Sitzung V: Juxtarenales AAA (5-10mm) FEVAR

Eric LG. Verhoeven MD, PhD, Athanasios Katsargyris, MD
Department of Vascular and Endovascular Surgery
Paracelsus Medical University, Nuremberg, Germany

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- *W.L. Gore & Associates*
  - *Consultant & Research grants*
- Atrium
  - Consultant
- *Siemens*
  - *Consultant*

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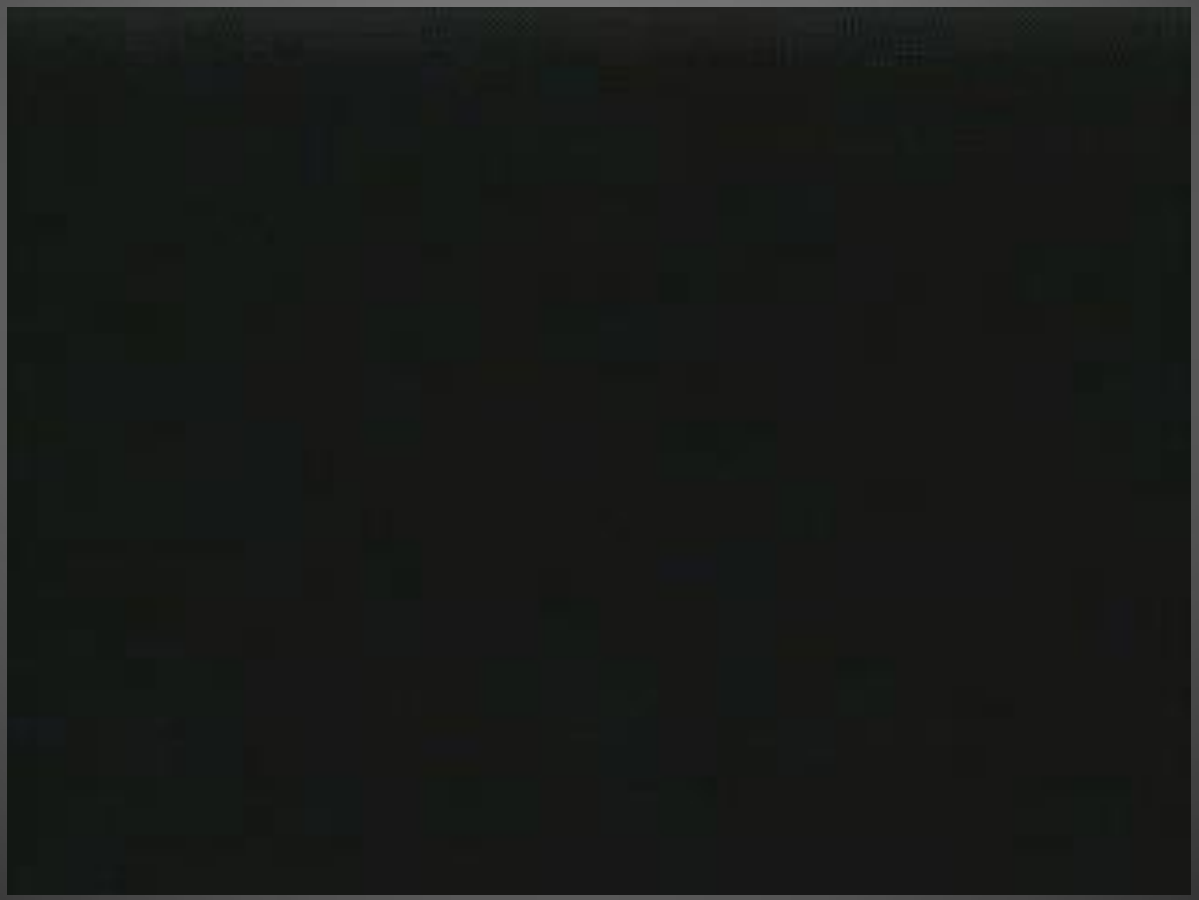


