



THE PRACTITIONER LE PRATICIEN

Country cardiograms case 31: Answer

Charles Helm, MD,
CCFP
Tumbler Ridge, BC

At first glance the follow-up ECG, which is illustrated on page 293, may look like a normal ECG with normal sinus rhythm at 89 beats/min, but closer inspection reveals some interesting features. The most obvious clue lies in lead VI, where the first 2 QRS complexes have a tall R wave and the third QRS complex is significantly different, with a normal configuration.

This should prompt scrutiny of the corresponding section of the lead II rhythm strip. It is evident that the complexes that correspond to the tall R waves in VI are wider, and with a shorter P–R interval. Indeed, in the rhythm strip, complexes 1, 5–8, and 11–14 have a P–R interval of 0.16 seconds and QRS duration of 0.09 sec. Complexes 2–4, 9, 10 and 15 have a shorter P–R interval of 0.125 sec and a QRS duration of 0.12 sec, with the presence of Delta waves.

This is conclusive evidence of pre-excitation, and the preceding tachycardia therefore constitutes a “completed” pre-excitation syndrome. In this case the pre-excitation is intermittent; this stresses the importance of looking dili-

gently for evidence of this phenomenon — even one such complex would clinch the diagnosis.

Is this Wolff–Parkinson–White syndrome? Not quite. By definition, WPW requires a P–R interval of less than 0.12 sec (with the A–V node being bypassed). Some cases of pre-excitation have a longer P–R interval, in such case the accessory tract may only begin somewhere in the A–V node or Bundle of His. This is known as Mahaim Fibre pre-excitation, which is what this ECG probably represents.

What is the significance of diagnosing completed pre-excitation? First, depending on the severity of symptoms, surgical ablation techniques can be considered. Second, every patient with pre-excitation should know of this diagnosis, and a medical alert bracelet should indicate this. If atrial fibrillation ever develops, the rapid ventricular rates can be life-threatening. In this situation many of the usual emergency department treatments (calcium-blockers, beta-blockers, digitalis) will make the situation worse.

For the Question, see page 293.