Tomasz Jakimowicz

Treatment of endoleak Type I after EVAR with fenestrated or branched stentgrafts

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Disclosure

Speaker name:

TOMASZ JAKIMOWICZ

I have the following potential conflicts of interest to report:

☑ **Consulting** (JOTEC, COOK)

☐ Employment in industry

☐ Stockholder of a healthcare company

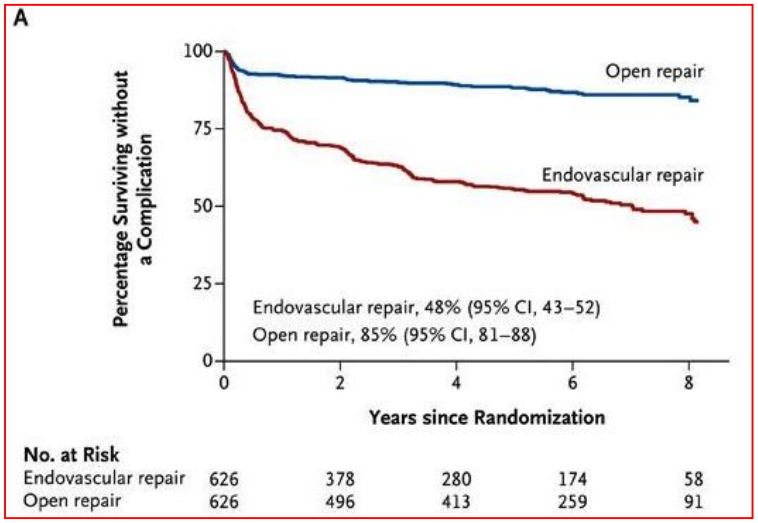
☐ Owner of a healthcare company

☐ Other(s)

☐ I do not have any potential conflict of interest

INTRODUCTION

- Endovascular method has gained in recent years recognized place in the treatment of abdominal aortic aneurysms, especially in patients with comorbidities.
- However, with the increase in the number of patients operated on with this technique and longer period of observation complications specific to this type of treatment are becoming a growing problem.



The NEW ENGLAND JOURNAL of MEDICINE

Endovascular versus Open Repair of Abdominal Aortic Aneurysm

Anonymous. The New England Journal of Medicine. Boston: May 20, 2010. Vol. 362, Iss. 20; pg. 1863

INTRODUCTION

From April 1998 to September 2016

2274 endovascular operations has been done due to aorta pathology in our Institution

1552
abdominal aorta

442
thoracic aorta

280
thoracoabdominal / juxtavisceral aorta

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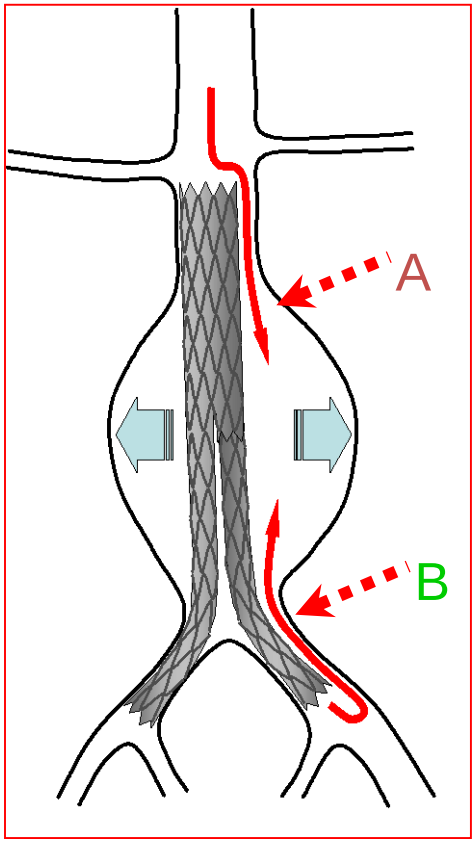
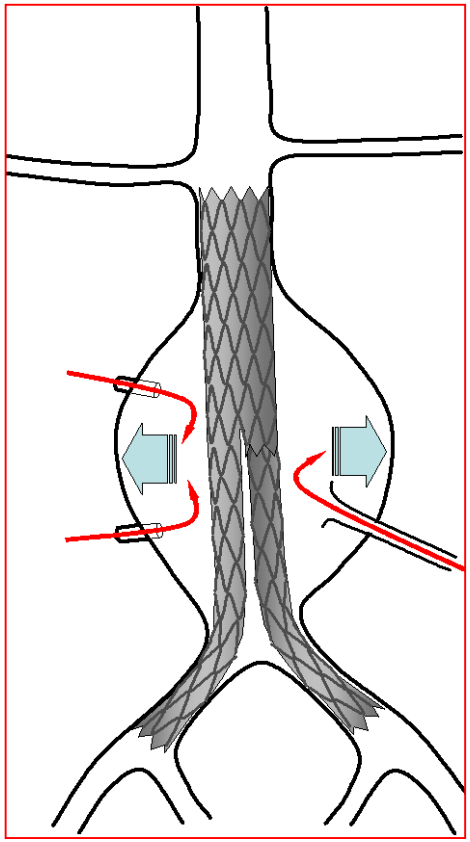
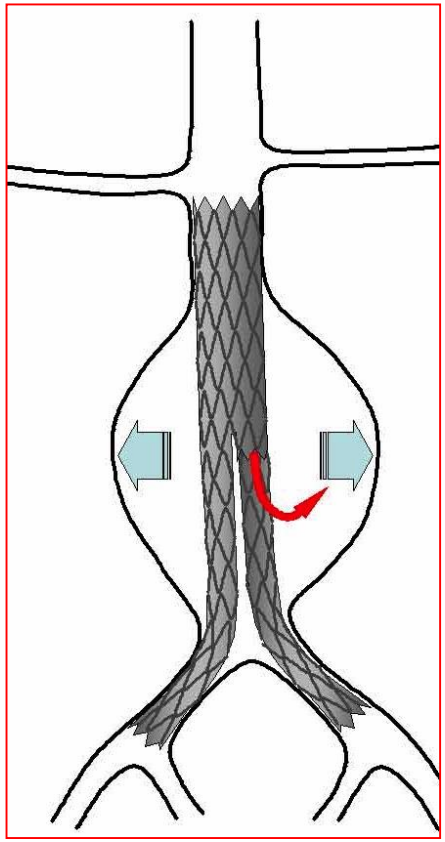
Endoleaks: 224 patients (14.4%)



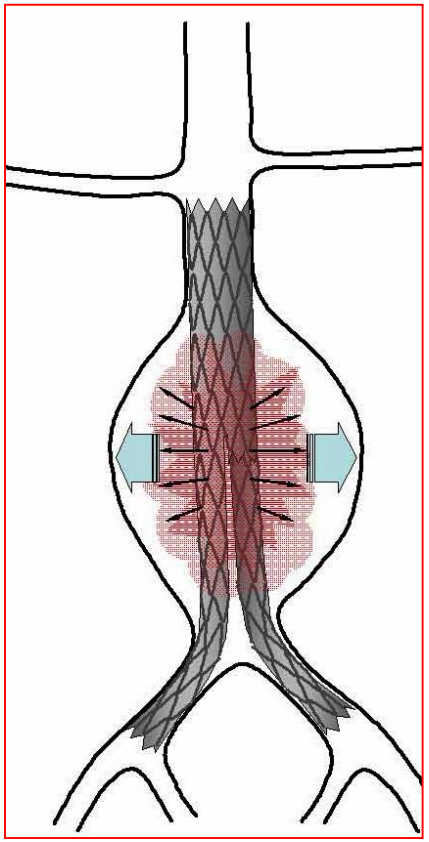
Type I
90



Type II
121



Type III
10

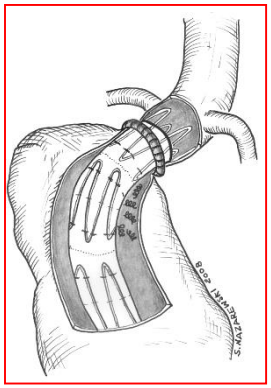


Type V
3

Algoritm of endoleak type I treatment

The patient was treated according to the order shown below, until the effective closure of the endoleak:

- implantation of additional stentgraft elongating the previously implanted
- baloon angioplasty of the sealing zone
- embolization of the endoleak source with coils or glue
- open surgery – laparotomy and banding of the sealing zone
- conversion to classic aortic surgery

