



FIGURE 276-11 Multifocal atrial tachycardia. Rhythm strip obtained from a patient with severe pulmonary disease during an acute illness. Arrows note three distinct P-wave morphologies.

to be rapid and variable, between 120 and 160 beats/min, but in some patients, it may exceed 200 beats/min. Patients with high vagal tone or AV nodal conduction disease may have slow rates.

AF is the most common sustained arrhythmia and is a major public health problem. Prevalence increases with age, and more than 95% of AF patients are older than 60 years of age. The prevalence by age 80 is approximately 10%. The lifetime risk of developing AF for individuals 40 years old is approximately 25%. AF is slightly more common in men than women and more common in whites than blacks. Risk factors for developing AF in addition to age include hypertension, diabetes mellitus, cardiac disease, and sleep apnea. AF is a marker for heart disease, the severity of heart disease, and age, and it is therefore difficult to determine the extent to which AF itself contributes to associated increased mortality and morbidity. AF is associated with increased risk of developing heart failure. AF increases the risk of stroke by fivefold and is estimated to be the cause of 25% of strokes. It also increases the risk of dementia.

AF is occasionally associated with an acute precipitating factor such as hyperthyroidism, acute alcohol intoxication, or an acute illness

including myocardial infarction or pulmonary embolism. AF occurs in up to 30% of patients recovering from cardiac surgery, associated with inflammatory pericarditis.

The clinical type of AF suggests the underlying pathophysiology (Fig. 276-12). Paroxysmal AF is defined as episodes that start and stop spontaneously. It is often initiated by small reentrant or rapidly firing foci in sleeves of atrial muscle along the pulmonary veins. Catheter ablation that isolates these foci usually abolishes the AF. Persistent AF has a longer duration, exceeding 7 days, and, in many cases, will continue unless cardioversion is performed. Cardioversion can be followed by prolonged periods of sinus rhythm. Episodes may be initiated by rapidly firing foci, but persistence of the arrhythmia is likely due to single or multiple areas of reentry facilitated by structural and electrophysiologic atrial abnormalities. In patients with long-standing persistent AF (>1 year), significant structural changes are present in the atrium that support reentry and automaticity, making it difficult to restore and maintain sinus rhythm. Some patients progress over years from paroxysmal to persistent AF. Fibrosis that develops with

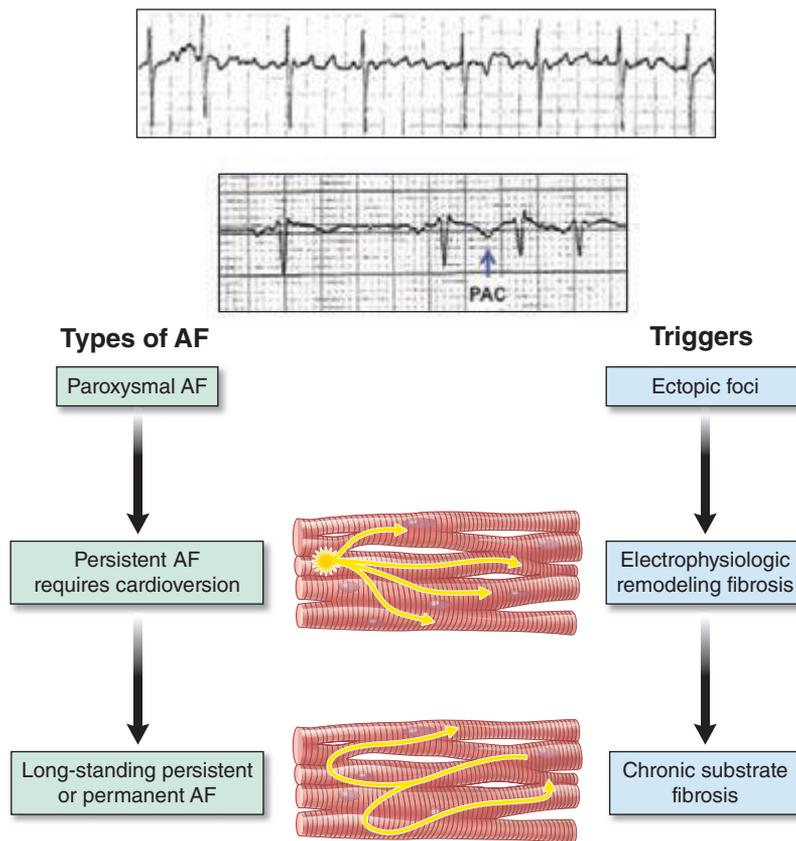


FIGURE 276-12 A rhythm strip of atrial fibrillation (AF) showing no distinct P-wave morphology and irregular ventricular response. Diagram depicts atrial fibrillation types. Paroxysmal AF is initiated by premature beats, as shown in the rhythm strip (arrow) after two sinus beats. Triggering foci are often an important cause of this arrhythmia. Persistent AF is associated with atrial structural and electrophysiologic remodeling, as well as with triggering foci in many patients. Long-standing persistent AF is associated with greater structural remodeling with atrial fibrosis and electrophysiologic remodeling.