



Best Practice in fEVAR in 2016

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Disclosure of Interest

Speaker name:Barend Mees.....

- I have the following potential conflicts of interest to report:
- Consulting
- Employment in industry
- Shareholder in a healthcare company
- Owner of a healthcare company
- Other(s)
- ☒ I do not have any potential conflict of interest

Indications for fEVAR in 2016

Pararenal Aneurysms

Juxtarenal

Suprarenal

Type IV TAAA

Failed EVAR



fEVAR versus Open Repair

	Nordon et al. 2009 ³⁹		Rao et al. 2014 ³⁴	
	Open Repair	fEVAR	Open Repair	fEVAR
Number of Studies	12	8	21	14
Number of Patients	1164	368	1575	751
Perioperative Mortality (%)	3.6	1.4	4.1	4.1
Major Complications (%)	NS	NS	25	15.7
Permanent Dialysis (%)	1.4	1.4	2.8	1.9
Chronic Renal Failure (%)	NS	NS	7.7	19.7
Secondary Interventions (%)	2.6	15	4.9	12.7
Target Vessel Patency (fEVAR; 1 year; %)	-	92	-	95
NS indicates not specified.				

fEVAR versus open juxtarenal repair

- Less invasive
- For unfit patients
- Lower mortality and morbidity
- Custom-made devices
- More extensive coverage of aorta

Pararenal AAA

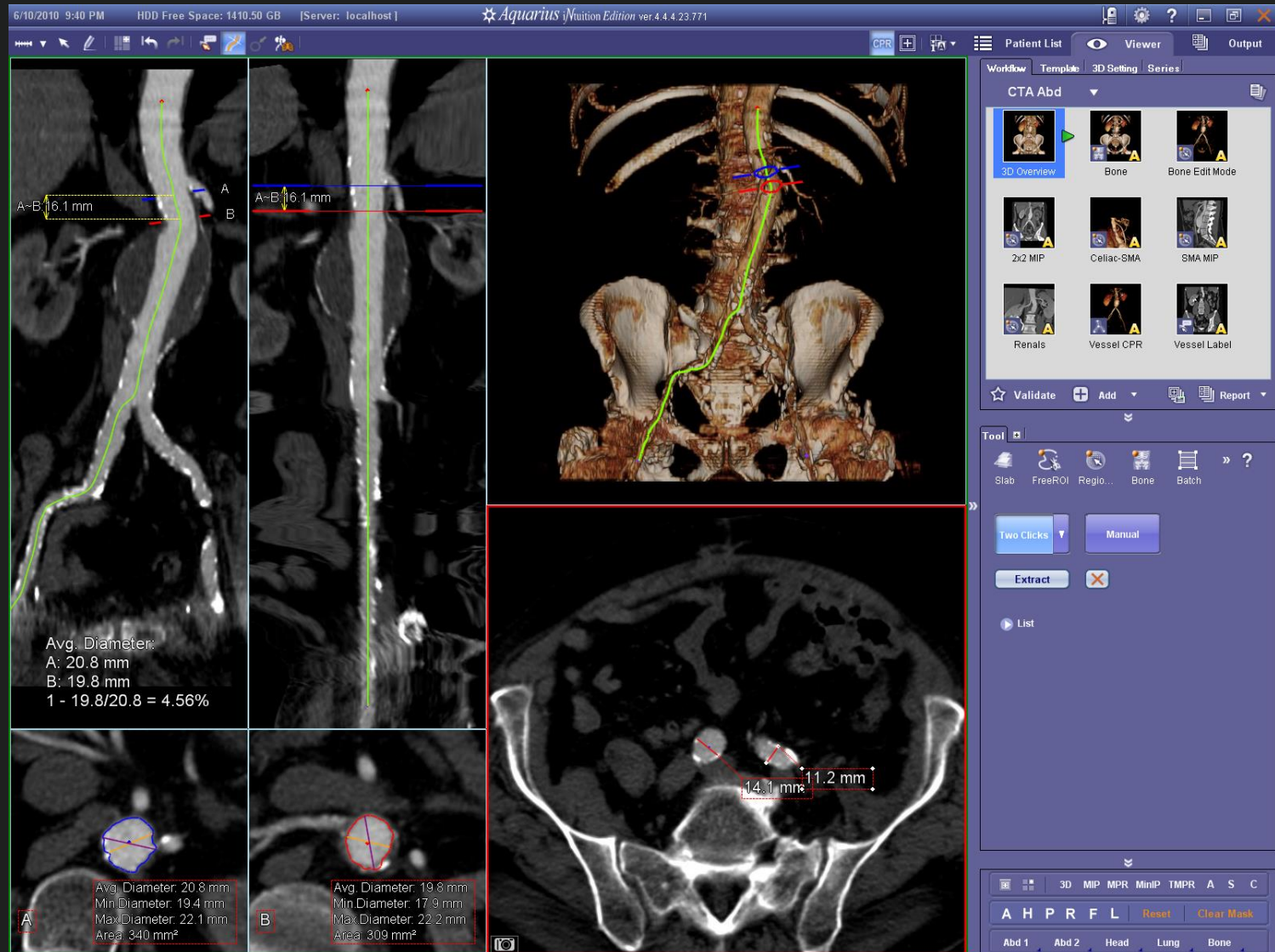
Infrarenal Aneurysm (short neck)