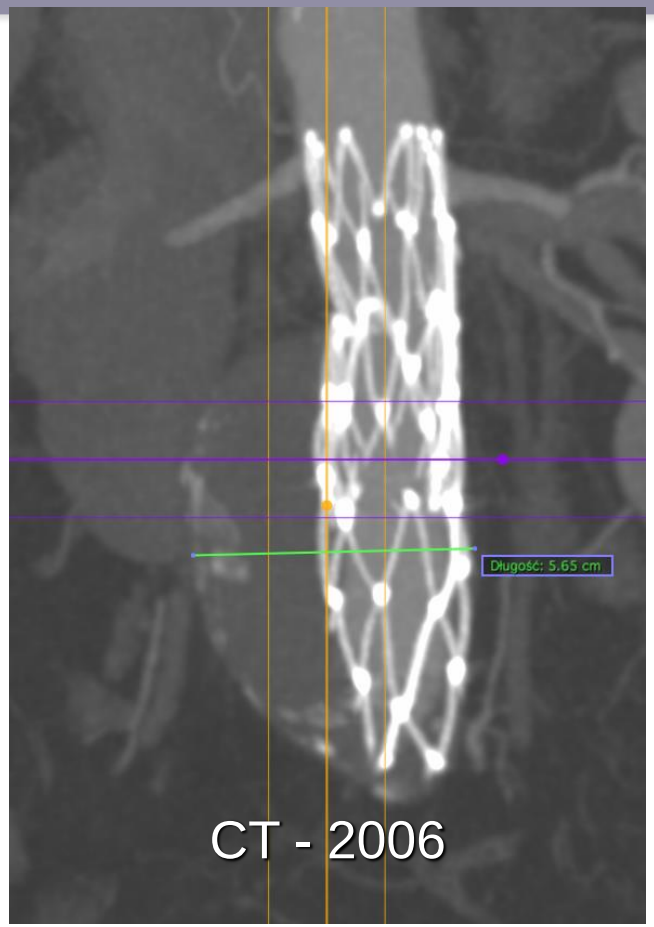


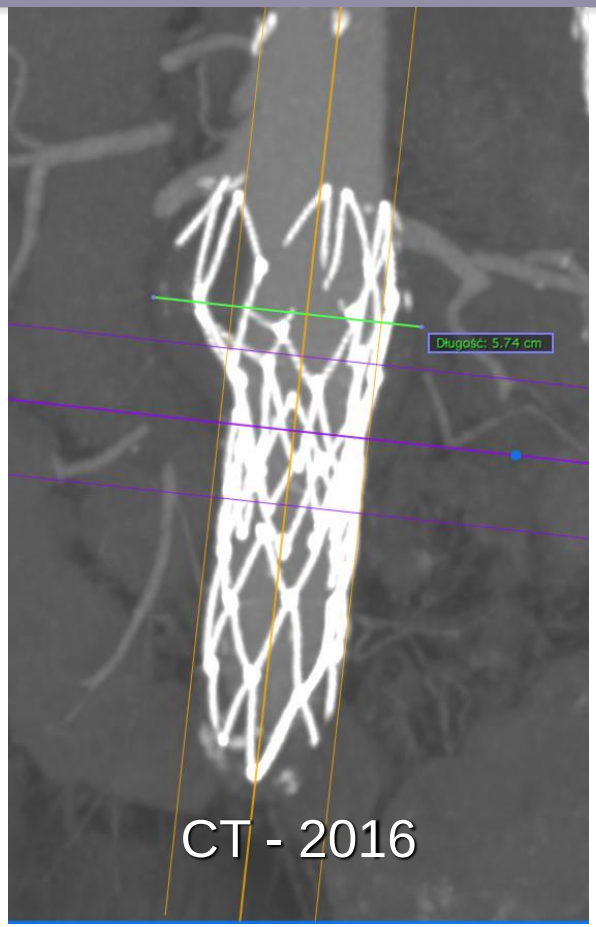
Aortic disease is progressive

"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."

Lawrence-Brown M, Progressive aortic aneurysm disease. *Endovasc Today*. 2014;(13)(5)(suppl) 3.

Aortic disease is progressive





Power-Link implanted in 2003

Our experience

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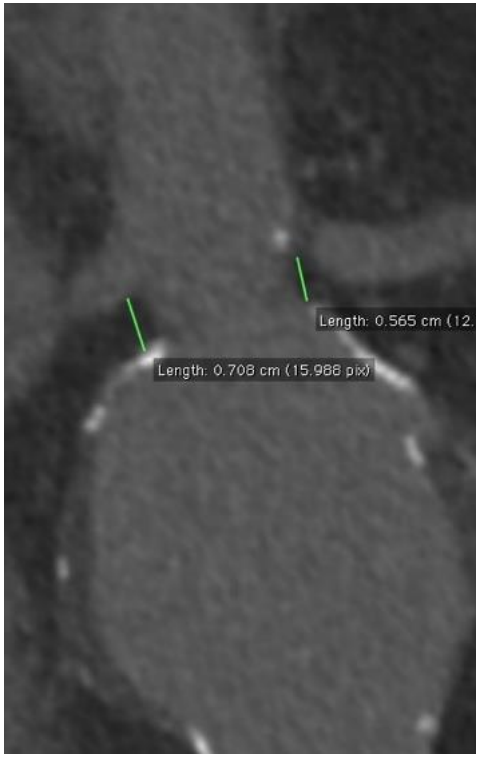
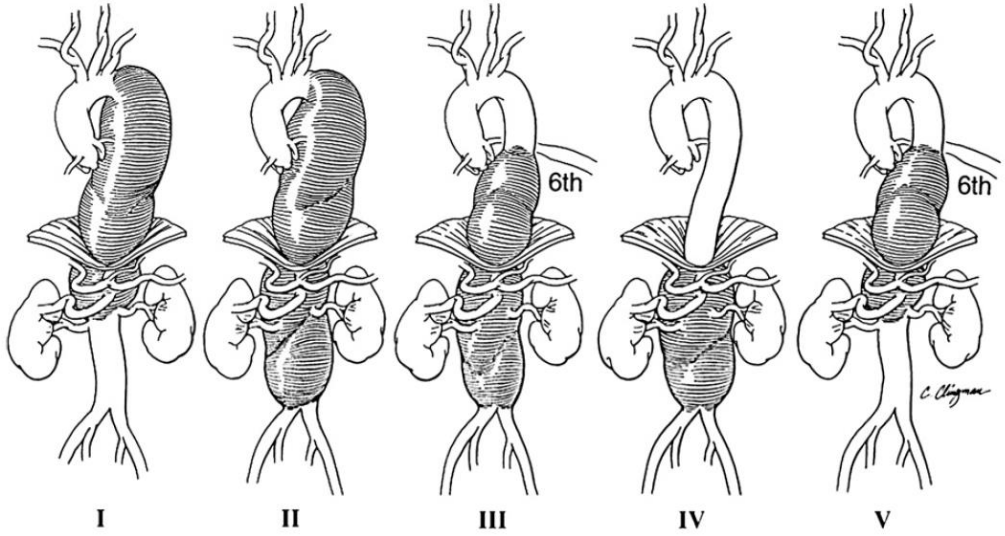
248 thoracoabdominal and juxtarenal aneurysm treated from 11.06.2010 to 14.10.2016





79 fenestrated

169 branched

32 hybrid before 2010

Our experience

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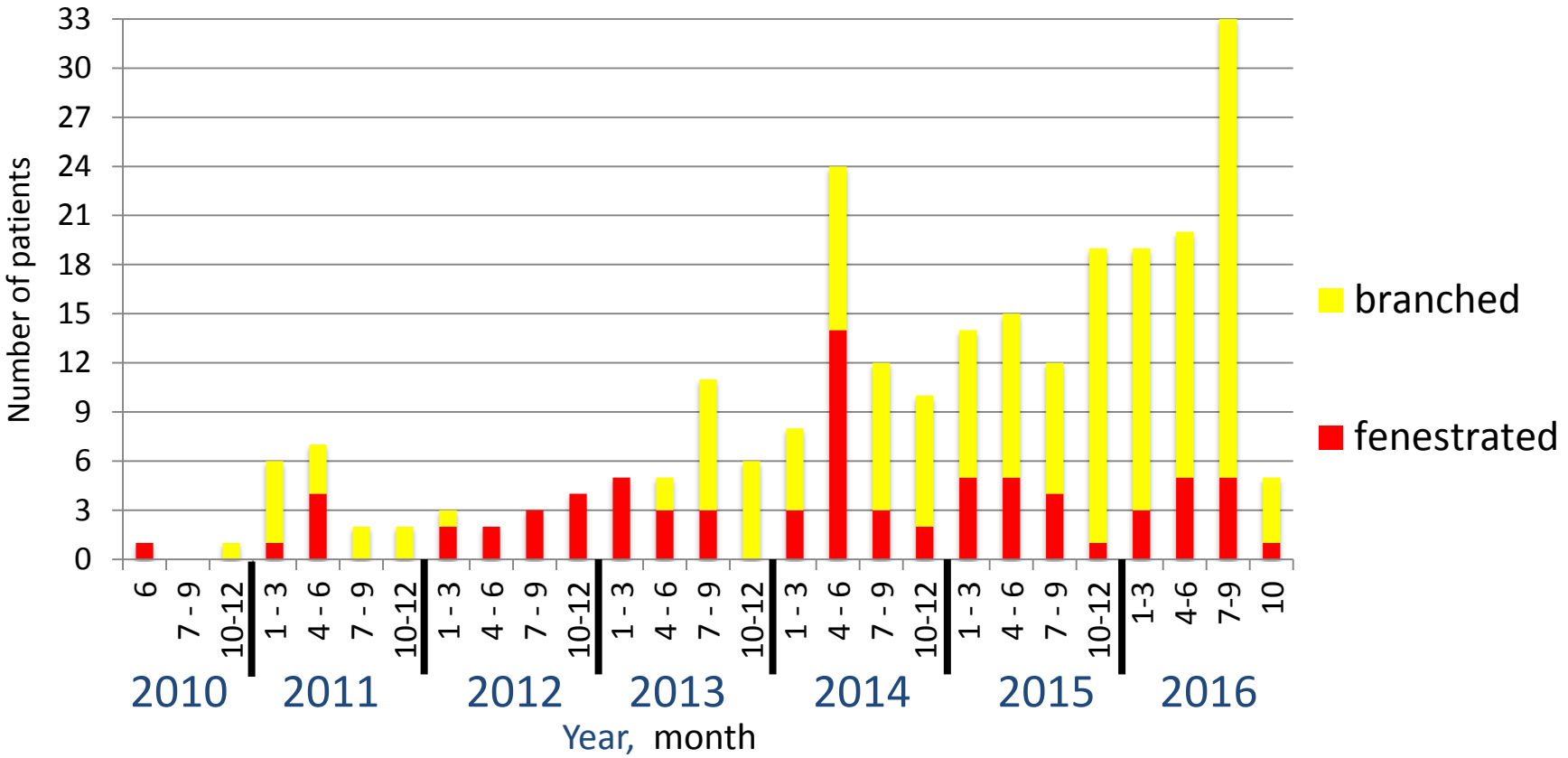
248 branched or fenestrated stent-grafts from 11.06.2010 to 14.10.2016



