

Case Report

Pulmonary Vein Compression After Implantation of a Left Atrial Appendage Occluder: Presentation and Discussion of a Case

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Introduction

Atrial fibrillation (AF) is the most common sustained cardiac arrhythmia which it occurs in 1-2% of the general population.[1] Over 6 million Europeans are suffering from this arrhythmia, and its prevalence is estimated to be at least double in the next 50 years. The prevalence of AF increases with age, and is from 0.5% at 40-50 years to 5-15% at 80 years.[2] Clinically, AF is associated with increased rates of death, stroke and other thromboembolic events, heart failure and hospitalizations, reduced quality of life and left ventricular dysfunction. In ischemic-related stroke and AF patients, emboli are dominantly from the left atrial appendage (LAA). Clinical studies have demonstrated that implantation of a LAA occluder can prevent ischemic stroke and avoid anticoagulation therapy in the patients with high-risk bleeding [3-5]. Currently, two different LAA occluders are available. However, it is still unknown whether the device can lead to depression or stenosis in PV diameter. In this article, a compression in the left inferior pulmonary vein after implantation of a LAA occluder is reported.

Case report

A 76 year old woman with primary hypertension was referred to our hospital for catheter ablation of persistent AF. She was suffering from exertional dyspnoe since two years ago which became more sever since the last 3 months. Persistent AF was initially diagnosed due to ischemic stroke on December 2011. Due to high risk of bleeding with anticoagulation, an Amplatzer LAA occluder (puck and disc type, AGA Medical Corp., Minneapolis, MN) was implanted in another hospital. Transesophageal echocardiography (TEE) was performed to exclude LAA thrombus before ablation procedure which confirmed that the LAA occluder was in the LAA. An angio CT of pulmonary veins was performed which showed three and two pulmonary veins in the right and left side, respectively. Compressed LIPV was suspected with an oval shape appearance in short axis (8 mm in CT angio), the other veins were in normal sizes (**Figure 1**).

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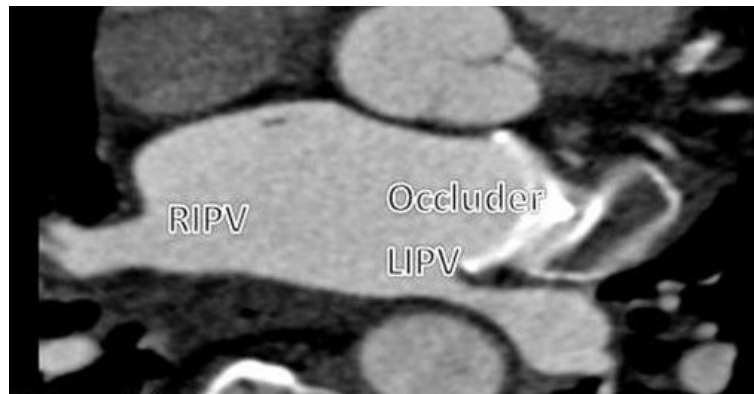


Figure 1: LAA occluder which narrowed the LIPV ostium

During the ablation study, stable sinus rhythm was at the beginning of the procedure. Two 8.5 F SL1 sheaths (St. Jude Medical, Inc., MN, USA) were advanced to the left atrium (LA) by a modified Brockenbrough Technique. After transseptal catheterization, intravenous heparin was administered to maintain an activated clotting time of 250 to 300 seconds. Additionally, continuous infusions of heparinized saline were connected to the transseptal sheaths (flow rate of 10 ml/h) to avoid thrombus formation or air embolism. Electroanatomical mapping was performed with a 3.5-mm-tip catheter (ThermoCool, Biosense-Webster, Diamond Bar, CA, USA) during SR by using CARTO 3 system (Biosense-Webstar, CA, USA). Mapping at the ridge between the left inferior pulmonary vein (LIPV) and LAA in anterior part showed significant decrease in impedance (about 70-80 Ohm), which suggested the catheter contact to the metal device (**Figure 2**).

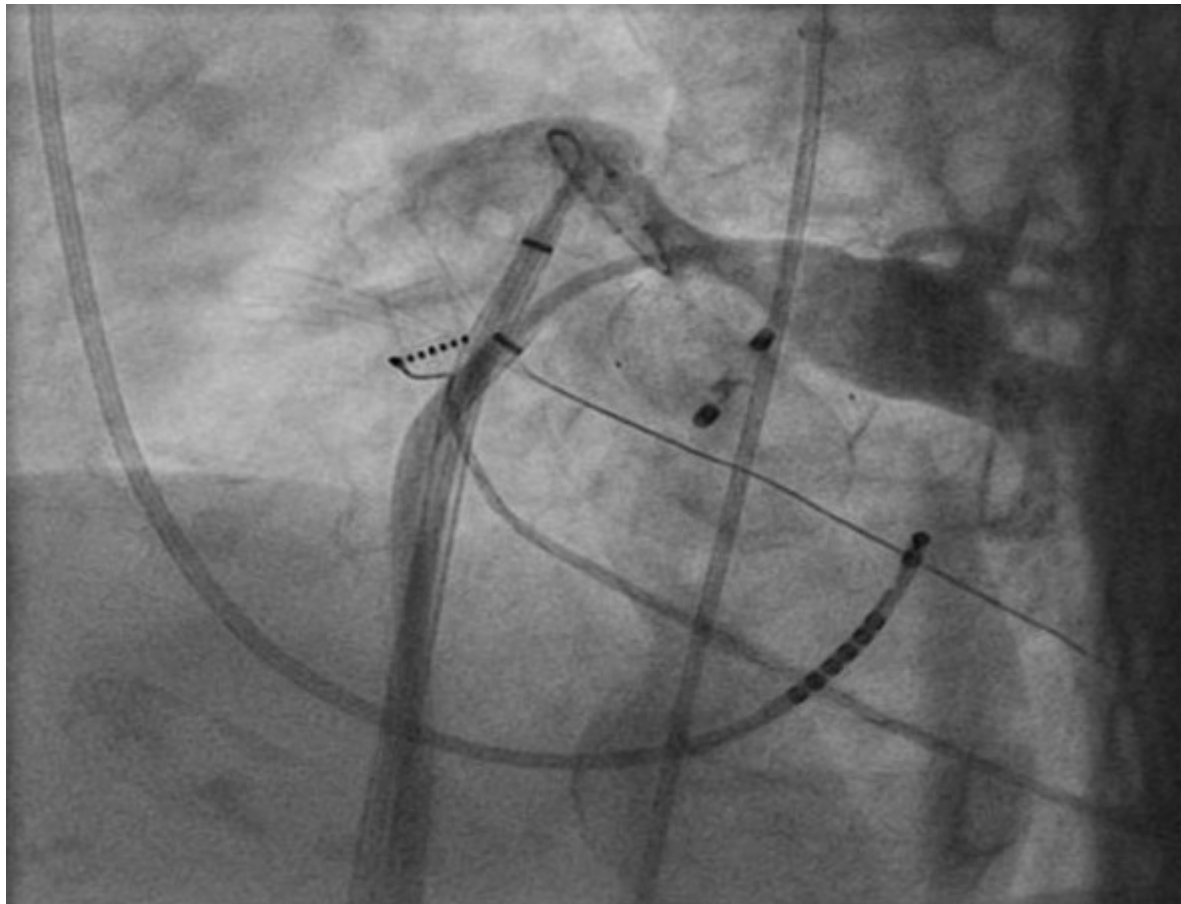


Figure 2: Angiography of LIPV shows the compression and narrowing of ostium

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