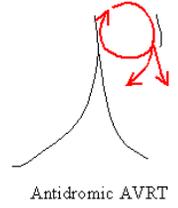
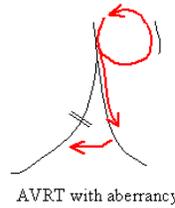


37. Supraventricular Tachycardia

1. Sinus Tachycardia
2. Reentrant Atrial Tachycardias---AVNRT, AVRT & WPW
3. Atrial Flutter
 - Type I: Rate 250-350 bpm, Negative Inferior F/P waves
 - Type II: 350-450 bpm-rare Positive Inferior F/P waves
 - L Atrial Flutter: Flat Inferior P/F waves. Discrete P waves in V1
4. Ectopic Atrial Tachycardia (EAT)
 - a. Single (or double) ectopic pacemakers, rate >100
 - b. MAT-Multifocal: >3 atrial pacemakers (Due to End-stage Lung Disease)



Classified by length of RP and PR intervals

- a. Short RP (RP<PR): AVNRT, AVRT, WPW, Junctional Tachycardias
- b. Long RP (RP>PR): Sinus Tachycardia, Sinus NRT, Ectopic Atrial Tachycardia, MAT, Junctional Tachycardias, Unusual AVNRT (antergrade fast fibers)
- c. Other: Atrial Fibrillation / Flutter

I. AVNRT (~60% of SVT)

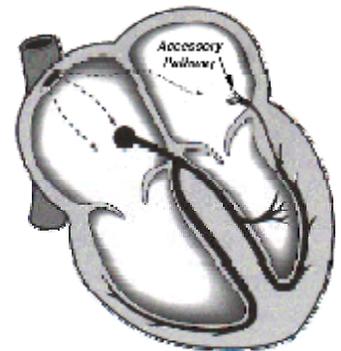
- a. Usually initiated by a premature atrial contraction, PAC.
The PAC is conducted down slow pathway (short refractory period) and fast pathway is still refractory when PAC occurs.
- b. Retrograde conduction up through fast pathway causing reentry
- c. Most involve slow pathway conduction with retrograde fast pathway
- d. Inverted p waves are seen shortly after QRS
- e. About 1/5 of AVNRT's have opposite pathways
- f. Type IC first line as chronic or PRN suppressive therapy
- g. Consider RF ablation for more than 1 PSVT per year

II. AVRT (~35% of SVT)

- a. Majority conduct down AV Node then retrograde through bypass tract ("concealed")
- b. A bypass (or accessory) tract is an anomalous band of conducting tissue
- c. Bypass tract conduction is rapid; p waves are usually inverted, occur shortly after QRS
- d. Few both antidromic or orthodromic bypass conduction, WPW (~2% of SVT)
- e. WPW is just a subtype of AVRT

III. Wolff-Parkinson-White Syndrome

- a. Divergent sinus impulse travels partially down two paths
 - i.-Impulses travel down AV and up bypass tract in 90% of WPW tachycardias
 - ii.-10% of the tachycardias, there is a wide complex with large delta wave
- b. Impulses meet and fuse in ventricles leading to retrograde P's after QRS
- c. Can present with tachycardia induces dilated cardiomyopathy
- d. WPW on a routine EKG without symptoms requires no further work up



IV. Junctional Arrhythmias

1. Depolarization initiates (usually high) in the AV junction, usually a 30-60 bpm rhythm
2. Narrow QRS with retrograde P wave buried in QRS (May be found just after QRS)

Treatments of AVNRT, AVRT & WPW

- a. 90% of AVNRT, WPW and AVRT tachycardias are terminated by 12mg adenosine IV bolus; 18mg maybe used for those who drink a lot of coffee or tea.
- b. Diltiazem, Verapamil or β -blockers may be used intravenously
- c. Radiofrequency catheter ablation is preferred for patients with recurrent AVRT & WPW.
 - a. Up to 15% of apparently successfully ablated patients will require second procedure
 - b. Some consider second episode in a year as indication for RF modification
- d. Radiofrequency catheter ablation for AVNRT is second line therapy, due to 2% heart block
- e. RF ablation for Type I Atrial Flutter: At isthmus between tricuspid annulus and IVC