

Cannulation Strategies for VA ECLS

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N A T I O N A L L E A D E R S I N M E D I C I N E

Disclosures

Speaker – Abbott

Which vessel to cannulate..

- Emergent and Crashing
 - If in ER, ICU or Cath Lab Bedside Peripheral Femoral VA ECMO insertion
- Emergent not Crashing
 - OR insertion; Especially if VA ECLS is for long(er) term
 - Axillary artery
 - Innominate artery
 - Aorta
- ? Femoral Artery already has Impella or IABP
 - Use contralateral femoral artery
 - Can use ipsilateral femoral vein
- Post Cardiotomy
 - Direct aortic
 - If a Femoral cannula via graft use contralateral venous drainage

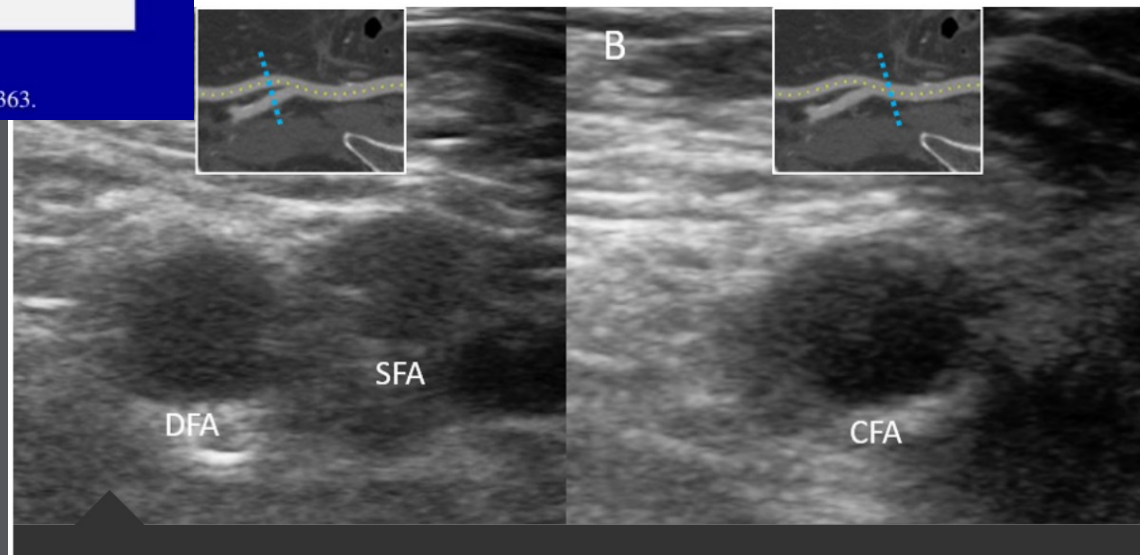
Femoral VA ECLS

Mandatory Ultrasound guided access

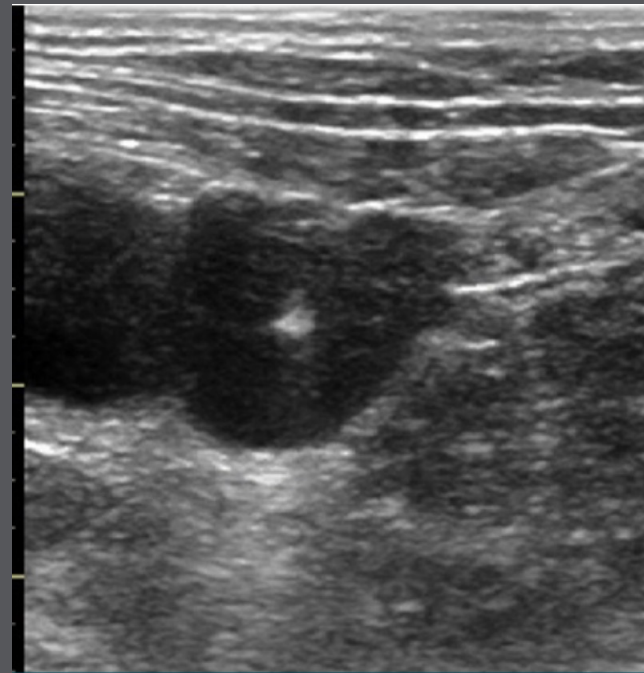
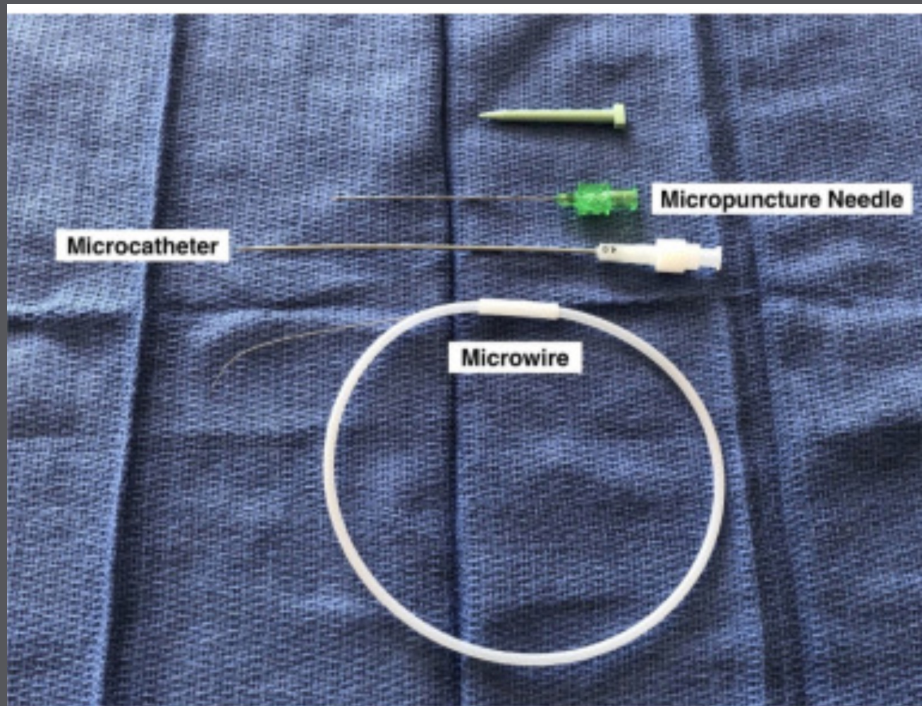
Normal diameter of lower limb artery

- Sub-diaphragmatic aorta 21 – 24 mm
- Infra-diaphragmatic aorta 17 – 20 mm
- Common iliac artery 10 – 12 mm
- External iliac artery 8 – 10 mm
- Common femoral artery 7 – 9 mm
- Superficial femoral artery 6 – 8 mm
- Popliteal artery 4 – 6 mm

Stiegler H & Brandl R. Ultraschall in Med 2009 ; 30 : 334 – 363.

