Right side or left side: an inconspicuous masquerade

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Careful examination of the ECG in Fig. 1 shows inverted P waves in leads I, aVL and V2 to V6. Also notice the upright P waves in aVR and absence of R wave progression in the precordial leads. These are classic findings in dextrocardia. Hence the important physical examination finding in this patient would be better audibility of heart sounds on the right side of the precordium. Limb lead reversal causing ‘technical dextrocardia’ is a close differential diagnosis, but can be ruled out here as it would not explain the inverted P waves seen in V2 to V6.[1]

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Fig. 1 also shows a wide QRS complex with rSR' pattern, resembling a right bundle branch block (RBBB), in the precordial leads. On close inspection, the wide S waves which are characteristically seen in the lateral leads in a RBBB are absent in this ECG. Hence the widened QRS complex in this ECG might be attributed to an intraventricular conduction delay.

An ECG was deliberately repeated with the precordial leads kept on the right side of the chest and with reversal of leads aVR and aVL (Fig. 2). Now the ECG shows a complete RBBB with first-degree AV block. The wide S waves in the lateral leads and normalisation of P wave morphology are easily noticeable. The patient was eventually found to have episodes of ventricular tachycardia which caused her palpitations.

This case highlights how RBBB in a patient with dextrocardia can masquerade as an intraventricular conduction delay unless an ECG is taken with right-sided precordial leads.

Fig. 1 Standard 12-lead ECG

Fig. 2 ECG done after reversal of limb leads and with chest leads kept on the right side of the precordium

Reference

1. Adrouny ZA, Semler HJ, Griswold HE. Dextrocardia with Right Bundle Branch Block. *Dis Chest*. 1965;47:334–5.