Closure Devices, Preclose & Large Closure Without Preclose

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Disclosures

consultant/speaker/proctor/travel support:
Medtronic, Guerbet (Asia), BTG, Merit Medical, Boston Scientific Corporation, Philips Healthcare, GE Healthcare, Abbott Vascular, Cardiatis

“Preclose”: steps

Pre-deploy Proglides x 2

Serially dilate to size for intervention

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Tighten sutures after intervention

Preclose in EVAR: what do we know so far

- Single suture: 14F
- Double suture: >14F
- Higher with US guidance
- High success rate (>94% per groin)
- Reduces procedure time (vs SEVAR)
- Shortens time to hemostasis (vs SEVAR)
Bail-out algorithm for Large-hole closure


Bleeding after Large-hole closure

spurting (arterial)

incomplete closure

e.g. track bleed, needle hole

additional proglide/s

"hole test" and use other closure devices

re-introduce sheath for open repair

manual compression

augmented with thrombogenic substances

*heparin reversal (almost never)
Gelfoam sandwich technique

- After tightening knots before cutting of sutures
- Backload Gelfoam onto sutures
- “Rail-road” using knot pusher directly onto arteriotomy site

Application of gelatin sponge sandwich as a hemostatic aid to percutaneous suture-mediated arteriotomy closure

* Expanding Preclose success to other sites

Carotid closure for carotid fenestrations

Multiple access site closure for complex EVAR

Post-close: Large hole closure without pre-placed sutures
Post-close

- Large percutaneous arteriotomy but no pre-deployed sutures
- Most common scenario:
  - Emergency EVAR (no time for groin prep)
  - Emergency upsizing of sheath
  - Percutaneous closure of ECMO
- Challenge: How to close a large hole without sutures in place?

84 year old man EVAR for AAA 5 years ago
- acute abdominal pain with rapid distension
- migrated right iliac limb with aneurysm rupture
- In extremis:
  - BP: 60/30 mmHg,
  - HR 150 bpm
  - Collapsed with PEA x 2
- No time for groin prep
- Left groin 16F sheath for REBOA
- Right groin 16F sheath for iliac extension

Post-close steps: “Serial Downsizing”

- Insert large sheath and insert two wires
- 14F sheath over 1 wire to buttress 1 Proglide
- Deploy Proglide 1
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**References**


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**Outline**

- Large-hole closure (Pre-close)
- Troubleshooting algorithm for Preclose
- Post-close
- How to expand repertoire with closure devices

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Thank you

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