

PULMONARY VEIN STENOSIS – A RARE COMPLICATION OF RADIOFREQUENCY ABLATION FOR ATRIAL FIBRILLATION

Ju Young Bae, M.D.¹; Liam du Preez M.D.¹; Alexander DeVecchio, M.D.²; Christopher J. Howes M.D.³

1. Department of Medicine, Greenwich Hospital, Yale New Haven Health System, Greenwich, CT, United States
2. Department of Medicine, Section of Cardiovascular Medicine, Greenwich Hospital, Yale New Haven Health System, Greenwich, CT, United States
3. Yale University School of Medicine and Yale New-Haven Hospital, Section of Cardiovascular Medicine, New Haven, CT, United States

Case Vignettes

A 61-year-old male presented to the emergency department (ED) with left-sided flank pain, fever, and rigors. Past medical history included recurrent episodes of prostatitis (started on Levofloxacin two days prior) and paroxysmal and persistent atrial fibrillation for which he underwent pulmonary vein isolation 2 months prior. Apixaban was discontinued 6 weeks following the ablation. CT of the abdomen and pelvis found fullness of the proximal ureter and left renal pelvis. Chest X-ray and Chest CT revealed left lower lobe infiltrate. He was discharged home on cefuroxime and doxycycline for pyelonephritis and possible atypical pneumonia.

Four days later, he returned to the ED with hemoptysis and left-sided pleuritic chest pain. Vital signs were temperature 100.5°F, pulse 90 beats per minute, blood pressure 137/79 mmHg, respiratory rate 18 breaths per minute, and oxygen saturation 100% on room air. Labs revealed white blood count $9.5 \times 10^3/\mu\text{L}$, hemoglobin 12.4 g/dL, mean corpuscular volume 89.6 fL, creatinine 1.00 mg/dL, d-dimer 0.66 mg/L FEU, alkaline phosphatase 71 U/L, alanine aminotransferase 24 U/L, International Normalized Ratio (INR) 1.04, C-reactive protein 5.3 mg/dL, high sensitivity troponin T 8 ng/L (hour 0) and 9 ng/L (hour 1), and negative SARS CoV-2 PCR. Electrocardiogram showed normal sinus rhythm without any acute ST or T wave changes. CT pulmonary angiography found no evidence of pulmonary embolus but demonstrated stenosis of the left upper lobe pulmonary vein, subtotal stenosis of the left lower lobe pulmonary vein, and increased consolidation in the left lower lobe compared to prior CT (Figure 1). Transthoracic echocardiogram showed ejection fraction of 56%, normal right ventricular cavity size and systolic function, and right ventricular systolic pressure of 30 mmHg. The patient underwent right and transeptal left heart catheterization with transeptal puncture, which demonstrated total occlusion of left lower pulmonary vein and posterior upper pulmonary vein, as well as severe stenosis of the left anterior upper pulmonary vein. Three stents were placed to the areas of stenoses with balloon angioplasty of left mid-posterior pulmonary vein.

Figure 1. CT pulmonary angiography demonstrating stenosis left upper lobe pulmonary vein (left figure) and subtotal stenosis of the left lower lobe pulmonary vein (right figure)

