

## Conflict of Interest

The authors declare having no conflict of interest.

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## Haemoptysis as a First Sign of Pulmonary Venous Stenosis Secondary to Radiofrequency Ablation of Atrial Fibrillation

### *Hemoptisis como forma de presentación de estenosis de las venas pulmonares secundaria a ablación por radiofrecuencia de la fibrilación auricular*

To the Editor:

We present two clinical cases, both middle-aged men who came to our consultation due to persistent hemoptoic sputum and dyspnea on great exertion. Regarding their personal history, both were ex-smokers and had been diagnosed with paroxysmal atrial fibrillation. Both had undergone circumferential ablation of the pulmonary veins of the left auricle after the failure of pharmacological treatment.

The patients presented unremarkable physical examinations. In the first of the two cases, the complementary tests, including PA and L chest radiograph as well as on thoracic computed tomography (CT) with contrast, revealed several alveolar infiltrates in different areas of the pulmonary parenchyma, confluent in some areas, and changing over time. As the symptoms were persistent, and given the lack of etiologic diagnosis, we ordered an angiotomography of the pulmonary veins. This revealed complete amputation of the opening of the left upper pulmonary vein, while the right upper venous confluent maintained a normal diameter. The right and left lower venous confluents presented reduced diameters at the height of the ostium (fig. 1). Given the diagnosis of stenosis of the pulmonary veins, the patient was sent to the Hemodynamics unit, where balloon angioplasty was performed at the level of the occlusion of the left upper pulmonary vein.

The second patient debuted with massive hemoptysis and underwent emergency surgical intervention. Left upper lobectomy was performed, with good post-op evolution. One month later, the patient was followed-up in our consultation, at which time we

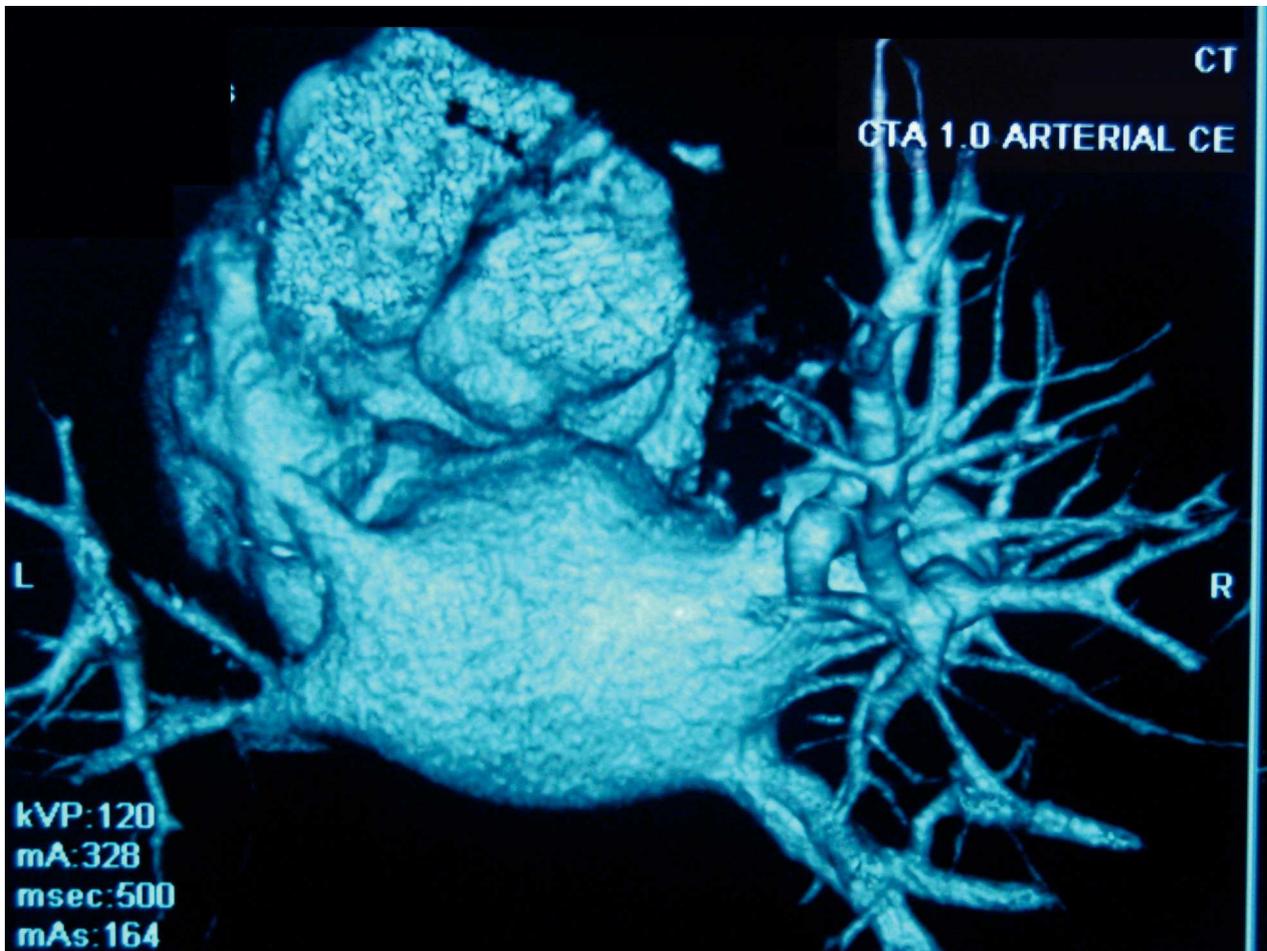
ordered a follow-up angio-CT. This revealed severe stenosis short of the ostium of the lower left pulmonary vein, with faint and delayed enhancement of the previous venous pathway. Given the diagnosis of stenosis of the pulmonary veins, the patient was sent to the Hemodynamics unit, where, after being evaluated, a stent was successfully inserted in the left upper pulmonary vein. To date, the patient enjoys a good clinical evolution.

## Discussion

Stenosis of the pulmonary veins is an underdeveloped pathology with regards to its diagnosis and therapeutic actions.<sup>1</sup> The lack of symptoms is very characteristic. In symptomatic patients, what is most prevalent is debut with effort dyspnea, or with persistent catarrhal symptoms, while hemoptysis is quite infrequent.<sup>2</sup> As for the radiological findings, there is no specific pattern in this pathology.<sup>3</sup> For all these reasons, it is a pathology that is usually under diagnosed.

The imaging test for diagnosis is pulmonary angiography,<sup>4</sup> but it is a very specific test, and for this reason many cases are never diagnosed.

The definitive treatment consists in achieving the recanalization of the stenosed segment.<sup>5</sup> In order to do so, balloon dilatation can be done, as in the first case. This is a more conservative method, with less surgical risk but with greater risk of relapse. Another therapeutic alternative is the implantation of a *stent* in the area of the occlusion of the vessel, as done in the second case. It is an effective method, with less risk of recurrence but with a higher rate of complications. Nowadays, transcatheter ablation is being used more and more as a therapeutic procedure in patients with chronic symptomatic atrial fibrillation. This pathology is currently being taken into consideration, and from a cardiology viewpoint prevention by means of technique perfection is the most important point. From the pulmonology standpoint, it is primordial to keep this pathology in mind in order to determine early, correct diagnosis.<sup>6</sup>



**Figure 1.** Angiotomography of the pulmonary veins: complete amputation of the opening of the upper left pulmonary vein is observed, while the right upper venous confluent maintained normal diameter. The right and left lower venous confluents presented smaller diameters at the height of the ostium.

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