Endovascular Aortic Repair

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Disclosures

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* Consultant with Philips
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* Shareholder Mokita Medical
Tip of the Iceberg?
Precursors of Disease Progression

- Short neck
- Wide neck
- Angulated neck

- Thrombus laden
- Posterior bulge
- Combination
EVAR ......and What Follows
EVAR: Standardized Steps

"Our standards are very high. We even have high double standards."
Step 1: Planning
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EVAR - Planning saves:

- OR-time
- Contrast-agent
- Radiation
- Nerves
Supra-/infrarenal fixation

2- or 3-piece design:

- What fits better?
- What's easier to plan?
CO\textsuperscript{2} as Contrast

Carbon dioxide:
- Simple
- Safe
- Unexpensive
- Ventral target vessels
Step 1: Planning

- Diameters
- Lengths
- Projections
- Devices
- Access-issues
Step 2: Puncture

Mikropuncture-set:

- 27 G needle
- 0.018 Wire
- 2 sheaths
Step 2: Puncture
Step 3: Heparine

- Heparine: 100 IE/kg KG
- Ca 10,000 IE
- ACT 250-300 sec

- Depends on body-weight
- Exemption: rupture
**Step 4: Access**

**Contralateral:**
- 6F sheath
- VanSchie 2 5F
- Universal Flush (UF) 4F suprarenal

**Ipsilateral:**
- 6F sheath
- Luderquist-wire double curve 260cm ascending aorta
Step 5: Graft Preparation

- Remove peel-away, mandrin, etc.
- Fasten screws, stop-cocks.
- Flush central lumen and graft.
- Follow graft-specific instructions.
Step 6: Main Body Deployment
Step 6: Main Body Deployment

* (Predilatation 16F)
* Introduction of main body
* Angiography
  * 20/20
  * Renal arteries and aortic bifurcation
Step 6: Main Body Deployment

- Projection!
- 10ml (20/sec)
- 2-4 x
Step 6: Main Body Deployment

- Projection!
- 10ml (20/sec)
- 2-4 x
Step 7: Contralateral Gate

- Cobra C2
- VanSchie 2, 4, 5
- Sidewinder from ipsilateral side
Step 7: Contralateral Gate

- Cobra C2
- VanSchie 2,4,5
- Sidewinder from ipsilateral side
Step 7: Contralateral Gate

- Cobra C2
- VanSchie 2,4,5
- Sidewinder from ipsilateral side
- Pigtail-test
- Balloon
Step 7: Contralateral Gate
Step 8: Iliac Leg Deployment

- Right Projection
- Overlap
- All the way to the hypogastric!!!
Step 8: Iliac Leg Deployment
Step 9: Dilatation

- Proximally careful
- Overlap allways
- Distally careful
Step 9: Dilatation

- Proximally careful
- Overlap allways
- Distally careful
Step 10: Final Angiographie

- 20ml (20/sec)
- Long angio – venous phase
- If necessary:
  - Retract flush-catheter
  - Redilate
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Conclusions

- Clinical outcome depends on device-design.
- Durability is still first priority for EVAR.
- Treatment outside of the IFU will produce less durable outcomes if patients live long enough.
- EVAR remains the method of choice for properly selected patients and an option for patients outside the IFU if unfit for surgery.
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