FEVAR Presentations

- FEVAR vs ChEVAR
- FEVAR to repair failed EVAR/Open repair
- Standard (2x) vs Complex (3x/4x) FEVAR

Juxtarenal AAA
Confounding Factors

- Not comparable cohorts
  - Patients: age, comorbidity
  - Anatomy
  - Urgency
- Center Experience
  - High vs Low volume centers
- Set-up in different centers/countries
- Patient selection bias

Short Neck

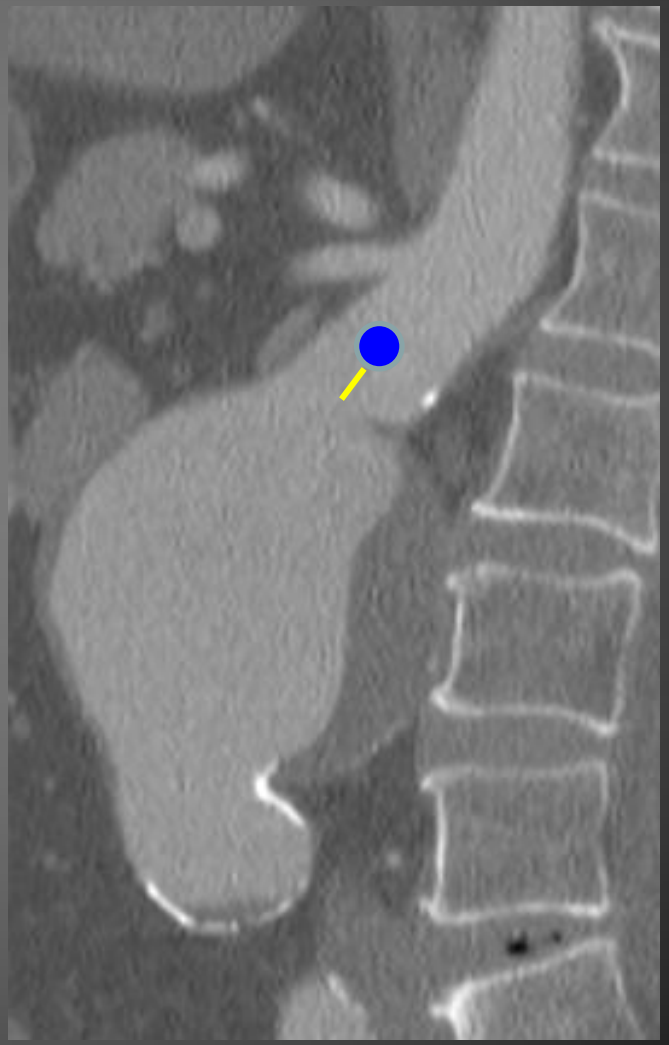
- “The Enemy“ in AAA Repair

Treatment Challenges

- Open Surgery
- Endovascular Repair

FEVAR
Goal

- Achieve sealing in short neck by creating a long neck...



FEVAR
Goal

- Achieve sealing in short neck by creating a long neck...
- Use para-suprarenal aorta for sealing

FEVAR

Fenestrated Stent Grafting for Short-necked and Juxtarenal Abdominal Aortic Aneurysm: An 8-Year Single-centre Experience

E.L.G. Verhoeven [a,c,*], G. Vourliotakis [a], W.T.G.J. Bos [a], I.F.J. Tielliu [a], C.J. Zeebregts [a], T.R. Prins [b], U.M. Bracale [a], J.J.A.M. van den Dungen [a]

Eur J Vasc Endovasc Surg (2010) 39, 529–536

Fenestrated Endovascular Aortic Aneurysm Repair as a First Line Treatment Option to Treat Short Necked, Juxtarenal, and Suprarenal Aneurysms

E.L.G. Verhoeven [a,*], A. Katsargyris [a], K. Oikonomou [a], G. Kouvelos [a], H. Renner [a], W. Ritter [b]