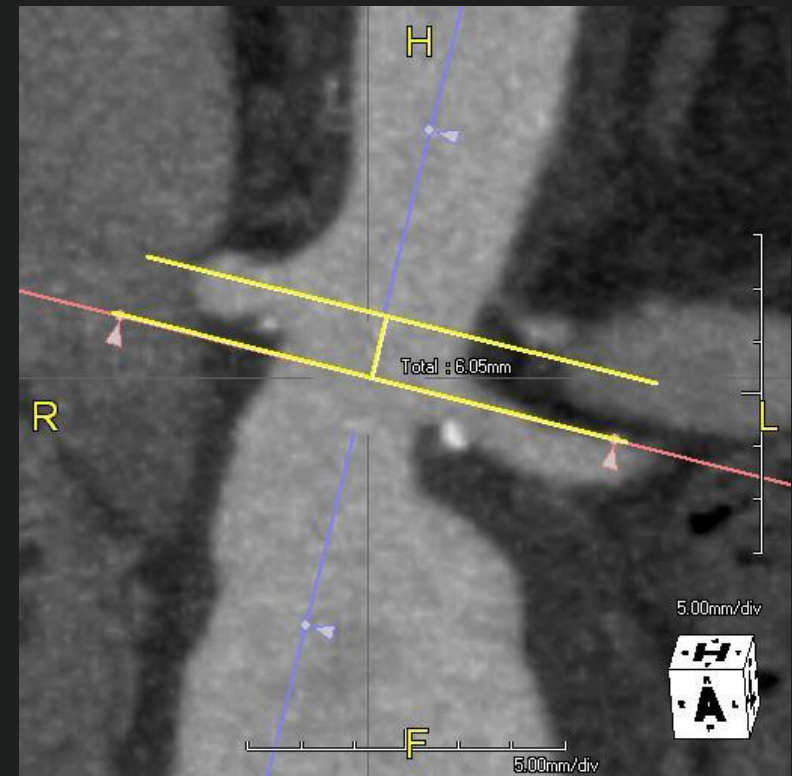
Juxta/Suprarenal Aneurysm



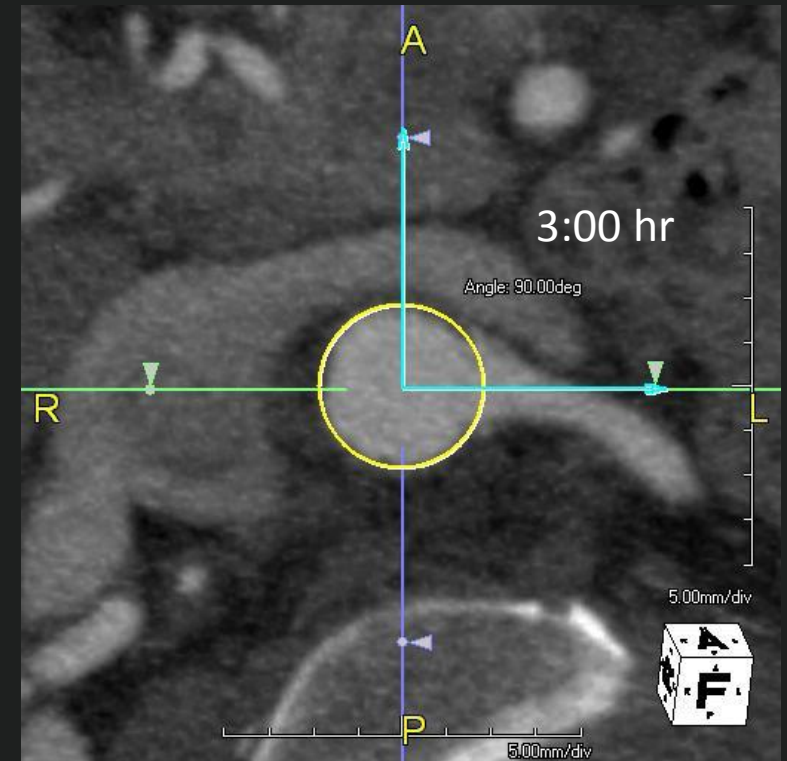
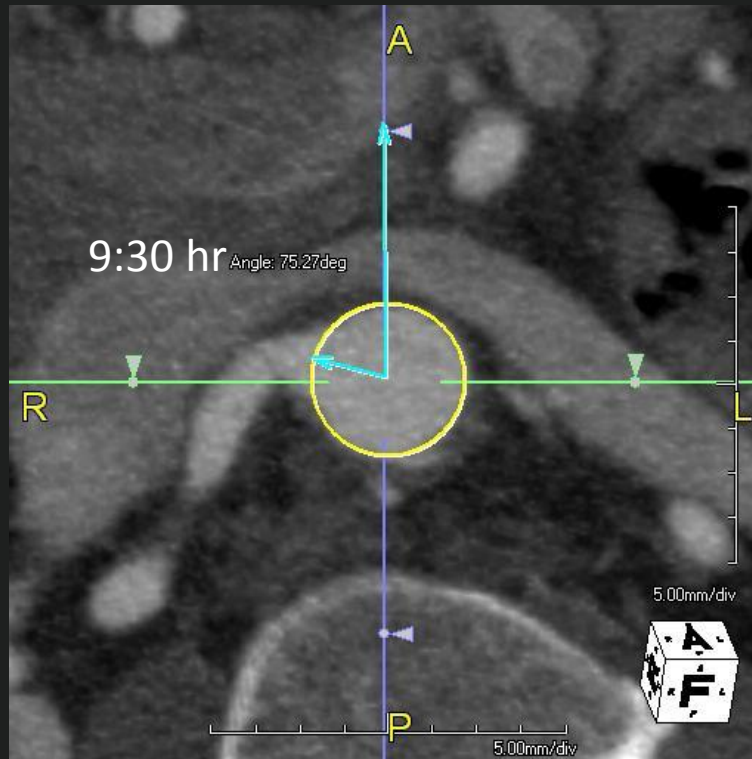
Workstation / 3D-imaging



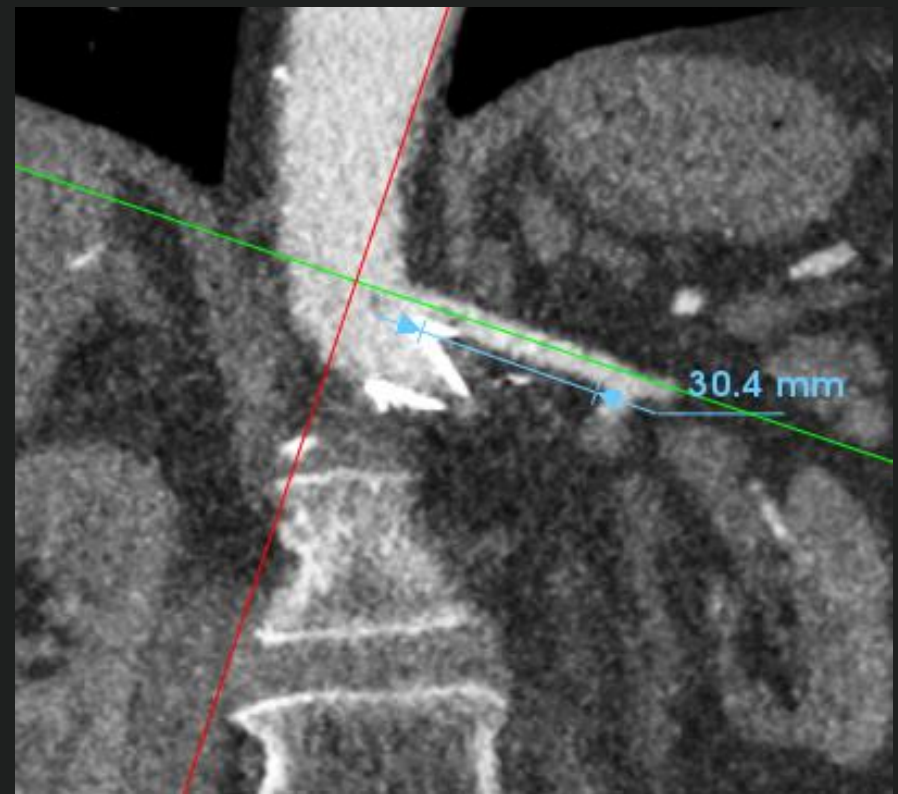
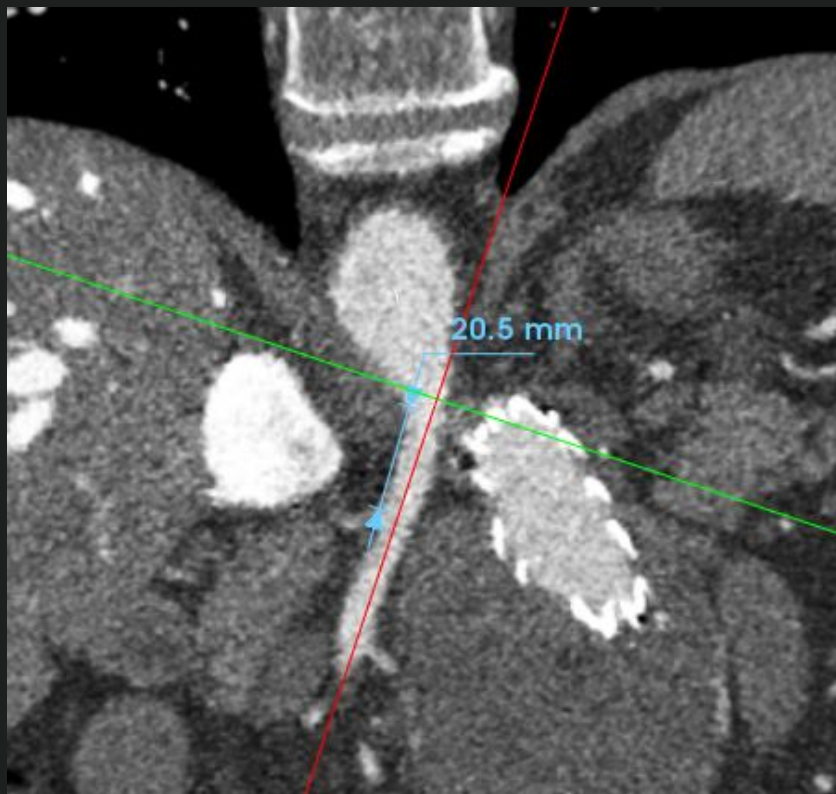
Target vessel distance



