

Endemann DH, Philipp A, Hengstenberg C, Luchner A, Pühler T, Hilker M, Schmid C, Riegger GA, Müller T, Resch M.

A simple method of vascular access to perform emergency coronary angiography in patients with veno-arterial extracorporeal membrane oxygenation

Intensive Care Medicine (Published online 13Oct 2011)

Aim: Veno-arterial extracorporeal membrane oxygenation (V-A ECMO) is progressively used in severe cardiogenic shock or in-hospital resuscitation to stabilize patients and to bridge to further therapeutic interventions. However, vascular access for coronary catheterization can be difficult under these conditions. It would thus be desirable to use arterial lines that are already inserted. Here, we describe a novel technique to perform coronary angiography and angioplasty in patients with V-A ECMO.

Methods: The technique is described in five patients in whom V-A ECMO was established because of prolonged cardiopulmonary resuscitation and who underwent coronary catheterization after stabilization. At the arterial cannula of the ECMO, a Y connector was inserted. At its free end, a hemostatic valve was placed, over which the coronary catheters were inserted.

Results: In one case, diagnostic coronary angiography revealed no significant coronary stenosis. In four other cases, successful coronary angioplasty with and without stent implantation was performed.

Conclusions: Cardiac catheterization using a Y-shaped adapter introduced into the arterial ECMO cannula is feasible. In a resuscitation setting, a new puncture of the femoral artery always carries the risk of complications, wherefore this new technology can be regarded as fast alternative.