••• CASE 43

A 12-year-old boy attends a summer camp for children with attention-deficit/hyperactivity disorder (ADHD) every summer. He always looks forward to this 3-week experience in the summer, and this year is no different. His parents drop him off at camp without incident as usual, and he moves into his cabin and renews his friendships from years past very quickly. Over the next several days, he comes to the camp infirmary several times daily complaining of feeling scared, short of breath, worried, and tearful. He sometimes feels so scared and short of breath, he thinks he is going to die. He has not experienced these feelings in the past with any regularity. His daily routine has changed considerably over the past several days given the camp environment, living in a cabin with several other boys, and the increased amount of exercise. including team sports, swimming, horseback riding, and campfires.

- **What is the most likely diagnosis?**
- **What is the best diagnostic test?**
- **What is the best treatment for this disorder?**

ANSWERS TO CASE 43: Anxiety Disorder Caused by Asthma

Summary: A 12-year-old boy comes to the camp infirmary with a primary complaint of anxiety symptoms, including worry, feeling frightened, short of breath, tearful, and worried that he is going to die. These symptoms seem to be related to beginning camp and are interfering with his ability to participate fully in the camp's activities. On physical examination by the camp physician, she hears wheezing when auscultating his lungs. She then checks his tidal volume and finds it significantly reduced. She chooses to give him an asthma inhaler and checks his tidal volume several minutes later when he feels much better, and it is normal.

- **Most likely diagnosis:** Anxiety disorder secondary to a general medical condition (asthma).
- **Diagnostic tests:** Complete blood count (CBC) with differential, physical examination, peak flow respiratory testing.
- **Best treatment:** His anxiety symptoms are related to his newly induced asthma. Treating the asthma is the best way to reduce the anxiety symptoms.

Analysis

Objectives

1. Recognize anxiety disorder secondary to a general medical condition (see Table 43-1 for diagnostic criteria).
2. Use laboratory tests appropriately to finalize the diagnosis of this disorder in a patient.
3. Understand the treatment of patients with this disorder.

Table 43-1
DIAGNOSTIC CRITERIA FOR ANXIETY DISORDER SECONDARY TO A MEDICAL CONDITION

1. Anxiety, panic aitacks. or obsessions or compulsions are the primary symptoms in the clinical picture.
2. The patient's history, a physical examination, or laboratory findings strongly suggest that the symptoms are a direct physiologic consequence of a general medical condition.
3. The symptoms are not betler explained by another mental disorder.
4. The symptoms do not occur only during the course of a delirium.
5. The symptoms cause clinically significant distress and/or impairment in functioning.

Considerations

This patient has obvious problems with anxiety but cannot pinpoint any psychological trigger. He attended the camp many times in the past and was looking forward to it this year. The patient began to feel a number of psychological symptoms that are often felt with the shortness of breath experienced with asthma. The anxiety has been present since starting camp, which also could be the trigger for the asthma. Environmental allergens associated with being outdoors in the summer and exercise can be related to asthma exacerbation. A physical examination can reveal wheezing in the lung fields, and the peak flow expiratory levels are likely to be below normal. All these symptoms occurred over the past few weeks, and the patient did not previously consider himself anxious or a worrier, suggesting something other than generalized anxiety disorder (GAD).

APPROACH TO ANXIETY DISORDER SECONDARY TO A MEDICAL CONDITION

Definition

Sjogren syndrome: A chronic disease in which white blood cells attack the moisture-producing glands. The hallmark symptoms are dry eyes and a dry mouth, but it is a systemic disease, affecting many organs and causing fatigue. It is one of the most prevalent autoimmune disorders, striking as many as 4 million Americans annually.

Clinical Approach

Many medical conditions can manifest symptoms that resemble a variety of anxiety disorders, including panic attacks, GAD, and obsessions and compulsions.

Differential Diagnosis

Multiple medical illnesses can cause syndromes in which anxiety is prominent; these include a host of neurologic disorders, systemic conditions, endocrine diseases, immune system disorders, deficiency states, and toxic conditions. **The criteria for GAD are met in up to 60% of patients with Graves disease.** Sjogren syndrome can produce prominent anxiety symptoms. In hypothyroidism, hypoparathyroidism, hypoglycemia, and B_{12} deficiency, anxiety can be the initial or predominant symptom. A pheochromocytoma can cause episodes of anxiety that mimic panic attacks. Patients with cardiomyopathy awaiting a cardiac transplant have a high incidence of panic disorder, probably as a result of increased noradrenergic tone. Parkinson disease and chronic obstructive pulmonary disease (COPD) can

also lead to panic attacks. Obsessive-compulsive symptoms have been reported in individuals with Sydenham chorea and multiple sclerosis. The clinician must keep in mind that the patient can have a coexisting but independent medical illness and anxiety disorder; in this case, the patient's previous psychiatric history, course of illness, and current symptoms can be helpful diagnostically.