Material

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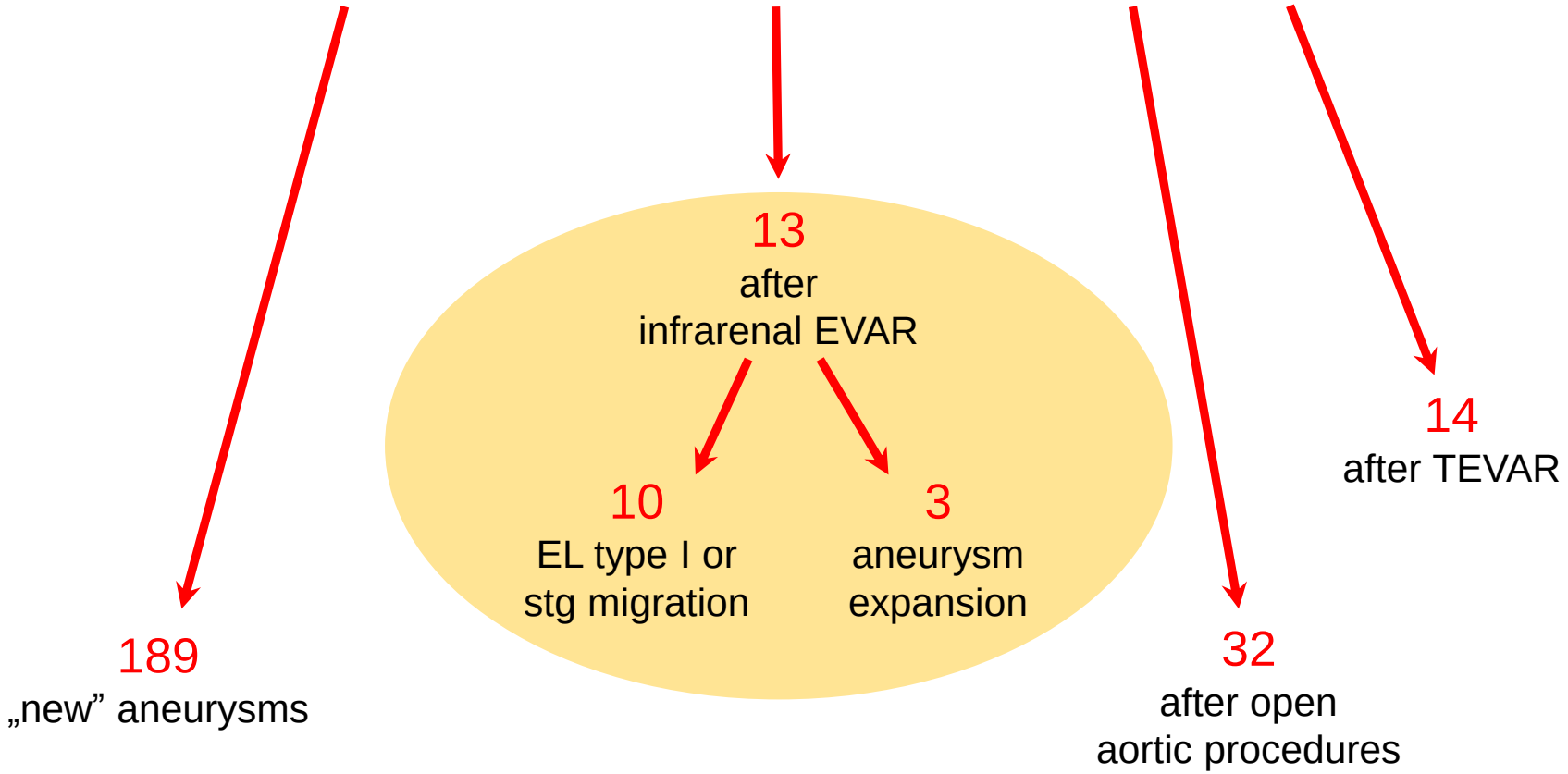
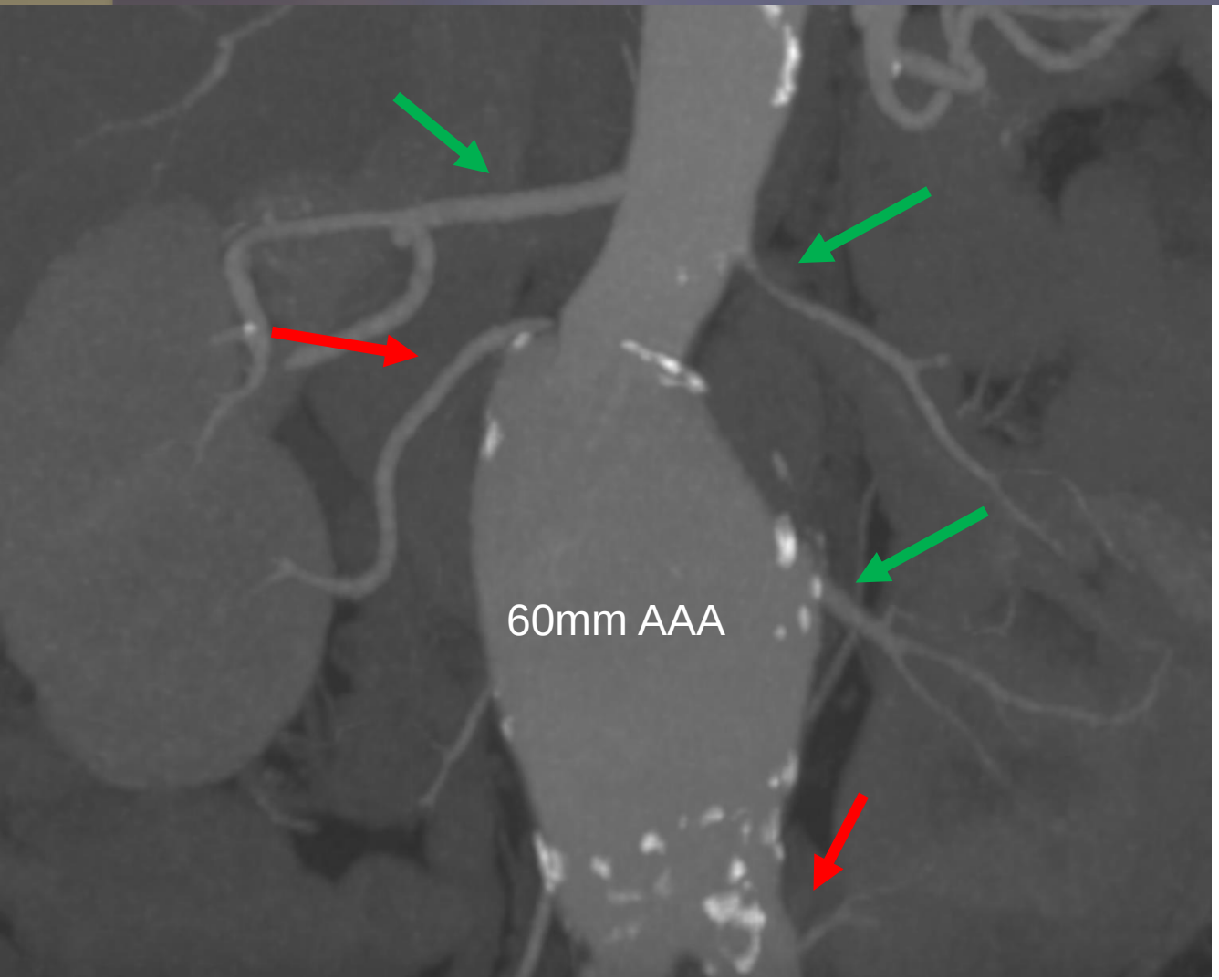
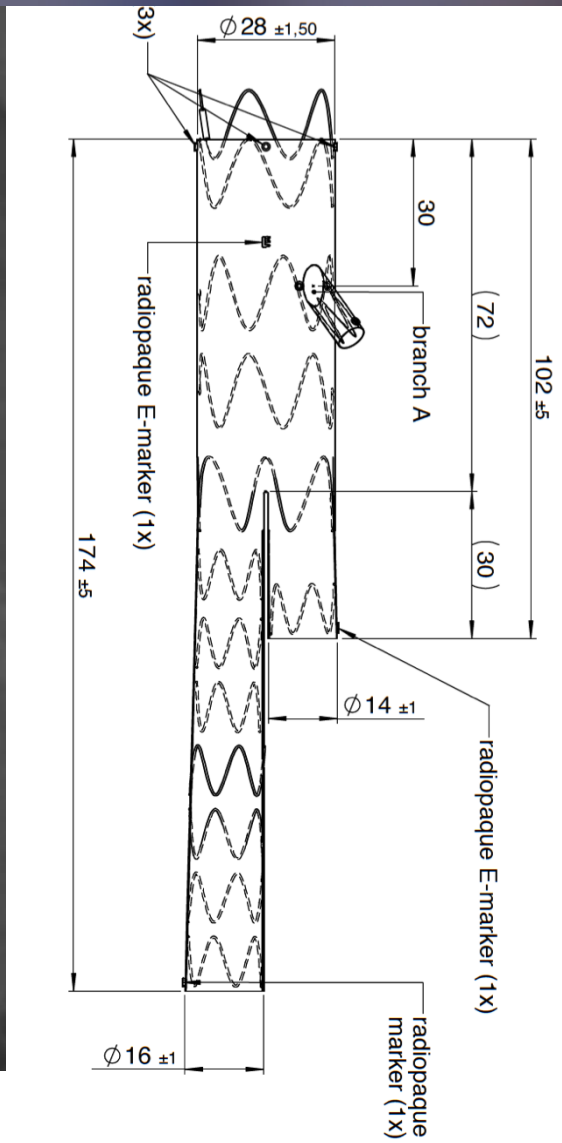


3rd Aortic Live Symposium

Graft plan (2013)

