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- The presence of epicardial pacing wires allows many of these to be effectively treated by means other than pharmacotherapy or DC cardioversion.
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**Indications**

- AV junctional tachycardia (with rates around 100–120) is common following cardiac surgery, and is effectively managed using atrial (AOO or AAI) or AV sequential overdrive pacing (DOO or DDD).
- The pacing rate is increased to around 120% of the endogenous rate. Once 1:1 capture of the myocardium is achieved, the pacemaker rate is gradually reduced. As the pacemaker rate falls below the endogenous sinus rate, a stable sinus rhythm is often established.

**Overdrive pacing vs cardioversion**

- Failure of drug therapy
- Recurrent arrhythmias
- Contraindication for cardioversion (e.g., digitalis intoxication)
- Aid to arrhythmia diagnosis (e.g., wide complex tachycardia to differentiate ventricular tachycardia from supraventricular tachycardia).

**Paroxysmal re-entrant SVT**

- Paroxysmal re-entrant supraventricular tachycardia can also be terminated by atrial pacing: either 'underdrive' pacing (at less than the SVT rate) if the pacing spike induces a refractory period in the segment of the myocardium forming the re-entrant loop; or 'overdrive', where the atrial pacemaker is set above the SVT rate in a manner similar to that described for AV junctional tachycardia.
- The myocardium in the re-entrant limb is depolarised by an anterograde pacing spike before re-entrant depolarisation of the preceding beat arrives; when it does arrive, the myocardium is in its refractory state, so the re-entrant pathway is effectively blocked.
- After capture, the rate can be gradually reduced to the desired target.

**Overdrive pacing**

- Occasionally after attaining 1:1 capture with overdrive pacing, sinus rhythm is not re-established on turning down the rate and the SVT with rapid ventricular response persists.
- In this situation it may be preferable to induce atrial fibrillation by rapid atrial pacing (up to 800 beats/min), depending on the pulse generator. Termination of rapid atrial pacing will sometimes lead to sinus rhythm where other techniques have not. If not, remaining in electrically induced rapid atrial fibrillation may be preferable if the AV block is sufficiently high to make the ventricular rate slower than that when in SVT.

**SVT with rapid ventricular response that fails to revert**

- There is some suggestion that either underdrive or overdrive ventricular pacing can terminate ventricular tachycardia, but there is a risk of precipitating VF by doing this. DC cardioversion remains the accepted standard of care for VT.

**Overdrive pacing [created by Paul Young 02/10/07]**

- Overdrive pacing is effective in type I atrial flutter (< 320–340 bpm), but not in type II with rates in excess of this.
- The pacemaker is set to just above the flutter rate and then gradually increased until the atrial complexes on the surface ECG change morphology. Typically, this will be 10–20 beats/min faster than the flutter rate and indicates the flutter has been terminated.
- The pacemaker is then slowed to an acceptable rate, or below the endogenous sinus rate.
- Failure of this technique is usually attributable to insufficiently rapid pacing rates, insufficient duration of atrial pacing, or insufficient stimulus strength.

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