

## “Sudden Onset of Palpitations”

By L.J. Melendez, MD; and Keith J.C. Finnie, MB, ChB

### Vignette

The electrocardiogram shown below was taken from a 69-year-old patient with chronic renal failure who developed sudden onset “palpitations” during a hemodialysis session.

### Questions

1. What is your electrocardiographic diagnosis?
2. How would you manage this event?

### Answer

1. The electrocardiogram shows a tachycardia at a rate of 174 beats per minute. The QRS complexes are narrow in all leads, which points towards a supraventricular origin for the tachycardia. Careful measurement of the R-R intervals shows that they are all exactly the same. The rhythm is, therefore, perfectly regular, which excludes atrial fibrillation. Other diagnoses to be considered are paroxys-

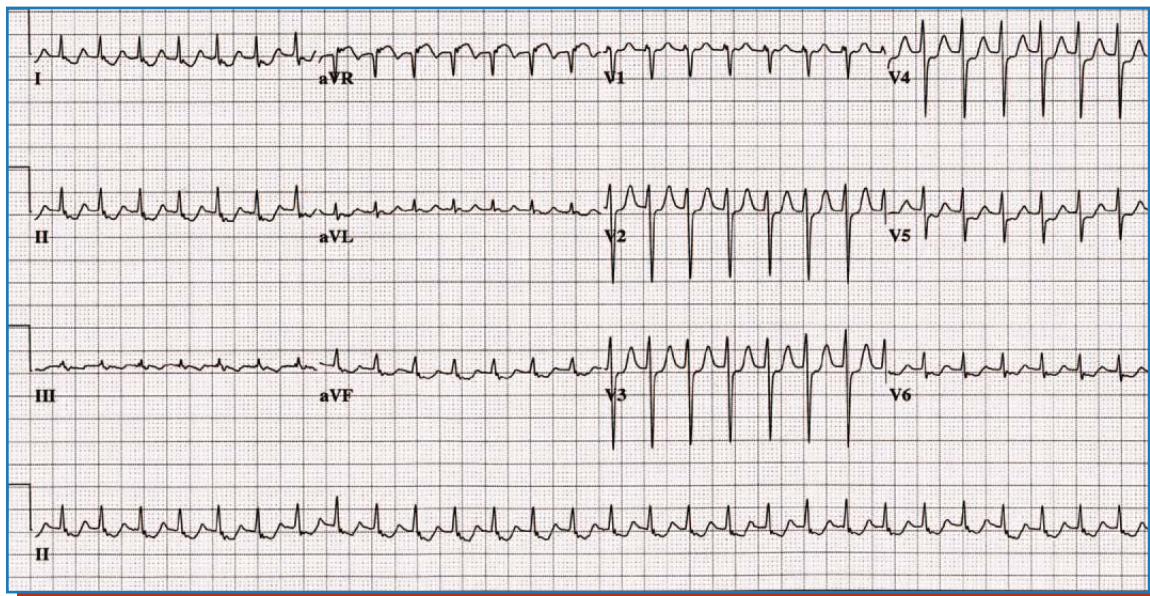


Figure 1

Dr. Finnie is professor of medicine, University of Western Ontario, and site chief of cardiology, London Health Sciences Centre, Victoria Campus, South Street, London, Ontario.

Dr. Melendez is professor of medicine, University of Western Ontario, and cardiologist, London Health Sciences Centre, Victoria Campus, South Street, London, Ontario.

mal atrioventricular (AV) nodal re-entry tachycardia, atrial flutter with a 1:1 or 2:1 conduction to the ventricles, and ectopic atrial tachycardia. The rate of 174 beats per minute is very much in favour of an AV nodal re-entry tachycardia since it would be too fast for flutter with a 2:1 conduction, and not fast enough for most flutters with a 1:1 conduction. At this point, ectopic atrial tachycardia cannot be entirely ruled out.

2. The definitive diagnosis at the bedside of the patient may be established with an intervention aimed at momentarily interfering with AV nodal conduction, which would terminate the paroxysmal tachycardia or make the flutter waves (or the P waves of ectopic atrial tachycardia) become apparent by reducing the rate of conduction to the ventricles. The simplest manoeuvre towards this objective is unilateral stimulation of the carotid sinus. If this is ineffective, or if it cannot be performed,

then intravenous administration of the appropriate dose of an AV nodal blocking medication, such as adenosine or verapamil, would be appropriate. In this particular case, the pharmacologic approach terminated the paroxysm, confirming AV nodal re-entry tachycardia. A repeated electrocardiogram showed normal P waves, QRS complexes, and conduction times.  $\square$



**Avapro**<sup>\*</sup>  
(irbesartan)

**Angiotensin II Receptor Blocker**



**Avalide**<sup>\*</sup>  
(irbesartan/hydrochlorothiazide)

**Angiotensin II Receptor Blocker/Diuretic**

Please consult product monographs for warnings and precautions.  
Product monographs available upon request at Sanofi-Synthelabo Canada Inc.,  
15 Allstate Pkwy, Markham, Ontario L3R 5B4.