

Clinical Images

Differential cyanosis between both hands



Fig. 1. Fingers of left hand showing cyanosis, while the other hand was normal.



Fig. 2. Clubbing and cyanosis of bilateral toes.

A 37-year old woman was admitted to the First Affiliated Hospital of China Medical University, Shenyang, with exertional dyspnoea and general fatigue for more than 30 years, which had aggravated since the last two weeks. On physical examination, systolic ejection murmurs could be heard in pulmonary valve auscultation area, and the second heart sound was accentuated. She had clubbing of bilateral toes, cyanosis of toes (Figs 1, 2). However, the fingers of left hand were cyanotic, while the other hand was normal (Fig. 1), which was uncommon. The blood gas analysis of bilateral radial artery and right femoral artery simultaneously demonstrated the arterial partial pressure of oxygen in left hand lower than that in right hand. Echocardiogram showed bidirectional flow through a patent ductus arteriosus having a diameter of approximately 15 mm, which was located between the descending aorta and the bifurcation of pulmonary artery. In the phase of systole, the shunt was from pulmonary artery to aorta (peak flow velocity was 2.3 meter/sec), while in phase of diastole the shunt was

from aorta to pulmonary artery (peak flow velocity was 0.9 meter/sec; right atrial and right ventricular dilatation, and an elevated systolic pulmonary artery pressure of 104 mmHg).

This patient has differential cyanosis, not only between upper and lower extremities, but also between left and right hands, which is rare. We speculate that in the phase of systole, the right-to-left shunt was to the point that left subclavian artery was involved, while brachiocephalic trunk was not involved, resulting in the unusual differential cyanosis between left and right hands.

Yang Guang* & Wang Jun
Department of Cardiology, the First Affiliated
Hospital of China Medical University
Shenyang 110001, China
Both authors contributed equally to this paper
**For correspondence:*
yangguang1210@163.com