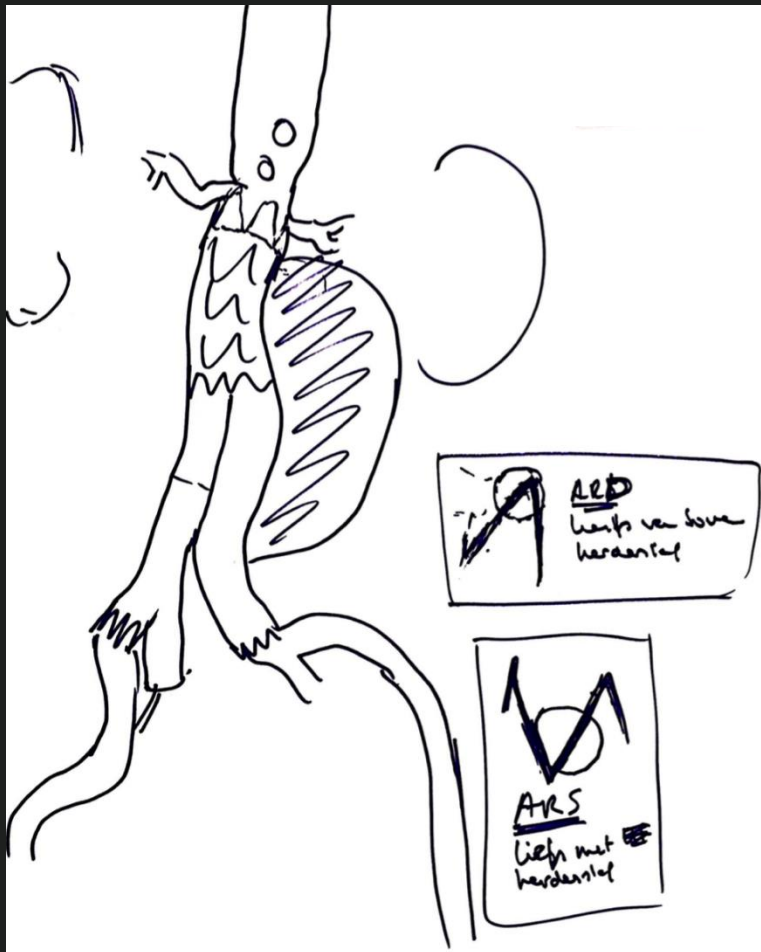
Determine clock position



Target vessel length



FEVAR planning (1)

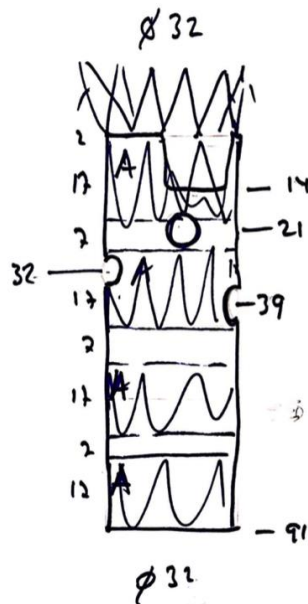


	①	PA	H	ø vd	brint	Syr
Cx (o)	12:45	29	0	82	16 mm	
SMA (m)	12:15	27	9	77	540	
ARD (m)	10:30	22	20	65	±40	Struktu
ARS (m)	14:15	22	27	71	14 !!	
Stark Evan		24	41			
bij		25	79			
pool R/RE		13	196			Occlusie Chimaer Axi
pool G		15	193			Axi op 209
ME R		9-10				
ME Li		G				

AFC Idm PEVAR + 1+	
Aorta ø 82 mm	
Geen seal prik	
Snel yosee AM	
Geen bpi? a endoleak	
poken goed	

Aorta V12	
SMA	8x38
ARS	2x22
ARD	2x22

FEVAR planning (2)



1. Double width scallop 20mm
- @ 12:45
- 14 mm deep

2. LARG FEN
- $\phi 8$ mm stent free
- @ 12:15
- 21 mm from top
- IVD 22

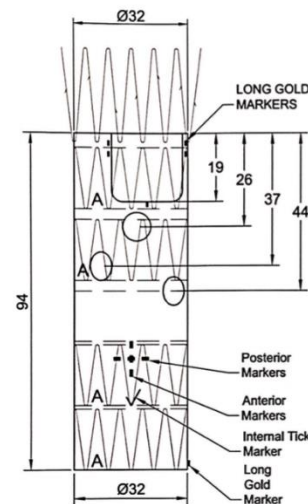
3. Small fen
- $\phi 6 \times 8$ mm
- @ 10:30
- 32 mm from top
- IVD 22

4. Small fen
- $\phi 6 \times 8$ mm
- @ 14:15
- 39 mm from top
- IVD 22

- Double diameter reducing ties
- Low profile fabric

NON STANDARD DEVICE REQUEST

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REINFORCED SCALLOP #1
WIDTH: 20mm
HEIGHT: 19mm
CLOCK: 12:45
IVD: 22mm

REINFORCED LARGE FENESTRATION #1
Stent Free
DIAMETER: 8mm
DIST FROM PROX EDGE: 26mm
CLOCK: 12:15
IVD: 23mm

REINFORCED SMALL FENESTRATION #1
WIDTH: 6mm
HEIGHT: 8mm
DIST FROM PROX EDGE: 37mm
CLOCK: 10:30
IVD: 23mm

REINFORCED SMALL FENESTRATION #2
WIDTH: 6mm
HEIGHT: 8mm
DIST FROM PROX EDGE: 44mm
CLOCK: 2:15
IVD: 22mm

- DOUBLE DIAMETER REDUCING TIES
- LOW PROFILE FABRIC

Please note the following:

1. By signing this graft plan you are confirming that the patient has consented to the provision of their personal information to Cook Medical. The patient understands that in order to plan and manufacture the requested device, Cook Medical may share his/her personal information with other Cook Group companies in the United States, Australia, Denmark, United Kingdom and Ireland and has consented to his/her personal information being so shared.
2. You are confirming that all clinically important features (eg. fenestration size / orientation, gold marker placement, sealing stents) are included in this graft design prior to your approval.
3. Unsigned plans or alterations may lead to a delay in the supply of this device. Please sign and date each page. If you wish to alter any part of this plan please initial and date each change.

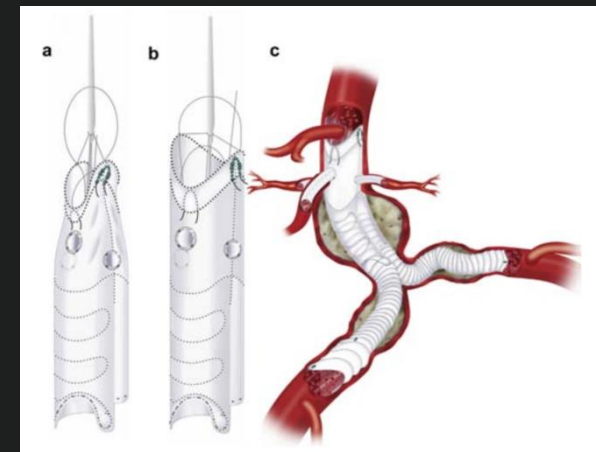
Sheath Size: 18FR FLEXOR
O.D.: 7.1mm
Sheath Length: 75cm
Device: FENESTRATED-PARARENAL-DEVICE
Component: AAA-REINFORCED-FEN-PROX

Patient ID:
Doctor: Prof. Schurink
Hospital: UMC Maastricht, Netherlands
Date of Procedure:
Drs Signature:
Date: 29/2/2016