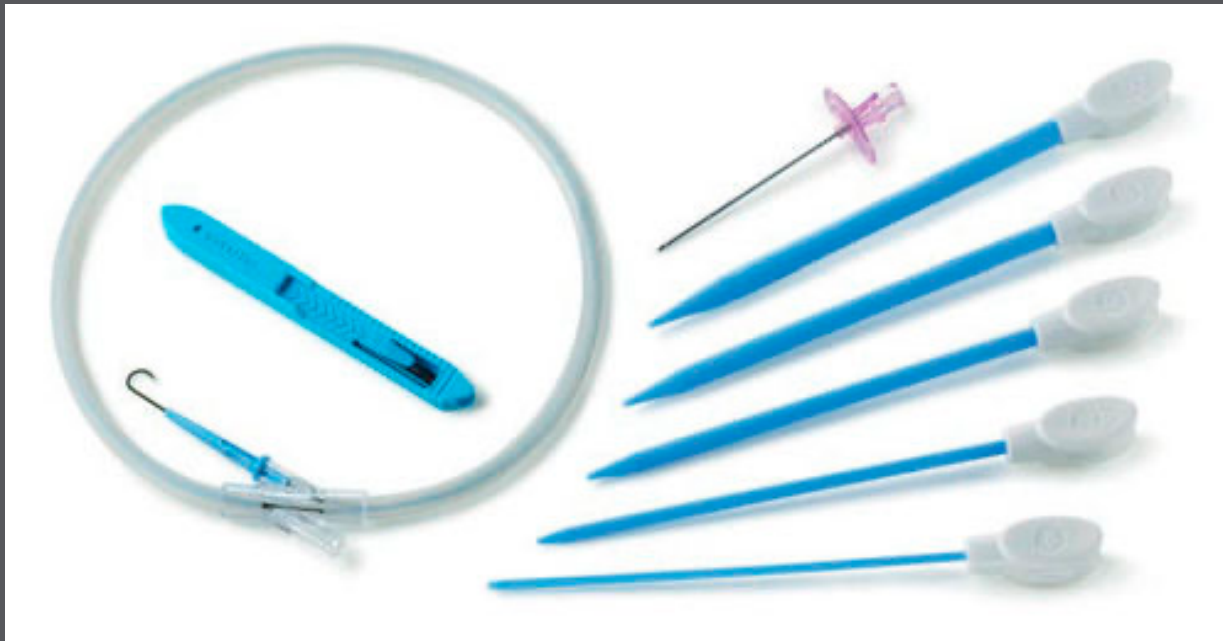


Micro puncture Needle Access

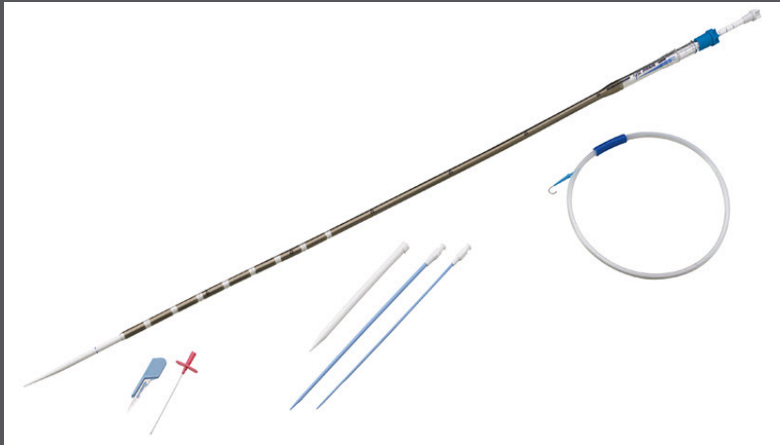


Sorin Dilator Set

- 18G needle
- Dilators in 8, 12, 16, 20, and 24French
- Relatively stiff 0.035 guidewire