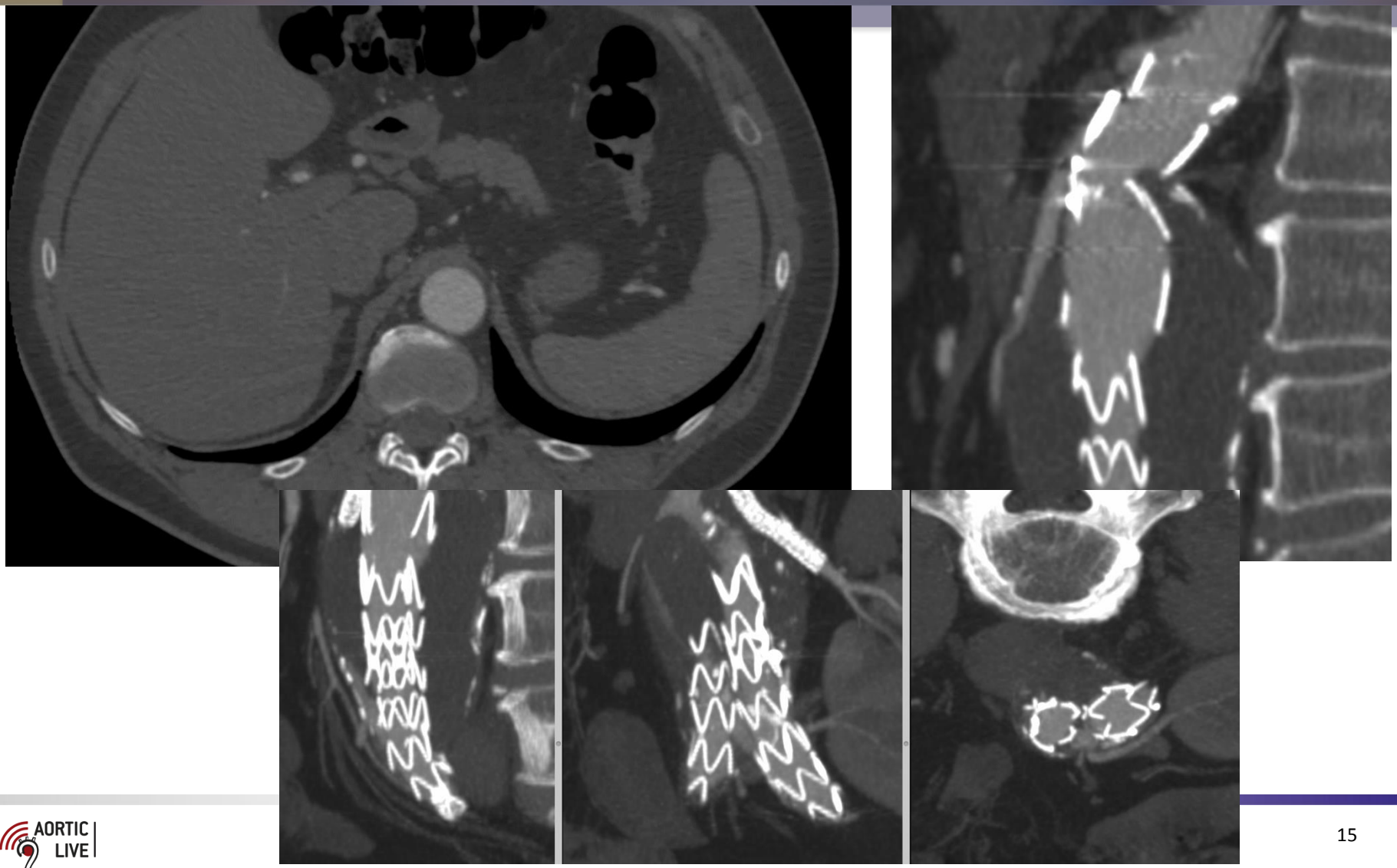




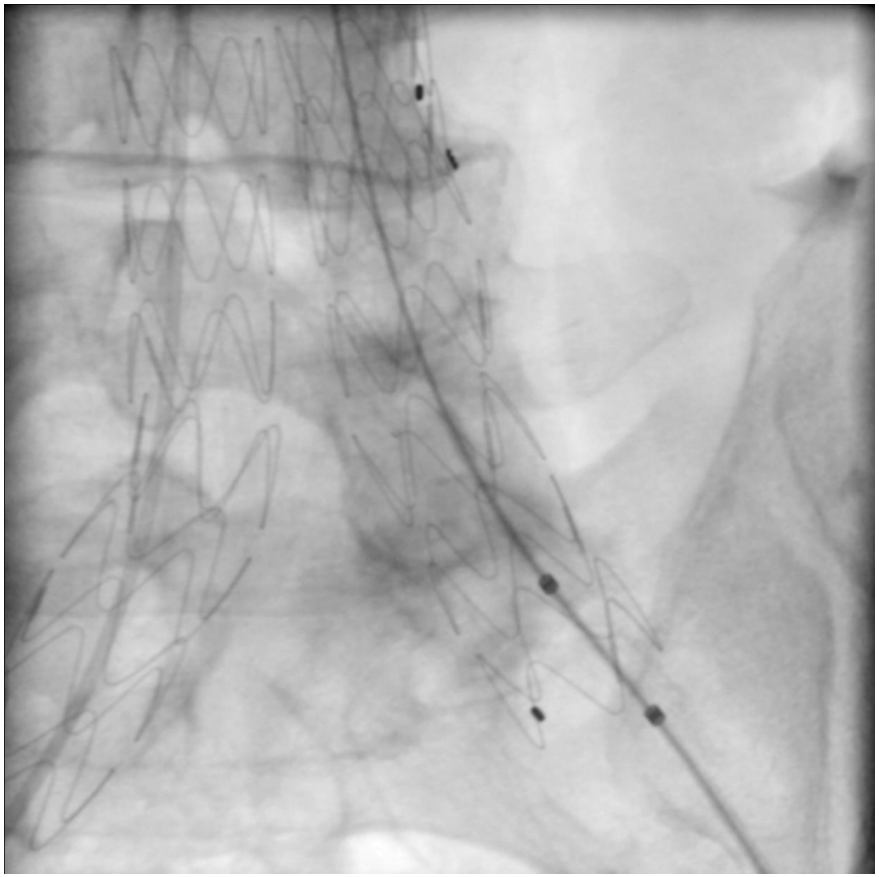
AORTIC LIVE

Complition angiography

Post-operative CT-scan (03/10.2013)



Onyx / coil embolization of EL I/II outflow (10.2013)



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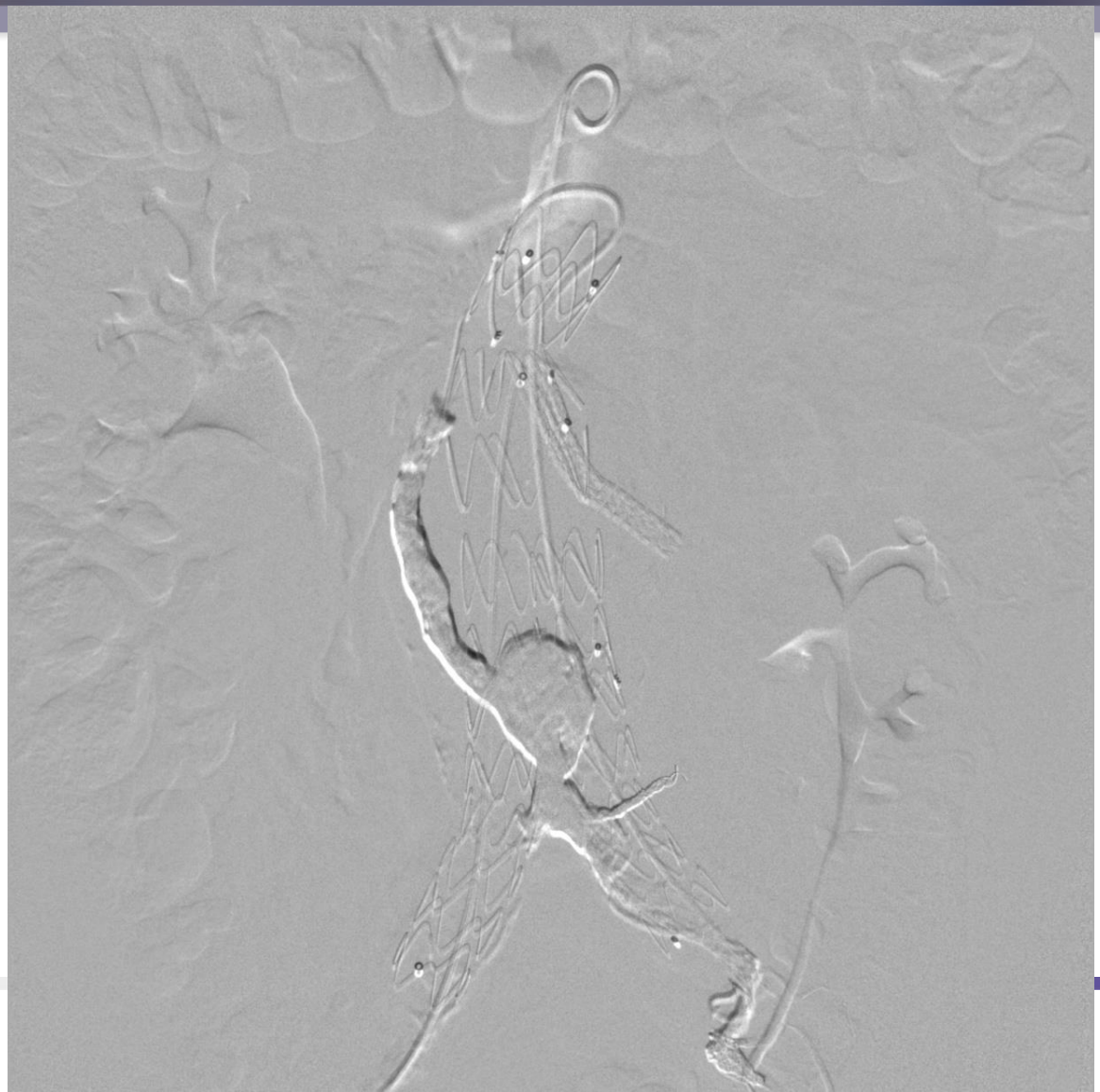
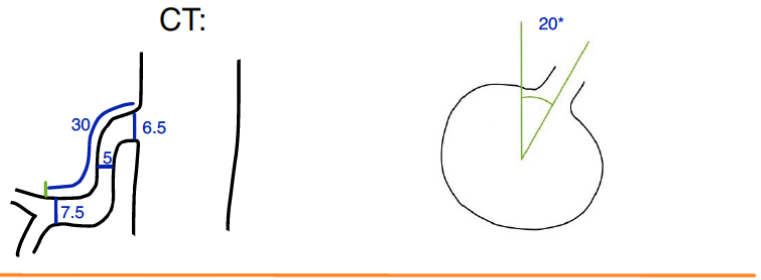
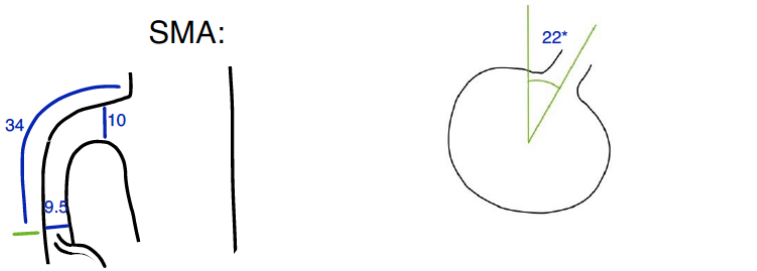
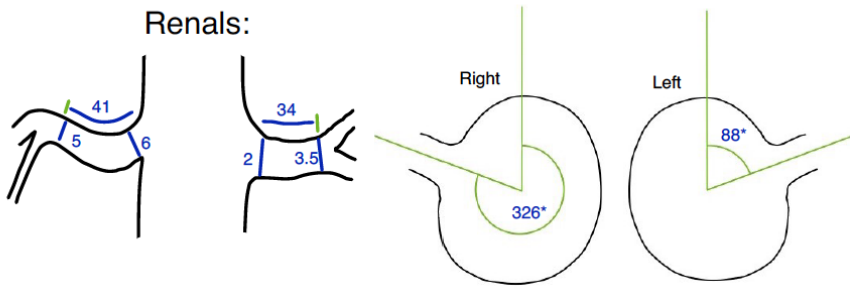