All Dimensions in mm Not to scale UK-RD Date: 29-Feb-16

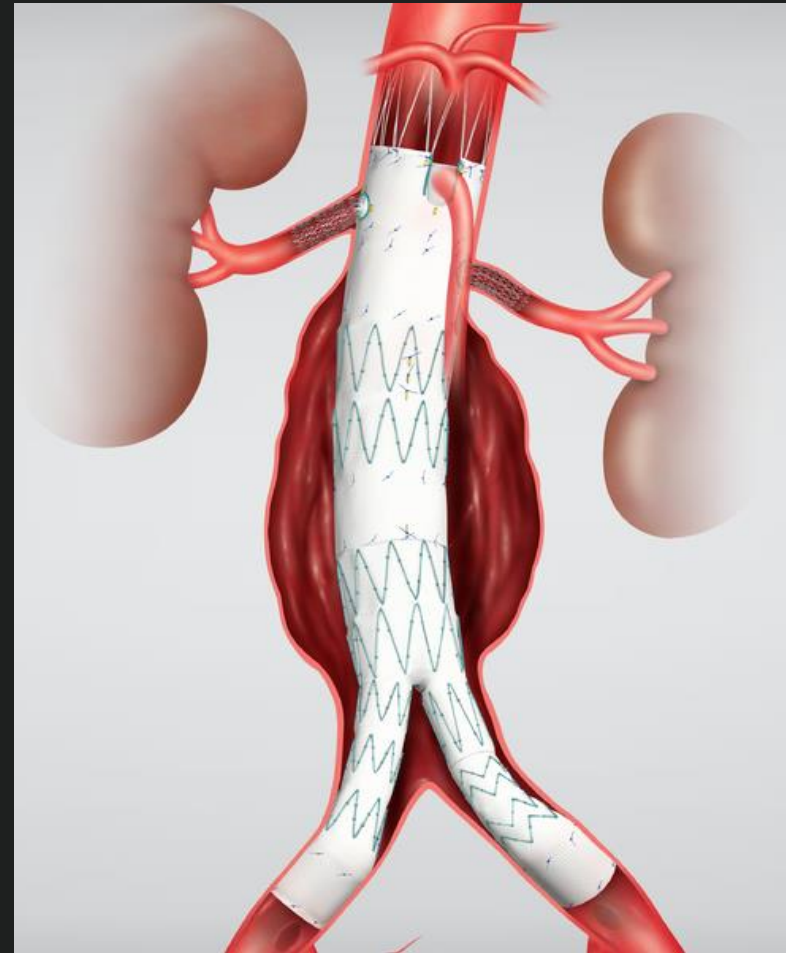
Fenestrated grafts

- Zenith Fenestrated (Cook)
- Anaconda Fenestrated (Vascutek)
- Ventura (Endologix)
- Bolton Medical
- Jotec
- Surgeon modified FEVAR
- In situ FEVAR

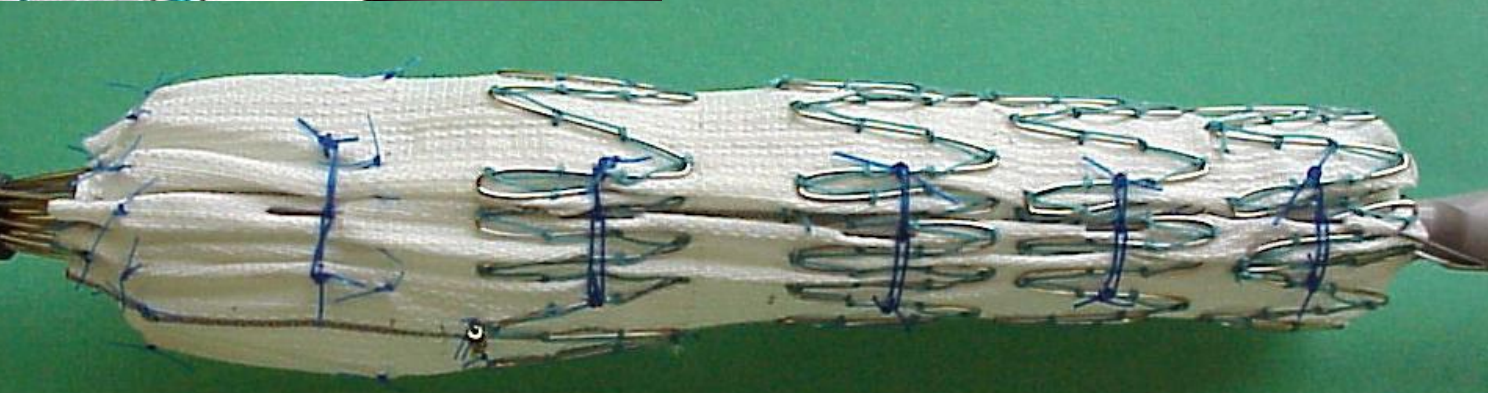
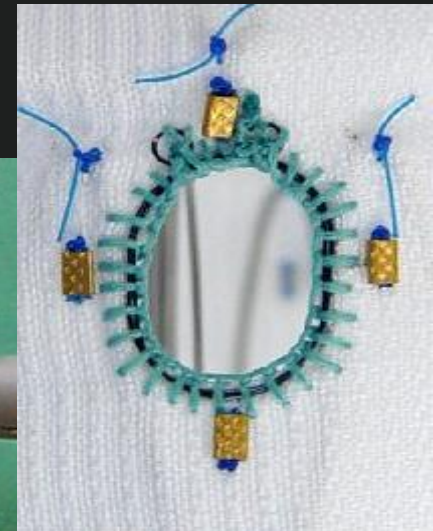


Cook Zenith Fenestrated CE

- Three modules:
 - Fenestrated tube
 - Bifurcated body
 - Iliac leg
- Max. 3 fenestrations

