Emerging REBOA technologies and techniques

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Resuscitative Endovascular Occlusion of the Aorta (REBOA)

Current technique

New solutions using translated skills

REBOA – AAST AORTA Registry
• Open collaborative registry
• Adoption (start Nov 2013)
• November 2017
  • REBOA = 568 from 34 centers
Evolving advances in REBOA for Trauma

• Device improvements
• Evolution in procedural approaches

REBOA 2018 – Procedural Innovations

• Lower profile devices
• Minimize complications
• Facilitate full percutaneous access
• Decrease threshold to utilize
• Prophylactic placement

• Device capabilities
• Arterial monitoring port
• Proximal arterial offloading

REBOA 2018: The ER-REBOA Catheter

• FDA-approved
• 7 French
• Arterial Pressure Monitoring
  • Prophylactic
• No Guide wire
• No Fluoroscopy

Growing military experience:
Northern et al. Trauma - 2018

Recent advances in austere combat surgery: Use of aortic balloon occlusion as well as blood challenge by special operations medical forces in recent combat operations

• 20 combat casualties treated with prehospital REBOA
• 19 of 20 successful
• Mean balloon time was 21 minutes (range 7-34 min)
• No procedural complications – 7 done by EM physicians
• 100% survival to the next level of care
Advanced Resuscitative Care in Tactical Combat Casualty Care

Dr. Frank Butler
TCCC Change 4 Oct 2018

Early Partial REBOA (P-REBOA)

- Preservation perfusion to brain / heart
- Avoidance of overpressure
  - Heart Failure
  - Worsening of TBI
- Initial total occlusion
  - Permits resuscitation initiation
  - Clot formation
- Partial balloon occlusion
  - Minimizes total ischemic time
  - Mitigates re-perfusion injury risk
  - Extends duration of intervention when needed

Partial REBOA in application

Resuscitative Endovascular Occlusion of the Aorta (REBOA): Expanding horizons

- Non-traumatic hemorrhage indications
- Post-partum hemorrhage
  - US / South American registries
- Medical Arrest / CPR augmentation
  - Funded clinical research in development

Conclusions

- REBOA use for trauma continues to evolve
- Evolving opportunities in non-trauma areas
- Wider utilization to be facilitated by
  - Continued device improvements
  - Training
  - Research

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