



BMH Med. J. 2017;4(2):73-75 **Interesting ECG**

Differential Diagnosis of Narrow QRS Tachycardia

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Abstract

Differential diagnosis of short RP tachycardia include atrioventricular nodal re entrant tachycardia, atrio ventricular re entrant tachycardia and less commonly atrial tachycardia with a long PR interval. Analysis of retrograde P waves in different leads is helpful in the differential diagnosis, with certain limitations.

Keywords: supraventricular tachycardia, narrow QRS tachycardia, short RP tachycardia

Middle aged person with history of coronary artery disease presented with a narrow QRS tachycardia (**Figure 1**). Tachycardia reverted promptly after carotid sinus massage and the baseline ECG showed features of the underlying coronary artery disease (**Figure 2**). Baseline ECG shows sinus rhythm, with q waves in leads III and T wave inversions in inferolateral leads. There is no evidence of pre excitation. ECG in tachycardia shows regular narrow complex tachycardia with 1:1 relationship between QRS and P' waves (arrows **Figure 1**), basically a form of supraventricular tachycardia. This ECG shows that RP' interval is shorter than P'R interval. Hence we have to consider the differential diagnosis of short RP tachycardia.

Differential diagnosis of short RP tachycardia

Differential diagnosis of short RP tachycardia in this case includes atrioventricular nodal re entrant tachycardia (AVNRT), atrio ventricular re entrant tachycardia (AVRT) mediated through a concealed accessory pathway or less commonly atrial tachycardia with a long PR interval. AVRT mediated through manifest accessory pathway also produces short RP tachycardia, but the baseline ECG in this case does not show evidence of pre excitation.

Termination with with carotid sinus massage suggests AV nodal dependent tachycardia and thus

atrial tachycardia is less likely. Analysis of retrograde P (P') waves in tachycardia suggests negative waves in leads I and aVL, and positive in inferior leads (III and aVF). This suggests an eccentric atrial activation originating in left atrium. This feature is suggestive of an AVRT through a left lateral concealed accessory pathway.

