A 36-year-old woman comes to the emergency department with a chief complaint of “I think that I am going crazy.” She states that for the past 2 months she has been experiencing sudden episodes of palpitations, sweating, trembling, shortness of breath, chest pain, dizziness, and feeling as if she is going to die. She has been to the emergency department twice in the past 2 weeks, convinced that she is having a heart attack. However, the results of all her physical and laboratory examinations have been within normal limits. She states that the first episode occurred when she was walking down the street, not thinking about “anything in particular.” The episode lasted approximately 15 minutes, although the patient says that it felt like it lasted much longer. Since that time she has had similar episodes once or twice a day, every day. As a result she finds herself worrying almost constantly about when she is going to have another attack. She denies having any other symptoms. She denies drug use and uses alcohol only “occasionally.” Her alcohol intake has decreased since the episodes began. Her only medical problem is a 1-year history of hypothyroidism for which she takes levothyroxine (Synthroid).

◆ What is the differential diagnosis?

◆ What is the next diagnostic step?
ANSWERS TO CASE 3: Panic Disorder Versus Thyroid Medication Overuse

Summary: A 36-year-old woman comes to the emergency department with a chief complaint and symptoms consonant with panic disorder (feeling as if she is going crazy or going to die, chest pain, shortness of breath, palpitations, sweating, trembling, and dizziness). She has been to the emergency department several times with the same symptoms, and no physical problems were found. The episodes have occurred once or twice a day for several months, and nothing in particular seems to precipitate them. The patient spends a lot of time between attacks worrying about when she is going to have another attack. The episodes last approximately 15 minutes. The patient denies alcohol or drug abuse, and her only medical problem is hypothyroidism.

◆ Top two diagnoses in the differential: Panic disorder versus medication (Synthroid)-induced anxiety disorder.

◆ Next diagnostic step: Obtain a thyroid profile and look for elevated levels of thyroid hormone, which if present could explain her symptoms.

Analysis

Objectives
1. Be able to correctly diagnose panic disorder in a patient.
2. Be aware that medical illnesses (or some substances) can cause panic attacks.
3. Understand how to rule out a medical illness or substance use issue by requesting the appropriate laboratory studies.

Considerations
This woman presents with classic symptoms of a panic attack. The attacks first appeared “out of the blue” and have occurred once or twice a day, every day, for the past several months. They are short-lived in duration, lasting about 15 minutes per episode. The patient spends a lot of time in between the attacks worrying about having another attack, a classic feature of the disease. The patient does not seem to have any symptoms of any other psychiatric disorder. She denies drug or alcohol use other than the occasional use of alcohol (which should be carefully quantified). She has hypothyroidism that is being treated with levothyroxine, which has been known to cause panic attacks when the dose is too high; thyroid studies should be used to rule out this possibility. If the thyroxine level is too high, the diagnosis will be substance-induced anxiety disorder and not anxiety disorder secondary to hyperthyroidism, as might be considered. If the patient has panic disorder, she should be treated with a selective serotonin reuptake inhibitor, along with a
short-acting benzodiazepine (alprazolam), for immediate control of her symptoms. The use of benzodiazepine should be discontinued after the first several weeks. Cognitive behavioral therapy can also be used. If the patient has an anxiety disorder due to a substance (thyroid medication), the dose should be decreased and the panic symptoms should remit.

**APPROACH TO PANIC DISORDER**

**Definitions**

**Agoraphobia:** Anxiety about being in places or situations from which escape might be difficult (or embarrassing) or in which help may not be available in the event of experiencing a panic attack. These situations include being outside the home alone, being in a crowd, being on a bridge, or traveling on a bus, train, or automobile.

**Panic attack:** A period of intense fear lasting for a discrete period of time, associated with at least four of the symptoms listed in Table 3-1. The criteria for panic disorder are denoted in Table 3-2.