[a] Department of Vascular and Endovascular Surgery, Paracelsus Medical University, Nuremberg, Germany
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- 2001-2009 (100 pts, Mostly High-risk pts)
- Learning Curve Effect
- Not ideal Set-up

- Anatomy: short-neck AAA, some juxtarenal (0-4mm)

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- Technical Success: 94%
  - 1 Open Conversion
- 30d-Mortality: 1%
- Follow-up: 24 months (Median)
  - No Rupture, No Conversion
- Target vessel patency: 93.3 ± 1.9% at 5 years

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- 2010-2014 (281 pts)
- First-Line Treatment
  - Low & High-risk Patients
- „No“ Learning Curve
- Optimal Set-up
  - Artis Zeego Hybrid Room
- Most juxta- and suprarenal AAA

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Eur J Vasc Endovasc Surg (2016) ■, 1–7

- Technical Success: 96.8%
- 30d-Mortality: 0.7%
- Follow-up: 21 months (Mean)
  - 1 Conversion (type Ib endoleak)
- Target vessel patency: 98.1% ± 0.6% at 3 years

Updated Nuremberg Experience
2010-2016

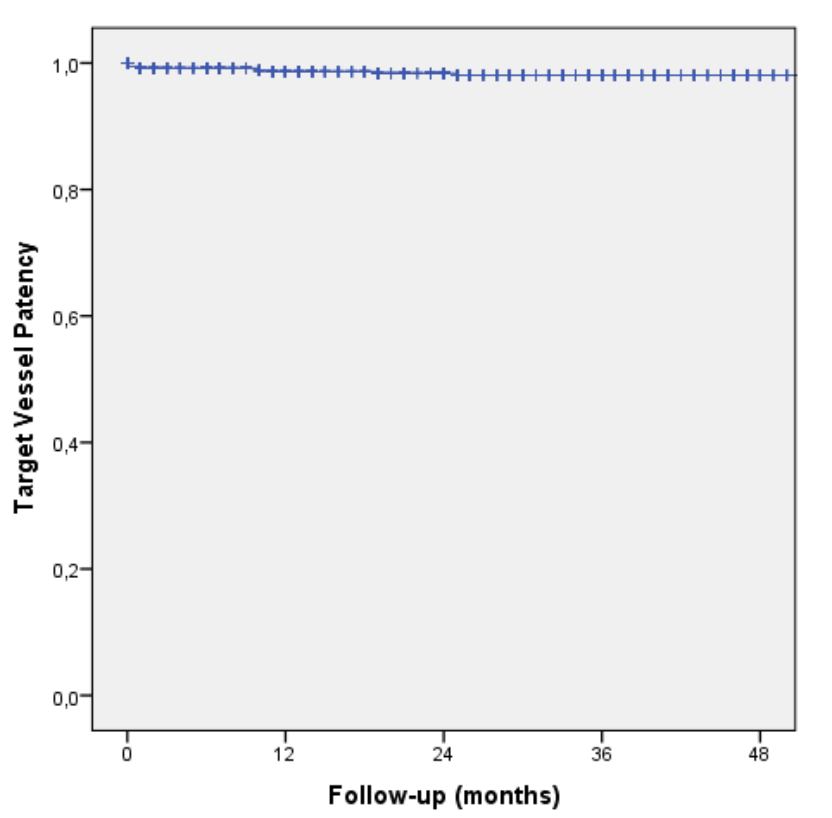
- 401 pts
  - 90.1% Male, mean age 72.7 ± 8 years
  - AAA: 60.3 ± 9.8 mm
  - Median neck length: 2mm
- ASA score
  - ASA II: 56.2%
  - ASA III: 40.9%
  - ASA IV: 2.9%

Early Outcomes

- Technical Success
  - N=390/401 (97.3%)
    - 1 Conversion
- 30d Mortality
  - N=2/401 (0.5%)
- 30d Major Complications
  - N= 43/401 (10.7%)
    - Renal: 4.7%, Cardiac: 1.5%, Pulmonary: 1.2%

Follow Up (21 ± 17 Months)