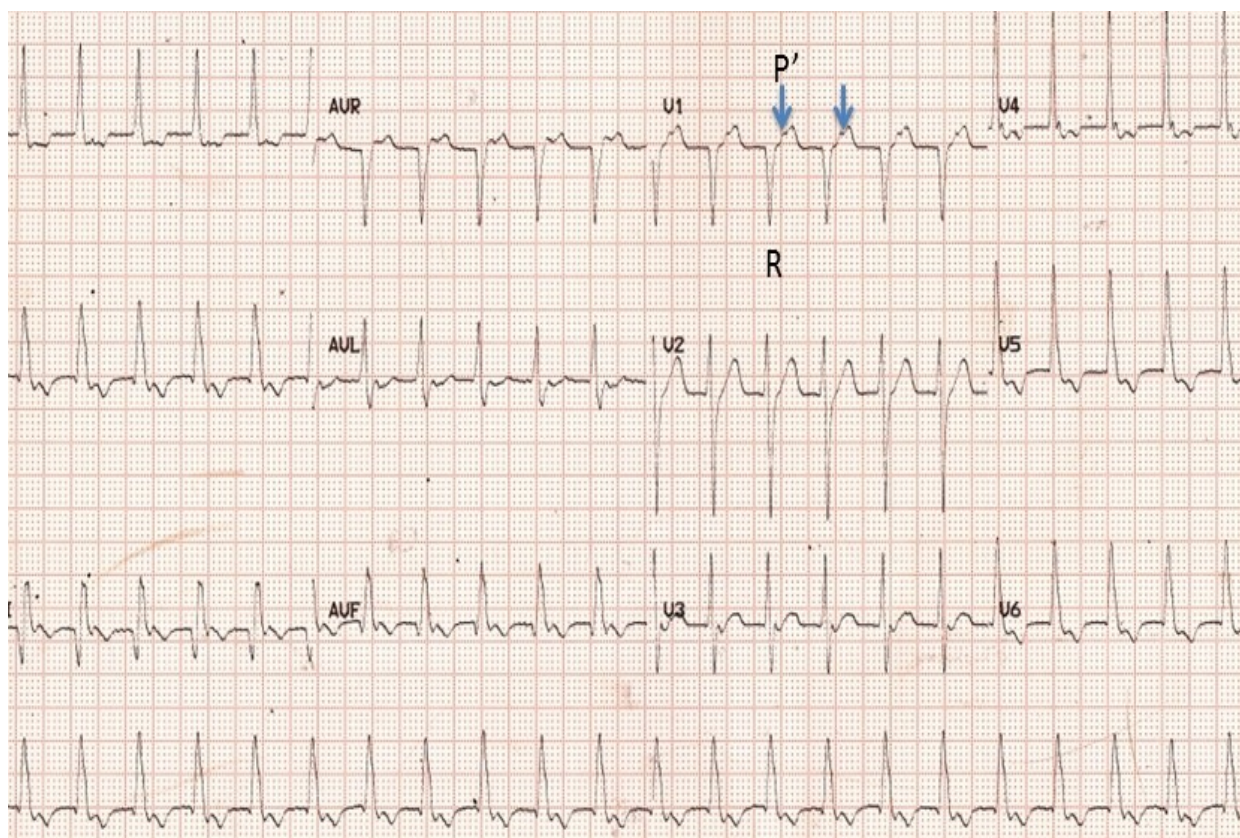


Figure 1: ECG showing narrow QRS tachycardia

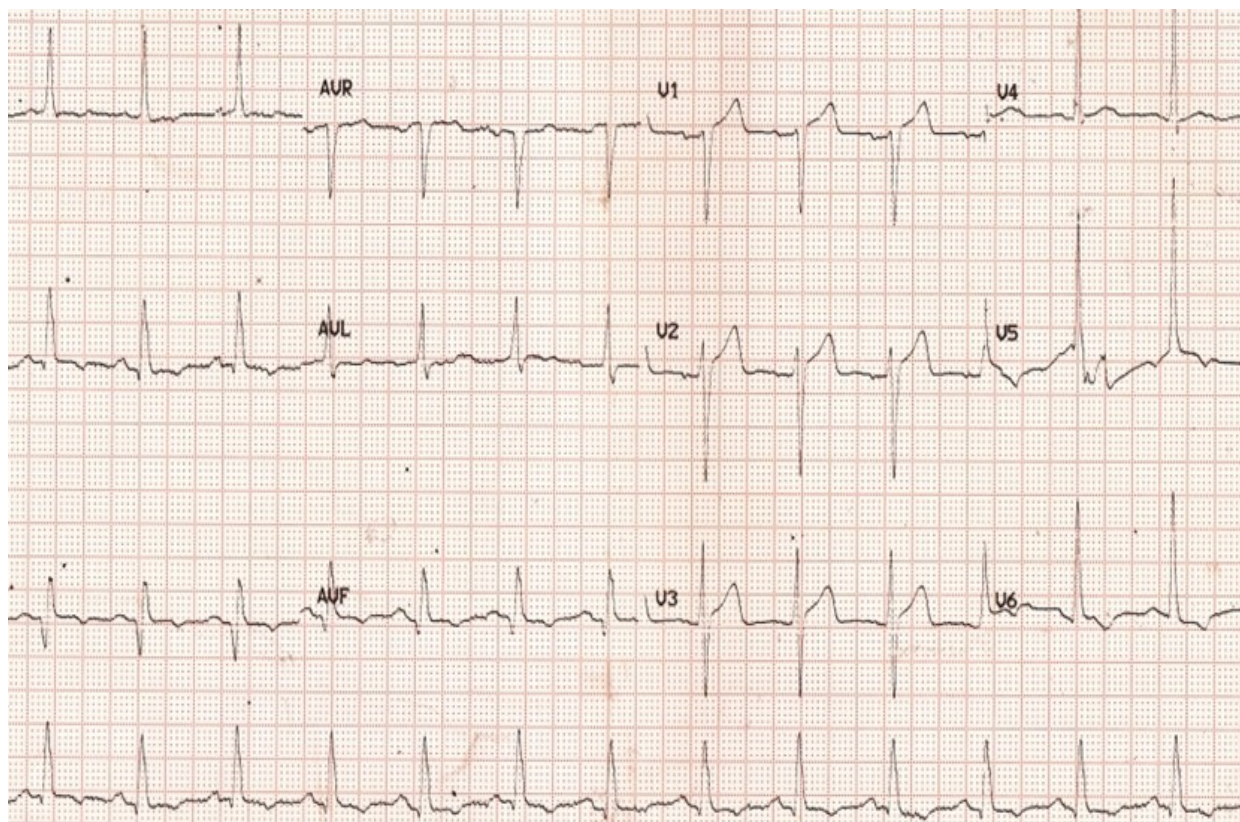


Figure 2: ECG after carotid sinus massage showing sinus rhythm

Caveat: Analysis of the P wave morphology in tachycardia is not easy in majority of the cases. Statistically AVNRT is more common than AVRT and if this is the initial presentation, that also is more suggestive an AVNRT than AVRT. We expect a concentric atrial activation in AVNRT viz. positive in aVR and aVL and negative in inferior leads.