

- Supraventricular tachycardia (SVT)

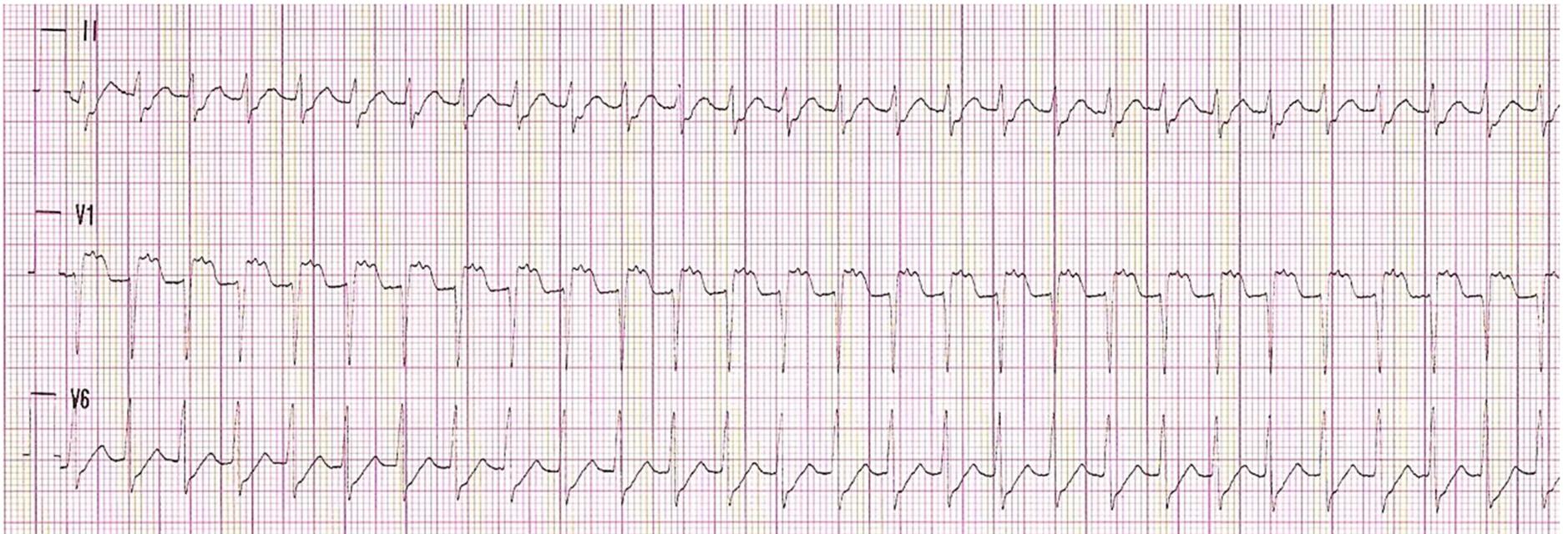


- Regular rhythm
- Rate > 100 BPM
- P waves not easily identified. The P wave may precede the QRS by  $\leq 110$  msec (retrograde atrial activation), may be buried in the QRS (and not visualized), or may follow the QRS complex.
- QRS complex is usually narrow (but occasionally wide if underlying BBB or aberrancy)
- Onset and termination of SVT is sudden

If rate is approximately 150 BPM, atrial flutter with 2:1 block may be present. Look for typical “sawtooth” flutter waves in leads II, III, aVF and V1.

There are several different types of supraventricular tachycardia (SVT), the majority of which cannot be differentiated by surface ECG alone and may require an electrophysiology (EP) study to differentiate:

- *AV nodal reentrant tachycardia* accounts for 60%–70% of SVTs and is usually initiated by an APC. This is termed “typical” AV node reentry tachycardia and utilizes the slow ( $\alpha$ ) AV nodal pathway for conduction from the atrium to the ventricle and the fast ( $\beta$ ) AV nodal pathway for conduction from the ventricle back to the atrium. This gives rise to a “short RP tachycardia” (RP interval < 50% of the RR interval), in which the retrograde P wave is either buried in the QRS complex or seen at the tail end of the QRS complex, especially in V1, where it appears as an r' complex. The slow and fast AV nodal pathways are components of the AV node and are not a separate accessory pathway as in WPW. Carotid sinus massage slows and frequently terminates the tachycardia. Occurs commonly in normal individuals.



*AV nodal reentry with retrograde P wave apparent immediately after the QRS*

- *Atypical AV nodal reentrant tachycardia* accounts for 5-10% of AV node reentry and 2%–5% of SVTs. In contrast to the typical form of AV node reentry tachycardia, the atypical form conducts in the reverse direction: conduction from the atrium to the ventricle occurs over the fast ( $\beta$ ) AV nodal pathway, giving rise to a short PR interval, and conduction from the ventricle to the atrium occurs over the slow ( $\alpha$ ) AV nodal pathway, giving rise to a “long R-P tachycardia” (RP interval > 50% of RR interval). The slow and fast AV nodal pathways are components of the AV node and are not a separate accessory pathway as in WPW. May require an EP study to diagnose. Carotid sinus massage may terminate the tachycardia.
- *AV reentrant tachycardia (orthodromic SVT)* occurs with Wolff-Parkinson-White (WPW) syndrome and concealed bypass tracts. The hearts are usually normal in these conditions, but WPW can be associated with Ebstein’s anomaly, cardiomyopathy, or mitral valve prolapse. Usually manifests as a short RP supraventricular tachycardia, but can have a long RP interval and be incessant if there is slow retrograde (VA) conduction. Often initiated by an APC, and usually terminates suddenly with carotid sinus massage.