



MIDWEST SURGICAL ASSOCIATION

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SP 2. ECMO SUCCESS AFTER AN ELECTRIFYING NEAR-DROWNING

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Background: Near-drownings occur in many different environments under a wide array of scenarios. Pertinent history taking is vital for subsequent care, such as determining the location and the cause of the near-drowning incident, as sometimes the provider is faced with more challenges than may be readily apparent.

Methods: We present the case of a 31 year old male that sustained electrocution in a river-walk waterway and subsequent near-drowning with cardiac arrest who quickly recovered following veno-venous extracorporeal membranous oxygenation (VV-ECMO).

Results: The patient attempted to save a man who fell into a river-walk waterway and was electrocuted by a small light pole that fell in with him. When the patient jumped into the water to save him, he was also electrocuted and was submerged for approximately five to six minutes. He was pulseless upon retrieval from the water and required two rounds of cardiopulmonary resuscitation and chemical cardioversion to obtain return of spontaneous circulation. Upon presentation to the hospital, there was concern for anoxic brain injury with the presence of myoclonus and hypoxia. A hypothermia protocol was initiated by the medical team for 24 hours, along with lung-protective ventilation and broad-spectrum antibiotics with Piperacillin/Tazobactam. Subsequent electroencephalograms showed no seizure activity. The patient was communicative with family when sedation was held. However, by hospital day four the patient developed worsening pneumonia and acute respiratory distress syndrome (ARDS) with hypoxia on maximal sedation, neuromuscular blockade, and increasing ventilator requirements. The oxygenation index was > 40 when the surgical team was consulted for ECMO cannulation. In the following days, lung compliance improved, vasopressors and antibiotics were discontinued, and diuresis was initiated for volume overload. He was decannulated after five days of VV-ECMO.

Conclusion: This case highlights the multifactorial complications that may arise with near-drowning. Factors to consider are the water source and events surrounding the near-drowning. Our teams were faced with treating hypoxic encephalopathy, cardiac arrest, polymicrobial pneumonia, ARDS, and rhabdomyolysis causing acute kidney injury. Likely, the inciting event, large volume resuscitation, and sepsis caused severe ARDS, which improved rapidly with VV-ECMO.