3rd Aortic Live Symposium

The anatomy



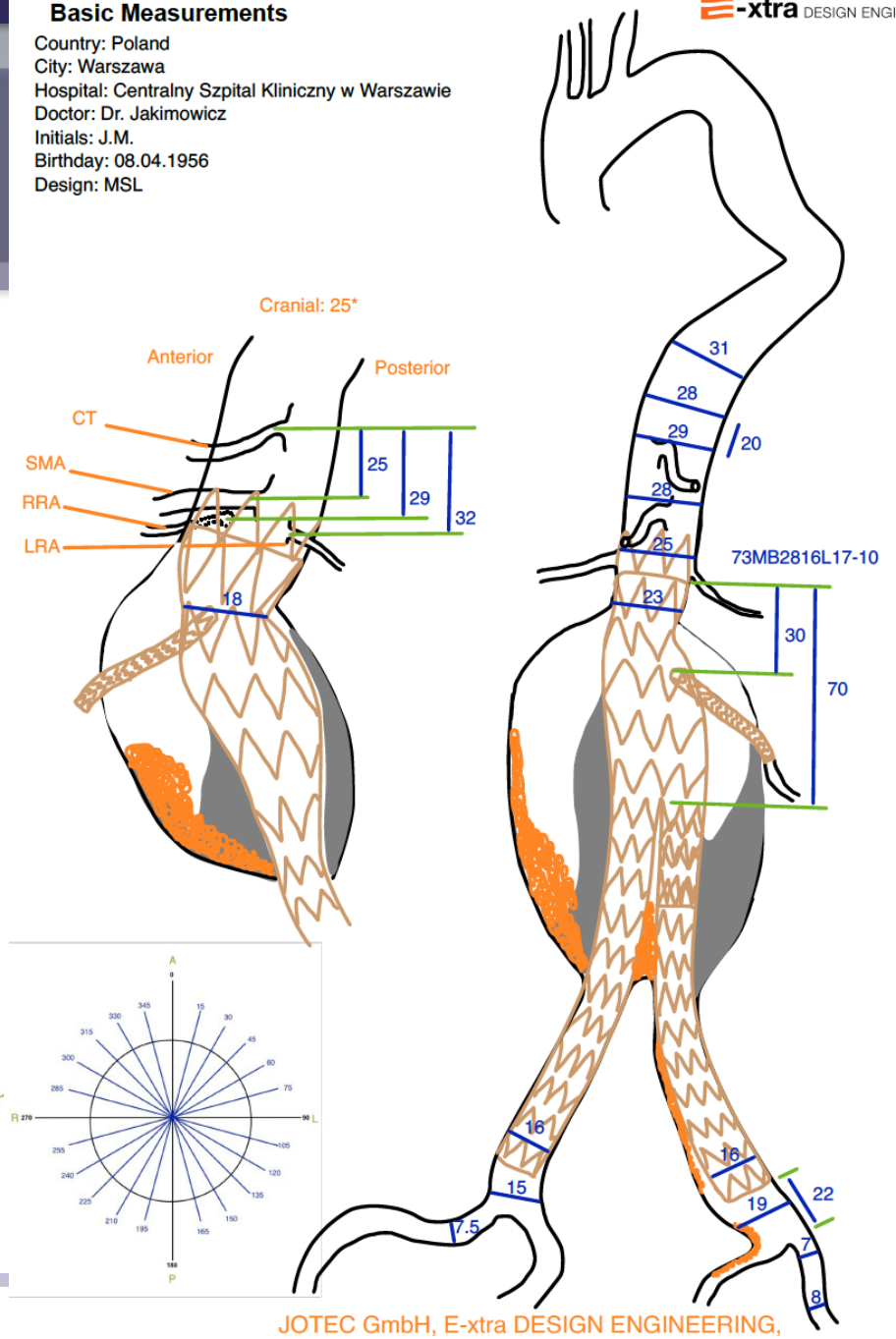




Basic Measurements

Country: Poland
City: Warszawa
Hospital: Centralny Szpital Kliniczny w Warszawie
Doctor: Dr. Jakimowicz
Initials: J.M.
Birthday: 08.04.1956
Design: MSL

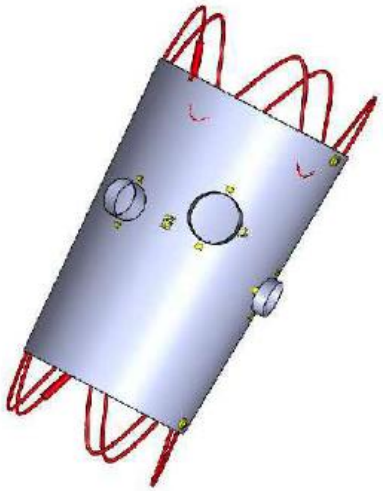
E-xtra DESIGN ENGINEERING

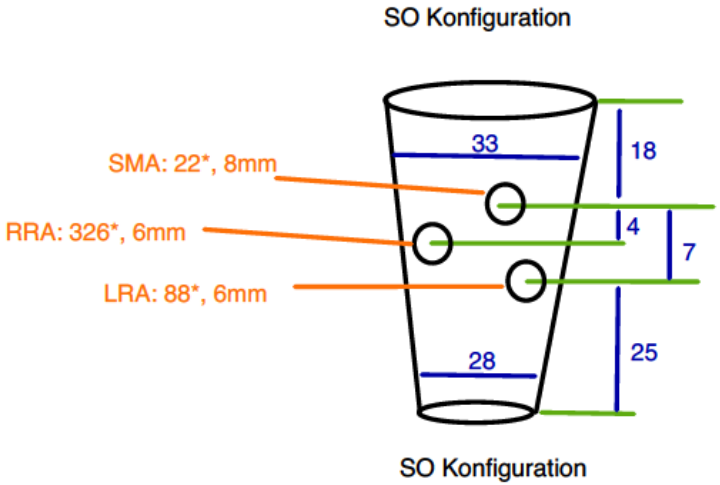


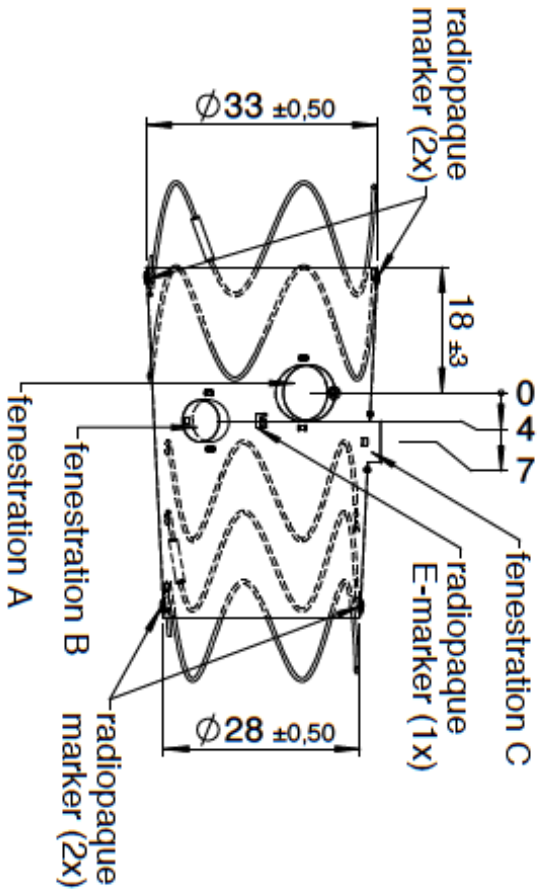
JOTEC GmbH, E-xtra DESIGN ENGINEERING,
Lotzenäcker 23, 72379 Hechingen, Tel. 07471922301, Fax 07471922101

