Safe and Effective HeRO Graft Placement: Techniques and Results

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The HeRO Graft: CONFLICTS OF INTEREST

- None

The Role of HeRO in AV Access: WHAT IS A HeRO GRAFT?

- Conventional PTFE AV graft (cannulation component)
- Venous outflow component
- Coupling device

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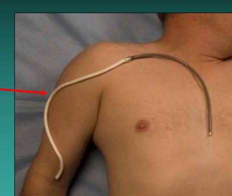

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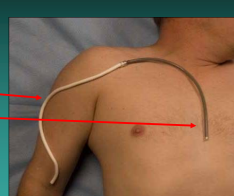

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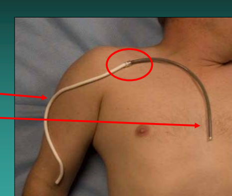
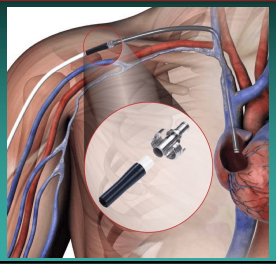


The Role of HeRO in AV Access: SuperHeRO

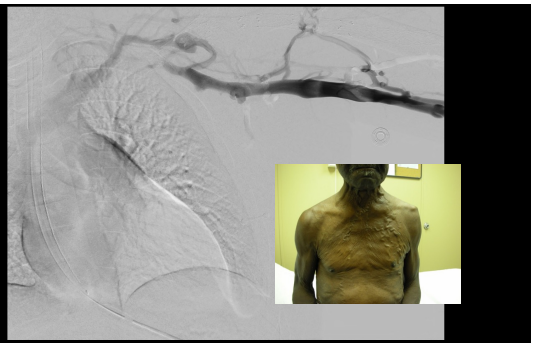


- Connector allows you to use any graft you want – IMMEDIATE ACCESS!

The Role of HeRO in AV Access: ANOTHER WAY OF LOOKING AT IT

The HeRO graft is NOT a device to be used "when all else fails."

The HeRO graft IS the perfect option when you have a patient with no access to the atrium other than an IJ catheter



The Role of HeRO in AV Access: WHAT ARE THE OUTCOMES?

- Procedural success greater than 90% (though pitfalls exist)
- Works well when coupled with early access grafts
- Infection rates low
- Very easy to declot, good secondary patency

The Role of HeRO in AV Access: THE DAI/FLOW RECIPE

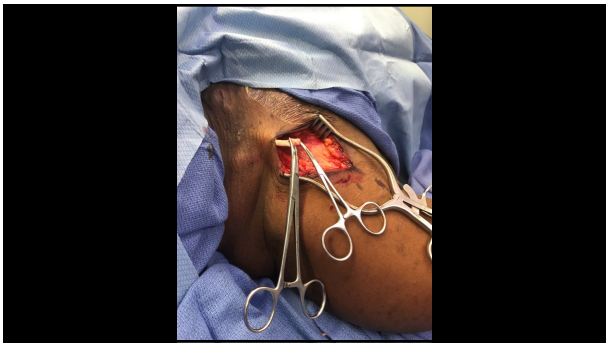
1. Gain access to atrium
   - Existing catheter
   - Inside out or outside in!
   - Typically jugular, though SCV can be used in extreme circumstances
   - STAGE catheter placement and HeRO by 2 weeks

The Role of HeRO in AV Access: THE DAI/FLOW RECIPE

2. Reverse Trendelenburg to reduce venous pressure
   - Block is fine with experience

The Role of HeRO in AV Access:
THE DAI/FLOW RECIPE

3. Access the catheter in the clean, SQ area central to the cuff, using the medial edge of your connector incision (deltopectoral groove). Cut it there, gain wire access.



The Role of HeRO in AV Access:
THE DAI/FLOW RECIPE

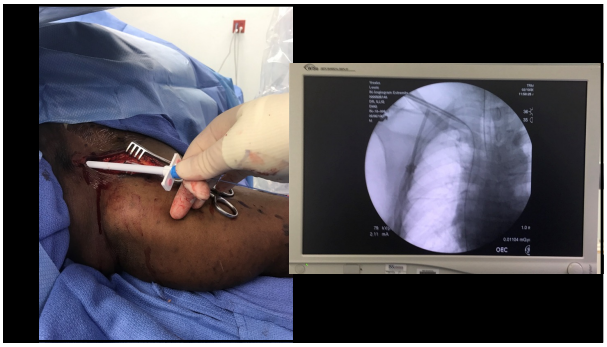
4. Use a STIFF WIRE (Amplatz), get the wire down into the INFERIOR VENA CAVA.

