

SUCCESSFUL MANAGEMENT OF PULMONARY SEQUESTRATION

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Pulmonary sequestration is a rare congenital lung anomaly characterized by nonfunctional lung tissue with an aberrant systemic arterial supply. In 75% of cases, it is intralobar, making it indistinguishable from microcystic CPAM in appearance. In 25% of cases, it is extralobar, located outside the normal lung with its own visceral pleura; in most of these cases, there is an associated pleural effusion. The incidence of chromosomal abnormalities and genetic syndromes is not increased. Defects in other systems, primarily diaphragmatic hernia and cardiac or vertebral anomalies, are found in up to 50% of cases with extralobar sequestration. In more than 30% of cases, there is regression or disappearance of the tumor during the 3rd trimester.

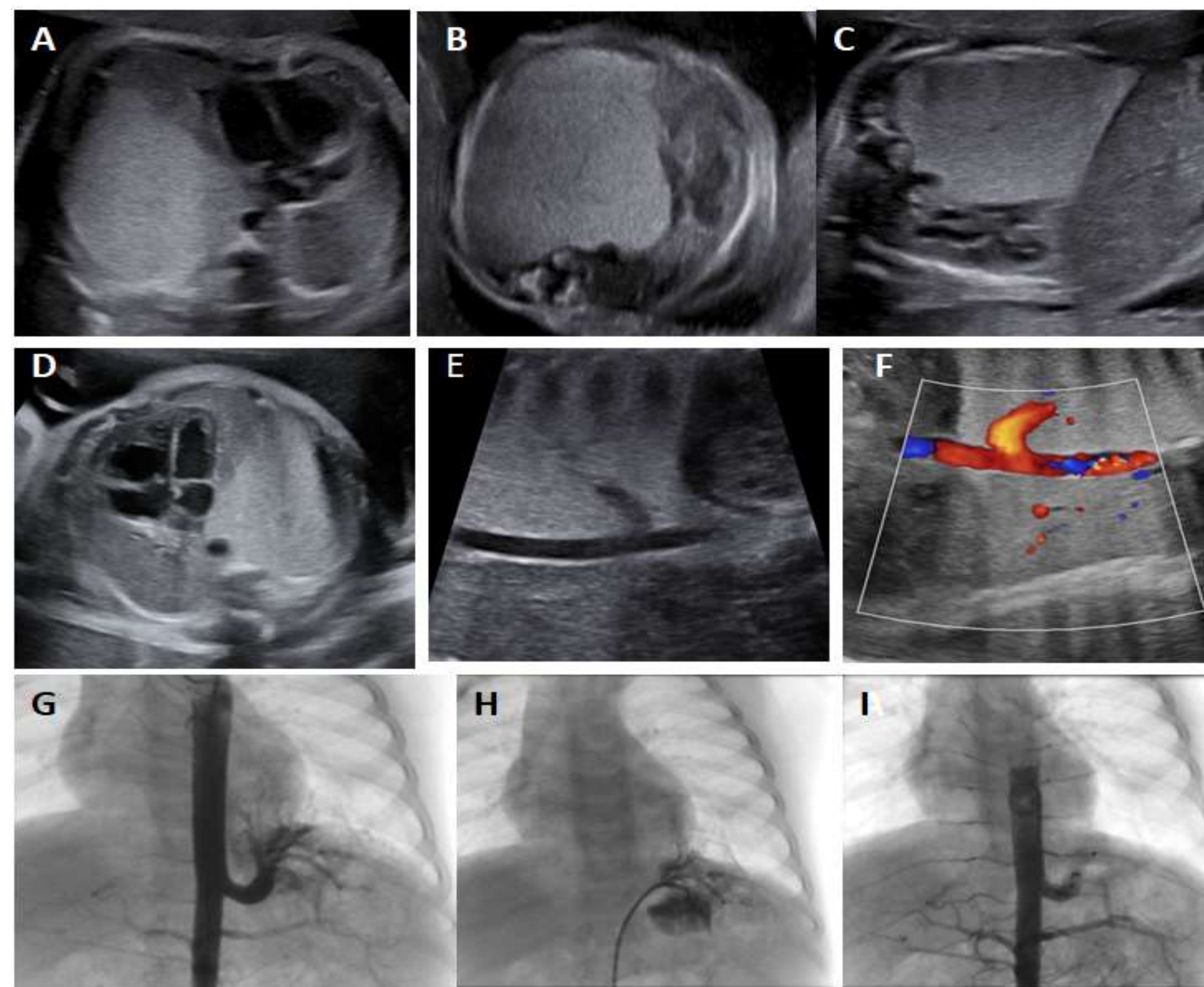


Figure 1. Ultrasound findings of pulmonary sequestration: A, B- transverse section in the second trimester, C - coronal section in the second trimester, D – transverse section in the third trimester, E – coronal section in the third trimester, F – Color Doppler of the aberrant blood vessel, G – aortography before intervention, H – isolated vessels of pulmonary sequestration before intervention, I – aortography after intervention.



Here, we present a case of pulmonary sequestration identified prenatally and successfully managed immediately after birth. The anomaly was detected at the 22nd gestational week during an ultrasound examination. At this stage, the left lung was hyperechoic, occupying the majority of the thoracic cavity, measuring 45x34 mm, and completely displacing the heart to the right. The right lung measured 19x9 mm, and the lung-to-heart ratio (LHR) was 0.8. The ultrasound findings most likely indicated CPAM. As the pregnancy progressed, the left lung decreased in size, with the LHR increasing to 4.4 in the middle of the third trimester. Additionally, an aberrant feeding vessel with a diameter of 3 mm was detected. The dimensions of the hyperechogenic mass in the left basal lobe were measured as 38x34 mm in the coronal section and 35x27 mm in the transverse four-chamber section. At the level of the three-vessel view, normal tissue of the apical lobe was observed, indicating no abnormalities in that region. These findings were consistent with pulmonary sequestration, with a clearly identified systemic vascular supply. The lesion was followed up monthly until delivery. No pleural effusion or hydrops were observed.

The pregnant woman underwent Double test, which indicated a low risk for common trisomies. Amniocentesis was also performed and revealed no aneuploidy of chromosomes 13, 18, 21, or the sex chromosomes. Furthermore, fetal exome sequencing did not detect any pathogenic, likely pathogenic, or variants of uncertain significance that could explain the observed fetal phenotype. MRI of the fetal thorax confirmed the ultrasound findings, with no cystic lesions identified.

The woman gave birth via Cesarean section at term, and the male neonate, with an Apgar score of 9.

Aortography confirmed the diagnosis of pulmonary sequestration, and a combination of vascular plug placement and sclerotherapy was performed. This approach offers a safe and effective alternative to surgery, particularly in patients at high surgical risk or those with asymptomatic lesions. As demonstrated here, close follow-up is a key to the good outcome, as the initially unfavorable diagnosis resulted in successful management.