Rigshospitalet
Heart Centre

UNIVERSITY OF COPENHAGEN

REGION

Tips and tricks for sizing/technical success of F/BEVAR in chronic dissections.

Timothy Resch

Professor of Vascular Surgery

Disclosures

- COOK Medical Inc – Consulting, IP
- JOTEC/Cryolife – Consulting
- Bentley Innomed – Consulting
- GORE – Speaker
- Medtronic – Advisory Board

Fate of False Lumen flow

- Distal FL flow persists in 65-80% of patients**
  - Significantly more common in chronic and type 3b extent dissection*
- Significant Dilatation of Distal Arch

*Rodriguez et al JVS June 2008
**Verhoyle et al JTCVS 2008
**Szeto et al ATS 2008

Predictors of Outcome after Endovascular Repair for Chronic Type B Dissection

K. Mani [a,d,*], R.E. Clough [a,b], O.T.A. Lyons [a,c], R.E. Bell [a], T.W. Carrell [a,b], H.A. Zayed [a], M. Waltham [a,c], P.R. Taylor [a,b]

EJVES 2012:43

- N=58
- Chronic type B
- 3 year mortality 36%

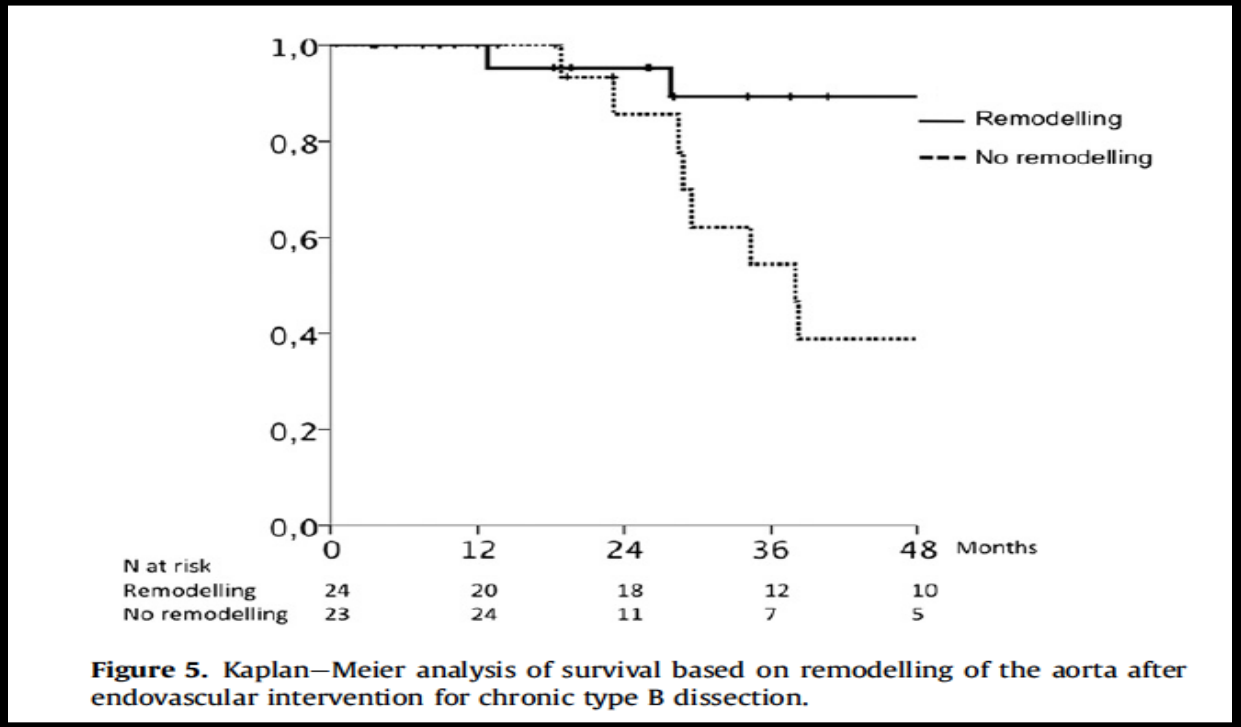


Figure 5. Kaplan–Meier analysis of survival based on remodelling of the aorta after endovascular intervention for chronic type B dissection.

No remodelling → Death

Branch/Fenestrated Series on chDissection

Comparative Study > J Vasc Surg. 2020 Sep;72(3):822-836.e9. doi: 10.1016/j.jvs.2019.10.091. Epub 2019 Dec 25.