Which Cannula

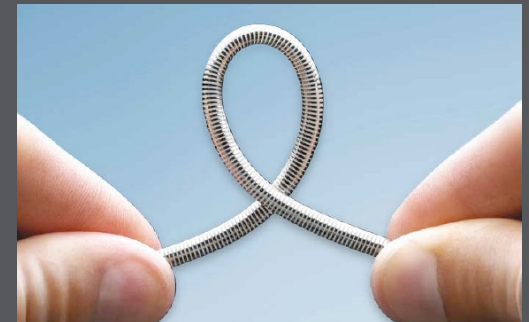


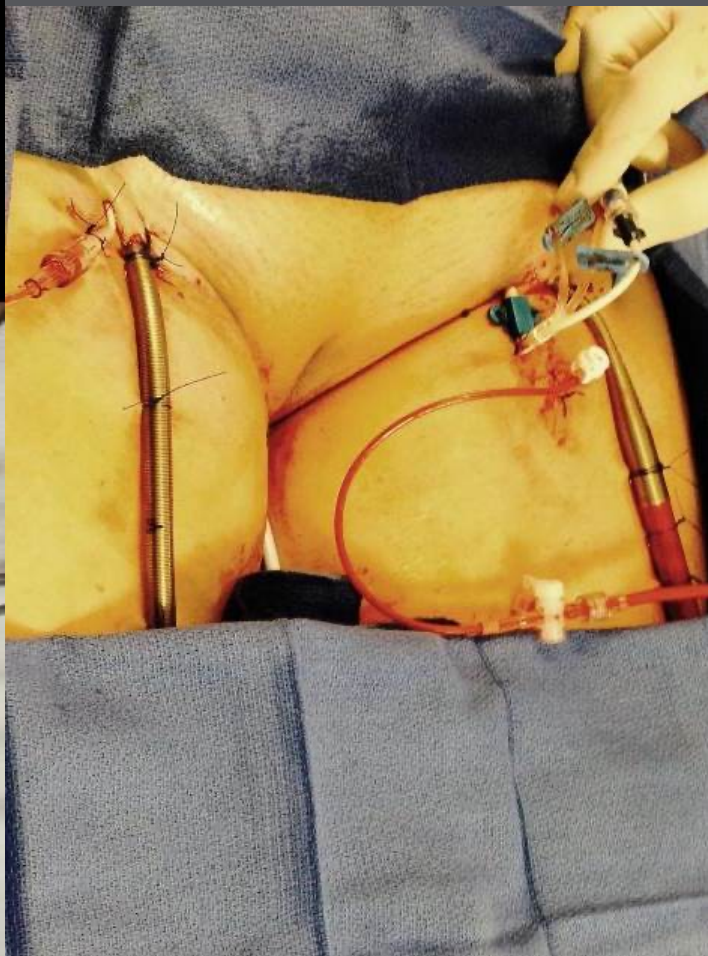
CARDIOTHORACIC TRANSPLANTATION AND MECHANICAL CIRCULATORY SUPPORT: ACQUIRED

Feasibility of smaller arterial cannulas in venoarterial extracorporeal membrane oxygenation

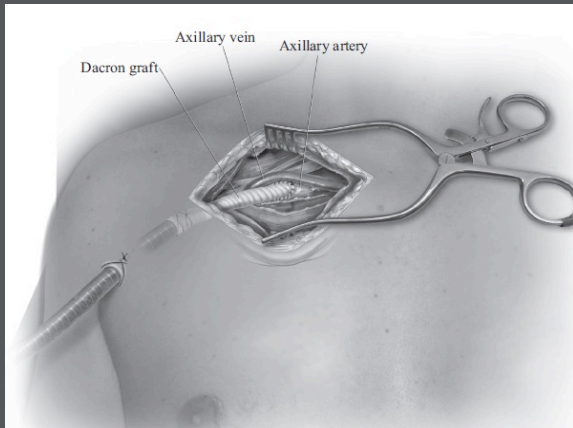
Hiroo Takayama, MD, PhD,^a Elissa Landes, MD,^a Lauren Truby, BS,^a Kevin Fujita, BS,^a Ajay J. Kirtane, MD, SM,^b Linda Mongero, CCP,^a Melana Yuzepolskaya, MD,^b Paolo C. Colombo, MD,^b Ulrich P. Jorde, MD,^b Paul A. Kurlansky, MD,^a Koji Takeda, MD, PhD,^a and Yoshifumi Naka, MD, PhD^a

Objective: To facilitate venoarterial extracorporeal membrane oxygenation (ECMO) insertion for cardiac arrest.





