

Given the existence of a very weak brachial pulse and good femoral artery pulse, coronary angiography was performed via the right femoral artery. The catheter was inserted with no complications and the PTFE prosthesis puncture dilated with a 6F introducer dilatation catheter (Cordis, Johnson & Johnson). The artery was canalized with the 6F delivery catheter and the guidewire and dilatation catheter extracted. When the JL4 6F catheter was advanced over the metal guidewire we discovered the patient had an axillo-bifemoral bypass, not just the aorto-bifemoral bypass described (Fig. 1). We photographed the left coronary artery and a 285 cm exchange guidewire was used to complete coronary angiography via the JR4 6F catheter. This showed no significant lesions in the left coronary artery and a long, severe lesion in the proximal and mid right descending coronary artery. Successful percutaneous placement of two drug-eluting stents was via a JR4 6F catheter guidewire similar to that used in femoral and radial access interventions. The procedure was completed with deferred manual extraction of the femoral introducer at 6 h post-procedure. The patient was discharged next day with no complications.

Although percutaneous procedures on PTFE prostheses entailing puncture with the Seldinger technique have been described previously,<sup>2,3</sup> to our knowledge this is the first time this percutaneous coronary intervention has been performed via an axillo-bifemoral bypass. As radial and brachial access are possible on both sides, the need to resort to this access site can only arise in exceptional circumstances but may sometimes be of use. The procedure was conducted with standard percutaneous intervention materials with no difficulty. Hence, questions such as a

theoretical limitation due to catheter length, difficulty in advancing through the graft, or lack of anatomy support, seem to be answered by the successful outcome of this case.

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## Elderly Patient With Platypnea-Orthodeoxia: Check the Ascending Aorta

### *Paciente anciana con platipnea-ortodesoxia: hay que verificar la aorta ascendente*

#### To the Editor,

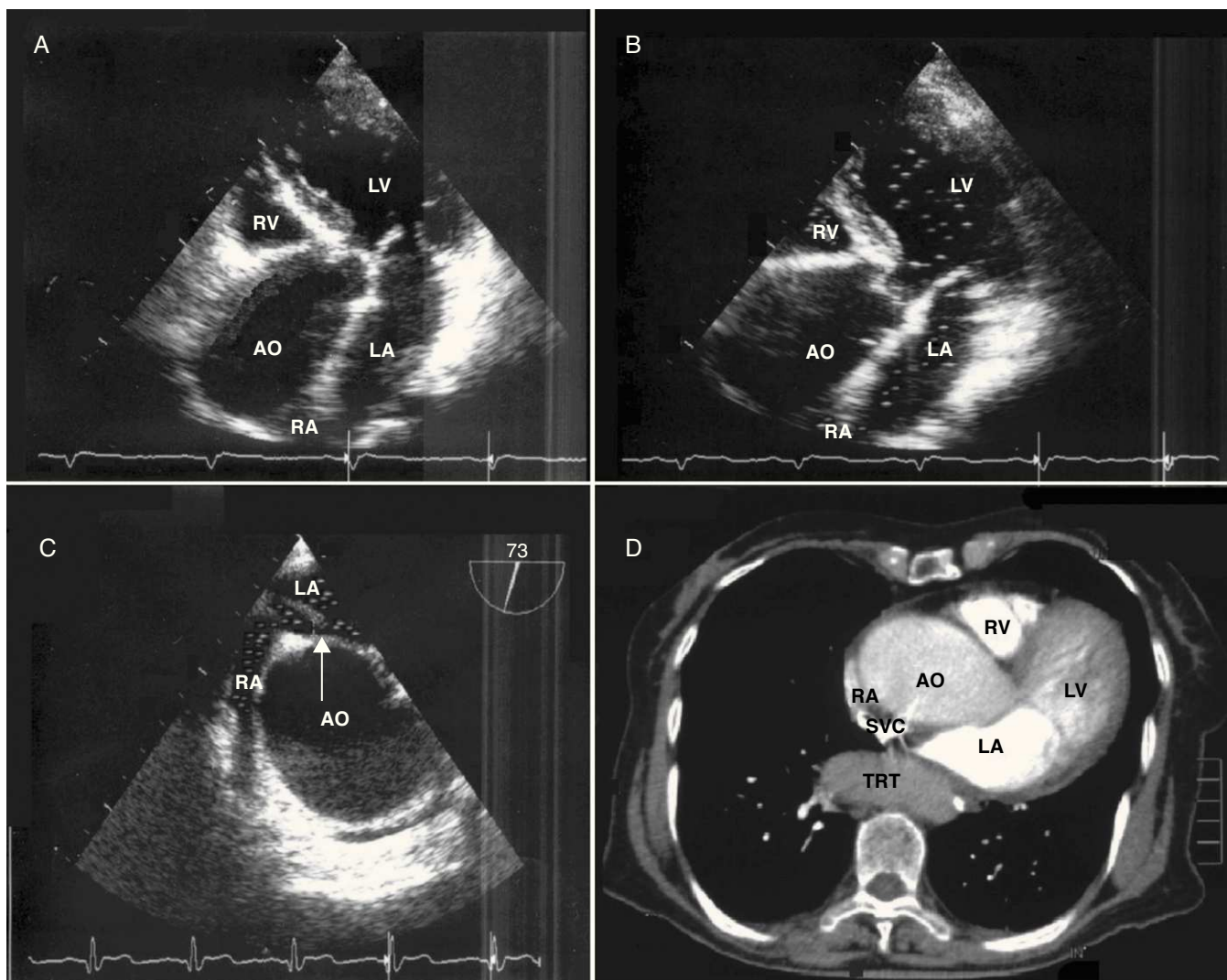
A previously asymptomatic 78-year-old woman was admitted because of dyspnea and a sense of fainting when moving from the recumbent to the erect position. When supine the patient was not dyspneic and on clinical examination a soft basal diastolic murmur was heard. Arterial blood oxygenation on room air was 95%. On standing up, she became tachypneic and cyanotic, with a blood desaturation to 84%, not responding to supplemental oxygen. The presence of a platypnea-orthodeoxia syndrome (POS) was evident, while signs of orthostatic hypotension were absent. The electrocardiogram was normal. Chest radiography showed an enlarged and tortuous thoracic aorta.

