Image in cardiology

Ductal stenting and pulmonary artery stenosis

Stent ductal y estenosis de arterias pulmonares

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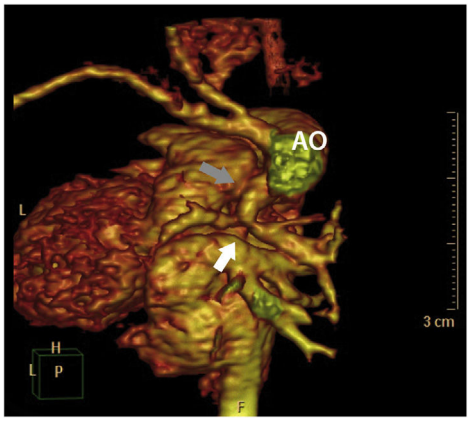

Figure 1.

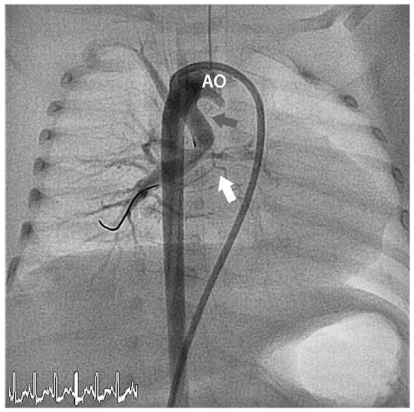

Figure 2.

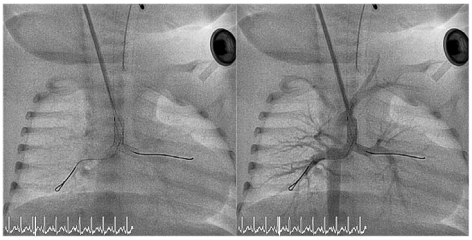

Figure 3.

The patient was a male neonate weighing 2200 g, with a single-ventricle defect, pulmonary atresia, ductus-dependent pulmonary flow, and severe stenosis at the point of union between the ductus and pulmonary arteries. Given the patient's low weight and anatomical complexity, a percutaneous intervention was chosen.

During catherization, ostial stenosis of the pulmonary arteries was confirmed (figure 1, computed tomography angiography; figure 2, aortography: Ao [aorta], grey arrow [ductus], white arrow [branch stenosis]; video 1 of the supplementary data). Bifurcation coronary stenting (Culotte technique) was chosen to maintain the ductus open and resolve the pulmonary artery stenosis.

With a 4-Fr introducer from the carotid artery to provide greater support (an anterograde mammary guiding catheter would have provided insufficient support), an Onyx 3.5 × 15 mm stent was implanted between the aorta, ductus, and left branch, and cells were opened towards the right pulmonary artery. A second 3.5 × 15 mm stent was placed in the aorta, ductus, and right pulmonary artery, opening cells towards the left pulmonary artery. Subsequently, sequential dilatations were performed in both arteries. Finally, the ductal segment of the stent was dilated with a 4 mm balloon (the ductal diameter regulates the pulmonary flow and is determined by the weight of the neonate), with a good angiographic outcome (figure 3 and video 2 of the supplementary data).

Stent placement in the ductus arteriosus is an established technique to correct heart defects with reduced pulmonary flow. Normally, only the ductus is covered and cases of stenosis of associated branches are ruled out. In this case, novel use of a percutaneous coronary intervention underpinned the success of the procedure.

APPENDIX. SUPPLEMENTARY DATA

Supplementary data associated with this article can be found in the online version available at https://doi.org/10.1016/j.rec.2019.10.014

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