Other possible diagnoses include axis I disorders such as major depression, schizophrenia, and bipolar disorder, mania, all of which can cause anxiety, and the presence of other symptoms (e.g., depressed mood, hallucinations, excessive spending) can help in differentiating among them.

Treatment

Treatment of an anxiety disorder secondary to a general medical condition includes addressing the causative medical illness. Some anxiety symptoms can linger long after treatment of the condition has been otherwise successful, especially in the case of obsessions and compulsions; in such cases, the symptoms can be treated as if they were primary psychiatric syndromes. As in the case of primary anxiety disorders, selective serotonin reuptake inhibitors (SSRIs), benzodiazepines, and buspirone can all be helpful, depending on the nature of the anxiety. For example, an individual with mainly obsessions and compulsions tends to respond to SSRIs. whereas a person with primarily generalized anxiety symptoms responds to buspirone.

Comprehension Questions

[43.1] A 62-year-old man with a history of diabetes mellitus, chronic COPD. hepatitis C. peripheral neuropathy, and a pacemaker for control of cardiac arrhythmia complains of new-onset episodic anxiety occurring over the past 3 weeks. He has no history of anxiety symptoms. Episodes of intense anxiety tend to occur in the daytime, last for 30 minutes to an hour, and are accompanied by hyperventilation and a sense of "palpitations," as well as some confusion and disorientation. Of the following, which is least likely to be the diagnosis in this case?

A. Panic disorder
B. Episodic hypoglycemia
C. Hypoxia caused by COPD
D. Hypoxia caused by arrhythmia

[43.2] A 45-year-old man with schizophrenia, type II diabetes, and alcohol and cocaine dependence comes to the emergency department 2 hours after drinking half of a fifth of whiskey and smoking cocaine, after which he fell and hit his head. He describes losing consciousness for several minutes. He states that he feels extremely anxious, saying, "I can't calm down." In the emergency department, he is noted to be hyperventilating. Which of the following tests should be performed immediately?

A. Blood glucose level determination
B. Thyrotropin (TSH) level determination
C. Abdominal ultrasound examination
D. Test for human immunodeficiency virus disease

[43.3] Generalized anxiety disorder secondary to a medical condition is diagnosed in a 23-year-old woman after she began having obsessions and compulsions after falling from a horse. Although her head trauma was treated, and she apparently suffered no sequelae, her obsessions and compulsions have continued. If medication is given, which of the following medication side effects will most likely develop?

A. Orthostatic hypotension
B. An increase in the QT interval
C. Anorgasmia
D. Tardive dyskinesia

[43.4] A patient experiencing tachycardia, derealization, paresthesias, and shortness of breath most likely would be diagnosed with?

A. Myocardial infarction
B. Asthma
C. Hyperthyroidism
D. Agoraphobia
E. Panic attacks

Answers

[43.1] A. This man has multiple medical problems that can cause anxiety symptoms and no history of anxiety. He can be inadvertently overdosing on insulin or hypoglycemic medications, or his pacemaker is not functioning properly. Although a primary diagnosis of an anxiety disorder is possible, it is the least likely in this case.

[43.2] A. This patient is hypoglycemic, or his anxiety is caused by alcohol withdrawal or cocaine intoxication. Because he has history of a head injury, a computed tomography scan of the head should be performed to rule out a hemorrhage. The other laboratory or imaging tests are unnecessary in the short term.

[43.3] C. Selective serotonin uptake inhibitors are the treatment of choice for obsessions and compulsions, and the most common side effect of these agents is sexual dysfunction, primarily anorgasmia in women and delayed ejaculation in men.

[43.4] E. Tachycardia, derealization, paresthesias, and shortness of breath are the classic presentation for panic attacks. Panic attacks are also associated with agoraphobia but are distinct from that disorder.

CLINICAL PEARLS

Many medical illnesses produce prominent anxiety symptoms, and a carefully recorded history, a review of symptoms, and a physical examination usually point to the underlying medical problem.

The presence of a psychiatric history should not preclude careful evaluation for a medical cause of symptoms.

REFERENCES

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