A transthoracic echocardiogram revealed normal ventricles and left atrium. A dilated ascending aorta of 6.0 cm was distorting and severely reducing the right atrium (Fig. 1A). Slight aortic and tricuspid valve regurgitations were noticed. Systolic pulmonary artery pressure was estimated at 35 mmHg. When agitated saline was injected intravenously in a seated position, microbubbles appeared immediately in the left atrium, confirming the existence of a right to left intracardiac shunt (Fig. 1B). With the patient in the recumbent position, the quantity of bubbles passing to the left cardiac chambers was dramatically reduced. The location of the shunt was not apparent transthoracically, but transesophageally a patent foramen ovale (PFO) of 5 mm was found and the amount of

shunt was calculated at 25% (Fig. 1C). Although the early appearance of contrast in the left atrium made the existence of an intrapulmonary fistula unlikely, a chest computerized tomography (CT) and magnetic resonance imaging were deemed necessary. In particular, chest CT showed the aortic aneurysm severely deforming the right atrium to a vermiform cavity (Fig. 1D). No signs of intrapulmonary arteriovenous malformations were found. The patient was referred for resection and grafting of the ascending aortic aneurysm, with closure of the PFO. Unfortunately, the planned interventions were cancelled 10 days later, when the patient sustained a hemorrhagic stroke.

A POS consists of dyspnea and arterial oxygen desaturation when assuming the sitting or erect position from the recumbent one.<sup>1</sup> A right-to-left interatrial shunt through a PFO is frequently the anatomical substrate that is responsible.<sup>2,3</sup> Persistence of a PFO in adulthood reaches a prevalence of almost 25%, usually remaining clinically silent. If right atrial pressure exceeds the left one, a right-to-left interatrial shunt can manifest paradoxical embolisms or POS, sometimes provoking cryptogenic strokes. Alternatively it can present even in the absence of elevated right atrial pressure. This is a case of a position- and not a pressure-mediated shunt. An enlarged ascending aorta can distort the right atrium, giving a horizontal direction to the atrial septum and a counterclockwise rotation of the heart.<sup>4,5</sup> This distortion favors a caval inflow against a PFO, especially in the sitting and erect position, when the postural changes may exacerbate a right-to-left shunt.<sup>6</sup>

As life expectancy is increasing, aortic dilatation will become more common. When elderly patients present with otherwise unexplained dyspnea, positional manipulations should be performed. If the suspicion of POS is raised, the possibility of an aneurysmatic ascending aorta distorting a previously silent PFO should not be overlooked.



**Figure 1.** Transthoracic echocardiogram, modified apical view. Right atrium is compressed by ascending aorta (A). Contrast passes through the right atrium to the left (B). Transesophageal echocardiogram. Right atrium deformed by the dilated aorta. Opening of a patent foramen ovale (arrow) permits a right-to-left shunt of contrast (C). Chest computerized tomography. Right atrium reduced by the aortic aneurysm to a vermiform cavity (D). AO, ascending aorta; LA, left atrium; LV, left ventricle; RA, right atrium; RV, right ventricle; SVC, superior vena cava; TRT, tortuous descending aorta.

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