hTEE management of a complex cardiac patient requiring ECMO

Sharon Matkosky ACNP-BC
Henry Ford Hospital, Detroit, MI, USA

The patient.

50 year old female with progressive dyspnea on exertion, systolic PA pressures in the 90's, severe MR and moderate to severe TR.

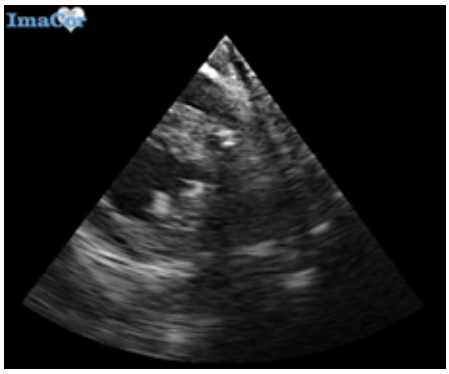
Procedure and Transfer to CVICU.

The patient underwent a complex attempted repair of the mitral valve with cordal replacement, which was unsuccessful despite multiple attempted revisions. A mechanical mitral valve was ultimately placed. The tricuspid valve was repaired with an annuloplasty ring. Although there was no previous history of rheumatic disease, at the time of operation there was evidence of rheumatic valvulitis.

The patient had an extended pump run and severe hypoxemia, also a collapsed right lung following multiple attempts at separation from bypass. The patient was placed on veno-arterio ECMO and Nitric Oxide.

Upon admission to the CVICU the patient was noted to have decreased pulse pressure in the arterial and PA lines during the night. ECMO flow remained constant with an index over 2, excellent oxygenation and evidence of adequate tissue perfusion.

hTEE Placement and Exam I. hTEE was placed to evaluate cardiac structure and function. hTEE demonstrated decreased RV filling and fluid accumulation on the right cardiac border with flattening of the septum. Posterior fluid was also noted. Based on the hTEE images, loss of ejection and clotting in the mediastinal chest tube, the patient was taken back to the OR for exploration. She was found to have a large hematoma compressing the anterior and posterior aspects of the ventricle. This was consistent with the findings in the CVICU.



hTEE Exam II and Followup. hTEE was reintroduced in the CVICU and utilized for 72 hours for ongoing monitoring of cardiac function. An hTEE exam post evacuation showed decreased cardiac function with wall motion abnormality.

Resolution. The patient had a complicated course of recovery with multisystem organ dysfunction requiring short term hemodialysis. The patient was discharged to a rehab center one month later, spent 14 days in rehab before discharge, and has since made a full recovery.