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P waves in ECG - Variations on a Theme

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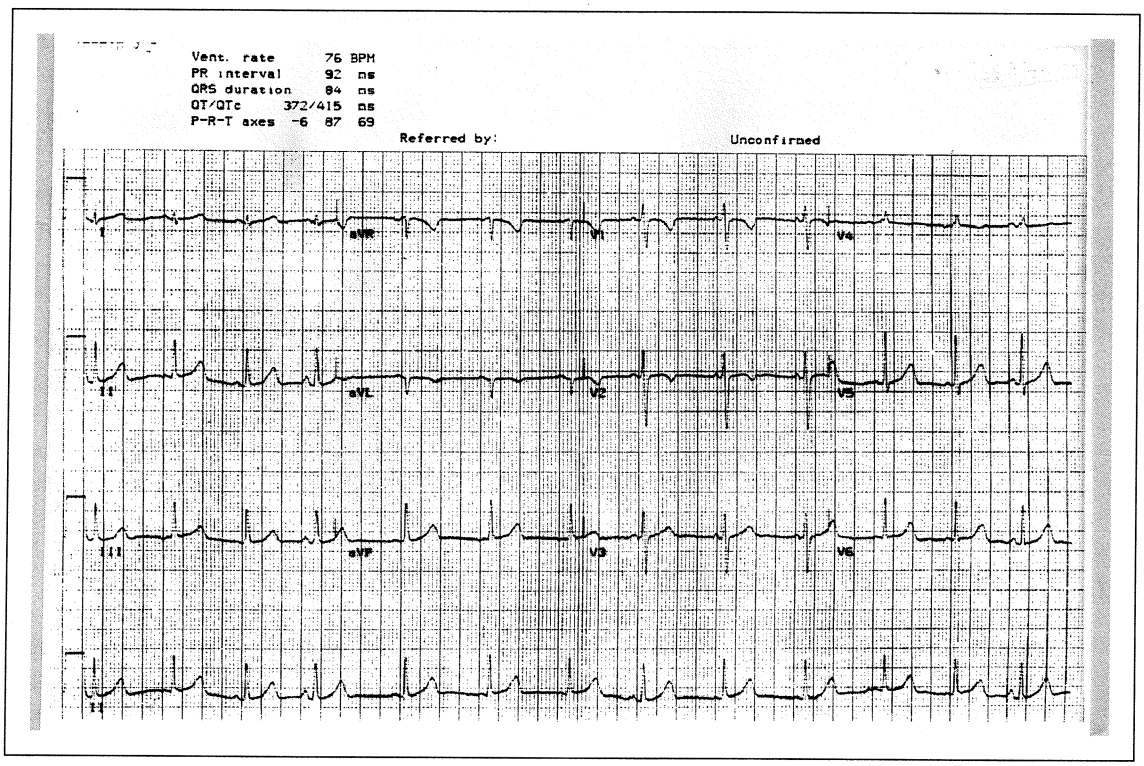

CASE HISTORY

A 12-year-old girl was referred to a paediatrician for near-syncopal episodes. She has good effort tolerance and has no complaints of palpitations. There is no previous medical or family history of note. As part of the work-up, a 12-lead ECG was performed. Is there any abnormality?

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ANSWER

Diagnosis: Wandering pacemaker

DISCUSSION

This ECG demonstrates normal QRS complexes, each preceeded by a p wave. Careful review of the p waves however suggests that the p wave morphology is variable. This is associated with inconsistent PR and RR intervals. There is no ventricular hypertrophy and the corrected QT interval is within acceptable limits.

The varying p wave morphology and axis suggest. the presence of more than one pacemaker (the usual sinoatrial node) located within the atrium. It has been postulated that this rhythm may be an exaggerated form of respiratory sinus arrhythmia[1], such that other latent atrial pacemakers discharge when the sinoatrial node cycles to a slow rate during expiration. Other classical features to note are the variation in PR and RR intervals.

In the healthy paediatric group, this finding is usually not of great consequence[2]. The significance of this condition in adults should be interpreted in the respective clinical setting. Whereas this may represent a heightened vagal tone in a well-trained athlete, it can also reflect lung disease or sinus node dysfunction in the elderly with these problems[3].

In itself, the wandering pacemaker is benign and requires no treatment. However, recognition of this condition and reassurrance are important. The symptom in our patient is not attributed to heart rhythm disorder. On follow-up, she has remained well.

REFERENCES

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