A healthy 21-year-old man attended the clinic complaining of palpitations. Laboratory investigation and physical examination were unremarkable. His 12-lead electrocardiogram (Fig. 1) demonstrated three distinct populations of QRS complexes, including sinus and wide-complex beats in a bigeminal pattern. The differential diagnosis of the ectopic beats includes re-entry, triggered activity and enhanced automaticity. The combination of a variable coupling interval between the ectopic and sinus beats and the presence of a fusion complex (seventh QRS complex in the rhythm strip) is consistent with ventricular parasystole. Analysis of the parasystolic beats revealed a right bundle branch block-like pattern in lead V1 and an inferior axis. This morphology purports a location of the parasystolic focus in the superior aspect of the left ventricle, i.e. the left ventricular outflow tract (LVOT), possibly in the non-coronary cusp or the aortomitral continuity. The exact location of the focus is difficult to ascertain without an electrophysiology study. The LVOT has been implicated in the genesis of ventricular arrhythmias in the absence of structural heart disease. Recognition of these arrhythmias is important, as they may lead to the deterioration of systolic function. First-line therapy is usually pharmacological with an antiarrhythmic agent; if this fails, these arrhythmias are usually amenable to radiofrequency ablation.

Abbreviations: LVOT, left ventricular outflow tract.

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Figure 1. Twelve-lead electrocardiogram showing a parasysole arising from the left ventricular outflow tract.

Disclosure of interest

Dr. Baranchuk identifies ongoing involvement in research sponsored by Medtronic Inc. and has received honoraria from Medtronic, Boston Scientific and St Jude Medical for speaking at conferences.