Palpitations, should one worry?

A. A. M. Wilde • J. S. S. G. de Jong

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Answer to the rhythm puzzle

As already stated, the initial arrhythmia is a supraventricular tachycardia (narrow QRS complex tachycardia) in which the P wave is most likely to be found immediately following the QRS complex (see the inferior leads and lead aVL). In that case the most likely diagnosis is AV nodal reentrant tachycardia (AVNRT). The efficacy of adenosine to terminate the tachycardia (Fig. 2) fits this diagnosis. An alternative diagnosis would be AV re-entrant tachycardia, using a bypass tract. The P

wave is then to be expected at least 80 msec from the QRS complex. In any case, termination of the tachycardia occurs suddenly and is followed by an irregular wide complex tachycardia (14 complexes) without discernable P waves (Fig. 2, terminal part of upper strip and initial part of lower strip). In the middle part of the lower strip (Fig. 2) sinus rhythm with 1:1 conduction to the ventricle resumes.

This tachycardia most likely is a ventricular tachycardia based on abnormal automaticity. In a series of almost 200 SVT terminations (by adenosine) ventricular ectopy, includ-

Fig. 2 Monitor strip during termination of the tachycardia

A. A. M. Wilde (✉) • J. S. S. G. de Jong
Department of Cardiology, Academic Medical Centre,
Meibergdreef 9,
1105 AZ Amsterdam, the Netherlands
e-mail: a.a.wilde@amc.uva.nl

ing ventricular tachycardias like this one, was observed in 2/3 of cases [1]. The most frequent origin was in the inferior left ventricular septum [1], which might also be the case in this example given the negative complex in a lead II like configuration (upper lead in the strips). It did not require further intervention. Finally, termination with sinus carotid massage or with verapamil can also be followed by (complex) ventricular arrhythmias. Hence, the most likely mechanism does not relate to adenosine but presumably

relates to, for example, calcium overload during/after the rapid rate.

Reference

1. Tan HL, Spekhorst HHM, Peters RJG, et al. Ventricular arrhythmias after adenosine-induced termination of supraventricular tachycardia in the emergency room. *PACE*. 2001;24:450–55.