

Letter to the Editor

3D Printing in *Revista Española de Cardiología*: Just a Passing Fad?***Impresión 3D en Revista Española de Cardiología: ¿una moda pasajera?*****To the Editor,**

We recently read with great interest the article by Sanz Sánchez et al.,¹ in which they used a personalized cardiac model built using 3-dimensional (3D) printing to simulate percutaneous closure of an iatrogenic fistula between the aorta and the right atrium. The in vitro simulation allowed the authors to experiment with different devices until they found the one that achieved complete closure of the defect. The same procedure was then performed successfully in the patient using the device identified in the 3D model.

Recent years have seen an exponential increase in the number of scientific publications on the use of 3D models, and this growing interest has also been reflected in *Revista Española de Cardiología*. In 2017, the journal published a review article summarizing the potential of this new technology and its emerging applications in the fields of medical education, cardiac surgery, and interventional procedures for congenital and structural heart disease.² One of the most applicable areas is the assessment of percutaneous closure of the left atrial appendage. Vaquerizo et al.³ presented one of the largest series described to date, in which they evaluated 10 patients, using personalized 3D models created from computed tomography images, and demonstrated that the devices selected based on the 3D models were the ideal choice and that the patients had no residual leaks after implantation. The authors concluded that 3D models improve appreciation of the anatomy and spatial relationships, and help to select the appropriate size and type of device, allowing optimized planning of percutaneous closure of the left atrial appendage. In the same issue of *Revista Española de Cardiología*, Barreiro-Pérez et al.⁴ gave a beautiful, concise description of multimodal imaging assessment for the planning of this procedure, and included the emerging 3D printing technology as a particularly useful accessory in complex cases.

In a similar vein to the use of 3D models for structural heart disease, is their use in the field of congenital heart disease. In 2017, Manso et al.⁵ described an unusual anomaly in a 21-week-old fetus with transposition of the great arteries, but with the peculiarity that it had subpulmonary muscular conus that produced mitral-pulmonary discontinuity in the left ventricle. The authors used a

3D model built when the patient reached 2 months of life to plan the surgical correction.

Despite the increase in articles published in *Revista Española de Cardiología*, use of 3D models remains a privilege only available in some centers, and there is still a long way to go until it is incorporated into everyday clinical practice. In our opinion, the key is to reduce the production costs. This could be achieved by reducing the design and production time due to newer printers and increasingly cheaper materials. So far, few publications have analyzed the production costs or, more importantly, the cost-effectiveness of 3D models. In the coming years, we will undoubtedly witness increasingly widespread access to this technology, and realize that 3D printing, far from being a passing fad, is a revolutionary technology that is here to stay.

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