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IMAGES IN CARDIOLOGY

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Interrupted aortic arch and aortopulmonary window demonstrated on 64-slice multidetector computed tomography angiography

A 3-day-old infant was referred for cardiac assessment because of multiple congenital anomalies including facial dysmorphism, cleft lip and palate and exomphalos minor. Echocardiography revealed type B interrupted aortic arch and large aortopulmonary window. The interventricular septum was intact.

A 64-slice multidetector computed tomography (MSCT) angiography (Sensation 64, Siemens, Germany) was performed using high resolution protocol (slice thickness 0.75 mm, pitch factor 1.2) without electrocardiographic gating. A total of 6 ml of intravenous contrast was injected through a 24 G cannula in the right saphenous vein. No sedation was given and the actual scan time was 1.97 s. Following acquisition, three-dimensional volume rendered images were reconstructed using Syngo InSpace4D application software.

The study illustrated interruption of the aortic arch between the left common carotid and left subclavian arteries, giving rise to the classic "V" sign appearance. The descending aorta was fed by a large patent ductus arteriosus (panel A: BC, brachiocephalic artery; LCC, left common carotid artery; LSC, left subclavian artery; PDA, patent ductus arteriosus). The spatial relationship between the vessels was clearly demonstrated. In addition, there was a large communication existing between the ascending aorta and the proximal main pulmonary artery which represented a large aortopulmonary window (panel B: arrow; AAo, ascending aorta; MPA, main pulmonary artery). Conservative management was advocated subsequently after the diagnosis of trisomy 13 was revealed on karyotyping.

MSCT provided a fast and non-invasive way for accurate morphological evaluation in this case.

M N L Wong
L G Chan
K H Sim

martin.wong@health.gov.my