A 78-year-old woman presented with a 2-month history of worsening dyspnea, orthopnea, and cough with hemopty-
sis. Her past medical history was significant for hypertension and severe mitral regurgitation for which she had undergone mitral valve repair 3 years previously. In addition, she had recurrent atrial tachycardia requiring 2 radiofrequency ablations, which included ablation of several left-sided pathways. The last ablation was performed 3 months before her presentation.

A transesophageal echocardiogram was performed and showed turbulent Doppler flow and increased systolic and diastolic velocities in the right lower (Figure 1) and left upper pulmonary veins. A contrast-enhanced, retrospectively gated helical CT scan showed 60% to 70% stenoses of the right lower (Figure 2, left panel) and left upper pulmonary veins. A ventilation-perfusion scan revealed a large perfusion defect in the right lower lobe. The patient subsequently underwent a successful balloon dilation of the right lower and left upper pulmonary veins (Figure 3). Pulmonary artery pressures before dilation were 85/30 mm Hg, and dropped to 55/20 mm Hg immediately after dilation. A transesophageal echocardiogram performed after the procedure showed normal flows in the previously stenotic pulmonary veins. A CT scan completed several days after the procedure showed a reduction in the degree of stenosis in both right lower (Figure 2, right panel) and left upper pulmonary veins. The patient’s acute symptoms were markedly improved, although her condition subsequently deteriorated secondary to multiple other medical problems.
**Figure 2.** Retrospectively gated helical CT volume imaging after contrast administration permitted production of maximal intensity projections. On the pre-angioplasty image (left), the right lower pulmonary vein shows an asymmetric discrete annular narrowing of 60% to 70% (arrow) as the vein joins the left atrium (LA). After angioplasty (right), there was reduction of the focal stenosis of the right lower pulmonary vein to 20% to 30% (arrow).

**Figure 3.** A, Selective angiogram of the left upper pulmonary vein (LUPV) in the lateral projection demonstrating moderate stenosis at its insertion into the left atrium (arrow). B, LUPV after balloon angioplasty demonstrating significant improvement in the stenosis, with a 49% increase in luminal diameter from 3.5 mm before dilation to 5.2 mm after dilation (arrow).
Pulmonary Vein Stenosis After Catheter Ablation of Atrial Arrhythmias

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