

Case 3/2008 – Fourteen Month Old Female Infant with Pulmonary Arteriovenous Fistula

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Clinical data

Cyanosis as an isolated sign appeared at 5 months of age, having recently progressed accompanied by an infectious process.

Physical examination

Patient was eupneic, with marked cyanosis, and pulses were palpated normally on all 4 limbs. Weight: 10 Kg, Height: 81 cm, BP: 90/60 mm Hg, HR: 120 bpm. O₂ saturation, at rest: 50%. Aorta was not palpable at the supraesternal notch.

There were no deformities or impulsions in the precordium. Ictus cordis was not palpated. Heart sounds were normal and no heart murmurs were identified.

Lung auscultation evidenced a slight difference in characteristics [timbre] of vesicular breath sounds from one side to the other of the chest. The abdomen showed no abnormalities.

The electrocardiogram showed sinus rhythm and signs of left ventricular chamber overload with deep S waves in V2 and V3 (Sokolof Index: 40 mm) with $\hat{A}QRS$: +100o, $\hat{A}P$: +60o, and $\hat{A}T$: +30o.

Radiographic image

cardiac area with slightly increased dimensions, elongated and rounded left ventricular arch, and normal pulmonary vascular network (rete). A hypotransparent image with

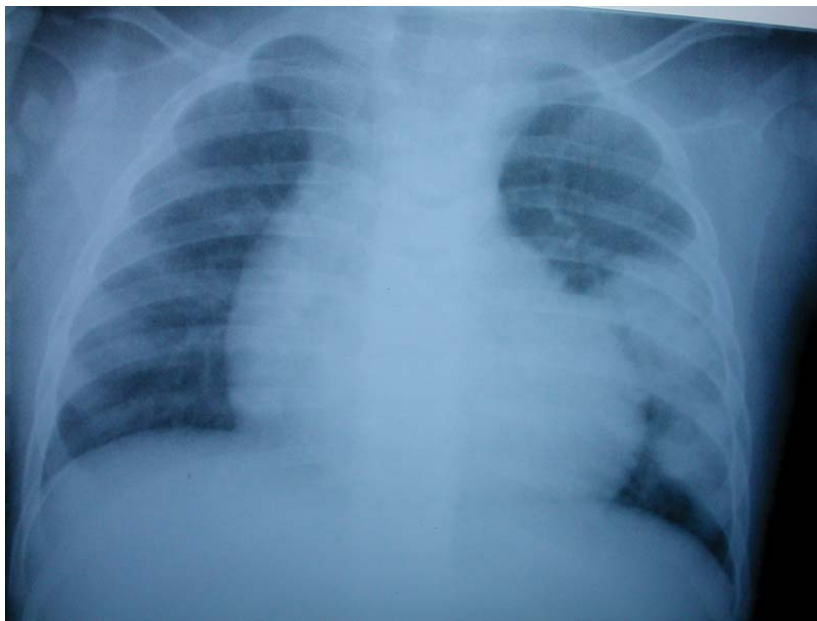


Fig. 1 - Chest X-ray showing slightly increased cardiac area with elongated and rounded left ventricular arch. Pulmonary vascular network is normal. There is a clear image of condensation of the pulmonary parenchyma in the mid to left portion, consistent with an arteriovenous fistula.

Key words

Pulmonary arteriovenous fistula, congenital cardiopathy, interventional treatment, surgery.

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distinct borders in the middle left pulmonary field was noted (Fig. 1).

Diagnostic impression

this image is consistent with the diagnosis of possible significant pulmonary arteriovenous fistulae.

Differential diagnosis

image of condensation in pulmonary parenchyma demands differential diagnosis with an infectious and/or tumoral pulmonary process.