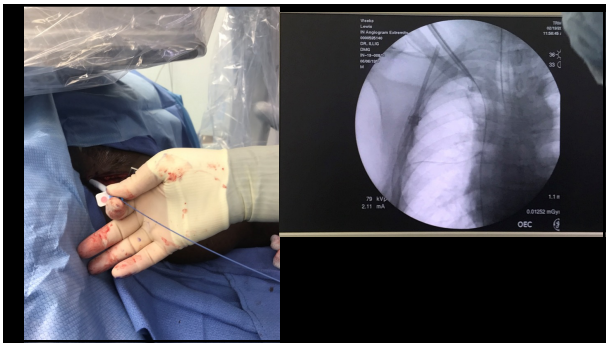
The Role of HeRO in AV Access:
THE DAI/FLOW RECIPE

5. DILATE THE ENTIRE TRACT with an 8mm by 8cm balloon. The balloon should protrude into your wound at the end.

The Role of HeRO in AV Access: THE DAI/FLOW RECIPE

6. WATCH INSERTION OF THE PEEL-AWAY SHEATH (aka the javelin of death) with fluoroscopy at all times. Adjust the angle so it points into the atrium, not into the wall of the SVC.
   - Snare for "body floss" if you need to.





The Role of HeRO in AV Access: THE DAI/FLOW RECIPE

7. Lubricate the venous outflow device.

8. If it won't go?
   - Peel away sheath can kink – remove
   - Insert over partially inflated balloon
   - Snare and body floss

The Role of HeRO in AV Access: THE DAI/FLOW RECIPE

9. Assuming you start with a catheter?
   - Use an immediate access graft!
     - Acuseal and Flixene work well
     - Artegraft more problematic due to size and coupling device issues

The Role of HeRO in AV Access: THE DAI/FLOW RECIPE

- Patient arrives with no access other than an IJ catheter:
  - SuperHeRO with immediate access graft
  - Goes home, no catheter, access any time

The Role of HeRO in AV Access: WHAT ARE THE OUTCOMES?

- 2012: 164 patients at 4 centers
  - 90% secondary patency at one year
  - 71% required interventions; 1.5 per year
  - Infections in only 4% (0.1 per 1000 days)

Gage (Ross) Eur J Vasc Endovasc Surg 2012;44(1):

The Role of HeRO in AV Access: WHAT ARE THE OUTCOMES?

- 2015: 409 patients, meta-analysis
  - 59% secondary patency at one year
  - Steal in 6%
  - Bacteremia rate (0.1 to 0.7 per 1000 days)

Shakarchi Eur J Vasc Endovasc Surg 2015;50(1):108-13

The Role of HeRO in AV Access: WHAT ARE THE OUTCOMES?

- Immediate Access?
- 2017: 10 patients, Super HeRO/Acuseal
  - 90% secondary patency at one year
  - Mean time to access 33 hours
  - Two early thromboses

Perry J Vasc Surg CR 2017;3(3):175-9

The Role of HeRO in AV Access: WHAT ARE THE OUTCOMES?

- Jeff Lawson, oral presentation
  - Infection rate perhaps LOWER using preexisting catheter than access de novo

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The Role of HeRO in AV Access: WHAT ARE THE OUTCOMES?

- DAI experience:
  - 7/1/18-8/13/19 (one year): 55 HeROs placed
    - 75% outpatient
    - 96% staged catheter/HeRO, 2 on-table access
    - 13 "inside out" catheter placement initially

Illig et al: Safe and effective HeRO graft placement. In press, JVA

The Role of HeRO in AV Access: WHAT ARE THE OUTCOMES?

- DAI experience: 55 HeROs
  - Mean OR time (excluding 7 complex):
    - First 20: 72 minutes
    - Last 28: 62 minutes
  - One death (flow related CHF despite ligation)
  - One 30-day infection (cellulitis, graft preserved)

Illig et al: Safe and effective HeRO graft placement. In press, JVA

The Role of HeRO in AV Access: WHAT ARE THE OUTCOMES?

- DAI experience: 55 HeROs
  - 89% used for dialysis within 36 hours
  - Four late infections requiring removal (3 graft only, 1 all components)

Illig: JVA 2022;23(5):805-12

The Role of HeRO in AV Access: CONCLUSIONS

- The HeRO graft is safe and effective in establishing access in patients with no direct access to the atrium other than a jugular catheter.

ASDIN: February

VASA: May

CiDA: October