Considerations for a Durable Repair

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Aortic Disease is Progressive

• “The progression of aortic aneurysms is a reflection of the degenerative process of the aorta as a result of biological aging, constant pressure and fatiguing pulsating forces—at times we even feel the hammering to which our arteries are subjected.”

How to Manage Endovascular AAA Repair?

1. Durability: Resistance to Migration/Endoleak
2. Personalized solutions: Portfolio
3. Precise and controlled delivery
4. Seal in Healthy Tissue
Cook Product Portfolio

A complete portfolio designed to address the progressive nature of aortic disease from the arch to the iliacs
Current treatments (Surgery/EVAR) treat the result of the disease...but not the disease
The disease continues after Surgery/EVAR...
Infrarenal Aortic Neck Dilates after open Surgery
Aortic neck dilatation after endovascular abdominal aortic aneurysm repair: A word of caution

Nicolas Diehm, MD, Florian Dick, MD, Barry T. Katzen, MD, Juerg Schmidli, MD, Christoph Kalka, MD, and Iris Baumgartner, MD, Miami, Fla; and Bern, Switzerland

CONCLUSION

Current evidence on AND raises serious concerns about long-term durability of stent graft fixation in the proximal aortic neck despite a significant heterogeneity in measurement methods and definitions of AND. Further
Proximal neck: extension of disease
Proximal neck at all?

AAA growth from 5.5 to 8cm
How to solve the problem?

FEVAR as a primary solution or repair of failed EVAR

Endoanchoring ?

Pharmaceutical “Freezing” of Aortic Degeneration ?
FEVAR
Suprarenal aorta does not seem to dilate significantly over time (5 studies)

Differences in stiffness, thickness between suprarenal and infrarenal aorta

Fenestrated EVAR has shown low rates of migration and type I endoleak, although AND following fenestrated EVAR has not been investigated adequately.

Prevention: FEVAR?

Verhoeven et al. *Eur J Vasc Endovasc Surg*. 2016;51:775–781

Kouvelos et al. *J Endovasc Ther* 2016
Endoanchoring
Prevention: Endostapling?

Predictors of early aortic neck dilatation after endovascular aneurysm repair with EndoAnchors

Apostolos K. Tassiopoulos, MD, Spyridon Monastiriotis, MD, William D. Jordan, MD, Bart E. Muhs, MD, Kenneth Ouriel, MD, and Jean Paul De Vries, MD
Stony Brook, NY; Atlanta, Ga; Middletown, Conn; New York, NY; and Nieuwegein, The Netherlands

- ANCHOR Registry: 257 patients with baseline challenging neck anatomy, treated with EndoAnchors to secure fixation and
- Two cohorts: 66% prophylactic use; 34% with acute Type Ia endoleak
- Aortic diameter measurements:
  1. “Level 0” (at lowest renal artery)
  2. “Level 5” (5mm distal)
  3. “Level 10” (10mm distal)
  4. Suprarenal (20mm proximal)

• Aneurysm neck still dilates at 1 year after endovascular aneurysm repair with EndoAnchors, particularly in those with large aortic diameter, more oversizing, neck angulation, and suprarenal fixation.

• No significant difference in AND among prophylactic and acute endoleak cohorts
• EndoAnchors have a protective effect on neck dilatation at usual deployment level
Discussion

• Definition & Quality of Proximal Neck (Length)

• Diameter (vs. Suprarenal diameter)

• Look at CT scan with conservative eye
  – Do not forget the Sagital view
Conclusions

• Careful with EVAR in hostile neck anatomy (when there is another option!)
• Follow-up of patients with hostile anatomy!!
• NO to presentations on short-term good results in short-neck EVAR.....
• Choose your graft carefully to allow for additional more proximal repair later
Considerations for a Durable Repair

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