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**IMAGE FOCUS**

**An unusual case of left bronchial compression caused by a large patent arterial duct in a child with pulmonary atresia with ventricular septal defect**

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A 2-day-old term baby was referred to our hospital for an urgent cardiology assessment because of respiratory collapse and complete ‘white-out’ of a large left lung with mediastinal shift to the right (Panel A). At the time of admission the infant was on high-frequency oscillatory ventilation, inhaled nitric oxide, high-dose inotropes, and Prostin infusion. Subsequent echocardiographic examination revealed pulmonary atresia with ventricular septal defect and large persistent arterial duct (PDA). A repeat chest X-ray showed persistent over-inflation of the left lung, with some aeration of the left upper lobe but persistent opacification of the remaining lung (Panel B). The baby was weaned to conventional ventilation, however, remained on mild inotropic support. A computed tomography (CT) angiogram was performed in order to delineate cardiovascular and lung parenchymal anatomy. The CT scan demonstrated a large, tortuous PDA compressing and occluding the left main bronchus (Panels C and D). The compression was particularly exacerbated by the more vertical course of the left-sided PDA. The branch pulmonary arteries originated separately from a very large (7 × 6 mm diameter) PDA arising from the under surface of the aortic arch, with no connection to the right ventricle (Panel E). In addition, there was an overexpansion of the left lung and obstruction of the left main bronchus (Panels C and D). This had resulted in delayed clearance of foetal fluid from the left lung causing the persistent changes seen on the chest X-ray. On the following day, the baby underwent ligation and division of the PDA and a 5 mm RV-PA Gore-tex® conduit insertion. The postoperative course was uneventful.

Panels A and B. Anteroposterior chest radiography; (C and D) axial chest computed tomographic scan; and (E and F) 3D reconstruction from CT scan images. PDA, persistent arterial duct; Ao, aorta; RPA, right pulmonary artery; LPA, left pulmonary artery; LMB, left main bronchus.