Outcomes of endovascular repair of chronic postdissection compared with degenerative thoracoabdominal aortic aneurysms using fenestrated-branched stent grafts

Emanuel R Tenorio [1], Gustavo S Oderich [2], Mark A Farber [3], Darren B Schneider [4], Carlos H Timaran [5], Andres Schanzer [6], Adam W Beck [7], Fernando Motta [3], Matthew P Sweet [8], U.S. Fenestrated and Branched Aortic Research Consortium Investigators

Affiliations + expand

PMID: 31882309 DOI: 10.1016/j.jvs.2019.10.091

Eur J Vasc Endovasc Surg (xxxx) ■, xxx

Mid-Term Results of Fenestrated/Branched Stent Grafting to Treat Post-dissection Thoraco-abdominal Aneurysms

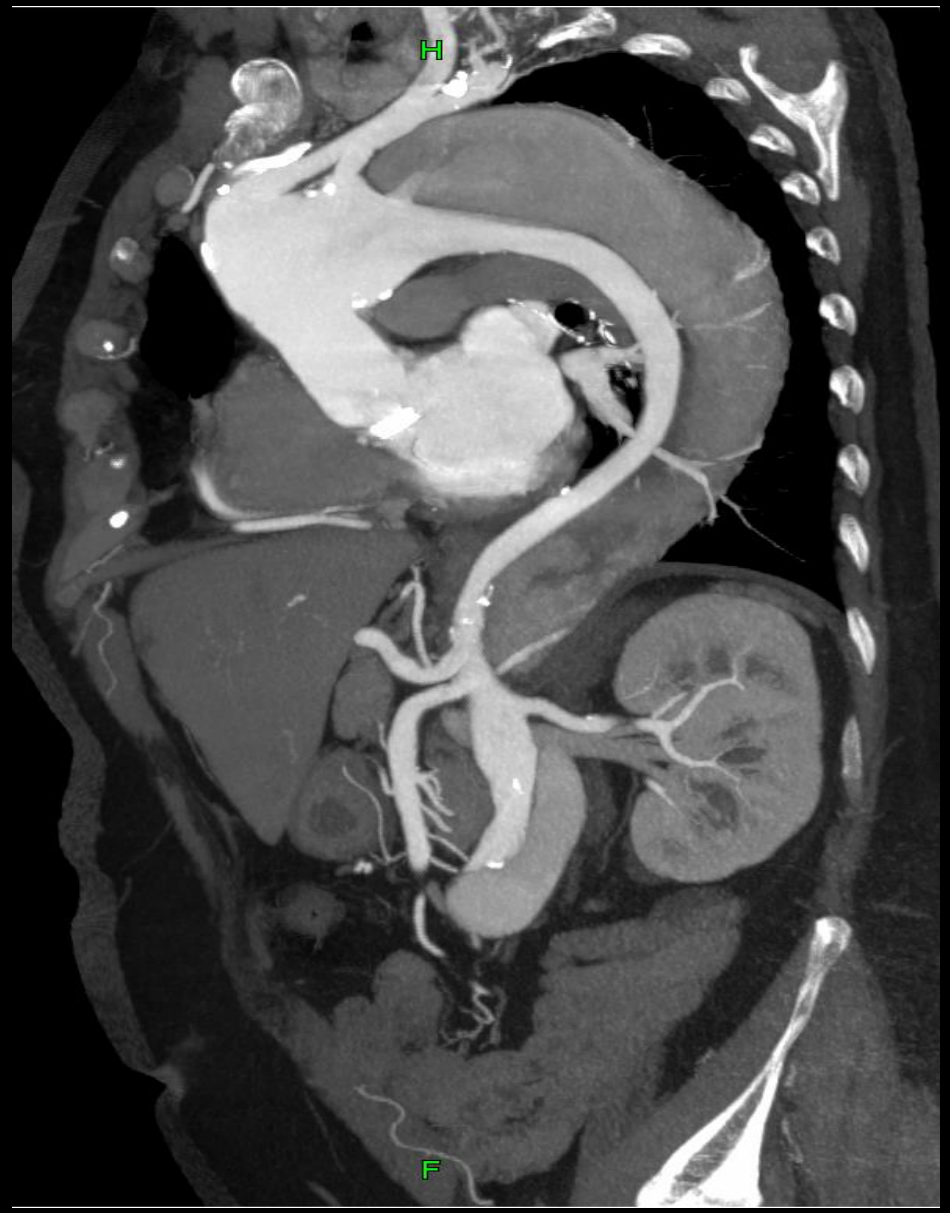
Kyriakos Oikonomou [a,b], Piotr Kasprzak [b], Athanasios Katsargyris [a], Pablo Marques De Marino [a], Karin Pfister [b], Eric L.G. Verhoeven [a,*]