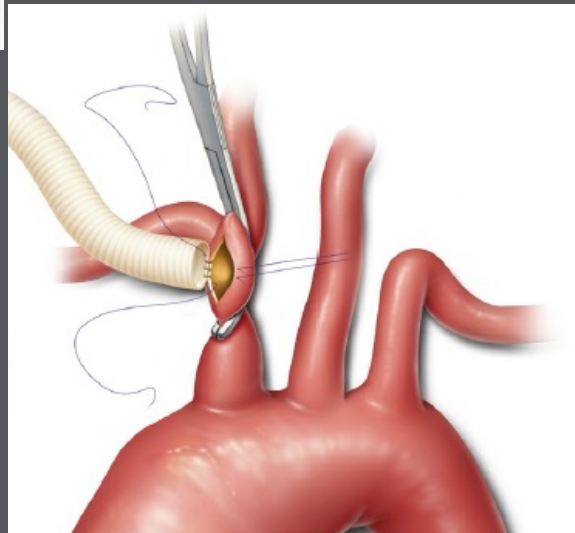
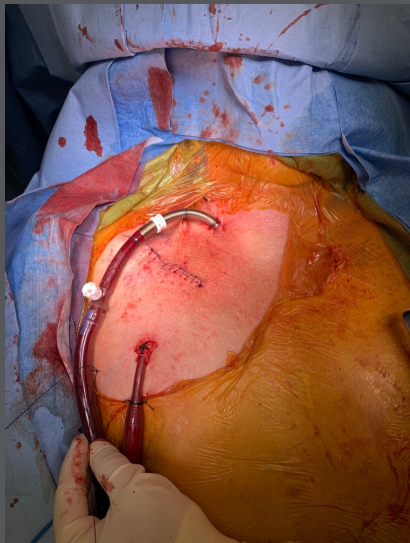
Ambulatory Central / Peripheral VA ECLS



ambulatory

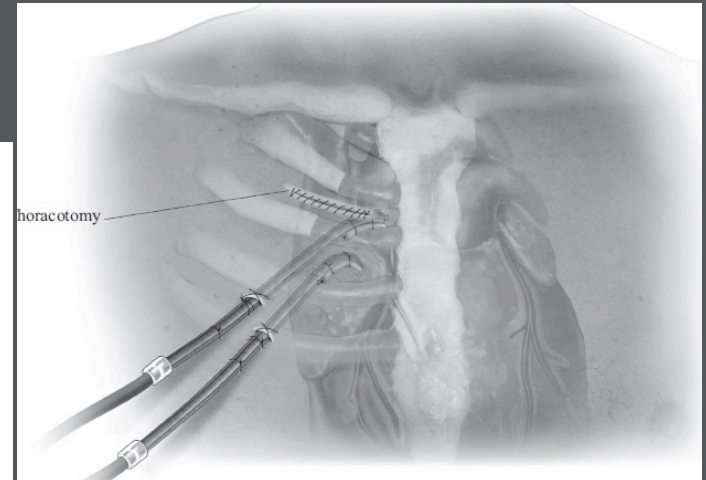
Right Axillary Artery

Issues: Arm
Hyperemia



8mm Gortex Chimney
on Innominate Artery

Calcifications can
cause Stroke



Right Anterior
Thoracotomy for
Aortic and Venous
Cannula

Hard to get to incase
of bleeding

Central VA ECMO with apical LV VENT, thoracotomy

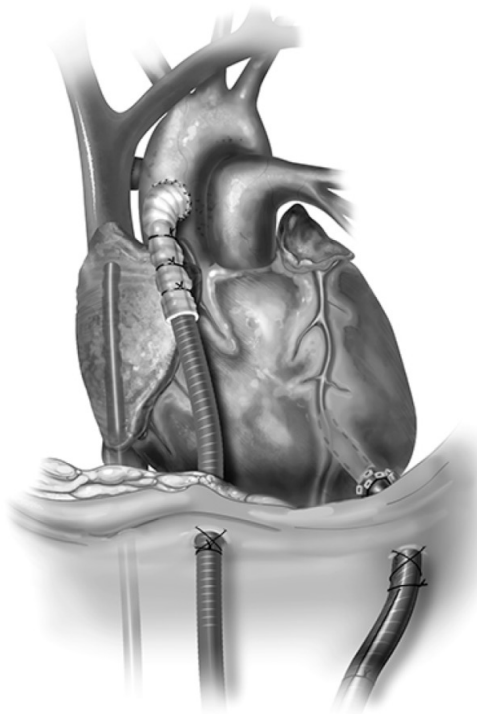


Fig. 7

