

Image in cardiology

Massive thrombosis in ECPELLA strategy

Trombosis masiva en estrategia con ECPELLA

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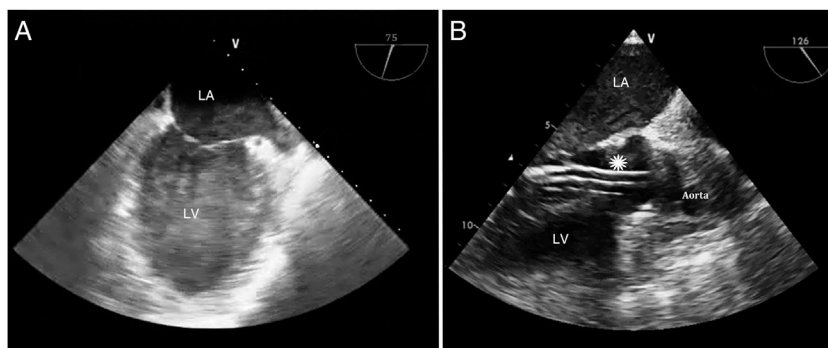


Figure 1.

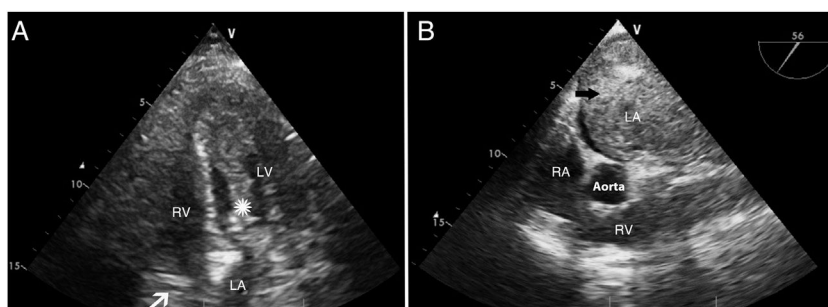


Figure 2.

A 66-year-old man with dilated cardiomyopathy underwent a heart transplant after being listed for elective surgery as INTERMACS 4. The patient had a donor-recipient mismatch for sex and heart mass –10%, ischemia time of 190 minutes, and RADIAL score 2. The patient experienced primary graft failure (video 1 of the supplementary data, transesophageal echocardiography, transgastric plane) and required venoarterial extracorporeal membrane oxygenation (VA-ECMO) via peripheral access and full support at 4.5 L/min. At 24 hours, in view of the lack of left ventricular (LV) unloading (figure 1A: LV distension and smoke-like echo; LA, left atrium), an Impella CP device (Abiomed, United States) was implanted. The device was left at performance level P4 with a flow rate of around 1.5 L/min, as the patient did not tolerate a higher setting due to suction phenomena, thus achieving improved LV unloading (figure 1B; asterisk: Impella). Coagulation times were prolonged (activated partial thromboplastin time, 105 s; activated coagulation time, 230 s). At 24 hours postimplantation, a follow-up echocardiogram revealed thrombosis of the system and the atrium (figure 2A, asterisk: Impella thrombosis; arrow: ECMO cannula; RV, right ventricle; figure 2B, arrow: LA thrombosis; RA, right atrium; video 2 of the supplementary material). It was decided to limit therapeutic effort, and the patient died shortly afterwards.

Although the combination of VA-ECMO and Impella (an approach known as ECPELLA) is used as a LV decompression measure, it may entail a higher risk of thrombosis. This is due to low preload in the left chambers, which requires reducing the Impella power setting, thus preventing high flows and raising the likelihood of thrombosis in the system.

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.2019.11.016>

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