Narrow QRS Tachycardia

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Tachycardia is defined as a ventricular heart rate exceeding 100 beats per minutes. Tachycardias are broadly categorized based upon the width of the QRS complex on the electrocardiogram. A narrow QRS complex (<120 milliseconds) suggests that the arrhythmia originates above or within the His bundle, because narrow QRS complex reflects rapid activation of the ventricles via the normal His-Purkinje system. Therefore, most of narrow QRS tachycardia is a supraventricular tachycardia. However, some kinds of fascicular ventricular tachycardia or septal ventricular tachycardia may presents with relatively narrow QRS complex, so differential diagnosis is important. The origin of tachycardia may be in the sinus node, the atria, the atrioventricular node, the His bundle, or some combination of these sites. Narrow QRS complex tachycardias can be divided into those that require only atrial tissue for their initiation and maintenance, and those that require the atrioventricular junction. The narrow QRS tachycardia includes sinus tachycardia, atrioventricular nodal reentrant tachycardia, atrioventricular reentrant tachycardia, atrial tachycardia, atrial fibrillation, atrial flutter, multifocal atrial tachycardia, inappropriate sinus tachycardia, and junctional ectopic tachycardia.

The majority of narrow QRS complex tachycardias are associated with a regular ventricular rate, however, patients with AF shows irregularly irregular ventricular rate. In addition, underlying conduction system disease and certain drug toxicities can lead to irregular appearing rhythms due to intermittent conduction block between the atria and the ventricles. Characterization of atrial activity is an important step of the diagnosis of narrow complex tachycardias. However, due to the rapid rate of the tachycardia, P waves are often superimposed on other parts of the surface electrocardiogram. In cases where P waves cannot be clearly identified, the Valsalva maneuver, carotid sinus massage, or the administration of intravenous adenosine may help to clarify the diagnosis. Once P waves are identified, the following characteristics should be determined: atrial rate, P wave morphology, RP relationship, and AV relationship. The RP interval is defined as the interval from the onset of the QRS to the onset of the P wave. The temporal relationship between the P wave and the R wave divides narrow complex tachycardias into two categories: short RP and long RP tachycardias. A differential diagnosis can be made by careful interpretation of electrocardiogram.

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