

# Advanced endovascular access in pre-hospital emergency medicine: a route to the future.

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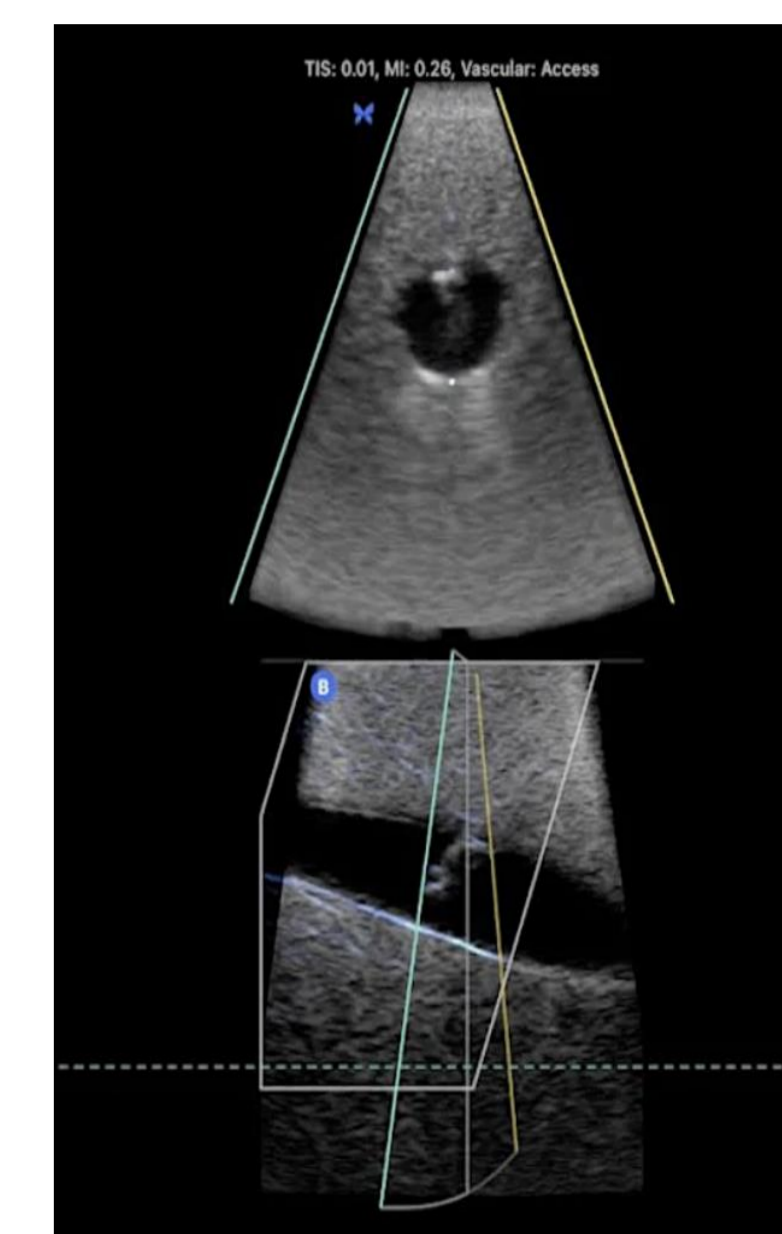
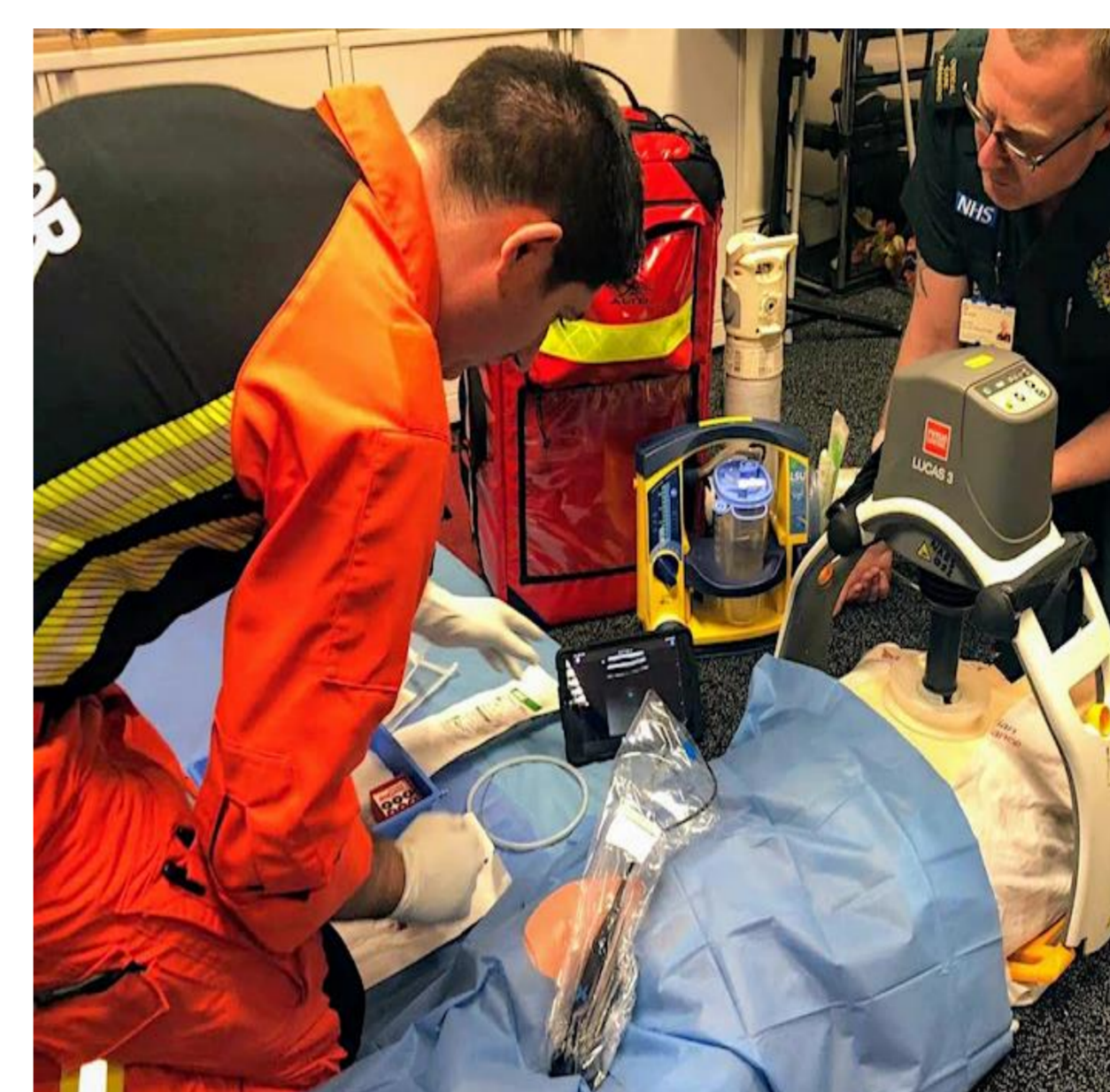
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## Background

