the Doppler image was observed for the PFO closure device (Fig. 2).

The patient was discharged without complications the following
day on dual antiplatelet therapy (aspirin and clopidogrel).

Percutaneous closure of the LAA is offered as a new treatment
option for patients at risk of embolism in whom it may be difficult
to achieve satisfactory anticoagulation control or where anti-
coagulation treatment is not possible or desirable. Ninety percent
of thrombi in patients with nonrheumatic atrial fibrillation occur
in the LAA. A PFO closure is also possible and is recommended in
situations where there is a risk of paradoxical embolism, regardless
of recent discussions and reports on its long-term usefulness.

This case shows that it is possible to carry out the double
percutaneous procedure in the same intervention and to thereby
act directly on the embolic focus of the LAA while also closing the
PFO.

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Endovascular Diagnosis and Palliative Treatment
of a Pulmonary Artery Angiosarcoma

Diagnóstico y tratamiento paliativo endovascular
de un angiosarcoma de arteria pulmonar

To the Editor,

A 62-year-old woman with dyspnea at rest and chest pain
persisting for 2 months was referred to our hospital with a
presumptive diagnosis of pulmonary thromboembolism (PTE). On
admission the physical examination revealed signs of right-sided
heart failure and systolic murmur in the pulmonary area. The
electrocardiogram showed signs of overload of the right chambers,
whereas transesophageal echocardiography showed dilatation of
the pulmonary trunk, a heterogeneous hypoechoic image strad-
dling the bifurcation, and a right ventricle with severe dilatation
and deterioration of the systolic function. A ventilation-perfusion
scintigraphy suggested a high probability of PTE and, therefore,
anticoagulant therapy with sodium heparin was initiated. Venous
Doppler ultrasound of the lower limbs ruled out the presence of
thrombosis. The differential diagnosis included a tumor of the
pulmonary artery.

Computed tomography angiography of the chest showed an
occlusive endoluminal filling defect that involved the pulmonary
trunk, extending toward both main branches but primarily
affecting the left: some sectors of the image were late-phase
contrast-enhanced (Fig. 1A). The lesion was confirmed by
pulmonary angiography (Fig. 1B), and found to produce a critical
obstruction with a translesional pressure gradient of 53 mmHg.
Atypical, vimentin-positive Ki67 cells were observed in specimens
taken with a bioprobe. The anatomical pathology diagnosis was
angiosarcoma of the pulmonary trunk.

Given the infiltration of the pulmonary artery and adjacent
arteries, the patient’s poor overall condition and high
surgical risk, it was considered that the tumor could not be
surgically resected. To relieve the dyspnea, palliative treatment
consisting of angioplasty of the pulmonary trunk with 2 stents of
26/40 mm and 24/60 mm was successfully undertaken (Fig. 2).

Following the procedure, the patient’s symptoms improved. She
was discharged with functional class II dyspnea and was able to
return to her normal activities. After 4 months, she presented
progressive dyspnea up to functional class III, caused by severe

Figure 1. A: tomography angiography of the chest; endoluminal mass affecting the trunk (white arrow) and invading the right branch of the pulmonary artery (yellow arrow); its relationship with the aorta can also be seen (blue arrow). B: pulmonary angiography confirming the previous finding: absence of filling with iodinated contrast material.

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Heart Failure in a Patient With Wolff-Parkinson-White Syndrome

**Insuficiencia cardiaca en un paciente con Wolff-Parkinson-White**

To the Editor,

A 41-year-old patient was referred to our center for ablation of accessory pathways (AP) in the context of Wolff-Parkinson-White (WPW) syndrome. The patient, who was still asymptomatic, had been diagnosed with WPW 9 years earlier in a routine examination. Three years before the present admission she began to refer to short episodes (<5 min) of sudden-onset, sudden-offset palpitations, which were never recorded by electrocardiogram (ECG). In the past 9 months, she began to show signs of heart failure in the form of New York Heart Association functional class II effort dyspnea. Physical examination was normal, but during exercise testing she only achieved 6 METs. The ECG showed sinus rhythm with pre-excitation manifested by a right antero-septal AP suggesting a classic pattern of left bundle branch block (LBBB) (Fig. 1A). Both echocardiography and magnetic resonance imaging (MRI) showed a marked intraventricular dyssynchrony, with early activation of the septum fluoroscopy, as in the case described, or under transesophageal echocardiographic guidance.

Angiosarcoma presents in middle age (40-65 years) and tends to affect only one of the pulmonary branches, unlike PTE which tends to affect both. The tumor grows rapidly and produces local invasion and distant metastasis. Vascular occlusion is the main cause of death. The prognosis is poor: the mean survival is 1.5 months if surgical resection is not possible and about 12 months if the patient undergoes surgery, which is usually partial.

Angioplasty of the pulmonary trunk is a minimally invasive, palliative procedure that has only been reported in a few cases. The procedure could be useful to improve symptoms due to obstruction and can be combined with chemotherapy or radiotherapy to reduce the tumor size and improve the quality of life in patients excluded from surgical treatment.

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Figure 2. Digital subtraction angiography: stents placed in the right (black arrow) and left (white arrow) branches of the pulmonary artery.

Figure 1. A: electrocardiogram showed a pattern of pre-excitation by a right antero-septal pathway suggesting a classic pattern of left bundle branch block. B: normalization of the electrocardiogram after ablation.