



## TRANCATHETER OCCLUSION OF MULTIPLE PULMONARY ARTERIOVENOUS MALFORMATION

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### **Introduction:**

Pulmonary arteriovenous malformations (PAVM) are structurally abnormal blood vessels that are direct communications between the branches of pulmonary artery and pulmonary veins, without an intervening pulmonary bed. It has an incidence of 2 to 3 cases per 100,000 people, with a slightly increased female to male ratio. The clinical presentation varies from asymptomatic and incidental detection to symptoms related to degree of hypoxemia such as cyanosis, dyspnea, hemoptysis, and exercise intolerance. In recent years, the preferred method to treat this condition is through transcatheter occlusion, with surgery reserved for large, complex lesions.

### **Patient and history:**

We present a case of an 11-year-old female with a history of cyanosis and dyspnea on exertion of unspecified duration. She had clubbing of the fingernails, but no other abnormal cardiac findings. A chest x-ray revealed a lobulated mass-like density in the right lower lobe of the lung. A 2DEchocardiogram done showed no structural heart disease, so she was suspected to have a PAVM. Chest CT angiography revealed PAVMs in the upper, middle, and lower lobes of the right lung.

### **Results:**

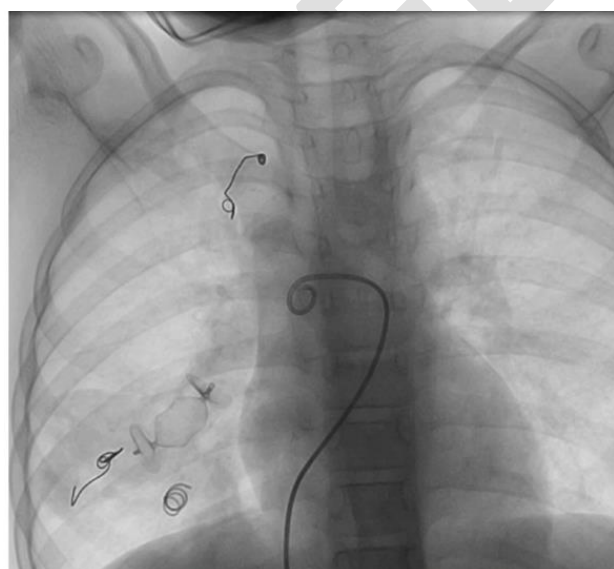
She was brought to cardiac catheterization laboratory for pulmonary angiography and transcatheter embolization of the PAVM's. Using Cook Nester embolization coils, three simple PAVMs were occluded, while a single complex PAVM was embolized using a Cocoon vascular plug. Postembolization pulmonary angiogram showed occlusion of the supplying arteries to the PAVM's, with minimal shunting through the vascular plug. She tolerated the procedure well, with improved pulse oximetry oxygen saturation to 95% from 85% pre-procedure.

**Conclusion:**

Transcatheter embolization of PAVM is a safe and effective means of occluding PAVMS. Since the goal is to ensure occlusion of all feeding arteries, different devices must be on hand, including coils, vascular plugs, and other types of occluders. Care must be taken when deploying these devices to prevent systemic or paradoxical embolism.



**Figure 1:** Pulmonary angiogram showing a complex pulmonary arteriovenous malformation in the right lower lobe



**Figure 2:** Straight AP view showing the vascular plug and three coils in the right lung.