Target Vessel Patency



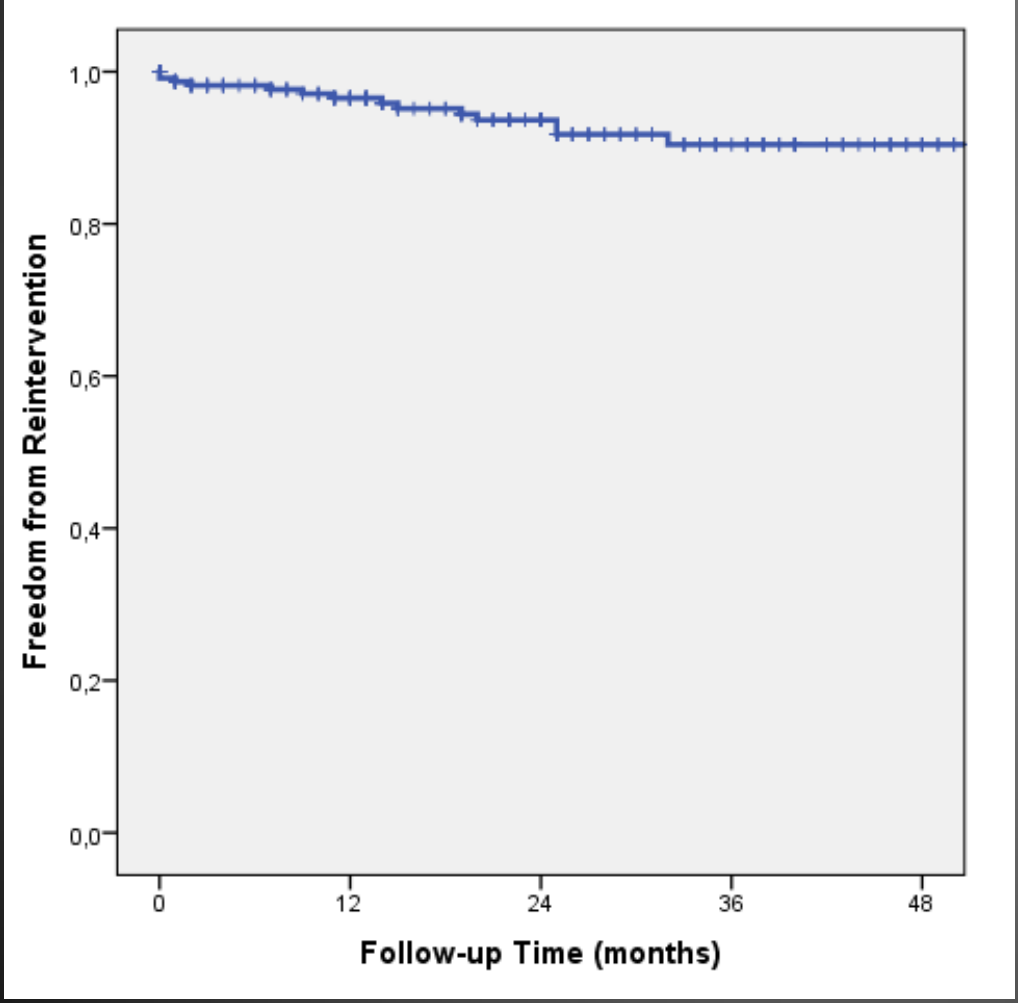
Estimated Patency

98.5 ± 0.5% at 1 year

98.1 ± 0.7% at 3 years

Follow Up (21 ± 17 Months)