[a] Department of Vascular and Endovascular Surgery, Paracelsus Medical University, Nuremberg, Germany
[b] Department of Vascular Surgery, University Medical Centre Regensburg, Regensburg, Germany

- N=71
- Technical Success 96%
- 30d Mortality 5,6%
- SCI 4.2%
- Reintervention 50% @ 3years
  - Branch vessel and iliac endoleaks mainly
- 85% sac thrombosis @ 12 months

Challenging Procedures

- Proximal and Distal Sealing
- Narrow true lumen
- Target vessels perfused by false lumen



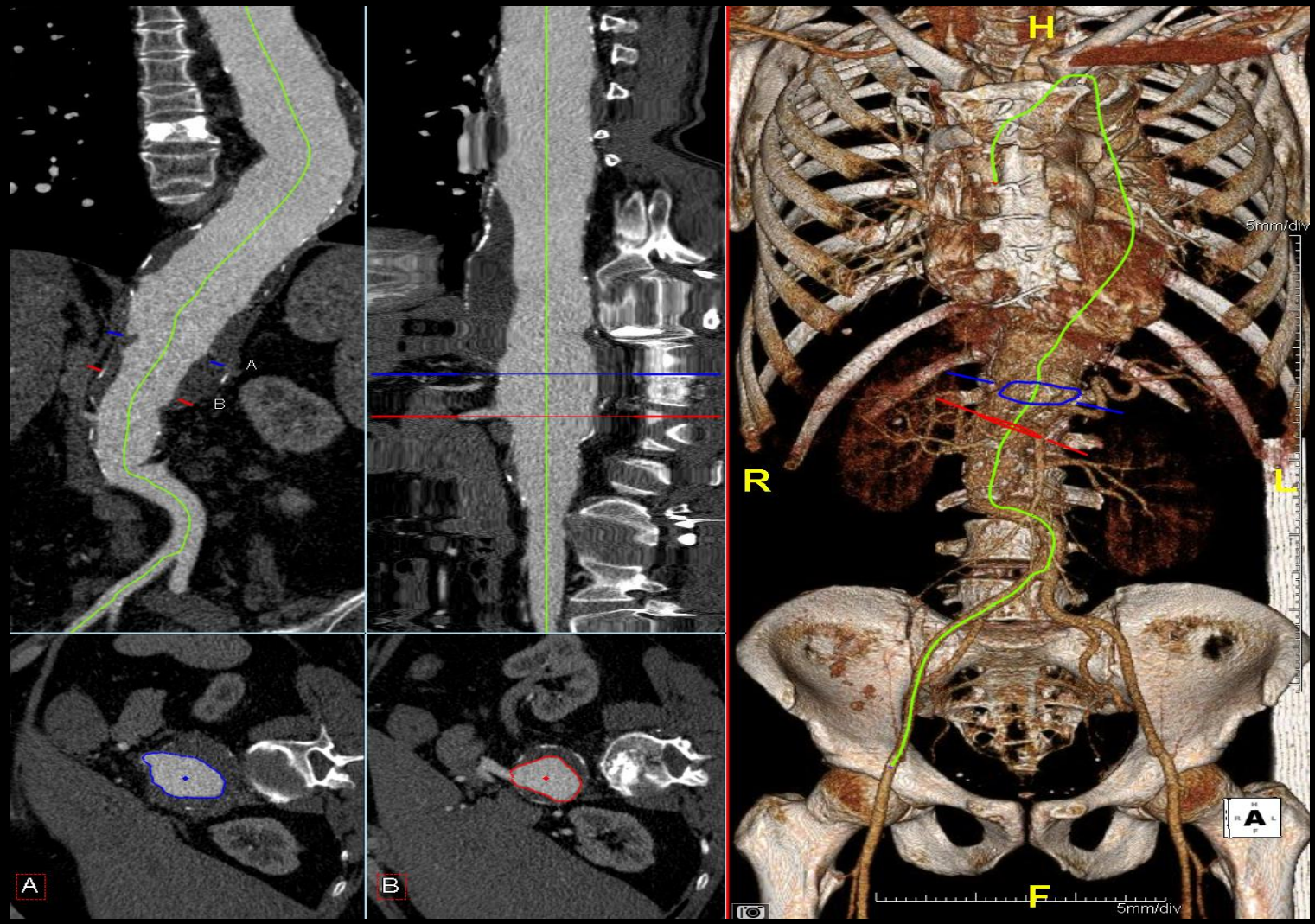
REGION

Planning

Timothy Andrew Resch

Planning

- Preoperative 3D Imaging is critical
- Properly timed contrast
- High-resolution reconstruction
- Understanding of device deployment
- ID fenestrations