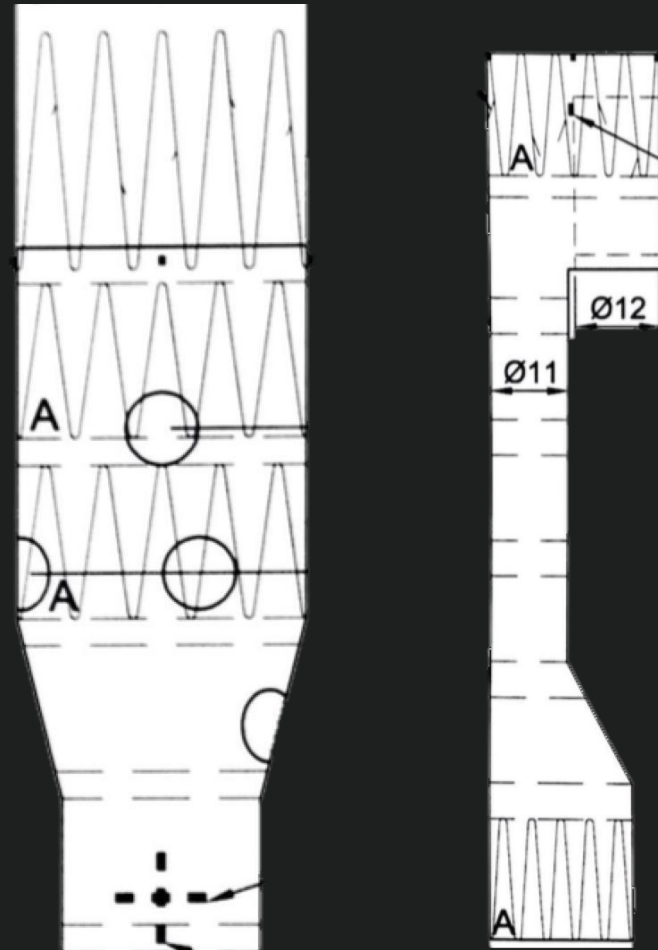


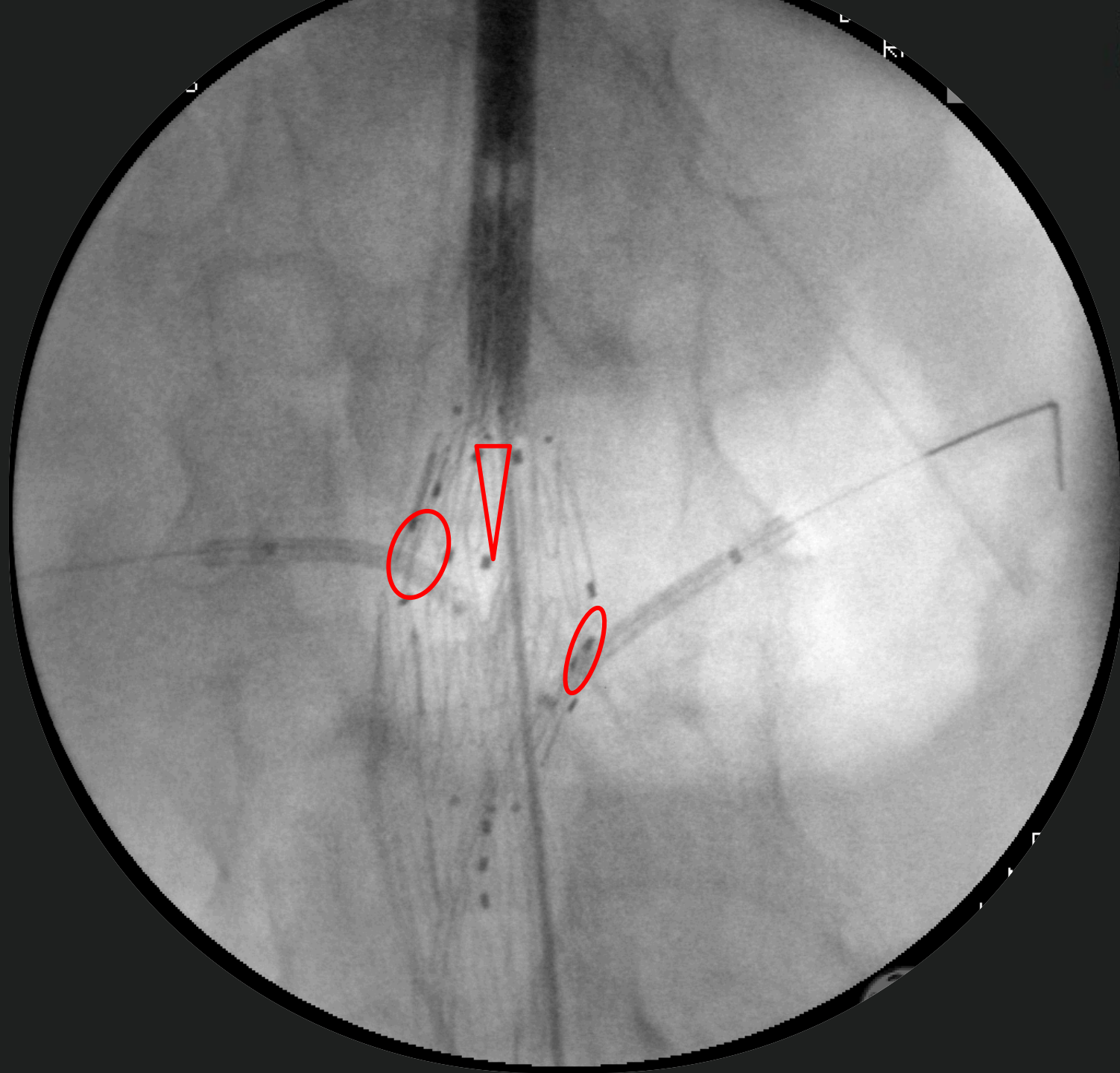
Cook Zenith Fenestrated CE



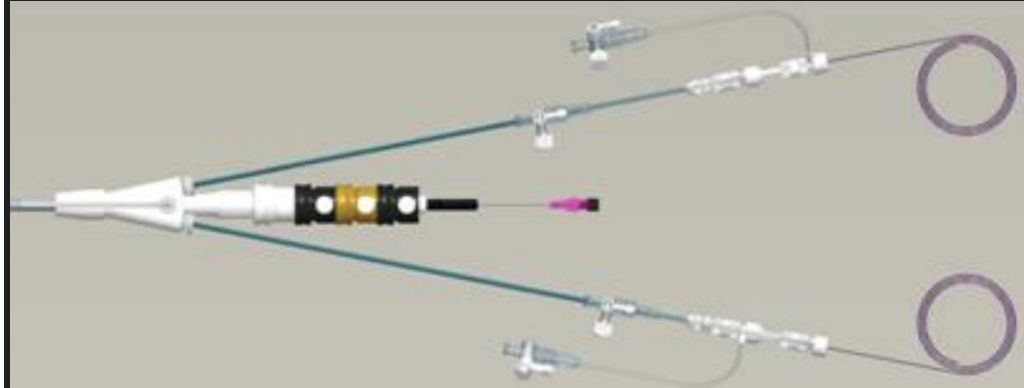
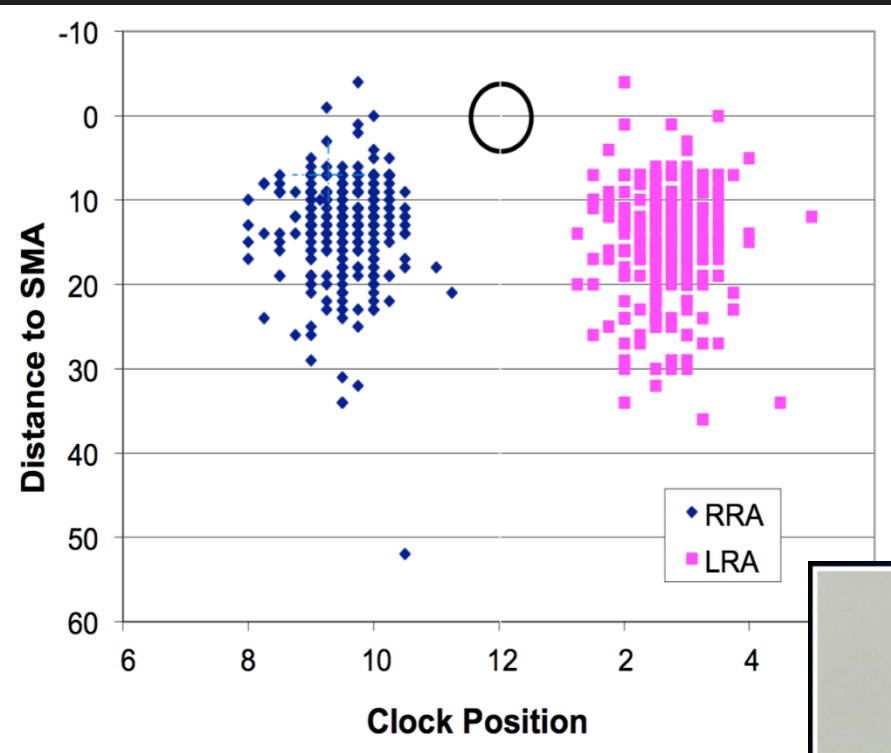
Cook Zenith Fenestrated Custom Made

- More options in design
- Limitations in position and distance between fenestrations
- Long-term durability and experience