AORTIC LIVE

Graft plan



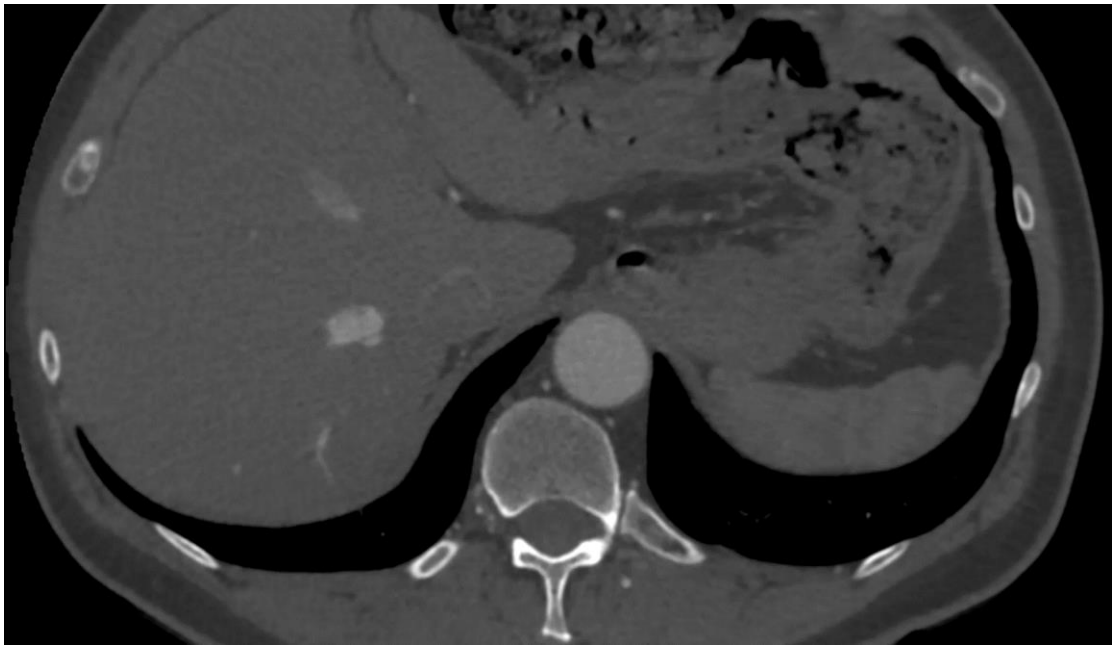


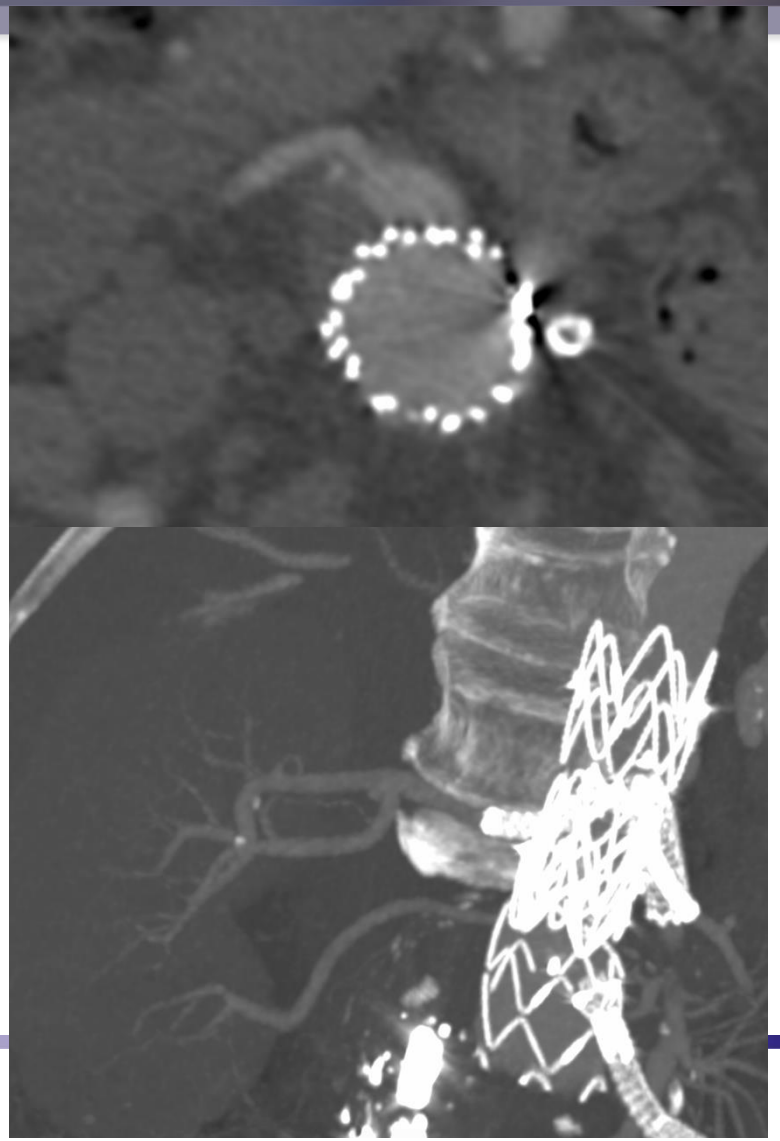


Covered Stents:
SMA: 91BX3710L-00 / 91BX5710L-00
RRA: 91BX3806L-00 / 91BX5806L-00
LRA: 91BX3805L-00 / 91BX5805L-00

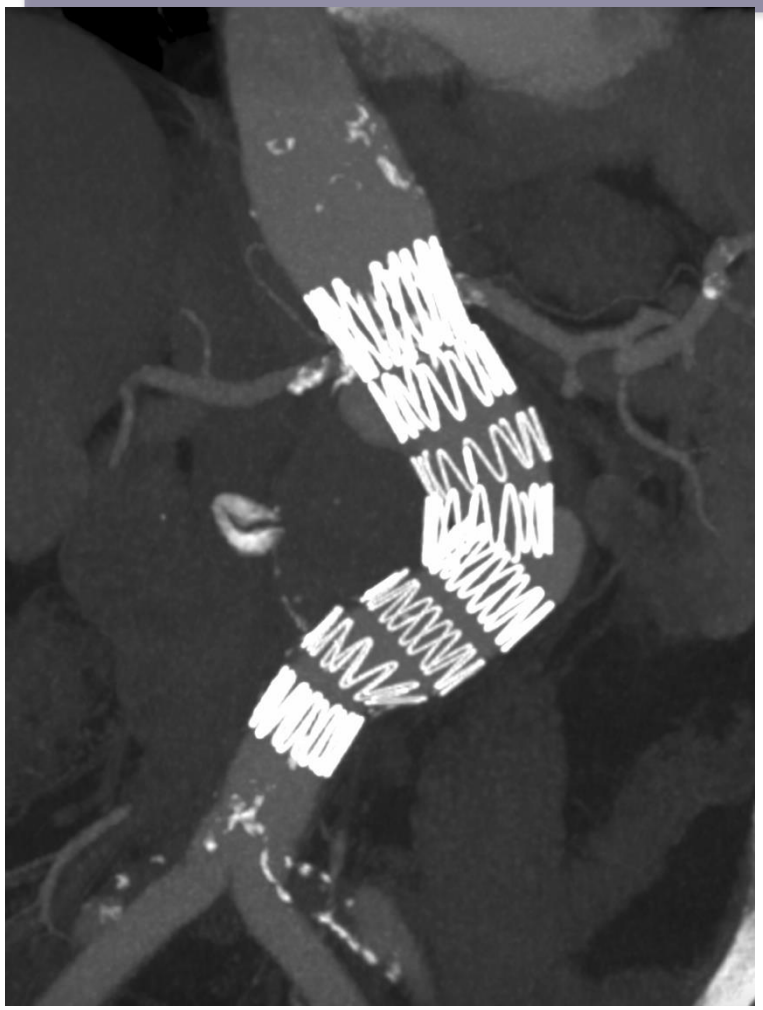
additional stentgrafts:
right 93CL1519L05
left 93CL1522L05

