


CARDIOVASCULAR FLASHLIGHT

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Rare angiographic and echocardiographic findings of an aortic arch interruption in a patient with differential cyanosis

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A 23-year-old lady with a 3-year history of undiagnosed murmur and progressive dyspnoea was referred to our institution for a percutaneous patent ductus arteriosus (PDA) closure. Physical examination revealed differential cyanosis with an oxygen saturation in the upper and lower extremity of 95 and 86%, respectively. A loud P2 with a grade 3/6 systolic murmur was audible at the second left intercostal space with radiation to the back. An echocardiogram revealed a non-restrictive ventricular septal defect (Panel A, arrow) with an overriding aorta and a large PDA (Panel B, arrow) with a diminished diastolic flow. A suprasternal view demonstrated an aortic arch interruption (type A) (Panel C) and aortic discontinuity distal to the left subclavian artery. A left ventriculography confirmed an interrupted aortic arch with a clear separation between three branches of aortic arch and the descending aorta (Panel D). A right heart catheterization revealed severe fixed pulmonary hypertension with a mean pulmonary artery pressure of 92 mmHg and pulmonary vascular resistance of 11 Woods units. Since the patient had fixed pulmonary hypertension, the surgical correction was unfortunately not performed. The patient was then referred to heart and lung transplantation.

This case highlights the essence of left heart or aortic obstruction, i.e. interrupted aortic arch or coarctation of the aorta, when PDA is discovered. Failure to identify aortic arch interruption in this case of attempted PDA closure will lead to catastrophic lower-half ischaemia.

Panels A–D. Asc Ao, ascending aorta; CC, left common carotid artery; DAO, descending aorta; LV, left ventricle; LSC, left subclavian artery; mPA, main pulmonary artery; PDA, patent ductus arteriosus; Inn, innominate artery, VSD, ventricular septal defect; RV, right ventricle.

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