

**ANEURYSMAL “SAC” INVOLUTION: A CRITICAL DETERMINANT OF
OUTCOME AFTER EMBOLOTHERAPY OF PULMONARY AVM**

**Saluja S, Pollak JS, Thabet A, Henderson KJ, Denbow N, White RI. Yale
University School of Medicine, New Haven, CT USA**

Purpose: Short-term results after embolotherapy of pulmonary arteriovenous malformation (PAVM) demonstrate improved oxygenation and reduced shunt. Our purpose is to report the long term imaging results of successful embolotherapy of PAVM, using unenhanced spiral computed tomography (CT) of the chest.

Materials and Methods : A prospective study was conducted with Human Investigations Committee approval. All patients were treated by standard techniques, using pushable fibered coils or detachable silicone balloons. Unenhanced spiral chest CT (5mm cuts), was obtained 6 months to 1 year after embolotherapy in all patients. Involution of the venous sac is defined as disappearance of the sac with residual scar.

Results: 160 consecutive and previously unreported patients were treated over a 3-year period (1996-1999). 425 PAVM were occluded during 203 procedures. Follow-up is complete at this time in 145/160 (91%) of patients with 393/425 (94%) PAVM. The mean follow-up is 5.5 years.

Failure of the aneurysmal sac, connecting the pulmonary artery to pulmonary vein, to involute, was demonstrated in 5/114 (4.4%) patients and 5/325 (1.5%) PAVM. Reperfusion of the treated PAVM was due to recanalization of the treated artery (3 patients) or accessory vessels not identified originally (2 patients). One patient with reperfusion developed recurrent hemoptysis and one patient each without reperfusion developed symptomatic stroke and brain abscess.

Conclusions: Involution of the aneurysmal sac is the most important imaging indication of successful long-term outcome. Despite use of modern embolotherapy techniques, 4.4% of our patients had recurrences. Minimally, follow-up by the treating physician is recommended 1 year and every 5 years after embolotherapy.