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Successful Long-term Extracorporeal Cardiopulmonary Membrane Oxygenation without Anti-Coagulation

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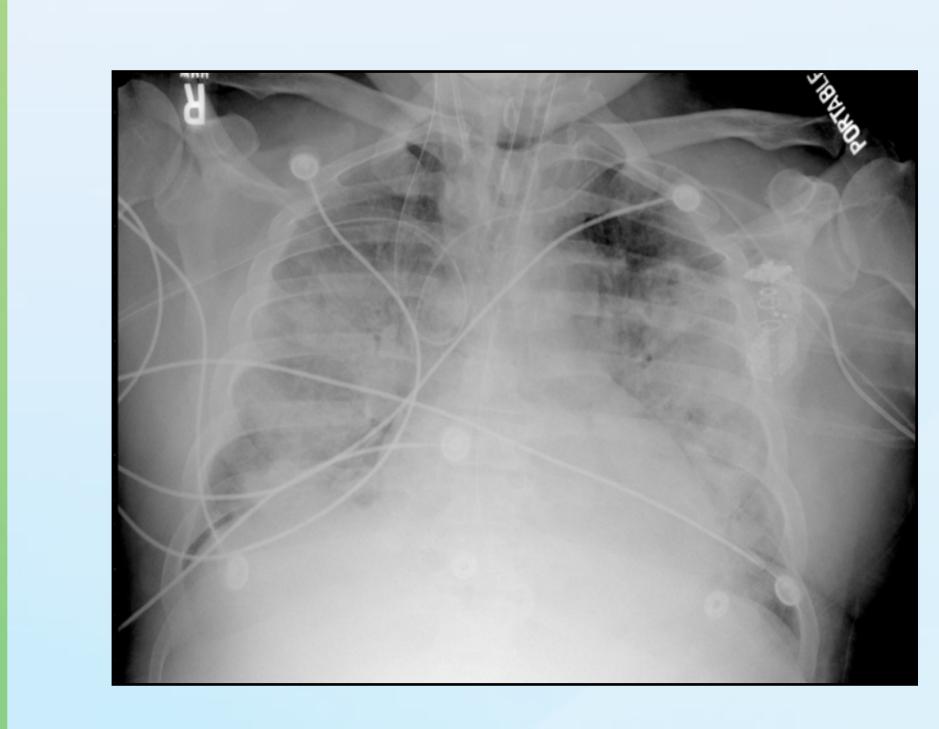
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Successful Long-term Extracorporeal Cardiopulmonary Membrane Oxygenation without Anti-Coagulation

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Background

Extracorporeal cardiopulmonary membrane oxygenation (ECMO) is a technique becoming more prevalent in critical care situations for refractory Acute Respiratory Distress Syndrome (ARDS). One of the major complications of ECMO is bleeding due to required anticoagulation. We present a case of a 47-year-old male (H1N1) who had significant bleeding complications during ECMO, and anticoagulation was discontinued over a total of 25 days. The patient had a successful recovery.



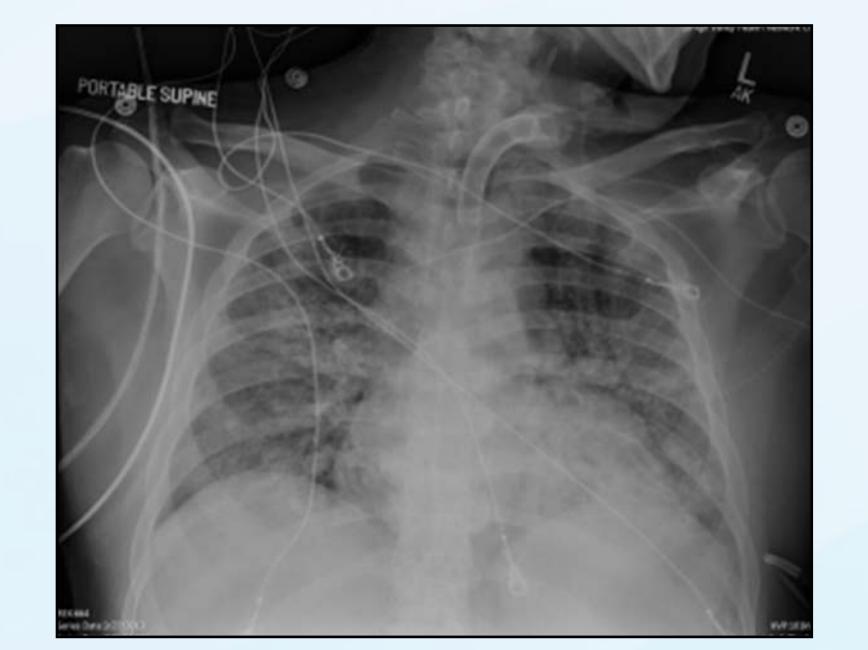
Initial CXR on admission prior to ECMO



First de-cannulation CXR



CXR prior to second ECMO



Second de-cannulation CXR



CXR prior to discharge

Pertinent Hospital Events

The patient had severe epistaxis and GI bleeding during the first ECMO run. The heparin was discontinued for 7 days up to the time of decannulation. The patient again developed exacerbation of ARDS requiring ECMO support. This time, anticoagulation was not used for the entire second ECMO run for 18 days. The Avalon dual lumen cannula was free of thrombus upon examination after decannulation each time. The patient did not have any thrombotic or embolic events and has recovered from ARDS.

Timeline of Patient's Hospital Course

Date	Symptoms	Procedure	Heparin/off-Anticoagulation
February 5	H1N1, ARDS, vent-dependent respiratory failure, refractory hypoxemia	Initiate veno-venous RIJ ECMO	Yes
February 12	Severe epistaxis, upper GI bleeds	Bilateral posterior nasal packing, right maxillary artery embolization	Discontinued
February 20	None	De-cannulation of veno-venous ECMO	None/off heparin for 7 days
March 3	Acute decompensation of ARDS	Re-Initiate RIJ veno-venous ECMO	None
March 21	None	De-cannulation of veno-venous ECMO, discharged to rehab	None/off heparin for 18 days

Conclusion

- This case review shows that a moderately long-term veno-venous ECMO can be successful without administering an anti-coagulant.
- In addition, a second ECMO run during the same admission is also feasible.

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