

Reviewer #1:

Scientific Quality: Grade B (Very good)

Language Quality: Grade B (Minor language polishing)

Conclusion: Accept (General priority)

Specific Comments to Authors: This is an interesting case report where a patient with cardiogenic shock post stent thrombosis is put on Left Atrial Venous- Arterial ECMO (LAVA-ECMO) instead of the classical Venous-Arterial Extra Corporeal Membrane Oxygenation (VA-ECMO). 1. For the article to be more meaningful to non-specialists, author need to explain how the LAVA-ECMO technique differs from the VA-ECMO technique, in particular where the LA cannulation leads to and how it assists the patient physiologically. 2. The patient died from sepsis and bleeding. The author needs to discuss whether the extra cannulation contributes to and worsens bleeding and sepsis.

Dear Reviewer,

We would like to thank you for your comments and suggestions. Below are the responses to the issues raised.

For the article to be more meaningful to non-specialists, we added the following sentence to the end of the introduction to help explain the position of the LA cannulation and the physiological significance for the patient:

“Physiologically, this venous cannula, which passes through the intra-atrial septum and into the left atrium, reduces the left ventricular end diastolic volume and pressure, helping to reduce preload as well as left ventricular distension. The arterial cannula unloads the volume removed from the venous cannula, thus adding to the ejection fraction of the left heart which improves tissue perfusion. “

Regarding the outcome: the advancement of the already-existing cannula did not seem correlated with worsened bleeding. The septic and bleeding complications were most-likely due to the prolonged stay in the ICU. To clarify this point we added the following sentences:

“ECMO requires the blood to be continuously anti-coagulated, which poses a constant risk for hemorrhagic complications. In addition, prolonged ICU admissions increase the likelihood of septic complications. To our knowledge, the LAVA-ECMO configuration does not seem to pose any additional risk of hemorrhage or sepsis, in comparison to the normal VA or VV-ECMO. No specific studies have been designed to evaluate this comparison, however. “

All changes are highlighted in the manuscript as requested.

Thank you again for your time.

Reviewer #2:

Scientific Quality: Grade D (Fair)

Language Quality: Grade B (Minor language polishing)

Conclusion: Minor revision

Specific Comments to Authors: I read with interest the article Left Atrium Veno-Arterial (LAVA) ECMO as Temporary Mechanical Support for Cardiogenic Shock; a Case Study. This is a very patient patient with the application of advanced treatment techniques, but, unfortunately, also with a fatal outcome. This method of treatment can certainly be potentially useful and interesting to some readers. It is certainly necessary to additionally edit the article (Literature section, terminology of coronary arteries, improvement of the English language

Dear Reviewer,

We greatly appreciate your comments and suggestions.

Below you can find our responses.

Regarding the references, the reference section has been modified according to the Format for References Guidelines

We also changed the terminology of the coronary arteries as requested:

“common trunk artery” to “left main artery”

“Intraventricular artery” to “Left anterior descending artery”

“circumflex artery” to “left circumflex artery”

As for the English language improvement, we ensured this paper was reviewed by an American citizen who was born and lived in the USA for 24 years and has a bachelor's in science from Denison University. His course work included literature and writing classes in English and he has published several academic articles. He also worked as an English tutor for several years.

The following English language changes were made:

the semicolon to a comma in the title.

“wait” to “way” in the *aims* section

“to medical regimine” to “with medical therapy” in the *introduction* section

The word “subsequently” was removed from the 3rd sentence of the *case description* section

“contextually” was changed to “at the same time” in the *case description* section

“placement of an” was added to the IABP sentence in the *case description* section

“Kinesis” to “movement” in the *case description* section

“GRC” to “packed red blood cells” in the *case description* section

All changes are highlighted in the manuscript as requested.

We hope you found these changes to be useful. Thank you again for your time.