Novel endovascular resuscitation techniques such as aortic balloon occlusion and extracorporeal circulatory support may modify survival in haemorrhagic shock and medical cardiac arrest. Early arterial access is key to the ability to deliver these therapies.

This study aims to demonstrate the feasibility and safety of early femoral arterial access in a pre-hospital critical care service.



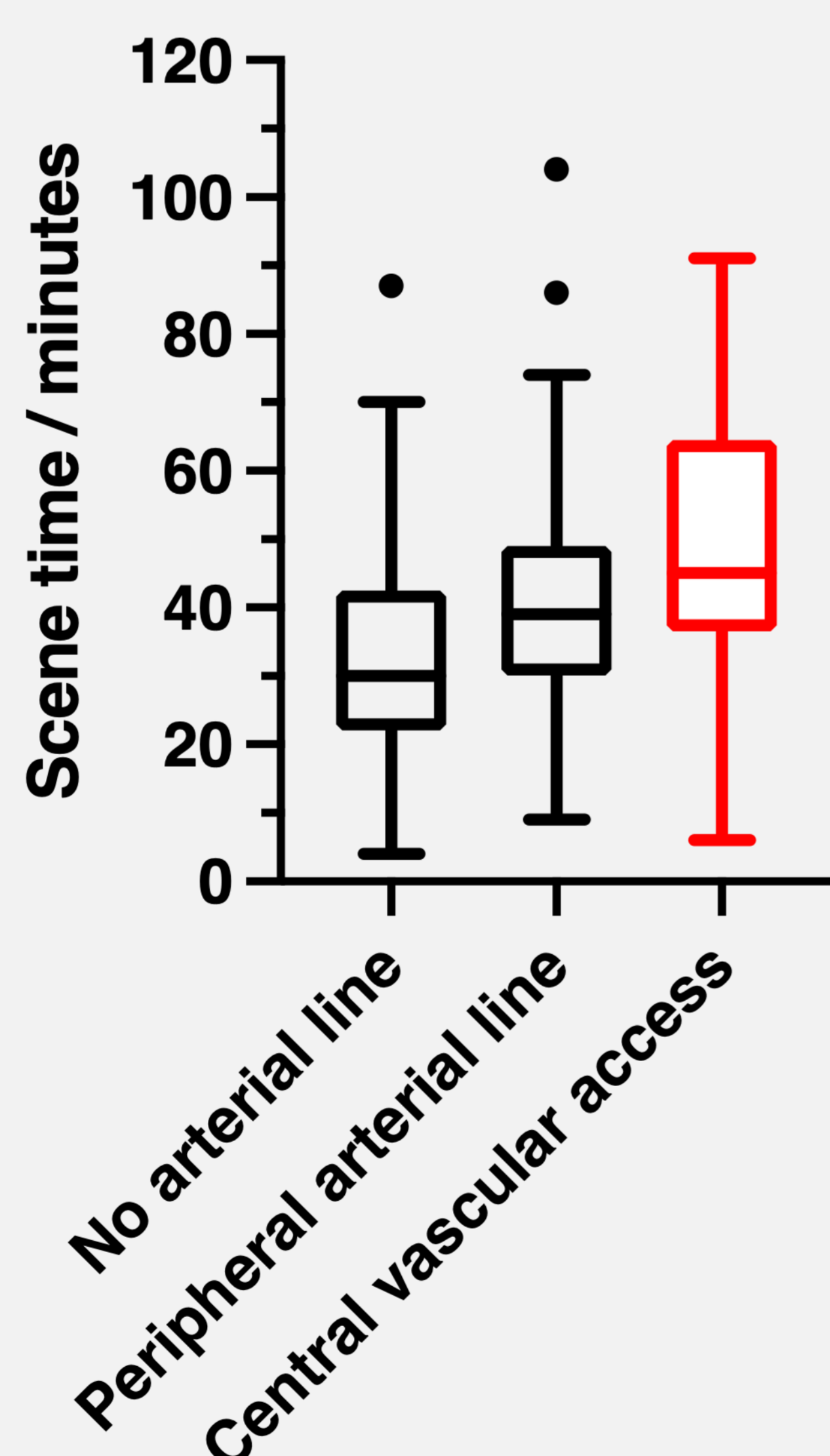
## Methods

A retrospective analysis of patients who underwent advanced endovascular access at East Anglian Air Ambulance (EAAA) was performed between 01/01/2021 and 01/03/2022.

Devices were inserted by pre-hospital consultants under ultrasound guidance according to a robust standard operating procedure. Patient data were extracted from the electronic record

## Scene Times

Length of time on scene in patients with medical cardiac arrest conveyed to hospital by EAAA:



## Results



**79% Male**  
**Mean age 53**  
(range 36-83)

**19 Arterial**  
4Fr Merit MAK™

**11 Venous**  
Six 6Fr and five 8Fr  
(Merit Prelude®)

**6 Venous and Arterial**

**Complications = 0**



**215 patients conveyed post OHCA**

**137 - no arterial**

**69 - peripheral arterial**

**9 - femoral arterial**



Scene times were longer for femoral arterial line patients (45mins (IQR 37-65) vs. no arterial line (30mins (IQR 22-43), p = 0.024) not longer than peripheral arterial access (45mins (IQR 37-65) vs. 39mins (IQR 30-49), p = 0.97)

## Conclusion

Central vascular access can be safely performed in a pre-hospital setting without prolonging scene times.

Developing familiarity with femoral arterial access is an important step towards advanced endovascular resuscitation techniques.



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