Endovascular grafts and VAC wound treatment of infected prosthetic arterial grafts is a new graft preserving strategy: Key elements and midterm results

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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) followed by long term antibiotic treatment

Carotid Dacron-patch infection with a fistula to the neck 3 months after CEA + stent

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Surgical revision
without clamping the reconstruction

VAC therapy

Long-term outcome

- Secondary delayed suture after 12 days
- 3 months ABx treatment
- 68 months FU (>5 years)
- No recurrent infection

Carotid Dacron-patch infection
with an infected rapid expanding pseudoaneurysm

Angiography
coiling of ECA + relining CCA and ICA with a stent graft
The Uppsala experience
2007 - 2014

16 patients / 17 procedures (age 16-91 years)

- **10 reconstructions in the neck:**
  - 6 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)
  - 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)

Long-term outcome
after median 5-years follow-up

- 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

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 ?**