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doi: 10.1136/adc.2006.104315

Antenatal diagnosis and postnatal treatment of intrapulmonary arteriovenous malformation

A baby boy was suspected of having right-sided intrapulmonary arteriovenous malformation on fetal echocardiography at 37 weeks' gestation. This showed two prominent vessels (fig 1A), the first consistent with a right-sided pulmonary artery with flow of blood away from the right heart towards the right lung as seen on colour Doppler. The second vessel was draining blood from the right side of the fetal chest back to the left atrium. Oxygen saturations following delivery were 84% in air with no improvement with supplemental oxygen. Angiography revealed a large intrapulmonary arteriovenous malformation in the right middle lobe and anterior portion of the right lower lobe. There was a large feeding vessel with an early bifurcation and a larger more superior feeding vessel that divided more distally in the anterior segment of the lung (fig 1B, C). Prompt filling of the dilated right-sided pulmonary veins was consistent with the diagnosis. Transcatheter occlusion of the arteriovenous malformation

using multiple coils led to a successful outcome with resolution of intrapulmonary shunting.

Intrapulmonary arteriovenous malformation is a rare vascular malformation of the lung that is associated with cyanosis and may lead to significant morbidity. Antenatal diagnosis of intrapulmonary arteriovenous malformations is possible and allows early treatment of a condition that may otherwise lead to significant morbidity.

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Competing interests: None.

Figure 1 (A) Fetal echocardiogram demonstrating long axis view of the fetal heart. There is a prominent vessel draining into the left atrium (LA) consistent with a right pulmonary vein (RPV). There is a further prominent vessel seen anterosuperiorly originating from main pulmonary artery consistent with a branch of the right pulmonary artery (RPA). (B) Selective angiography of right pulmonary artery (RPA) shown on lateral fluoroscopy demonstrating a large feeding vessel (FV) with an early bifurcation and a larger more superior feeding vessel that divides more distally in the anterior segment of the lung. (C) Angiography post coil occlusion demonstrating full occlusion of the two feeding vessels with multiple coils used in the larger more superior vessel.