

CARDIOVASCULAR FLASHLIGHT

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Transcatheter embolization of multiple intra-pulmonary arterio-venous fistulae with Amplatzer vascular plugs**Milosz Jaguszewski¹, Oliver Gaemperli¹, Oliver Kretschmar², Matthias Greutmann¹, Jurg Grünenfelder³, and Roberto Corti^{1*}**¹Department of Cardiology, Cardiovascular Centre, University Hospital Zurich, Zurich, Switzerland; ²Department of Cardiology, University Children's Hospital Zurich, Zurich, Switzerland; and ³Department of Cardiac Surgery, Cardiovascular Centre, University Hospital Zurich, Zurich, Switzerland

* Corresponding author. Andreas Gruntzig Catheterization Laboratories, Cardiovascular Center, University Hospital Zurich, 8091 Zurich, Switzerland.

Tel: +41 (0)44 255 85 99, Email: roberto.corti@usz.ch**This paper was guest edited by Frank E. Rademakers, University Hospital Gasthuisberg, Leuven, Belgium**

A 56-year-old male was referred for percutaneous treatment of multiple-symptomatic persistent pulmonary arterio-venous fistulae (PAVFs). The patient's history included surgical repair of a secundum-type atrial septal defect with closure of right lung PAVFs in 1961, repeat transcatheter radiofrequency ablations for recurrent episodes of intra-atrial re-entrant tachycardia, and implantation of a transvenous dual-chamber pacemaker for sick sinus syndrome in 2002. Over the subsequent years, he had developed progressive cyanosis and dyspnoea (NYHA II–III) with arterial desaturation from 89 to 81% during exercise, indicating significant right-to-left shunt.

Selective pulmonary angiography revealed extensive PAVFs of the right lung, with major PAVFs identified in the middle (*Panel A*, arrows) and the lower lobes (*Panel B*, arrow). Major PAVFs were selectively engaged with a 5 F coronary Judkins right or multipurpose catheter. In the lateral and the medial segments of the middle pulmonary lobe, 6- and 8-mm amplatzer vascular plugs (AVPs) IV were used for the PAVFs, respectively (*Panel C*, white arrows), while a 6-mm AVP I was placed in the posterobasal segment of the right lower lobe (*Panel D*, white arrow). The largest PAVF in the middle pulmonary lobe was sealed with a 12-mm AVP II (*Panels C and D*, black arrow). Control angiography documented complete occlusion of all the PAVFs (*Panels C and D*).

Upon deployment of all the AVPs, arterial oxygen saturation improved from 90 to 95% at rest, and in the pulmonary artery, from 64 to 70%. The patient's post-procedural recovery was uneventful and his peripheral saturation remained stable during the 2 days prior to discharge.

The case presented in this article demonstrates that transcatheter occlusion of multiple PAVFs using AVPs is a feasible and valuable alternative to surgical lobectomy and has a high procedural success rate.

