

Case 4/2007 – A Sixteen-Month-Old Infant with Patent *Ductus Arteriosus*

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Clinical data

A sixteen-month-old white female infant with history of fatigue during feeding since she was 30 days old, which was progressive in nature. In the first year, she experienced recurrent upper respiratory tract infections, and two months ago had bronchopneumonia. At the age of eleven months, she was diagnosed with a heart defect, and since then had been taking anticongestive medication. On physical examination she was in good general condition, with mild tachypnea and wide pulse pressure in the upper and lower extremities. No cyanosis was observed. She weighed 9,860 g and was 76.5 cm tall. Oxygen saturation was 96%, heart rate was 125 bpm and blood pressure was 100/50 mm Hg. The aorta was not palpable. Chest examination showed mild impulses along the left sternal border, and a muscular apical impulse +++ was located at the fourth left intercostal space limited by the breadth of two fingers. Heart sounds were very loud, and the second sound was single. A continuous, ++, mild murmur was heard at the 2nd, 3rd, and 1st left intercostal space that radiated to the tricuspid area. The liver was palpable 2 cm from the right costal margin.

The electrocardiogram showed sinus rhythm and signs of left ventricular volume overload, with tall R waves in leads V4 and V5 and a Sokolof index of 50 mm.

P-axis: +60°, QRS-axis: +20°, T-axis: +60°.

Radiographic examination

Radiographic findings included an enlarged cardiac silhouette due to a markedly displaced left ventricular arch; a straight mid-arch; and a rightward deviation of the trachea,

considering the aorta enlargement with the aortic arch to the left and clearly increased pulmonary vascularity. (Fig. 1).

Diagnostic impression

This image suggests an increase in pulmonary shunt flow secondary to patent *ductus arteriosus*, as shown by the enlargement of both arteries and the left ventricle.

Differential diagnosis

Ductus arteriosus-related heart diseases, such as arteriovenous fistula and aortopulmonary window, must be recognized.

Diagnostic confirmation

Clinical findings are consistent with *ductus arteriosus*, based on the continuous murmur heard at the high left sternal border and rarely found in other types of systemic-to-pulmonary communication. The echocardiogram (Fig. 2) showed moderately dilated left chambers with an 8-mm patent *ductus arteriosus* and a large, continuous, left-to-right flow. The following measurements were found: right ventricle 10 mm, left ventricular diastolic diameter 39 mm, aorta 15 mm, and septal and wall thickness 5 mm.

Management

During surgery, the 3-mm *ductus arteriosus* was sectioned and sutured. The baby girl evolved favorably, and the heart murmur disappeared completely.

Key words

Infant; *truncus arteriosus*, persistent; heart defects, congenital.

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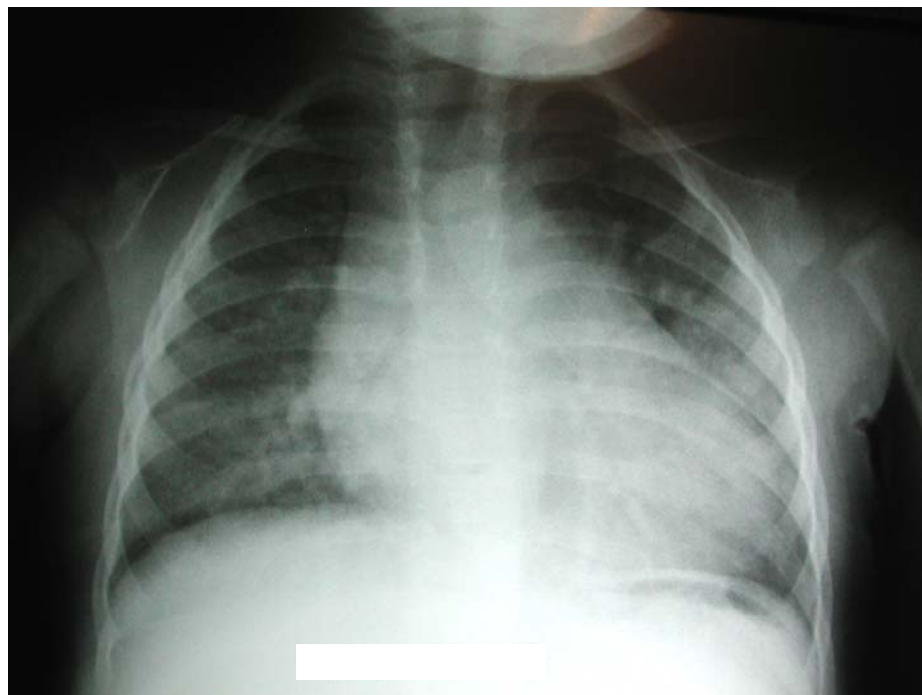


Fig. 1 - Chest x-ray showing evidence of ductus arteriosus, as shown by the enlargement of the aorta and pulmonary arteries, in addition to left ventricular dilation and increased pulmonary vasculature.

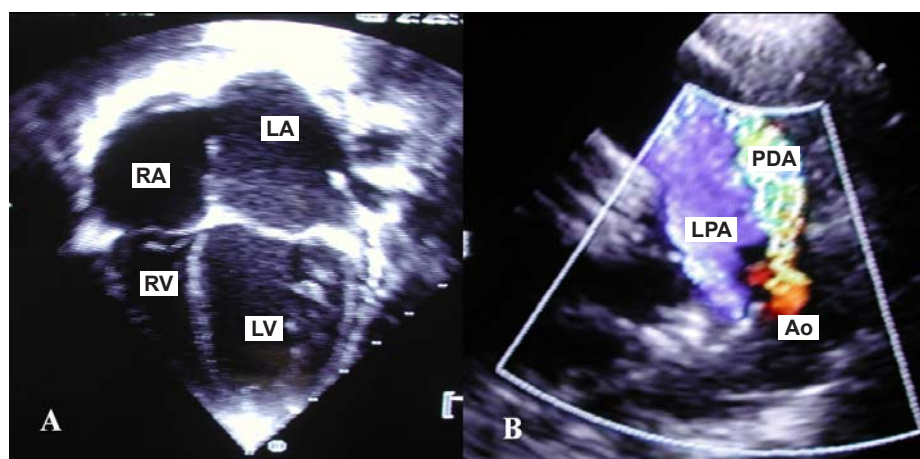


Fig. 2 - A) Echocardiogram in apical four-chamber view showing left chambers clearly dilated with the interventricular septum shifted to the right. B) Suprasternal view showing turbulent flow from the aorta (Ao) to the left pulmonary artery (LPA) through the ductus arteriosus (PDA). RA - right atrium; LA - left atrium; RV - right ventricle; LV - left ventricle.