Freedom from Reintervention



95 ± 1.5% at 1 year

90 ± 2.4% at 3 years

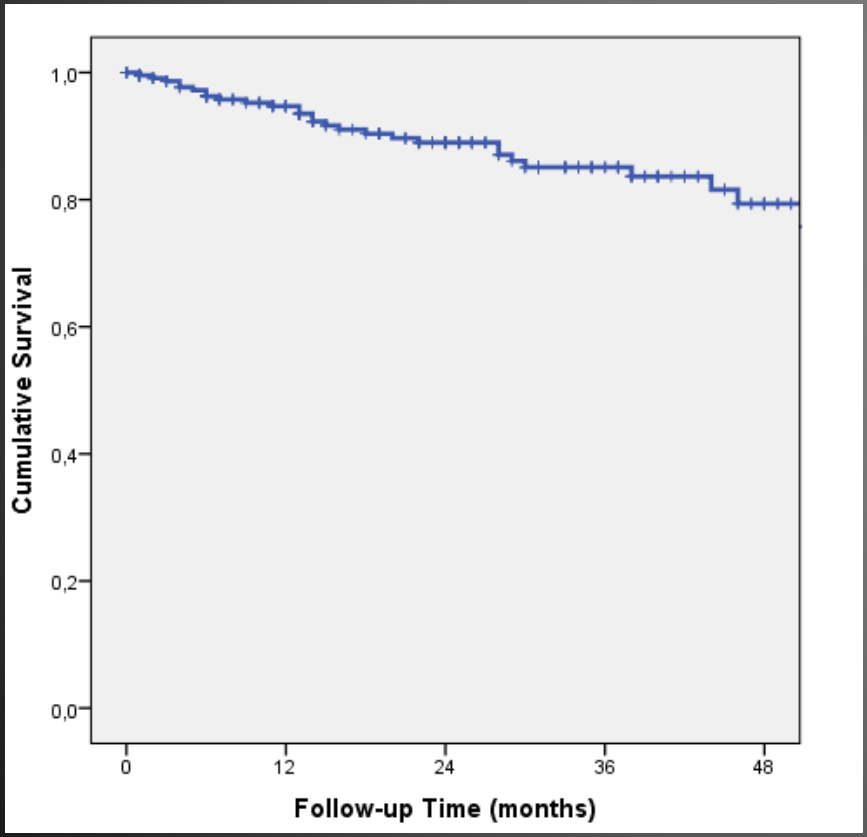
Follow Up (21 ± 17 Months)

Reinterventions (N=26)

Reintervention	N	
Target vessel relining/extension	6	73% ENDO
Coil embolization (Type II Endoleak)	6	
Iliac PTA	2	
Distal stent-graft extension (Type Ib Endoleak)	2	
Cuff+ Chimney+ Endoanchors (Type III Endoleak)	1	
TEVAR (intramural Hematoma)	1	
Redo F/BEVAR (Type Ia Endoleak)	1	
Femoral TEA	1	27% OPEN
Laparotomy for lumbar ligation (Type II Endoleak)	1	
Conversion (Type Ib Endoleak, Endotension)	2	
Groin drainage due to seroma infection	3	

Follow Up (21 ± 17 Months)

Late Mortality (N=34)

