Large Flow Luminal Space In An AAA Sac With Minimal Mural Thrombus Is Associated With Adverse Events After EVAR:

It Is More Important Than AAA Sac Size: Thrombus May Be Protective

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Disclosures

- Medtronic
- WL Gore
- Abbott
- Terumo
- Endologix
- Artivion
- Cook
- Philips

Introduction

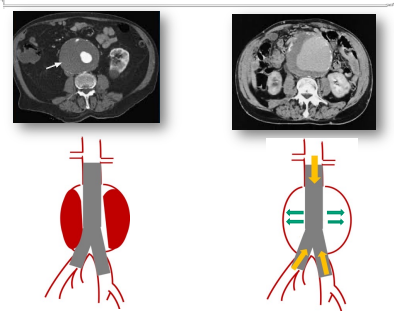
- To improve results, identifying risk factors for EVAR failure is essential.
- Large AAA diameter is a well-known risk factor
- Exact reason is unknown, as large AAAs usually have several hostile anatomical features

- Maybe, a large diameter is a surrogate for another risk factor

Introduction

- In many patients, the aneurysm sac before EVAR is partially filled with thrombotic material, limiting the endograft's mobility after implantation
- Conversely, in a large flow lumen, regardless of maximum sac diameter, there is a greater propensity for the stentgraft to dislodge, potentially leading to seal complications

Hypothesis



Objective

- To investigate the role of luminal volume on AAA-related complications

Hypothesis

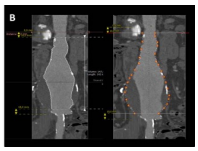
- AAA luminal volume represents an important risk factor for AAA-related complications, due to higher propensity for graft dislodgement.

Methods

- Retrospective study using a prospective database including all patients undergoing primary EVAR for degenerative AAA between 2006-2016

Methods

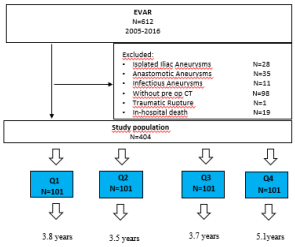
- Luminal Volume and total AAA volume were calculated semi-automatically on CTA
- Patients were stratified into quartiles



Methods

- **Primary endpoint:** - FF from AAA-related complications
- **Secondary endpoints** - sec. interventions
  - Neck/iliac related adverse event
  - AAA sac growth
  - Endoleak
  - Rupture
  - ACM
  - ARM

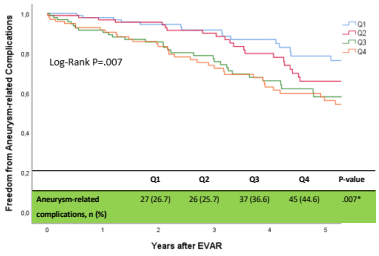
Results



Follow-up

Results

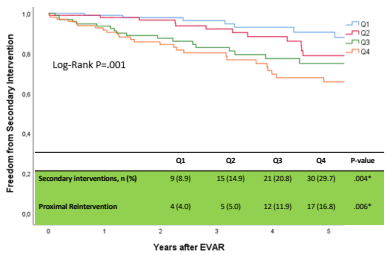
Aneurysm related complications



	Q1	Q2	Q3	Q4	P-value
Aneurysm-related complications, n (%)	27 (26.7)	26 (25.7)	37 (36.6)	45 (44.6)	.007*

Results

Secondary interventions



	Q1	Q2	Q3	Q4	P-value
Secondary interventions, n (%)	9 (8.9)	15 (14.9)	21 (20.8)	30 (29.7)	.004*
Proximal Reintervention	4 (4.0)	5 (5.0)	12 (11.9)	17 (16.8)	.006*

Results
Multivariable analysis

Adjusted for AAA diameter, α and β angulation, PSL, neck diameter, rupture as indication, AUI devices.

	HR	CI 95%	P-value
Q1	Ref		
Q2	1.05	.59-1.9	.88
Q3	1.67	.97-2.9	.066
Q4	1.91	1.01-3.6	.046

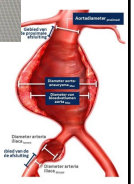
- AAA luminal volume represented an independent predictor of complications
- AAA total diameter did not.

Conclusion

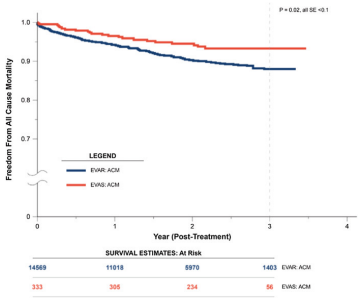
- First study focusing on impact of free luminal space on outcomes after EVAR
- Patients with larger AAA flow lumen are at greater risk for AAA-related complications (91% increased risk) irrespective of total AAA diameter
- Reasons are mainly unknown but probably due to more graft movement within the sac

Disclosures
David Deaton

Ratio of maximum aortic aneurysm diameter to maximum aortic blood lumen diameter <1.4



ACM after Nellix
David Deaton



Debate on the influence of thrombus

- If pre-op thrombus load in the sac is discussed:

  I made my point by proving thrombus is protective

- If post-op newly formed thrombus is discussed:

  We are in full agreement: more seems to be harmful

Thank you