

## IMAGE IN CARDIOLOGY

# Transcatheter aortic valve implantation and transcarotid approach

## TAVI e acesso transcarotideo

Isaac Pascual\*, Pablo Avanzas, César Morís

Área del Corazón, Hospital Universitario Central de Asturias, Oviedo, Spain

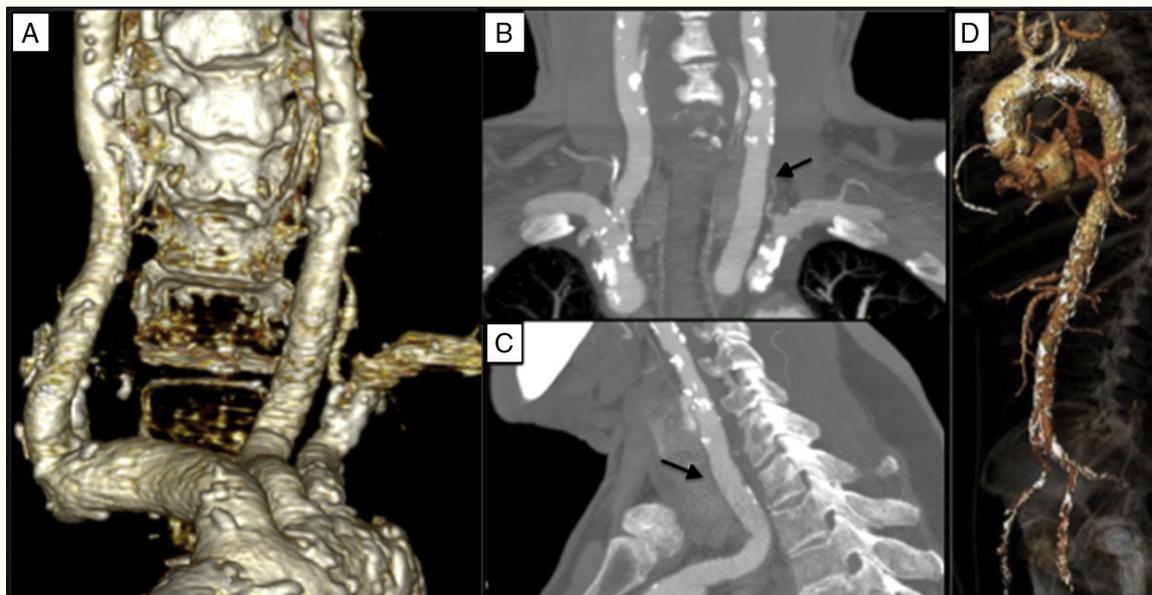
Received 10 March 2016; accepted 14 March 2016

Available online 21 February 2017

We present a 73-year-old man with severe aortic stenosis (area 0.6 cm<sup>2</sup>) and left ventricular dysfunction in New York Heart Association class III. He had a previous history of hypertension, peripheral vascular disease, chronic obstructive pulmonary disease and porcelain aorta. His

logistic EuroSCORE was 20.01% and Society of Thoracic Surgeons score was 2.78%.

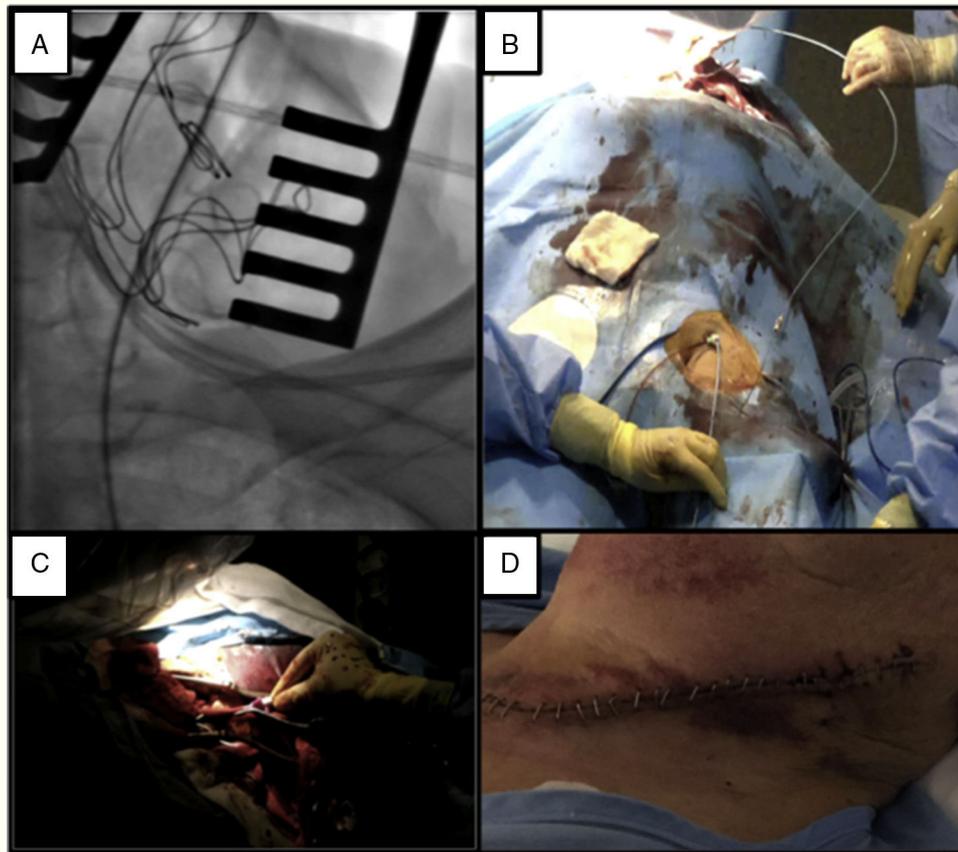
After careful evaluation by the heart team, the patient was referred for transcatheter aortic valve implantation (TAVI).



