An otherwise healthy 62-year-old man is brought to the emergency department 45 minutes after an episode of loss of consciousness while shaving. Prior to the episode, he had light-headedness, nausea, and dimming of vision. His wife states that he was unconscious for about 1 minute and lost control of bladder function. She did not notice any movement during the episode. He had a similar episode 1 month ago while shaving. At that time, echocardiography, 24-hour ambulatory ECG monitoring, and a tilt test showed no abnormalities; cardiac enzyme activities were within the reference range. His current blood pressure is 150/96 mm Hg. A grade 2/6, systolic ejection murmur is heard best at the upper left sternal border. The remainder of the examination shows no abnormalities. Which of the following is the most likely diagnosis?

(A) Absence seizure  
(B) Aortic stenosis  
(C) Carotid sinus hypersensitivity  
(D) Generalized tonic-clonic seizure  
(E) Neurocardiogenic (vasovagal) syncope  
(F) Transient ischemic attack
### Learning Objectives

The listener should be able to:

- Define the clinical features of an absence seizure.
- Define the signs, symptoms, and physical exam findings of aortic stenosis.
- Recognize common clinical situations precipitating an episode of syncope in a patient with carotid sinus hypersensitivity.
- Recognize the features of a generalized tonic-clonic seizure.
- Recognize the clinical presentation of neurocardiogenic syncope.
- Diagnose a Transient Ischemic Attack in a patient in the ER.

### Key Teaching Points

1. Absence seizures typically occur in younger children and resolve as they get older. The episodes consist of patients who “stare into space” and disengage from activity for a few seconds. The episodes can occur up to 100 times a day.

   During the episodes patients may experience impairment of consciousness, but no loss of postural tone, incontinence, or postictal state.

2. Patients with aortic stenosis may be asymptomatic for years before displaying any signs or symptoms. Patients will have signs and symptoms such as angina, exertional syncope, dyspnea on exertion, orthopnea, and PND. Patients with aortic stenosis will exhibit on physical exam S4 heart sounds, harsh crescendo-decresendo systolic murmur which is best heard in the second intercostal space and radiates to the carotids, parvus et tardus, sustained PMI, and a precordial thrill.

3. Any action that causes pressure to the carotid sinus baroreceptors including shaving, turning the head or wearing tight collars may be associated with an episode of syncope in patients with carotid sinus hypersensitivity.

4. Generalized tonic-clonic seizures may be preceded by an aura of depersonalization followed by loss of consciousness, stiffening of the muscles followed by rapid convulsions. These seizures can be associated with loss of continence, bowel and bladder.

5. Neurocardiogenic syncope, also known as vasovagal syncope, is the most common cause of syncope accounting for up to 35% of cases. The diagnosis may be suggested by a specific history with well-known triggers, but a classic history is not required. Patients are most often young and in good health. Some classical triggers include emotional stress, prolonged standing, heat exposure, fear of bodily injury, and painful stimuli. It often begins with a prodrome of nausea, dizziness or light-headedness, pallor, and diaphoresis. Syncope usually occurs in the standing position and the loss of consciousness is of short duration with immediate recovery and no post-ictal period. Loss of bladder control may occur.

6. Transient ischemic attack (TIA) is now defined as a transient episode of neurologic dysfunction caused by focal brain, spinal cord, or retinal ischemia, without acute infarction. The most common symptoms of TIA include the following: hand, tongue, cheek, face, arm, or leg weakness or numbness, difficulty speaking (garbled speech), slurred speech, or inability to speak at all, and blurred, double or decreased vision in one or both eyes.
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