

## Quiz Section

### Answer to Quiz No 4 ( PMR Vol 3 No 04 December 2008)

#### Answer to Quiz No. 3(ECG)

1. *What is the diagnosis?*  
AV nodal junctional tachycardia( figure 2).
2. *What are the most important causes of this pattern?*  
Electrolyte imbalance
3. *How will you treat it?*  
Correct electrolytes including magnesium.
4. *What is the immediate post operative complication post total correction?*  
Immediate: Ventricular Fibrillation,  
Hypokalaemia.  
Late: Chronic Pulmonary Regurgitation,  
Ventricular Dilation, electrical in homogenicity

#### Discussion:

The re-entrant junctional tachycardia (RJT) usually occurs in young people without underlying heart disease. If conduction proceed homogenous there can be entry into structures ahead and no entry from the distal end of one pathway into distal end of another pathway.

Re-entrant in atrio ventricular (AV) junction can occur within AV node when differences in refractiveness causes non homogenous conduction or when the presence of an accessory AV pathway provides a site for re-entry from the ventricles back to the atria.

Re-entry within the AV junction can result in a single junctional premature beat or in sustained RJT. These tachyarrhythmias can be more difficult to understand and identify than those originating in atria and ventricle

because AV junction is not represented by any waveform in ECG.

Two of the vaeieties of RJT-AV nodal tachycardia and orthodromic AV bypass tachycardia- produce anterograde ventricular activation that can result in normal appearing QRS complex, and these two varieties of RJT are considered supraventricular tachyarrhythmias (SVT).

Like all SVT, however, an RJT can result in abnormal QRS complex if it encounters ‘ aberrant conduction ’ within the bundle branches or fascicles.

#### Natural History of Re-Entrant Junctional Tachyarrhythmias:

Several follow up studies of children and young adult with RJT both with and without evidence of ventricular pre-excitation. A high percentage of neonates with RJT have evidence of ventricular pre-excitation but many of these spontaneously loose accessory pathway during the first year of life. Some loose only the capability for anterograde conduction through their accessory pathway, but retain the capability for retrograde conduction, as evident from recurrent episode of RJT. One study reported that 85% of adults with RJT did not have evidence of accessory pathway and that those without accessory pathway were older than those with pathway. There was also a much higher incidence of underlying heart disease in adults without accessory pathway.

Source: Marriots’s interpretation of ECG