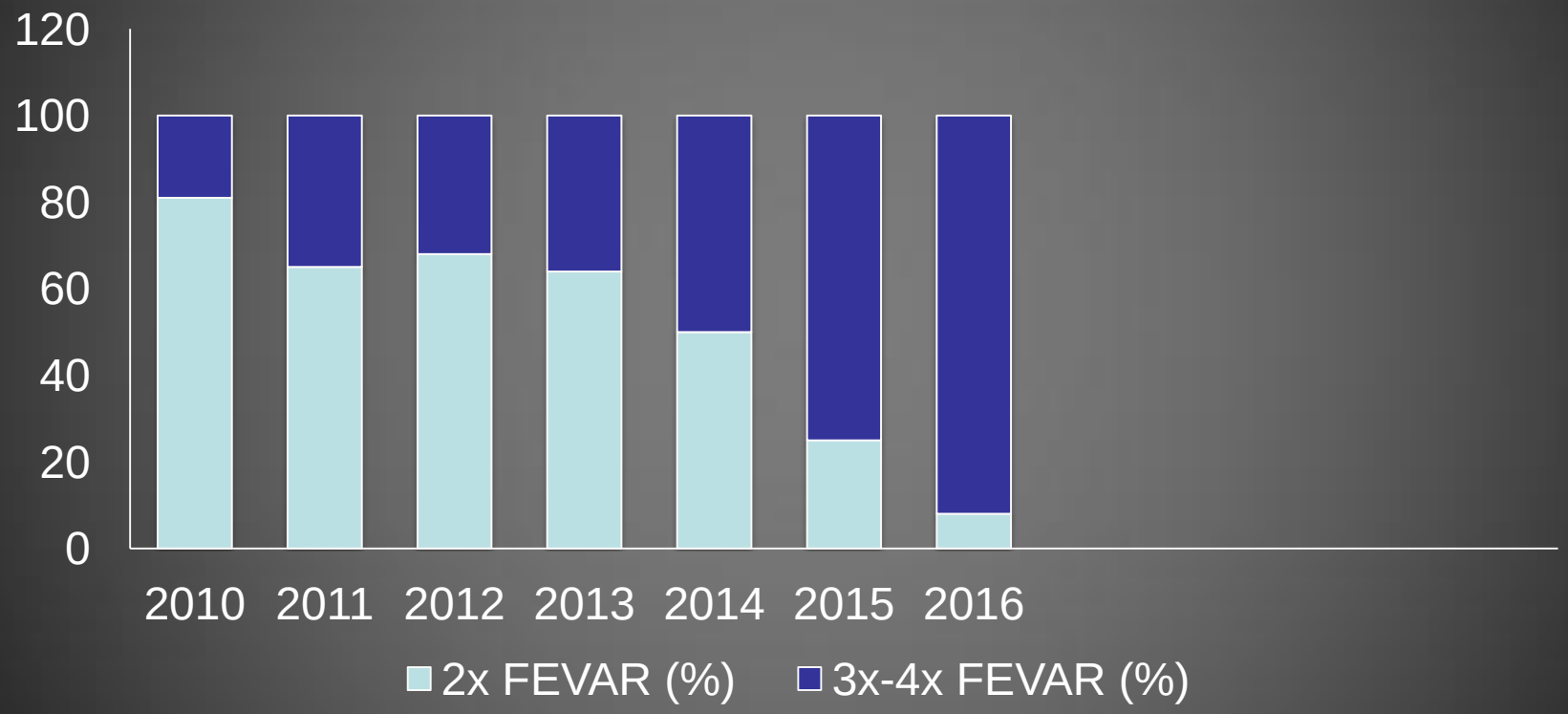


Estimated Survival

93.5 ± 1.6% at 1 year

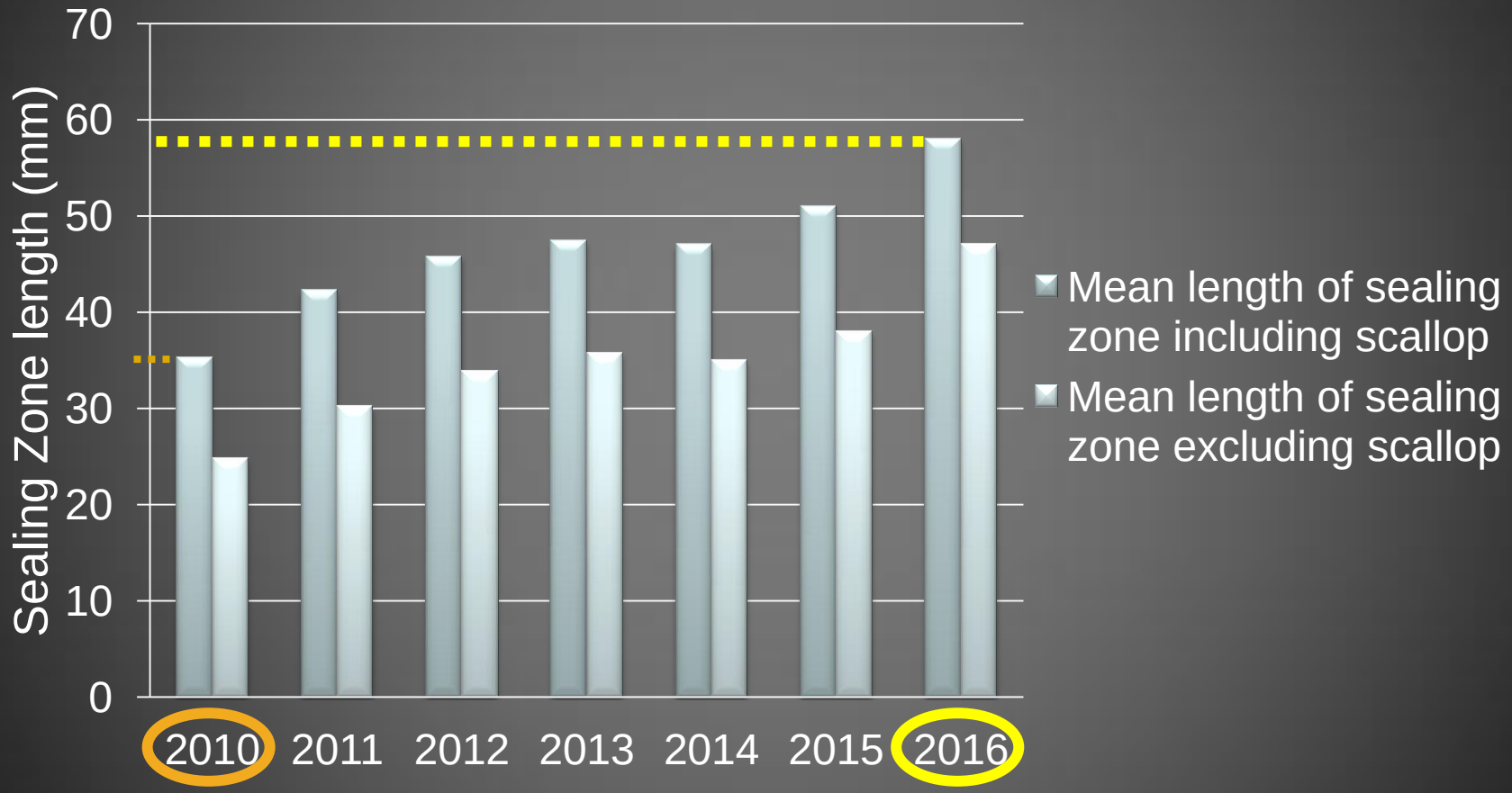
84.2 ± 3.1% at 3 years

Evolution of Stent-graft Design



↑ Use of 3x-4x FEVAR over the years…

Evolution of Sealing Zone



↑ Sealing zone length over the years…

Comparison of outcomes for double fenestrated endovascular aneurysm repair versus triple or quadruple fenestrated endovascular aneurysm repair in the treatment of complex abdominal aortic aneurysms

Athanasios Katsargyris, MD,[a] Kyriakos Oikonomou, MD,[a] George Kouvelos, MD,[a] Hozan Mufty, MD,[a] Wolfgang Ritter, MD,[b] *and* Eric L. G. Verhoeven, MD, PhD,[a] *Nuremberg, Germany*

(J Vasc Surg 2017;■:1-8.)

- Standard (2x) FEVAR

vs

- Complex (3x-4x) FEVAR

FEVAR Durability

Durability of branches in branched and fenestrated endografts

Tara M. Mastracci, MD, Roy K. Greenberg, MD, Matthew J. Eagleton, MD, and Adrian V. Hernandez, PhD, *Cleveland, Ohio*

(J Vasc Surg 2013;57:926-33.)

- 650 pts, Follow-up over 9 years
- Reintervention for
  - 0.6% of celiac, 4% of SMA, 5.5% of RAs
- Death from branch stent complication: 3/650 (0.5%)

- → Branches in FEVAR: durable, rarely cause of death

FEVAR
Conclusions

FEVAR provides excellent immediate, but also durable results

- ↑ Technical success
- ↓ 30-d Mortality
- ↑ Target vessel patency (mid-term)

- Need for reintervention
  - mostly endovascular