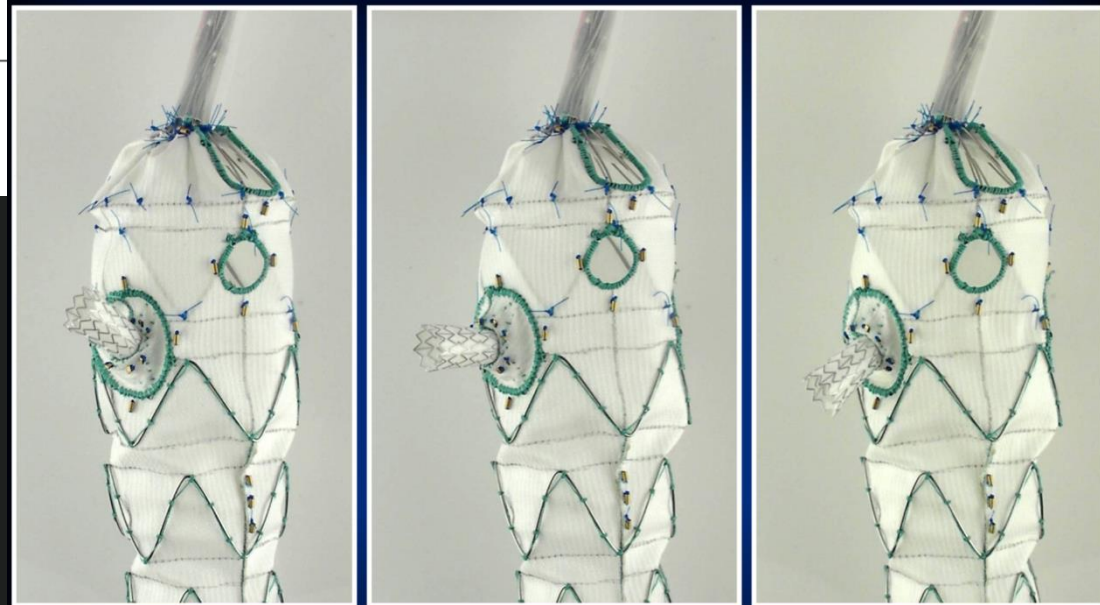




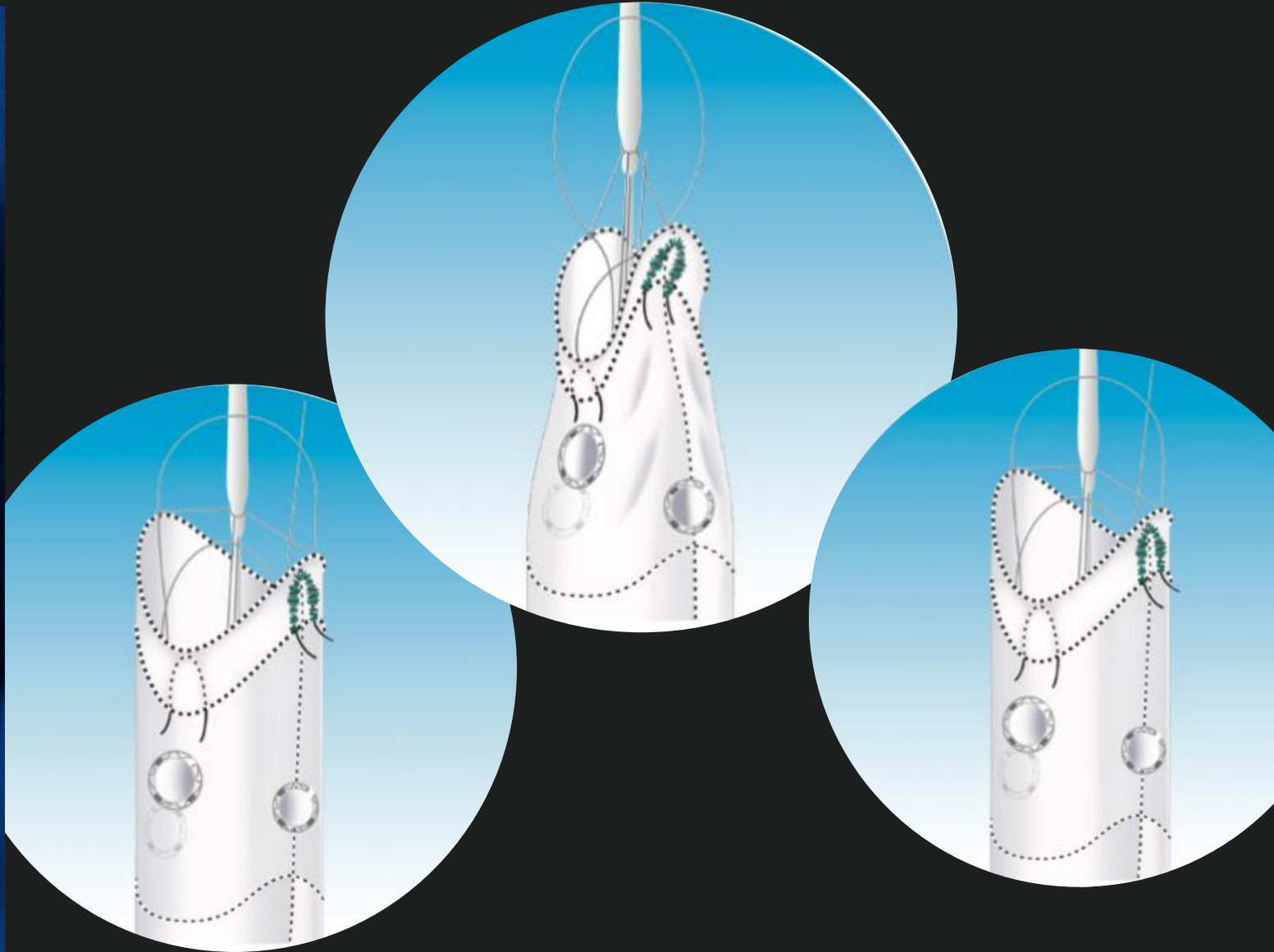
Cook P-Branch



Sobocinski et al. JEVT 2012;19:165-172



Anaconda Fenestrated



Fenestrated Anaconda

- Fenestrations:
 - of any size
 - on any position
- Repositionable
- Flexible for angulated anatomy
- Cannulation from below and/or above

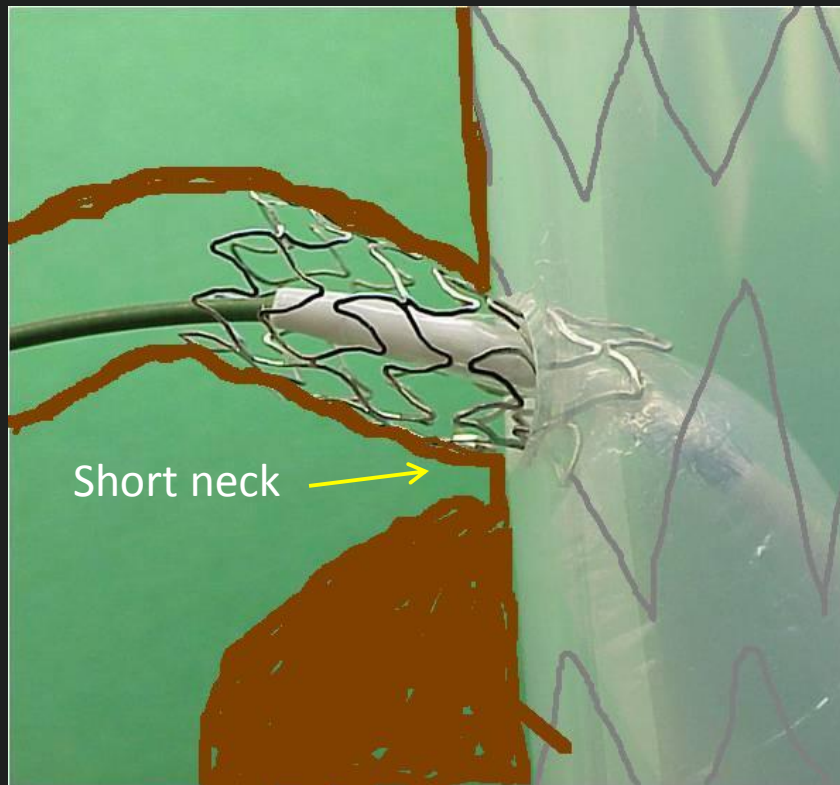


Fenestrated Anaconda

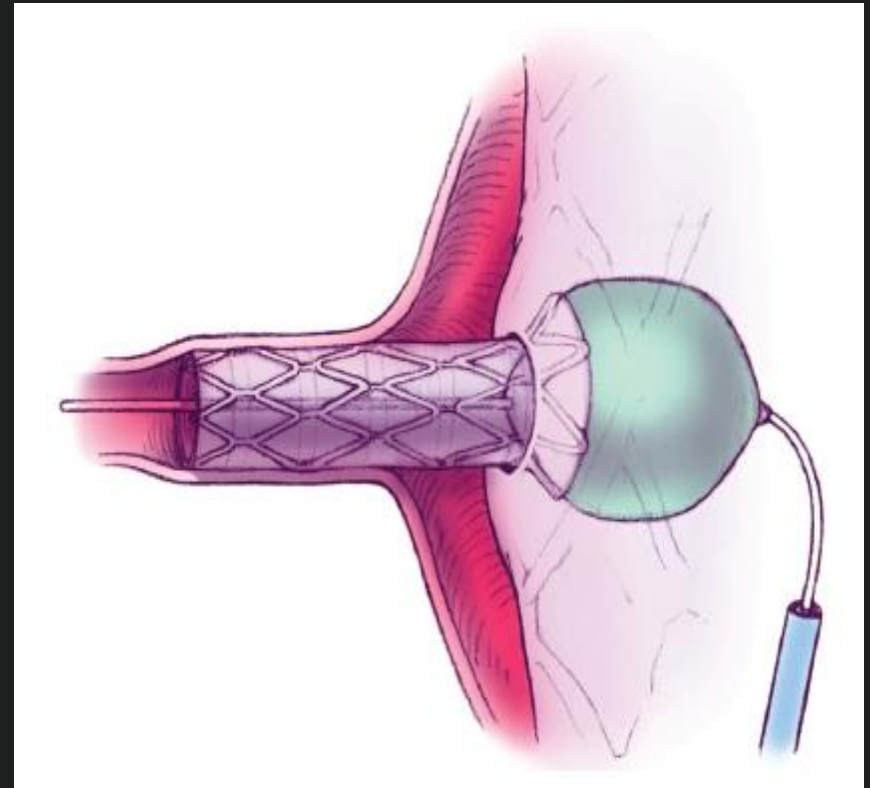


Which stent?

