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IMAGING IN INTENSIVE CARE MEDICINE

A potential source of cerebral emboli in patients supported with peripheral VA-ECMO

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A transesophageal echocardiography was performed for a patient supported with peripheral VA ECMO for his acute decompensated heart failure. The short and long axis view of the descending aorta showed that there was turbulence of blood at the equilibrium point where the forward flow by native heart met the retrograde flow by the ECMO (Fig. 1, Video 1). The to and fro blood flow was demonstrated (Video 2). Potential injury to the vessel wall from this turbulence of blood resulted in easy plaque rupture of underlying atherosclerosis and encouraged clot formation. Dislodgement of plaques and clots resulted in cerebral embolization. The infarcted brain was prone to bleeding under systemic anticoagulation. This could be one of the reasons explaining the high incidence of intracranial hemorrhage in patients supported with peripheral VA ECMO.

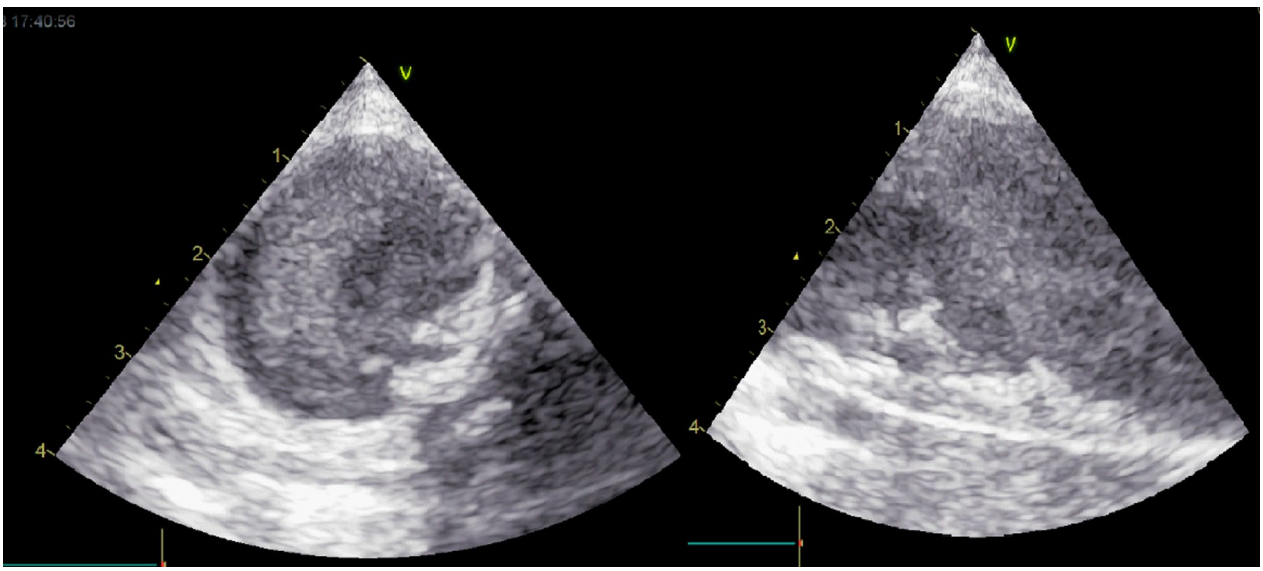

Fig. 1 Transesophageal echocardiography of the descending aorta showing the turbulence of blood at the equilibrium point and the surrounding atherosclerotic plaque

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Compliance with ethical standards

Conflicts of interest
On behalf of all authors, the corresponding author states that there is no conflict of interest.