey Medical Center in Hershey, Pa. He reports that he has no conflicts of interest concerning the subject matter of this article. Ian Deutchki is a medical student at Penn State College of Medicine and the Penn State Milton S. Hershey Medical Center. He reports that he has no conflicts of interest concerning the subject matter of this article.
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Drugs Mentioned in This Article

Olanzapine (Zyprexa)

References


Evidence-based References