**Figure 1** (A) Three-dimensional computed tomography view of the supra-aortic vessels; (B and C) computed tomography of the supra-aortic vessels showing absence of stenosis in the left common carotid artery (black arrow); (D) porcelain aorta.

\* Corresponding author.

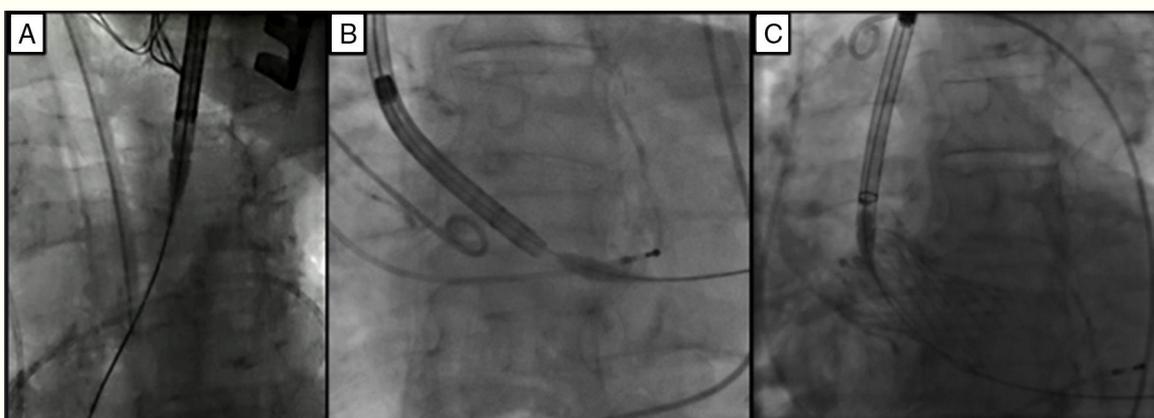
E-mail address: [ipascua@live.com](mailto:ipascua@live.com) (I. Pascual).



**Figure 2** (A) Radioscopic view of transcatheter access; (B) positioning of the team; (C) detail of the surgical exposure; (D) suture result four days after the procedure.

Femoral and left subclavian routes were not suitable for the procedure due to calcified and severe stenoses. Other routes were also rejected, the right subclavian artery due to aortic annulus angulation ( $>60^\circ$ ) and direct aortic access due to porcelain aorta (Figure 1). The minimum diameter of the left common carotid artery was 6.3 mm, so TAVI was scheduled. Cerebral magnetic resonance angiography was carried out to confirm the presence of collateral perfusion through the circle of Willis.

The procedure was performed in the catheterization laboratory, the team members being specially positioned for this approach (Figure 2). The proximal left common carotid artery was exposed under general anesthesia. Thereafter, sequential dilation of the carotid artery was performed and an 18F vascular access sheath was carefully advanced into the ascending aorta. The valve delivery system was then advanced and a 29 mm CoreValve Evolut R self-expanding prosthetic valve was successfully deployed. There was no



**Figure 3** (A) Delivery system coming from the carotid artery; (B) transvalvular positioning of the delivery system; (C) deployed prosthesis.

residual gradient or significant aortic regurgitation ([Figure 3](#), [Video 1](#)). The patient was discharged five days after the procedure without complications.

A transcarotid approach represents an alternative access route for TAVI in selected cases with no other suitable vascular approach.

## Ethical disclosures

**Protection of human and animal subjects.** The authors declare that no experiments were performed on humans or animals for this study.

**Confidentiality of data.** The authors declare that no patient data appear in this article.

**Right to privacy and informed consent.** The authors declare that no patient data appear in this article.

## Conflicts of interest

The authors have no conflicts of interest to declare.

## Appendix A. Supplementary material

Supplementary material associated with this article can be found in the online version at <http://dx.doi.org/10.1016/j.repc.2016.03.013>.