**Clinical Approach**

Attacks may vary from several a day to only a few during the course of an entire year. Prior to publication of the *Diagnostic and Statistical Manual (DSM-IV)*, panic disorders were defined by placing boundaries on the quantity

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**Table 3-1**

**DEFINITION OF PANIC ATTACK**

Panic attack consists of discrete episodes of at least four of the following:

1. Palpitations
2. Sweating
3. Trembling
4. Shortness of breath
5. Feeling of choking
6. Chest pain
7. Nausea
8. Dizziness
9. Derealization or depersonalization
10. Fear of losing control or going crazy
11. Fear of dying
12. Numbness or tingling
13. Chills or hot flashes
and/or minimal time frame necessary between attacks. The DSM-IV does not specify the number of attacks necessary nor does it give a time frame. It requires that at least one panic attack be followed by concern about another attack, fear of the implications of the attack, or a change in behavior related to the attack. The DSM-IV has established two diagnostic criteria for this disorder: panic disorders with agoraphobia (anxiety about being in places or situations from which escape would be difficult) and without agoraphobia. It is theorized that agoraphobia stems from the fear of having a panic attack in a place from which escape would prove difficult.

Typically, the first panic attack an individual experiences is spontaneous; however, it can also follow excitement, exertion, or an emotional event. The attack begins within a 10-minute period of rapidly intensifying symptoms (extreme fear or a sense of impending doom) and may last up to 20 to 30 minutes. Patients with agoraphobia avoid being in situations where obtaining help from friends or loved ones would be difficult. These individuals typically need to be accompanied when traveling on busy streets or in enclosed areas (tunnels, elevators). Severely affected individuals do not even leave their own homes.

In the general population the lifetime prevalence rates of panic disorder ranges from 1.5% to 5%. The mean age of presentation is about 25 years, with women being two or three times more likely to be affected than men. Approximately one third of patients with panic disorder also have agoraphobia.

**Differential Diagnosis**

At the top of the differential diagnosis list for panic disorder are the numerous medical conditions that can cause panic attacks. Table 3.3 lists some of them. Intoxication caused by amphetamines, cocaine, or hallucinogens and by withdrawal from alcohol or other sedative-hypnotic agents can mimic panic disorder. Medications such as steroids, anticholinergics, and theophylline are also well known to produce anxiety. Obtaining a thorough history (including details of alcohol and substance use) and performing a physical examination can usually clarify the issue. Except for the elevated blood pressure and pulse rate found in anxious states, no abnormalities are seen on examination. Any sig-

<table>
<thead>
<tr>
<th>Diagnostic Criteria for Panic Disorder</th>
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<tbody>
<tr>
<td>1. Recurrent, unexpected panic attacks</td>
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<tr>
<td>2. Attacks followed by 1 month of one of the following: concerns about having additional attacks, worry about the consequences of attacks, or a change in behavior as a result of attacks</td>
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<tr>
<td>3. Attacks are not due to substance abuse, to medication, or to a general medical condition</td>
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<tr>
<td>4. Attacks are not better accounted for by another mental illness</td>
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<tr>
<td>5. Can occur with or without agoraphobia</td>
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significant abnormal findings discovered should prompt a further workup for a nonpsychiatric cause. Treating the underlying conditions, adjusting medications, and/or initiating a detoxification process are also likely to resolve the anxiety symptoms.

Distinguishing panic disorder from other anxiety disorders can often be confusing. Panic attacks can be seen in many other anxiety states, as well as in depression. In fact, major depressive disorder has a high rate of comorbidity with panic disorder. The **hallmark of panic disorder is unexpected panic**
attacks not provoked by any particular stimulus. This condition is distinct from other anxiety disorders, where panic attacks are the result of exposure to a certain cue. For example, a car backfiring might provoke a panic attack in a patient with posttraumatic stress disorder, or being near a dog might provoke a panic attack in someone with a specific phobia to dogs. The other important aspect to remember is that in panic disorder the fear is actually of having an attack, not of a specific situation (contamination in the case of obsessive-compulsive disorder or performance in the case of social phobia) or of a number of activities (as in generalized anxiety disorder).