Postoperative CT-scan

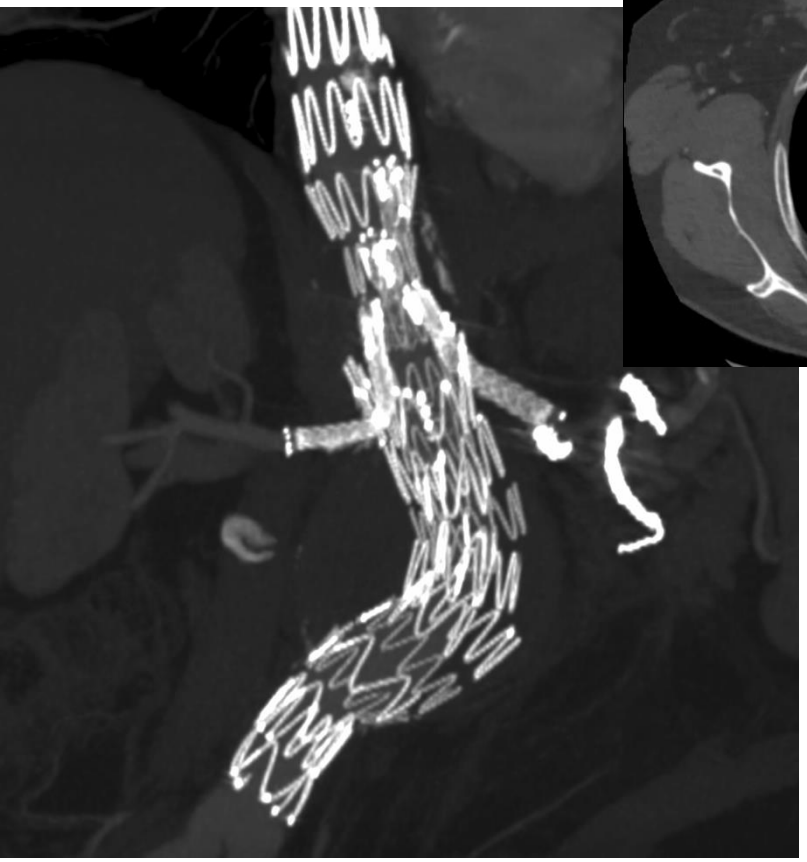


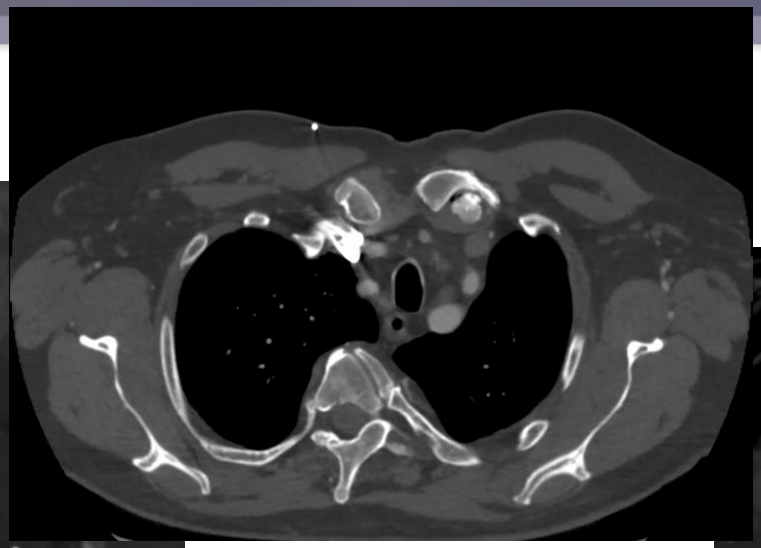


EL type I & III after EVAR for pseudoaneurysm

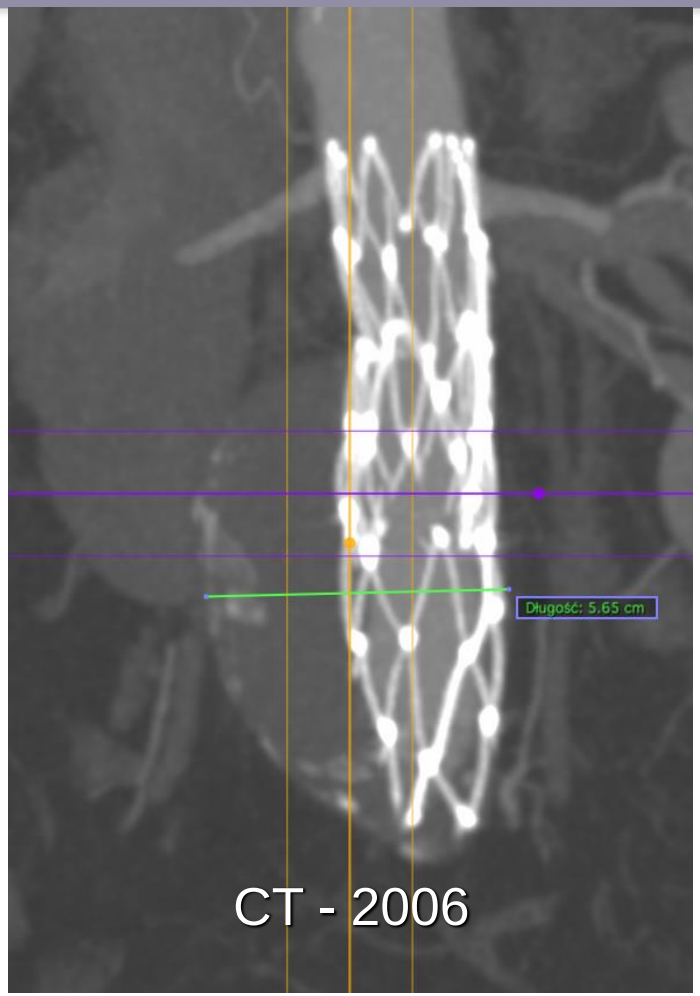


CT-scan after operation – branched endograft

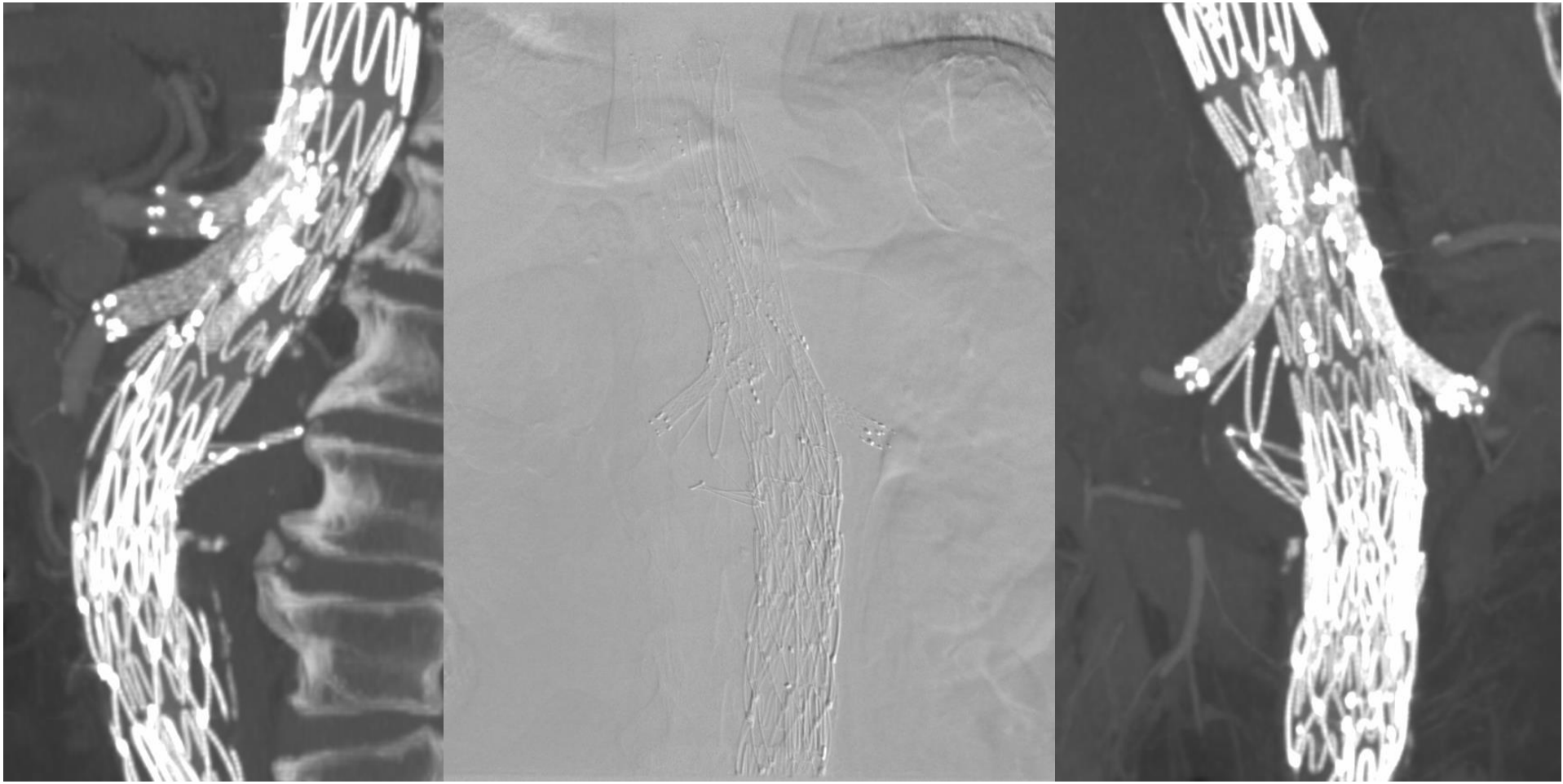




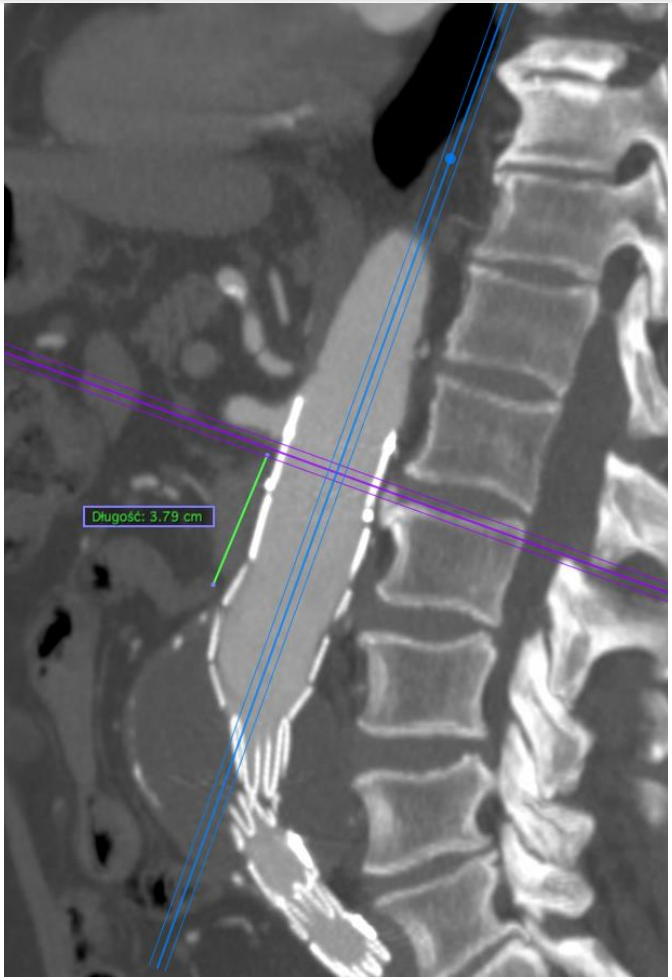
Power-Link implanted in 2003



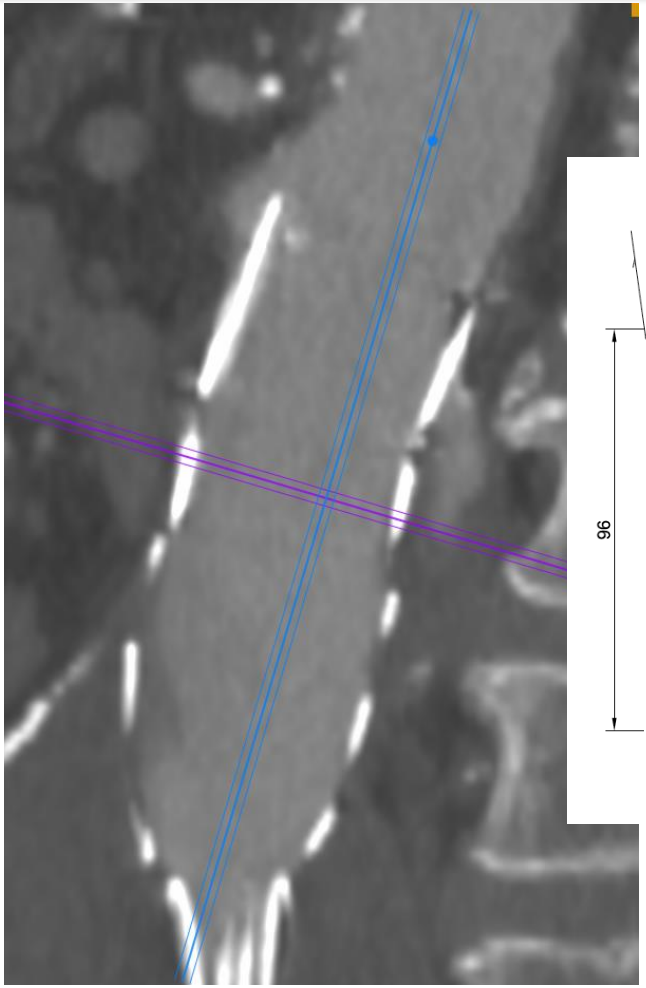
Power-Link in 2003, b-EVAR in 2016

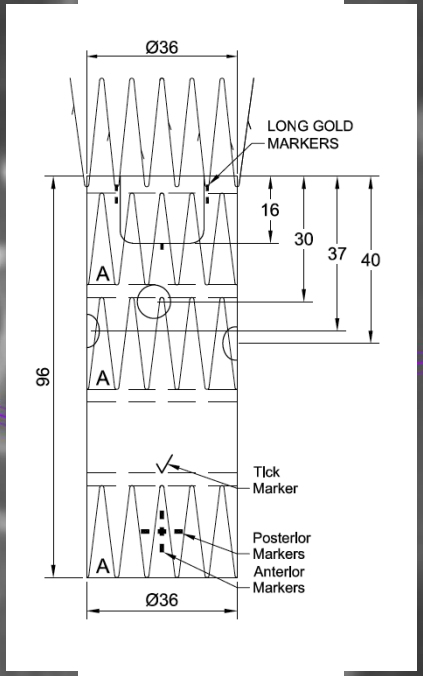


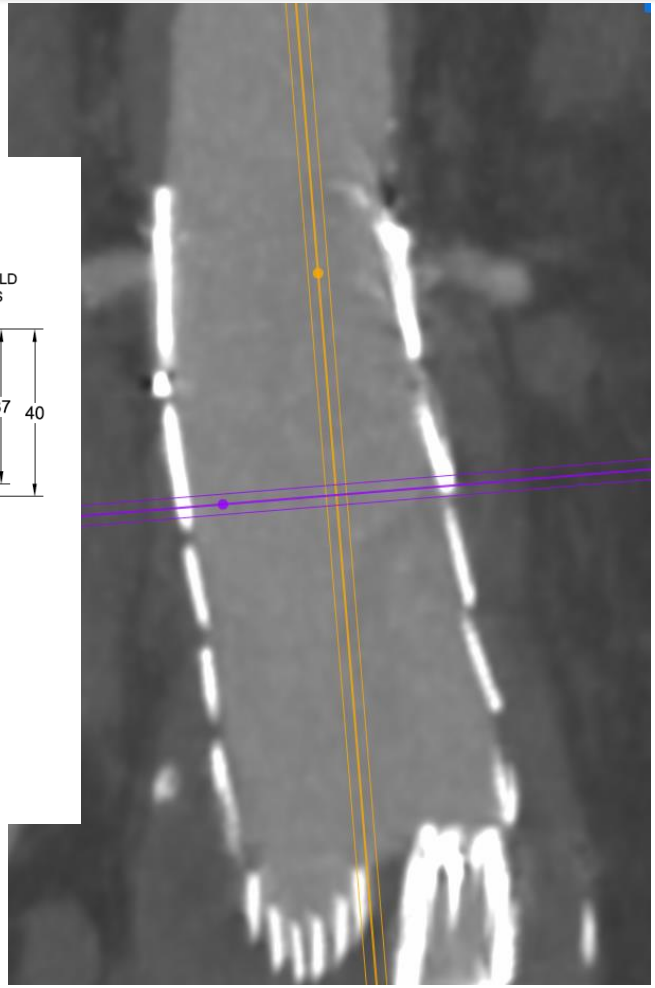
„EASY” aneurysm treated in 2003 – CT in 2007