Uncovered



Covered

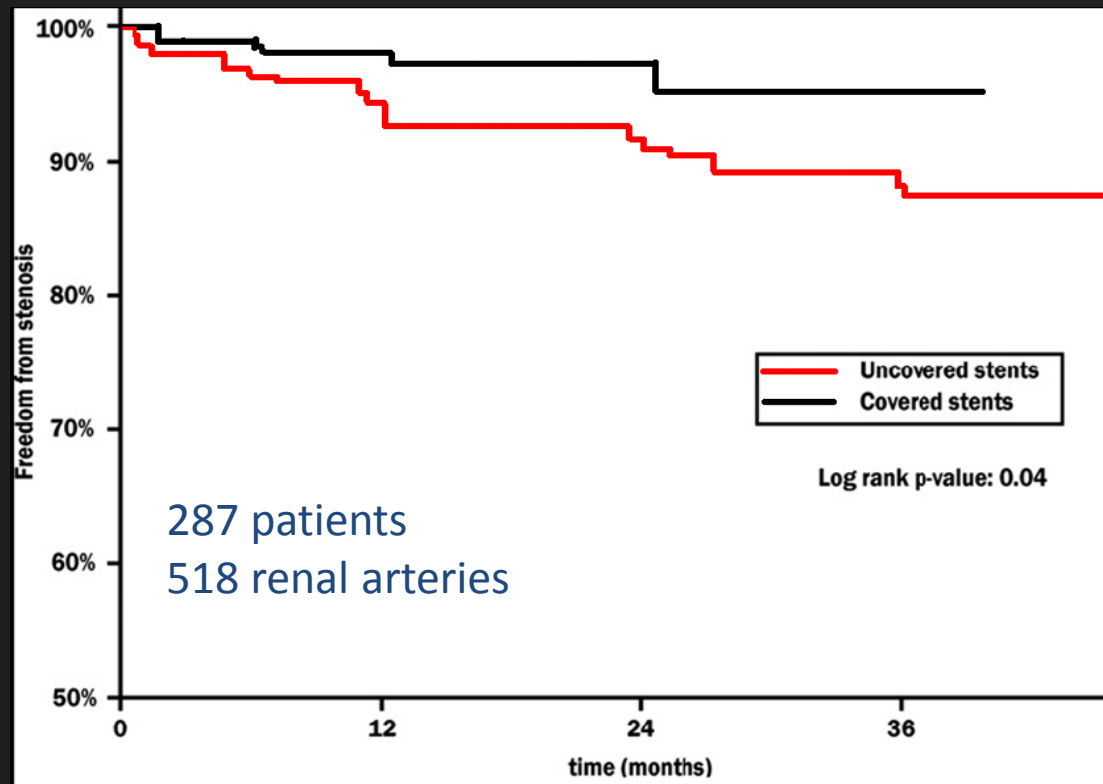


Which stent?

Covered vs uncovered

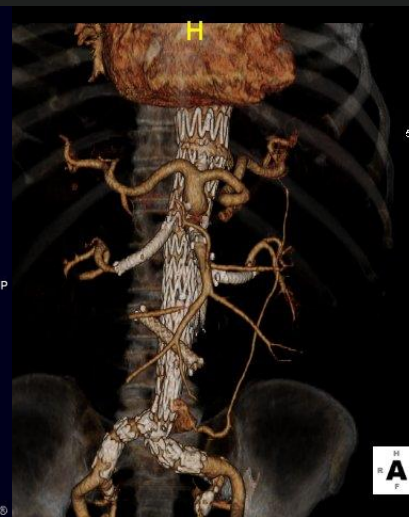
- Freedom of stenosis @ 24 months:

Uncovered	92%
Covered	97%



Complex Custom Made (T)EVAR in Maastricht UMC

- fEVAR for pararenal AAA: 84
- f/bEVAR for TAAA: 96
- f/bEVAR for aortic arch aneurysm: 9



fEVAR in Maastricht UMC

- Patients

- Men: 89%
- Age: 61–88 (75) years
- AAA diameter: 47–89 (65) mm
- Previous aortic surgery: 35%

fEVAR in Maastricht UMC

Trends since 2014

- One third of our fEVAR cases are fEVAR after EVAR (13 from 34)
- Two thirds of our fEVAR cases with percutaneous access (24 from 34)

Limitations of fEVAR

- Planning:
 - Human factor!
- Production time:
 - 6-8 weeks
- Access:
 - Often bilateral 20-22 Fr
- Procedure:
 - Radiation and contrast load

Procedure characteristics

DAP (Gy cm²)

	Mean	SD	Min.	Max.
All	130	131	15	514
EVAR	116	122	32	481
TEVAR	62	46	15	166
FEVAR	217	159	47	514



P=0.014

Fluoroscopy time (min:s)

	Mean	SD	Min.	Max.
All	25:26	19:47	1:49	97:47
EVAR	19:46	8:21	7:16	38:31
TEVAR	9:44	7:20	1:49	26:25
FEVAR	49:07	21:50	23:27	97:59

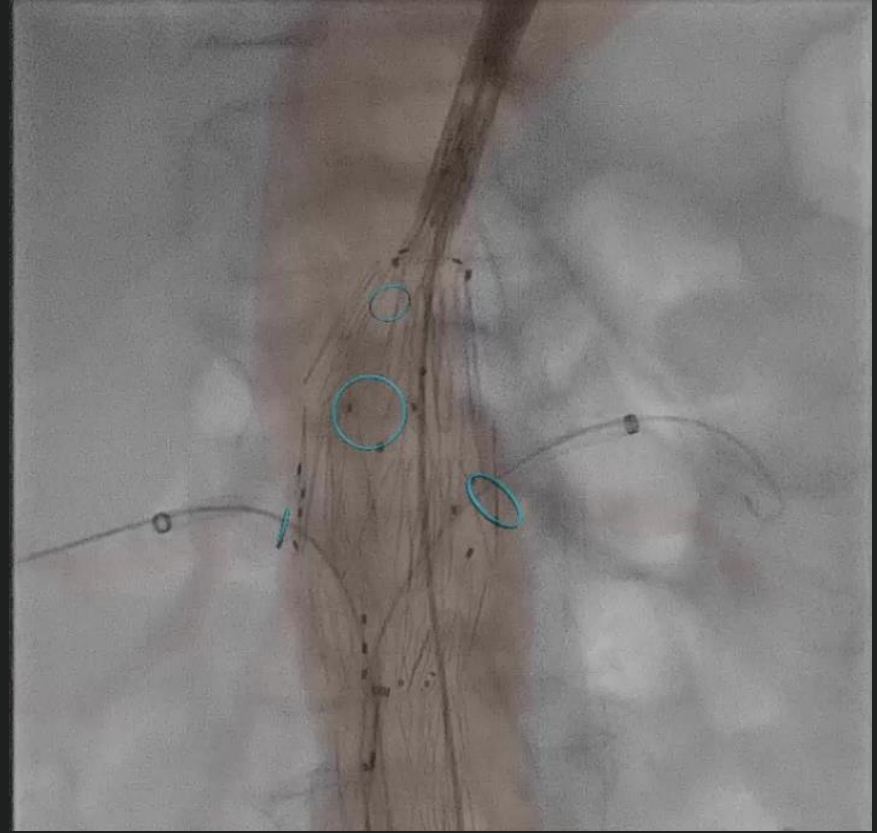
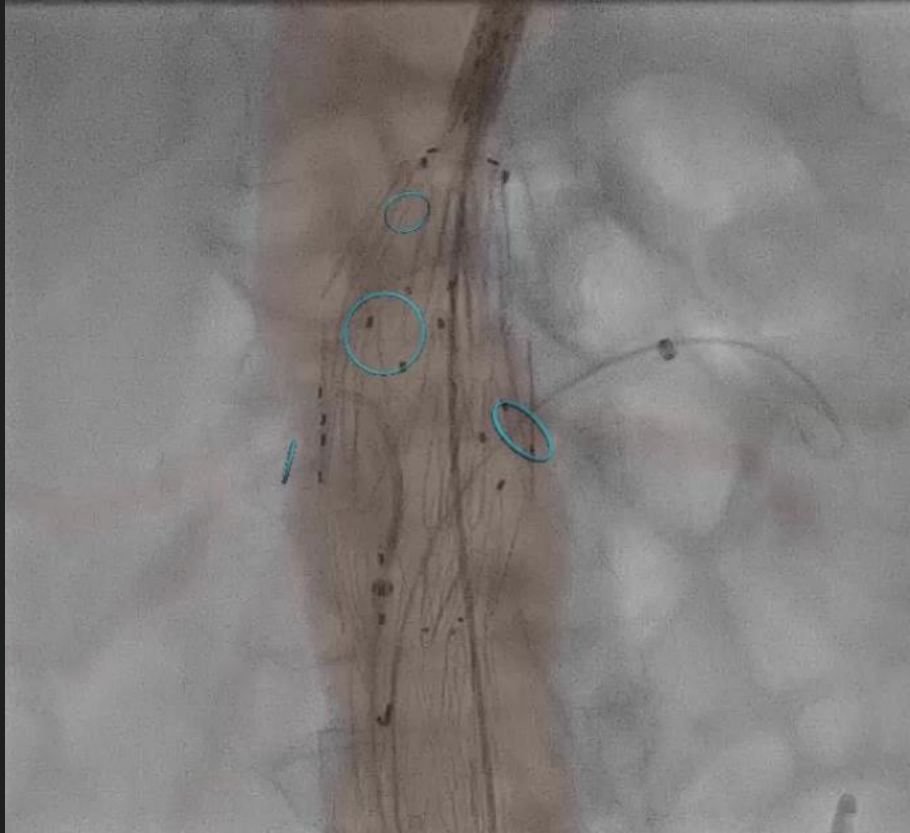
P<0.001

