INTRODUCTION

Fistulas between the aorta and cardiac cavities are rare and usually found in the right cavities. The presence of fistulas between the aorta and the left atrium (AOF-LA) is associated with complications of infectious endocarditis and paravalvular abscess, aortic dissection, and surgery affecting the valve or aortic root. We describe a patient with LA-AOF after resection of a left atrial myxoma presenting heart failure who underwent percutaneous treatment with an Amplatz device for closure of interventricular communication.

CLINICAL CASE

Woman, 72 years old, admitted to hospital due to heart failure. She had undergone intervention in another center on two occasions for left atrial myxoma and posterior relapse (18 years and 15 years before, respectively) and had been diagnosed at follow-up with asymptomatic LA-AOF. Electrocardiogram showed atrial flutter that was electrically cardioverted. The patient continued with heart failure despite treatment with diuretics and captopril. Transesophageal echocardiogram showed LA-AOF through the noncoronary sinus with an important shunt through it. The left ventricle was mildly dilated and presented preserved systolic function.

Cardiac catheterization was done showing normal lung pressure (30/14/20) and a pulmonary capillary pressure of 14 mm Hg. Aortography showed a large flow of contrast agent from the noncoronary sinus to the left atrium (Figure 1A and B).

We decided on transcatheter closure of the LA-AOF which was done via the right femoral artery. By use of a right coronary Judkins catheter, a hydrophilic guidewire was advanced from the aorta, via the fistula, to the left atrium with the catheter over this (Figure 2). Next, a long high-support guidewire was introduced into the left atrium and the coronary right catheter was exchanged for an Amplatz delivery system. Through this system, an Amplatz de-
vice was advanced via this system to close the 12-
mm interventricular communication (AGA Medical
Corporation, Golden Valley, Minneapolis, USA).
This device is made of nitinol mesh with dacron
patches inside consisting of 2 disks joined by a 7-mm
central neck. Under fluoroscopic guidance and trans-
esophageal echocardiogram, the delivery system was
gradually withdrawn until the device was completely
deployed, leaving 1 disc in the left atrium and the
other in the aorta, checking that valve operation was
not blocked. Transesophageal echocardiogram and
total aortography showed that the device had been
correctly placed with minimum leakage to the left
atrium (Figure 3A and B). The patient received 100
mg aspirin/day to which 75 mg clopidogrel/day was
added for 3 months. At 6-month follow-up, the pa-
tient was asymptomatic and the echocardiogram did
not show residual shunt.

DISCUSSION
Closure of LA-AOF is indicated in symptomatic pa-
tients and surgery is the standard treatment. Transcuta-
neous closure was based on the favorable angiographic
characteristics (noncoronary sinus, small diameter)
and the background of 2 heart operations.
Recently, isolated experiences have been reported
with an Amplatzer device in the treatment of peri-
valve leak involving prosthetic mitral valve,3 sinus rup-
ture of Valsalva aneurysm in right cavities,4 aortopul-
monary window,5 and coronary fistulas in right
cavities.6
Closure of LA-AOF with an Amplatzer device for
anterograde closure of the ductus has been described
in the literature with subsequent closure of an ostium
secundum-type interatrial communication.7 Not having
to carry out transeptal puncture would have suggested
the anterograde approach to the authors making it pos-
sible for them to implant a device for ductus closure
(with a single external disc that remains in the aorta).
We chose the retrograde approach due to its simplicity
aiming to implant an interventricular communication
closure device.

Figure 1. A: fistula between the noncoronary sinus of the aorta and
left atrium. Aortography in lateral projection (90° LAO); only the aorta
and left atrium are filled in these initial images. B: finally, the aorta,
atrium, and left ventricle are contrast-filled. LA indicates left atrium;
AO, aorta; LV, left ventricle.

Figure 2. Passage of the catheter (arrows) from the aorta through the
fistula to the left atrium.
Choice of the device was based on angiographic and echocardiographic findings, and the need for two discs to be anchored in the aorta and left atrium with a 7-mm central neck.

The 80-cm length of the Amplatzer delivery system makes a brachial approach necessary, but in short patients, as in this case, a femoral approach was possible. Potential risks could involve occluding a coronary ostium or restricting the movement of the aortic valves. In the present case, the fistula was located in the non-coronary sinus and had a small diameter, meaning that there was less risk, but such possible complications should be assessed before definitively releasing the device.

In conclusion, the percutaneous closure of LA-AOF with an Amplatzer-type device can be considered a therapeutic option in cases when the anatomy is favorable.

REFERENCES