**X-RAY FILM OF THE MONTH**

*Figure 1A:* Early film of angiogram, showing dilatation of left innominate vein and superior vena cava.

*Figure 1B:* Later film, showing opacification of the anomalous vertical pulmonary vein (arrow) draining into the left innominate.
Clinical Information

This white girl was first seen at the age of nine days with generalized mild cyanosis, present since birth. She was observed to have spells of rapid shallow respiration. No cardiac murmurs were detected at that time. The blood pressure was 110/80, the pulse 160, and the respirations 60. The liver edge was palpable just below the right costal margin. She was hospitalized again at the age of one year at which time she was still cyanotic and showed tachycardia. A systolic murmur was heard over the sternum.

The above chest film was made at the age of three. At that time she was still cyanotic. In addition to the earlier murmur, a diastolic murmur was now heard to the right of the sternum and posteriorly between the scapulae.

DIAGNOSIS

Anomalous Pulmonary Venous Return

These roentgenograms demonstrate the so-called figure-of-eight heart, which is considered diagnostic of anomalous pulmonary venous return. This condition is a congenital malformation in which one or more of the pulmonary veins empties into the right atrium or one of its tributaries, instead of into the left atrium. The figure-of-eight configuration occurs when most or all of the blood of one or both lungs drain into the right superior vena cava via an anomalous left vertical pulmonary vein emptying into the left innominate vein. The functional disturbance depends chiefly upon the details of the associated anomalies. The commonest of these is an atrial septal defect or a patent foramen ovale. When more than 50 per cent of the blood is shunted to the right side of the heart the outlook is grave. The most common clinical findings are dyspnea on exertion, mild cyanosis, and a loud systolic murmur to the left of the sternal border.

The chest film may be normal in the neonatal period, but the figure-of-eight deformity is seen in about half the cases before the age of three months. In addition to this configuration, the pulmonary arteries and their branches may be enlarged and considerable right atrial and right ventricular dilatation may be evident. The lower half of the figure-of-eight is formed by the heart, the left upper limb represents the anomalous vertical pulmonary vein, and the right upper limb the dilated superior vena cava resulting from the extra quantity of blood traversing it.

Angiocardiography (Fig. 1) confirms the diagnosis, and may demonstrate the associated anomalies.

DONALD E. DIETRICH, M.D.*
Cincinnati, Ohio

SELECTED REFERENCES

2 Staff Meeting, Mayo Clinic, August 26, 1953, and March 21, 1956.

*Resident, Department of Radiology, University of Clinical College of Medicine.