Full Metal Jacket: Multimodal Percutaneous Extracorporeal Cardiopulmonary Support

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Clinical Image

A 39-year-old male with a significant family history of coronary artery disease presented to the emergency department with chest pain. He was found to have an ST elevation myocardial infarction and rapidly progressed to cardiac arrest. He was emergently placed on venoarterial Extracorporeal Membrane Oxygenation (ECMO) utilizing the left femoral vein for drainage and the right femoral artery for return, with placement of a distal reperfusion catheter to maintain perfusion to the right lower extremity. Percutaneous coronary intervention was performed with simultaneous insertion of an Impella 5.0 via the left femoral artery for left ventricular decompression. He demonstrated significant ectopy and therefore a transvenous pacemaker was inserted via the left femoral vein (Figure 1). As cardiac contractility improved, the patient developed significant differential hypoxemia and therefore a right femoral venous return cannula was inserted and the patient converted to venoarterial-venous ECMO. The patient was weaned and ultimately separated from all mechanical support.

Figure 1: Multimodal percutaneous extracorporeal cardiopulmonary support.