Specific Planning Considerations

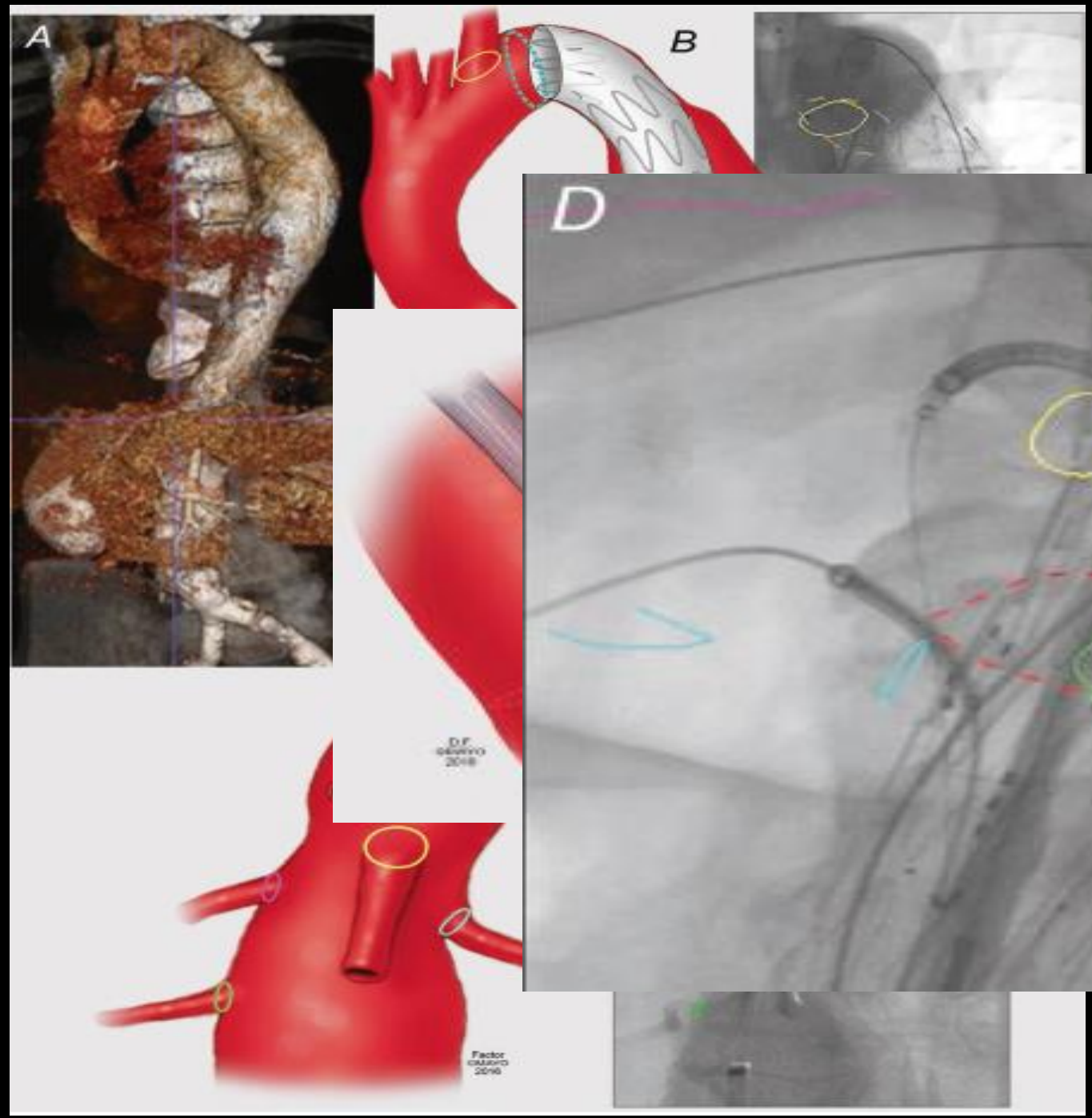
- Branches vs. Fenstrations
  - Plan according to anatomy
  - Fit to target vessels but **consider connections between TL and FL** in planning
- Tapering of devices
  - Not needed
  - PTA of device after catheterisation of TV
- Staging
  - Open vs endo components
  - Preemptive embolization of collaterals
- Choose appropriate proximal and distal landing zones
  - Healthy vessel vs Surgical grafts (CTD)