Treatment

Antidepressants such as selective serotonin reuptake inhibitors (SSRIs), tricyclic antidepressants, and monoamine oxidase inhibitors are highly effective in treating panic disorder. As in depression, a significant therapeutic effect may not be seen for several weeks. Treatment with a benzodiazepine may be needed on a short-term basis to provide more immediate relief. Given the addictive potential of benzodiazepines, as well as the significant comorbidity of alcohol abuse in panic disorder, the goal should be to use as small a dose for as short a period of time as possible, with the intention of discontinuing this medication once the antidepressant reaches full effect. Cognitive-behavioral therapy can be helpful, especially in panic disorder with agoraphobia, as it specifically addresses the restrictions on lifestyle present in individuals with this condition.

Comprehension Questions

[3.1] A 28-year-old man describes a persistent fear of speaking in public. Although he does not have difficulty with one-on-one situations, when giving a lecture he becomes extremely anxious, worrying that he will be humiliated. He relates one episode in which he was forced to speak at the last minute, which resulted in his experiencing panic, shaking, abdominal cramps, and a fear that he would defecate on himself. Because of this problem, he has been held back from promotion at his place of business. Which of the following is the most likely diagnosis?
A. Generalized anxiety disorder
B. Panic disorder
C. Social phobia
D. Specific phobia

[3.2] A 40-year-old woman presents with complaints of not being able to leave her house. For the past 5 years she has had increasing difficulty traveling far from home. She constantly worries that she will not be able to get help if she “freaks out.” In fact, she has had numerous unprovoked episodes of intense fear, associated with shortness of breath, chest pain, diaphoresis, and dizziness, that lasted for 20 min-
utes. She is convinced that if she drives too far from home, she will have an attack and not be able to obtain help. Which of the following is the most likely diagnosis?

A. Generalized anxiety disorder  
B. Panic disorder  
C. Social phobia  
D. Specific phobia

[3.3] A 25-year-old woman describes a lifelong history of being “scared of heights.” She becomes uncomfortable when higher than three stories and whenever traveling or shopping becomes preoccupied with knowing the heights of buildings. On finding herself at a significant elevation, she has severe anxiety symptoms such as trembling, lightheadedness, numbness and tingling, and a fear of dying. Which of the following is the most likely diagnosis?

A. Generalized anxiety disorder  
B. Panic disorder  
C. Social phobia  
D. Specific phobia

[3.4] The chief complaint of a 33-year-old man is, “I’m going to have a heart attack like my father.” He explains that his father died of a myocardial infarction at age 45. He is convinced that he is experiencing angina attacks consisting of nervousness, sweating, palpitations, flushing, and numbness in his hands and lasting approximately 5 minutes. He is anxious about having these symptoms and, despite negative results from a cardiology workup, remains certain that he will suffer a heart attack. His behavior and lifestyle have not been otherwise affected. Which of the following is the most likely diagnosis?

A. Generalized anxiety disorder  
B. Panic disorder  
C. Social phobia  
D. Specific phobia

**Answers**

[3.1] C. The most likely diagnosis for this man is social phobia. Although he suffers from panic attacks, they are not unprovoked as in panic disorder because they occur in response to public speaking. His fear is not of having further attacks but rather of being embarrassed or humiliated.

[3.2] B. This woman most likely has panic disorder with agoraphobia. She experiences recurrent spontaneous panic attacks and between attacks worries about having further attacks. She avoids driving away from her home for fear of being unable to obtain help in the event of an attack.
Specific phobia is the most likely diagnosis for this woman. Although she has panic attacks, they are not unexpected and result from being in a high place. Her fears are actually of a situation (heights) rather than of having further panic attacks.

The most likely diagnosis for this man is panic disorder without agoraphobia. He displays characteristic features of panic attacks, such as recurrent episodes of anxiety associated with physical symptoms. These episodes are spontaneous, and he worries about the consequences of having an additional attack, namely, a myocardial infarction.

**CLINICAL PEARLS**

- Panic disorder is characterized by recurrent, *unexpected* panic attacks associated with worry about having additional attacks, the consequences of attacks, or a change in behavior as a result of attacks.
- Any medical conditions, medications, or substance abuse that can cause panic attacks should be ruled out.
- Major depressive disorder is commonly seen in patients with panic disorder.
- Selective serotonin reuptake inhibitors or other antidepressants are used in the pharmacologic treatment of panic disorder. If benzodiazepines are also administered, they should be used in as low a dose and for as short a time as possible.

**REFERENCES**

