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CE - MEDICAL ILLUSTRATION

Himalayan P waves

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A 22-year-old man presented with a history of breathlessness of around 6 months duration. The breathlessness was particularly prominent on walking. He had noted that his fingers were of a bluish hue over the prior 2 months. He denied any history of chest pain, syncope, cyanotic spells or arthritis during his childhood. The patient had a blood pressure of 114/74 mm of Hg, and the pulse rate was 75 beats/min and regular. The patient was tachypneic (rate, 24 breaths/min) and appeared cyanotic. Clubbing was present. Auscultation of the heart revealed a widely split second heart sound and a pansystolic murmur in the tricuspid area.

The ECG revealed extremely tall 'P' waves, the so called Himalayan P waves, most prominently in leads II, III, aVF and V1. The P wave was most prominent in lead II where it was even taller than the QRS. These changes are suggestive of gross enlargement of the right atrium. The ECG also reveals a right bundle branch-like pattern in V1 preceded by a small q wave (Fig. 1). The Himalayan P waves are a result of a massively dilatated right atrium. These are classical for an Ebstein anomaly, although they have also been reported in a few other conditions such as tricuspid atresia and combined tricuspid and pulmonary stenosis [1–3].

In this case, the ECG picture and the clinical evidence of TR point to the diagnosis of an Ebstein anomaly and an echocardiography confirmed the diagnosis. The patient was started on standard heart failure therapy. On improvement, he was referred for tricuspid valve (TV) replacement.

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An Ebstein anomaly is a congenital defect of the TV characterized by downward displacement of the TV into the right ventricle. This results in atrialization of a portion of the right ventricle. The accompanying TR also contributes to the massive dilatation of the right atrium. The clinical presentation of an Ebstein anomaly is variable; around 50% patients present in infancy with features of cyanosis, heart failure and a cardiac murmur. In some patients, as in the present case, symptoms appear during teenage years or early adulthood. The symptoms may include exertional dyspnea, fatigue, palpitations (supraventricular tachycardia, associated Wolf Parkinson White syndrome), cyanosis or syncope. Echocardiography can help in establishing the diagnosis of an Ebstein anomaly in the majority of cases. The findings in such a case would include a dilatated right atrium, presence of tricuspid regurgitation and displacement of the leaflets of the TV [4]. An MRI may be used for diagnosis if images from echocardiography are not clear. Cardiac catheterization is rarely needed, but may be risky due to possible cardiac rhythm disturbances.

Conflict of interest None.

References

1. Kaushik ML, Sharma M, Kashyap R (2007) 'Himalayan' P wave. J Assoc Physicians India 55:856
2. Reddy SC, Zuberbuhler JR (2003) Images in cardiovascular medicine. Himalayan P-waves in a patient with tricuspid atresia. Circulation 107:498
3. Davutoglu V, Kilinc M, Dinckal MH (2003) Himalayan P waves in a patient with combined tricuspid and pulmonic stenosis. Heart 89:1216
4. Attenhofer Jost CH, Connolly HM, Dearani JA, Edwards WD, Danielson GK (2007) Ebstein's anomaly. Circulation 115:277–285

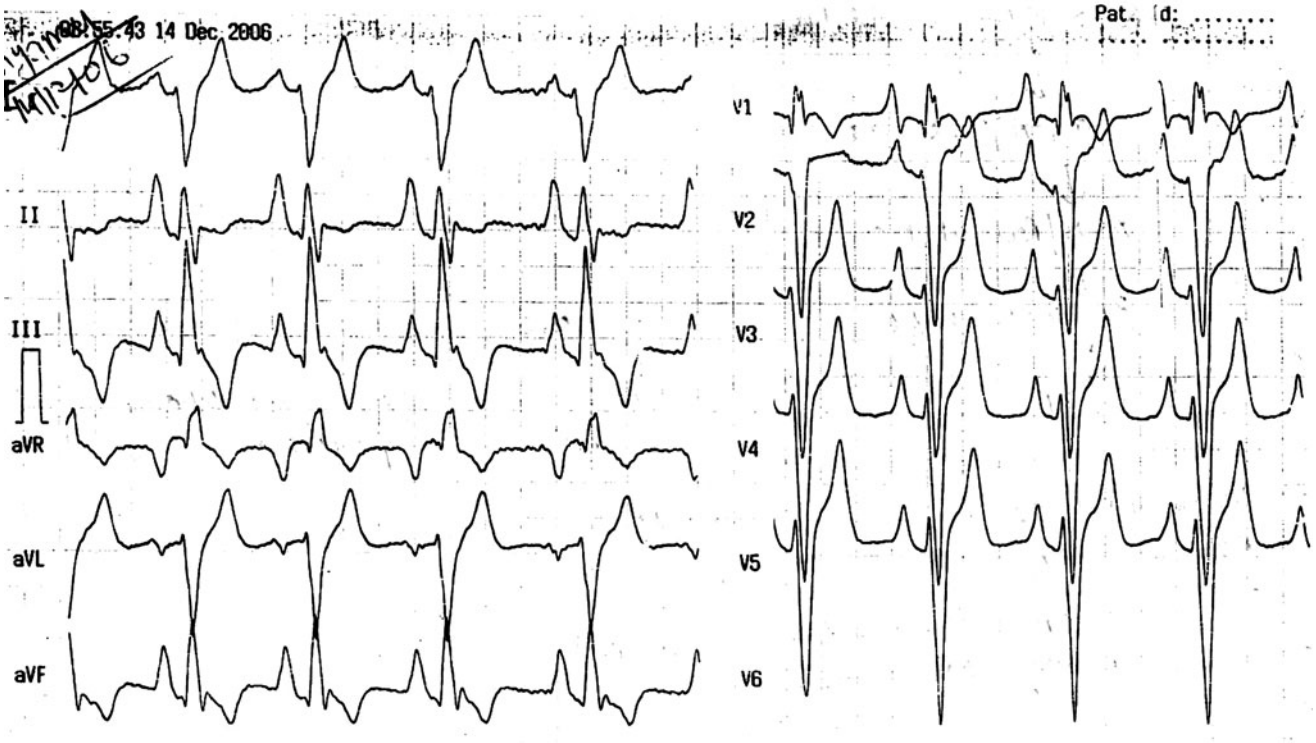

Fig. 1 ECG showing extremely tall 'Himalayan' P waves