„EASY” aneurysm treated in 2003 CT in 2016 EL t.1 and aneurysm expansion

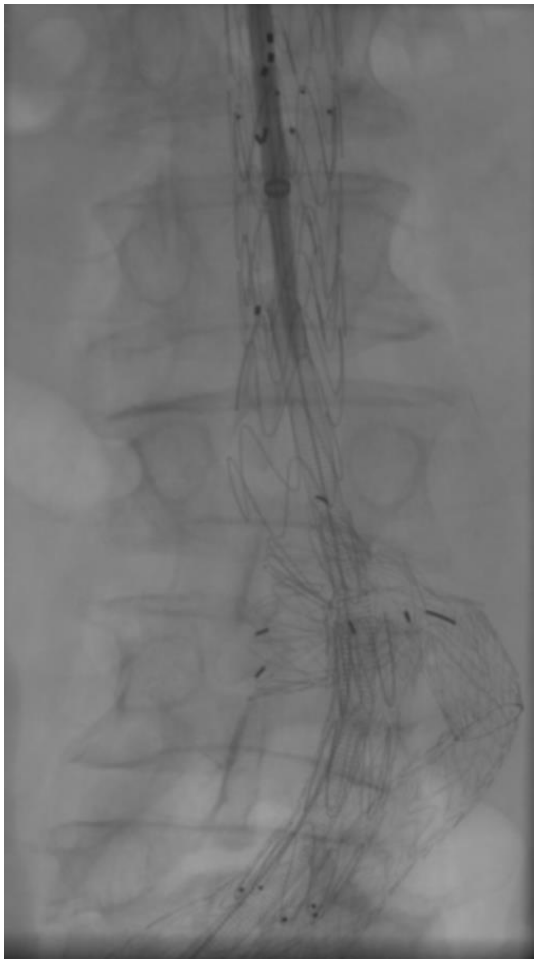






3rd Aortic Live Symposium

EL type I due to stg complete migration



Branched stg implantation

Summary

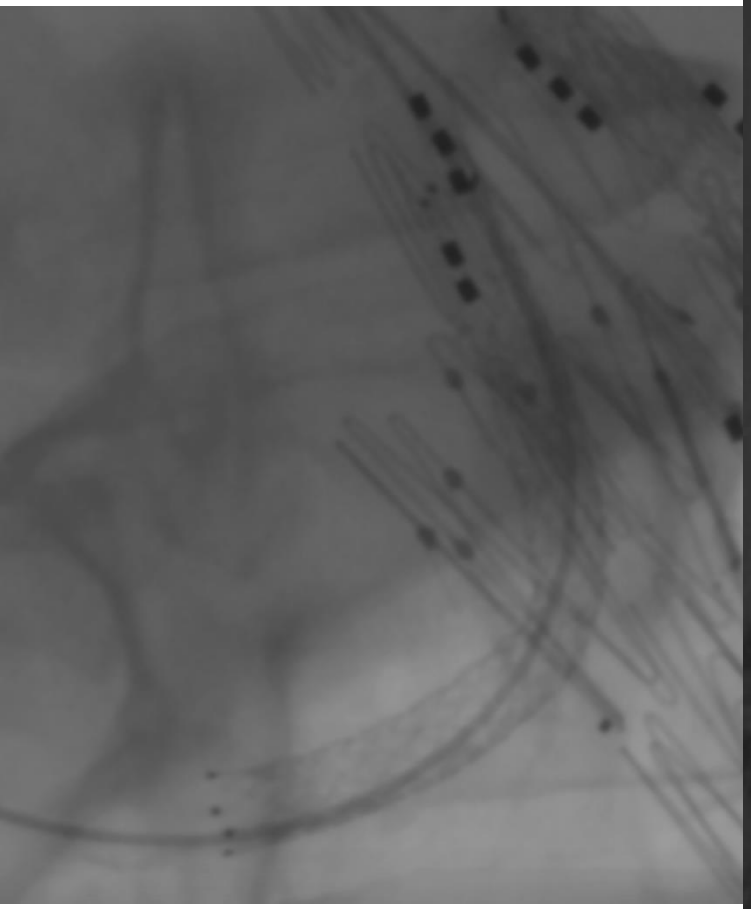
- 13 patients: 10 with EL I and 3 with proximal aneurysm expansion
- 12 suprarenal devices and one infrarenal with „complete migration”
- 4 fenestrated and 9 branched endografts
- mean suprarenal aorta coverage 10.3 cm (2.5 – 14 cm)
- mean operation time 195 min (115 – 345 min)

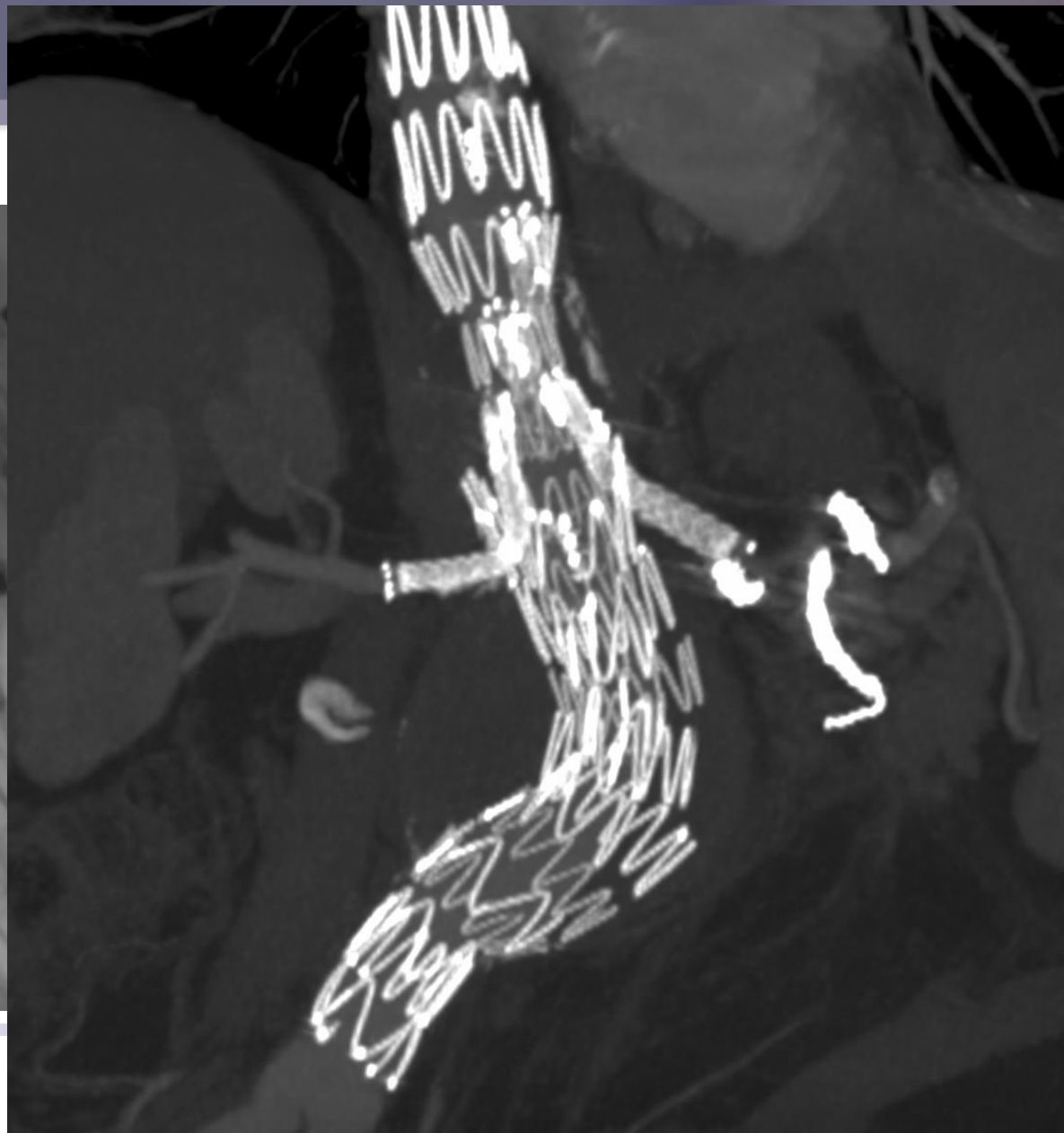
Results

- No mortality
- One transient paraplegia
- One EL type II from additional RRA
- Two renal arteries problem:
  - one in previously presented fenestration
  - one partial embolization of the kidney due to bleeding in POD 2
- None required dialysis

Discussion

Cannulating between the wires





AORTIC LIVE

Conclusions

- Fenestrated or branched stent-grafts could be usefull in the treatment of EL type I or proximal aneurysm expansion after EVAR.
- Suprarenal fixation can make the cannulation and stenting of renal arteries and SMA more difficult.
- Long-term follow-up is required to asses durability of the bridging stents between free-flow struts.
- When planning EVAR for infrarenal AAA we should keep in mind the possibility of proximal aneurysm expansion

Tomasz Jakimowicz

Treatment of endoleak Type I after EVAR with fenestrated or branched stentgrafts

THANK YOU FOR YOUR ATTENTION!!!

Department of General, Vascular and Transplant Surgery
Medical University of Warsaw
Head: prof. S. Nazarewski