EndoVAC hybrid treatment of vascular infection

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Disclosure

Speaker name: **Anders Wanhainen**

I have the following potential conflicts of interest to report:

- [ ] Consulting
- [ ] Employment in industry
- [ ] Stockholder of a healthcare company
- [ ] Owner of a healthcare company
- [ ] Other(s)

- [X] I do not have any potential conflict of interest
Clinical problem

Standard treatment of infected vascular grafts:

• Radical operation with resection of the graft
• Extensive local debridement
• Revascularization by extra-anatomic / in-situ reconstruction

This is sometimes difficult or risky, due to:

• Challenging anatomy or severe co-morbidities
• Risk of late graft/anastomosis failure → graft infection, bleeding, ischemia
1) **Relining** of the infected reconstruction with a stent-graft

2) **Surgical revision** without clamping the reconstruction

3) **VAC-therapy** to permit granulation and secondary delayed healing or suture

4) Long term antibiotic treatment
Carotid Dacron-patch infection

with a fistula to the neck 3 months after CEA + stent

Relining with a stent graft

Viabahn 6x50mm

Viabahn 8x50mm

Viabahn 8x50mm
Surgical revision
without clamping the reconstruction
Removal of the infected patch

... and initiation of VAC therapy
Long-term outcome

- Secondary delayed suture after 12 days
- 3 months ABx treatment
- > 8 years FU
- No recurrent infection
Carotid Dacron-patch infection
with an infected rapid expanding pseudoaneurysm
3 months after CEA
Angiography

coiling of ECA + relining CCA and ICA with a stent graft
The Uppsala experience
2007 - 2016

19 patients / 20 procedures (age 16-91 years)

- **13 reconstructions in the neck:**
  - 9 infected carotid patches after CEA (Dacron)
  - 2 infected carotid-carotid cross-over by-pass (Dacron)
  - 2 infected carotid-subclavian by-passes (Dacron)

- **7 reconstructions in the groin:**
  - 2 infected fem-pop bypasses (ePTFE and vein)
  - 3 infected patches after femoral TEA (Dacron)
  - 2 infected vascular accesses (after ECMO and EVAR)
Infected groin / fem-pop bypass

Supplemental rotated Sartorius muscle flaps
Duration of therapy

**VAC-treatment:**
- median **14 days** (9-57)

**Antibiotics:**
- median **3 months** (1-20)

- **Coagulase negative staphylococci**
- **Staphylococcus aureus**
- **Negative**
Eight patients died in severe co-morbidities, unrelated to this therapy - 1, 2, 9, 51, 56, 60, 64, and 80 months after treatment.

One had a transient stroke, one a temporary hypoglossal palsy, and two late (asymptomatic) stent graft thrombosis.

All patients healed their infections.

No recurrent infection was observed.
No recurrent infection
Conclusions

- Surprisingly good short- and long-term outcome
  - All patients healed their infections / no recurrence
  - All deaths were related to the underlying conditions
  - Only minor / non-permanent complications

- EndoVAC a feasible option in demanding situations
  - to avoid clamping
  - to avoid exposing / creating an anastomosis in an infected area

- Expand indications to less hostile situations ?
The Uppsala team