Diagnostic confirmation

in light of the absence of signs of cardiopathy, the cyanosis observed may be explained by an arteriovenous shift of blood through the supposed pulmonary fistulae. The magnitude

of this shift may justify the left ventricular increase seen on the chest X-ray and the left ventricular overload observed on the electrocardiogram. The echocardiogram confirmed cardiovascular normality and the hemodynamic study showed the presence of giant arteriovenous fistulae limited to the middle portion of the left lung corresponding to the lingula of the lobe and possibly part of the upper lobe because of the presence of 3 arterial trunks. The left lower lobe was preserved. In the right middle lobe there was also a moderate pulmonary arteriovenous fistula (Fig. 2).

Treatment

During the same diagnostic hemodynamic procedure, coil embolization was performed of the middle right lobe and oxygen saturation increased to around 65%. Since the fistula on the left was pronounced, a lobectomy of the lobe-lingula was considered in order to avoid progression of the hypoxia along with its deleterious consequences.

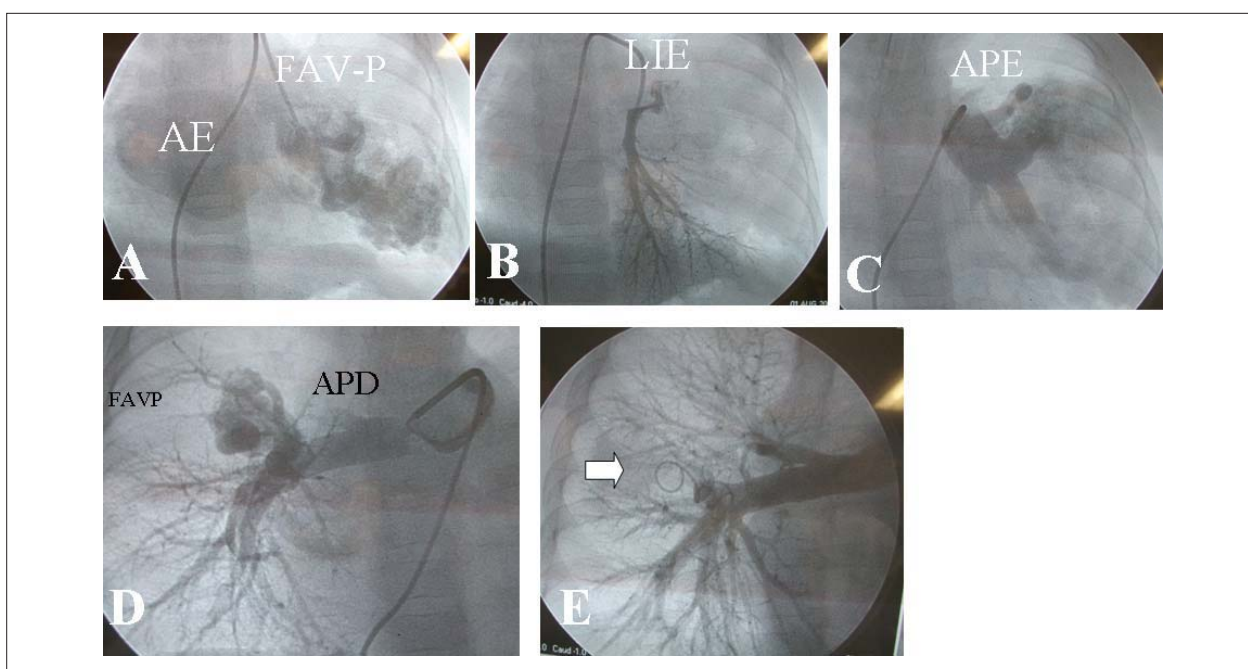


Fig. 2 - Angiography of the lobe-lingula shows large caliber arteriovenous vessels and rapid filling of the left atrium, characterizing the pulmonary fistulae in A, normal opacified left lower lobe in B, greater dilation of the left pulmonary artery in C, arteriovenous fistula of the right middle lobe before embolization in D, and after embolization in E. Abbreviations: LA: left atrium, RPA: right pulmonary artery, LPA: left pulmonary artery, AVF-P: pulmonary arteriovenous fistula, LLL: lower left lobe.