Himalayan P-Waves in a Patient With Tricuspid Atresia

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An 8-month-old female infant was diagnosed with tricuspid atresia in utero by an ultrasound and the diagnosis was confirmed at birth. She underwent a modified Blalock-Tausig shunt at the age of 2 months to treat increasing cyanosis. She did well and is waiting to complete single ventricle palliation.

On her recent follow-up, she was asymptomatic, with a systemic arterial saturation of 80% at room air. On examination, she had normal and symmetric pulses in her extremities, a normal S1, single S2, a grade 3/6-continuous murmur (due to shunt) at base, and a grade 2/6 ejection systolic murmur at the mid-left sternal border. Her abdominal examination was normal. Her cardiothoracic ratio was 0.60 on chest X-ray.

Her recent 12-lead ECG (Figure) demonstrates important diagnostic information and classic signs of tricuspid atresia. It shows a normal sinus rhythm, superior axis (−15), right atrial enlargement, and an adult pattern of QRS progression over the precordial leads (V1 through V6). This pattern of QRS is characterized by absent right ventricular forces and well-developed left ventricular forces consistent with left ventricular hypertrophy. The P-waves are tall (>5 mm) and peaked in lead II. These types of P-waves are called giant P-waves or Himalayan P-waves and are indicative of a dilated right atrium due to a restrictive atrial communication.

ECG showing typical features of tricuspid atresia (see text).
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