VT versus SVT with aberrancy
EKG Criteria

**Features favoring VT**

**AV dissociation**
- Fusion/Dressler (capture) beats
- 2:1 ventriculoatrial block
- Slightly irregular R-R intervals

**Absence of RS complex in the precordial leads**
- QRS concordance in the precordial leads similar to normally conducted beats
- Initial vector of abnormal QRS complex
- Predominantly negative QRS complexes in V₄ - V₆
- QR complexes present in V₂ - V₆

**R-S width > 100ms in at least one precordial lead**
- QRS duration > 140ms
- Extreme left superior axis deviation
- Net area under QRS negative in leads I and II

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Ventricular tachycardia</th>
<th>Rate-related aberrancy</th>
<th>Preexcitation tachycardia</th>
</tr>
</thead>
<tbody>
<tr>
<td>AV dissociation (more QRS than P waves)</td>
<td>Rules in</td>
<td>Practically rules out</td>
<td>Practically rules out</td>
</tr>
<tr>
<td>Captured beats</td>
<td>Rules in</td>
<td>Rules out</td>
<td>Rules out</td>
</tr>
<tr>
<td>Fusion beats</td>
<td>Rules in</td>
<td>Rules out</td>
<td>Rules out</td>
</tr>
<tr>
<td>Rhythm (ventricular)</td>
<td>Leftward shift supports diagnosis</td>
<td>Regular, except torsade de pointes</td>
<td>Regular, except AF and MAT</td>
</tr>
<tr>
<td>QRS axis</td>
<td>Strongly supports diagnosis</td>
<td>Almost never occurs</td>
<td>Rare</td>
</tr>
<tr>
<td>QRS duration &gt; 140 msec</td>
<td>Common</td>
<td>Usually not present</td>
<td>Usually not present</td>
</tr>
<tr>
<td>Remote myocardial infarction</td>
<td>Uncommon</td>
<td>Common</td>
<td>Common</td>
</tr>
<tr>
<td>Normal heart</td>
<td>None</td>
<td>May terminate if AV node-dependent</td>
<td>May terminate if AV node-dependent</td>
</tr>
<tr>
<td>Response to carotid massage</td>
<td>None</td>
<td>May terminate if AV node-dependent</td>
<td>May terminate if AV node-dependent</td>
</tr>
<tr>
<td>Response to Valsalva maneuver</td>
<td>None</td>
<td>May terminate if AV node-dependent</td>
<td>May terminate if AV node-dependent</td>
</tr>
</tbody>
</table>

**Features favoring SVT w/aberrancy**

**Consistent onset of tachycardia with PACs**

**Short RP interval (<0.1 sec)**

**1:1 ventriculoatrial relationship**

**Regular R-R intervals**

**Triphasic pattern in V₁**

**MORPHOLOGY CRITERIA**

**Features favoring VT**

RBBB pattern:
- Monophasic R or biphasic qR, QR, or RS in V₁
- S > R or QS in V₆

**Features favoring SVT w/aberrancy**

RBBB pattern:
- Triphasic rSR' in V₁
- Triphasic rSR' in V₆

AF, atrial fibrillation; AV, atrioventricular; MAT, multifocal atrial tachycardia.
LBBB pattern:
- Broad R wave or wide R-S length (> 30 msec) in V₁ or V₂
- Notched downstroke of S-wave in V₁ or V₂
- > 60 msec to nadir of S in V₁ or V₂
- qR or QS pattern in V₆

LBBB pattern:
- No R in V₁
- Small narrow R in V₂
- No slurring of S-wave downstroke
- Monophasic R in V₆
- Presence of septal Q in I & V₆
FIGURE 7. Algorithm of the diagnosis made by two observers in 554 tachycardias with a widened QRS complex. Number of tachycardias classified at each step is given. Sensitivities (SN) and specificities (SP) for the diagnosis of ventricular tachycardia (VT) are also shown at each step and also for the diagnosis of supraventricular tachycardia (SVT) with aberrant conduction at the last step. Note that the four consecutive criteria reached a sensitivity of 0.987 and a specificity of 0.965 for the diagnosis of VT and of 0.965 and 0.987 for the diagnosis of SVT with aberrant conduction.
Figure 1. Algorithm for diagnosis of a tachycardia with a widened QRS complex. When an RS complex cannot be identified in any precordial lead, the diagnosis of ventricular tachycardia (VT) is made. If an RS complex is present in one or more precordial leads, the longest RS interval is measured. If the RS interval is longer than 100 msec, the diagnosis of VT is made. If shorter than 100 msec, the next step of the algorithm is considered: whether atrioventricular dissociation is present. If present, the diagnosis of VT is made. If absent, the morphology criteria for VT are analyzed in leads V1 and V6. If both leads fulfill the criteria for VT, the diagnosis of VT is made. If not, the diagnosis of supraventricular tachycardia (SVT) with aberrant conduction is made by exclusion of VT.

References


D. Suh 12/13/00