Definition

Palpitation is a common, unpleasant, and often alarming awareness of heartbeats. It may result from increased conscious perception of the normal cardiac rhythm or from any cardiac arrhythmia producing changes in heart rate, rhythm, or contraction pattern, and may be reported as a skipping, pounding, fluttering, or similar sensation.

Technique

The history of palpitations may provide information as to the cardiac origin of the sensation, the type of rhythm disturbance responsible, and the clinical significance of the symptom. Various terms may be used to describe the sensation. These range from a nonspecific cardiac awareness to discrete episodes of rapid beats. Terms commonly used include "skip beats," "racing," "pounding," "fluttering," as well as numerous others. Any of these may reflect a cardiac irregularity. A fleeting "sinking" feeling may also be described; this is particularly common in patients with isolated extrasystoles and may correspond to the post-extrasystolic compensatory pause.

A report of seeing the chest move or "flutter" may suggest chest wall muscle fasciculations. In yet other cases, a noncardiac vascular origin of the symptom may exist, as in hypertension, aortic regurgitation, and tricuspid regurgitation with exaggerated pulsations of the arterial or venous systems.

Once a cardiac origin is suspected, the detailed history may provide clues as to the type of arrhythmia. Single "skips" suggest isolated premature extrasystoles, whereas the abrupt onset and termination of rapid, regular palpitations characterize paroxysmal supraventricular or ventricular tachycardia. Polyuria may follow paroxysmal supraventricular tachycardia. Paroxysmal atrial fibrillation is often described as beats irregular in both rhythm and strength, whereas sinus tachycardia is of gradual onset and offset with a regularly increasing and decreasing heart rate. Syncope following an episode suggests sinus node dysfunction with overdrive suppression of normal pacemaker function after a bout of atrial tachycardia. In patients with ventricular demand pacemakers, palpitation may occur with beginning and/or ending of demand pacing.

The examination may be aided by asking the patient to tap the rhythm or to choose from several cadences tapped by the physician. It is important to recognize, however, that these diagnostic hints are only suggestive; a conclusive diagnosis depends on electrocardiographic recordings during a symptomatic episode.

The history may likewise suggest a pathophysiologic mechanism for the presumed arrhythmias. Palpitations during exercise, particularly in an unconditioned patient, or during emotional episodes may reflect a normal sinus tachycardia; in a patient with coronary artery disease, a ventricular arrhythmia caused by exercise-induced myocardial ischemia may also be suspected. Regular, slow beats during rest or at night typically reflect heightened awareness of normal cardiac rhythm in an anxious patient.

The examiner should also seek precipitating factors or systemic diseases that may provide both a key to understanding the pathophysiology of the symptoms and a possible therapeutic approach. These include emotional and physical stress, fatigue, febrile illnesses, thyrotoxicosis, and caffeine or alcohol ingestion, in addition to drug toxicity (antiarrhythmic agents, cardiac glycosides) and worsening of any underlying cardiac disease. A family history of arrhythmias may suggest preexcitation or long Q-T interval syndromes.

The complete history will provide evidence as to the clinical significance of the symptom and the underlying arrhythmia. A history of organic heart disease is particularly important, as cardiac arrhythmias in the absence of structural cardiac disease pose less risk to life than in the presence of, particularly, ischemic heart disease or cardiomyopathy. In the former case, palpitations may represent an inconvenient symptom to be managed by reassurance, whereas in the latter aggressive drug therapy to prevent or delay sudden cardiac death may be mandatory. Thus, a complete history of chest pain, dyspnea, and the like, becomes a critical component of the history of palpitation.

Associated histories of syncope or near syncope should be sought. Palpitations in a patient with syncope probably increase the likelihood of a cardiac origin for the loss of consciousness. Palpitations immediately preceding syncope are classic symptoms of sick sinus syndrome.

Basic Science

The sensory mechanisms responsible for palpitation are unknown. In general, palpitations reflect changes in cardiac rate, rhythm, or both, or changes in contractility and/or ventricular contraction pattern. In each case, it is the abnormal movement of the heart within the chest that is felt. In cases of isolated extrasystoles, the augmented postextrasystolic beat may be felt in place of, or in addition to, the premature beat.

The clinical perception of these changes is highly variable. Whereas some patients are aware of virtually every premature ventricular beat, others are unaware of complex atrial or ventricular tachyarrhythmias. For example, 19 of 28 ambulatory patients with ventricular tachycardia studied by Winkle et al. (1977) were asymptomatic. Conversely, many patients with symptoms do not have major or significant rhythm disturbances. Of 165 patients complaining of palpitations who were monitored by Zeldis et al. (1980), 36% had normal rhythm during symptomatic periods.

DAVID M. MIRVIS
10. PALPITATIONS

Certain conditions predispose to symptoms. Patients with anxiety states, particularly those with somatic anxiety, most often report symptoms. Awareness is heightened in sedentary, depressed patients and reduced in active, happy persons.

Palpitations may also be prominent in certain cardiac disorders without arrhythmias. These include hyperkinetic circulatory states (e.g., brought on by anemia, fever), aortic or mitral regurgitation, patent ductus arteriosus, and septal defects. Patients with orthostatic hypotension commonly sense palpitations caused by sinus tachycardia on standing.

Clinical Significance

Palpitations are significant only as markers for an underlying cardiac arrhythmia or condition. It is the type of rhythm disturbance found and the clinical context in which it occurs that determine the importance of the palpitations. The symptom does not, by itself, imply the presence of cardiac disease.

Thus, to assess the meaning of this symptom requires electrocardiographic documentation of the cardiac rhythm during a symptomatic period, and complete evaluation of the cardiac status. The former often requires prolonged periods of electrocardiographic monitoring because of the intermittency of symptoms. Thus, ambulatory electrocardiographic (Holter) monitoring provides a laboratory tool for diagnosis. The history alone cannot accurately predict the type of arrhythmia responsible.

In many, the symptoms will occur without concomitant ECG changes. Palpitations in this group reflect an accentuated awareness of normal heartbeats or a noncardiac sensation (e.g., chest wall muscle fasciculation). The significance of the symptom in these persons is limited to the assessment of any predisposing psychological factors and to the careful and deliberate avoidance of producing a cardiac anxiety state. In others with documented arrhythmias, however, the clinical relevance of palpitation will depend solely on the type of rhythm and the type of cardiac disease (if any) found.

References

