CoreValve® Aortic Bioprosthesis Implantation in a Patient With Situs Inversus Totalis With Dextrocardia

Implante de bioprótesis aórtica CoreValve® en un paciente con situs inversus totalis con dextrocardia

To the Editor,

Dextrocardia occurs in 1/12 000 pregnancies, of which approximately a third are associated with inversion (mirror imaging) of the other visceral organs (situs inversus totalis).1 In these cases, inversion of the normal anatomy can hamper the performance of fluoroscopy-guided interventional procedures. We describe a 78-year-old man with situs inversus totalis and symptomatic severe aortic stenosis who was referred to our hospital for transcatheter implantation of an aortic valve. The patient had previously been considered ineligible for conventional aortic valve replacement due to high surgical risk (EuroSCORE logistic, 21%: porcelain aorta). The procedure was performed using a right femoral approach but was complex due to inversion of the cardiac anatomy. Classic ventriculography with 5 segments was performed using a 30° left oblique projection (the usual view is a 30° right oblique projection); a 10° caudal and a 10° right oblique projection were used to align the 3 Valsalva sinuses. Following aortic valvuloplasty with ventricular overdrive pacing, a 29-mm CoreValve® self-expanding aortic valve prosthesis (Medtronic, Irvine, California, United States) was successfully implanted. The patient was stable and asymptomatic when returned to the coronary unit. However, 24 h later he experienced cardiac tamponade secondary to right ventricular free wall perforation by the temporary pacemaker lead and required surgery. Three days later the patient experienced high-grade atioventricular block and consequently a permanent dual-chamber pacemaker was implanted. The patient was discharged 10 days later, with no further incidents (Figure).

Dextrocardia is a rare abnormality of the heart position.2 Most cases with situs solitus are associated with other cardiac or noncardiac malformations. However, patients with situs inversus totalis (as in our patient) rarely have other associated malformations1-3 and, therefore, it is not unusual them to reach older ages in which degenerative aortic stenosis is common.

Inversion of cardiovascular structures is an added procedural difficulty for percutaneous aortic valve implantation.4 The most important difficulties are related to stable positioning of the temporary pacemaker when crossing the aortic valve with the straight guidewire or attempting to align the 3 Valsalva sinuses to assess correct positioning of the prosthesis. In fact, our patient experienced late perforation by the pacemaker leads, possibly related to malpositioning. In cases such ours, in which the abnormal cardiac anatomy can affect the operator’s spatial orientation, we recommend careful catheter handling and conscientious selection of the angiographic projections (usually opposite to those seen in a patient with levocardia5). To our knowledge, this is the first case of the implantation of a CoreValve aortic valve prosthesis in a patient with situs inversus totalis.

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Valvular Heart Disease in Hyperprolactinemic Patients Treated With Low Doses of Cabergoline

Afección valvular cardiaca por dosis bajas de cabergolina en pacientes hiperprolactinémicos

To the Editor,

Between 1992 and 1997,\textsuperscript{1} a valvular heart disease similar to that produced by carcinoid tumors associated with fibrosis, leaflet retraction, and calcification was reported in patients treated with ergotamine derivatives (fenfluramine-phentermine). The activation of 5-hydroxytryptamine (serotonin) 2B (5-HT2B) receptors, which are highly abundant in the valvular endocardium, through signaling pathways mediated by Src kinases, stimulates fibroblast mitogenesis, with increased extracellular matrix production. It also causes the histological changes typical of this restrictive valvular heart disease, referred to as fen-phen since it was first described.\textsuperscript{2} In recent years, the development of this type of valvular heart disease has also been reported in patients with Parkinson’s disease treated with dopamine agonists\textsuperscript{3} and, more recently,

\begin{figure}
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  \caption{A: Anteroposterior chest x-ray. B: Postimplantation angiography in 10° caudal and 10° right projection. C: Cardiac computed tomography. D: 3-dimensional reconstruction. The red arrows indicate the CoreValve\textsuperscript{a} prosthesis. LV, left ventricle; RV, right ventricle.}
\end{figure}

\begin{thebibliography}{99}
\bibitem{1} Bohun CM, Potts JE, Casey BM, Sandor GG. A population-based study of cardiac malformations and outcomes associated with dextrocardia. Ann J Cardiol. 2007;100:305–9.
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