Iodinated contrast volume (ml)

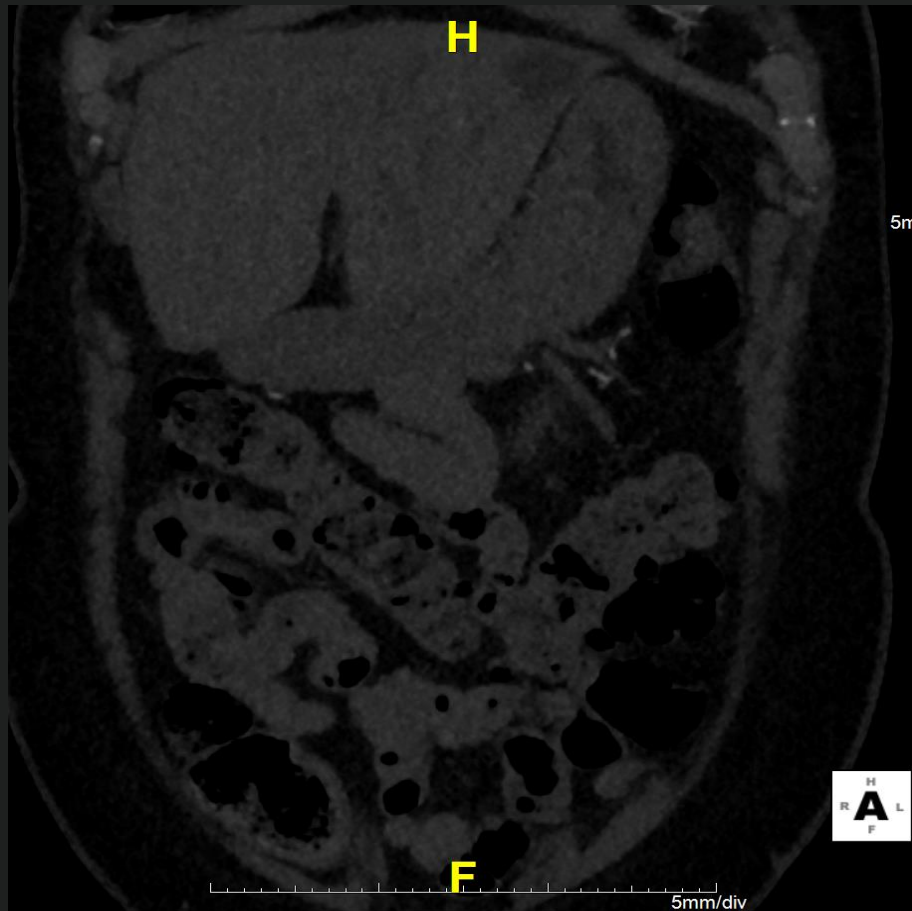
	Mean	SD	Min.	Max.
All	92	40	40	200
EVAR	84	32	50	150
TEVAR	89	49	40	170
FEVAR	116	36	65	200

P= NS

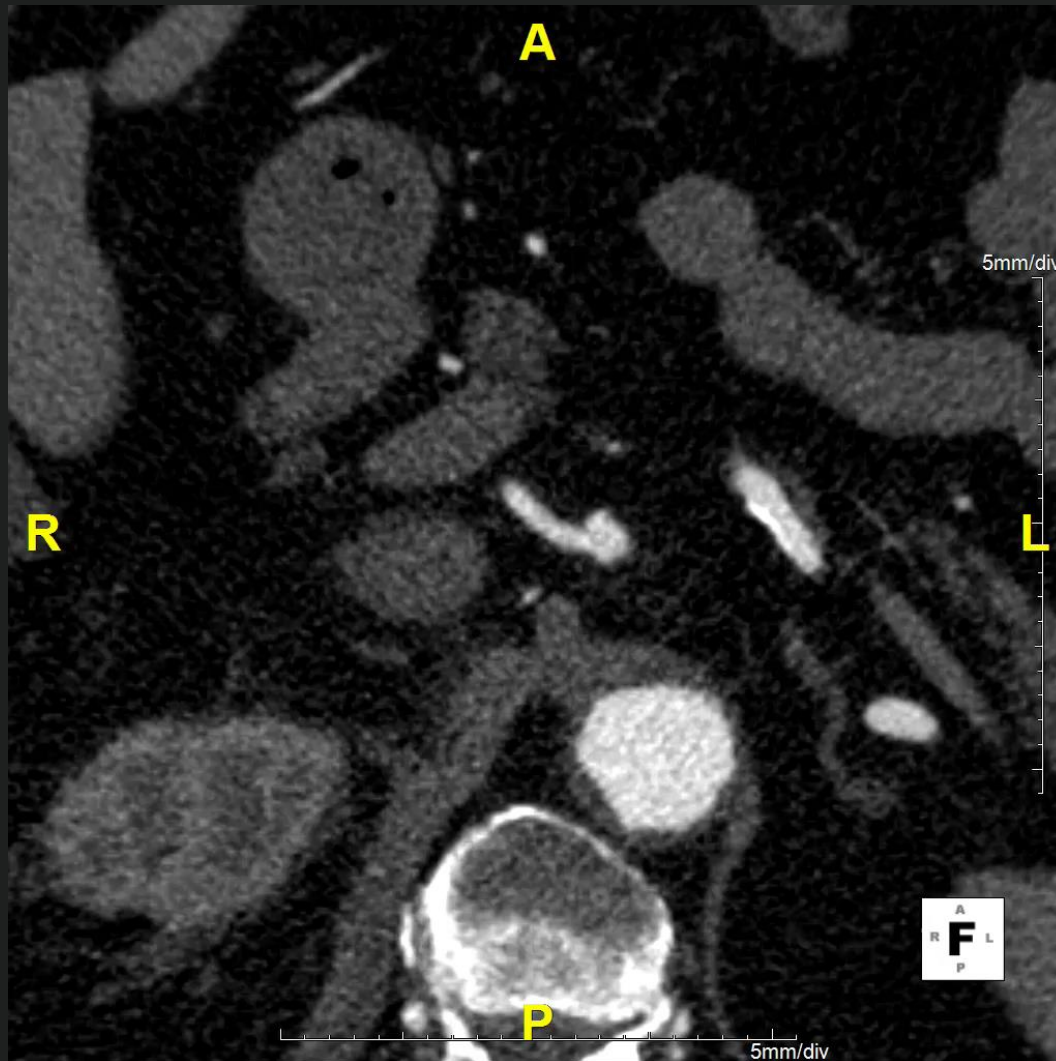
Fusion Guidance (1)



fEVAR after fEVAR



fEVAR for rAAA



fEVAR for rAAA



State of the art fEVAR 2016

- fEVAR has become an established therapy for pararenal AAA
- fEVAR for pararenal AAA has excellent short- and medium term results
- Off-the-shelf fEVAR is needed for (sub) acute treatment

State of the art fEVAR 2016

- Plan your graft design yourself
- Aim for adequate seal in normal aorta
- Covered stents for target vessels
- Fusion imaging to reduce radiation and contrast load
- Increasing fEVAR after EVAR
- Percutaneous access