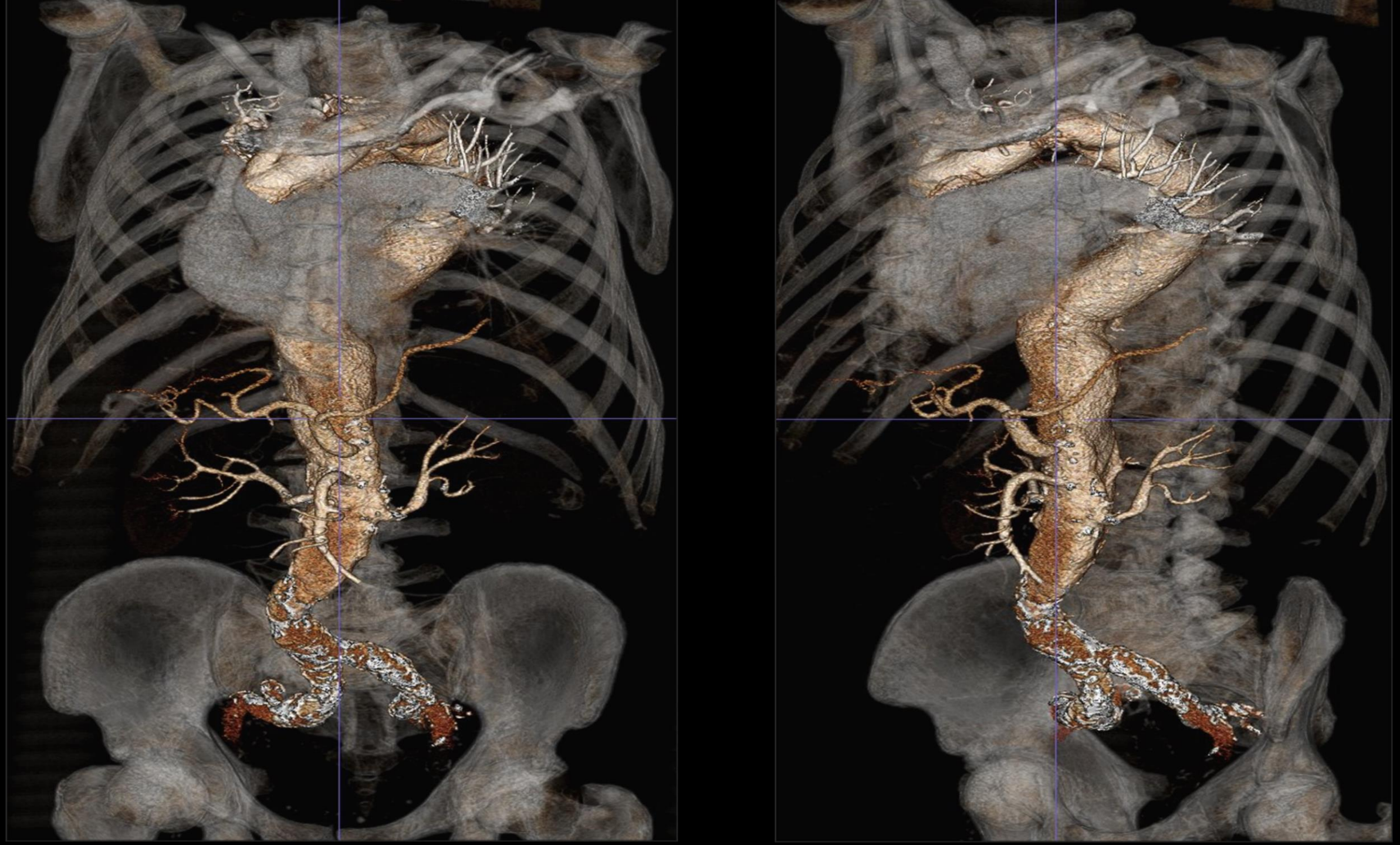
REGION

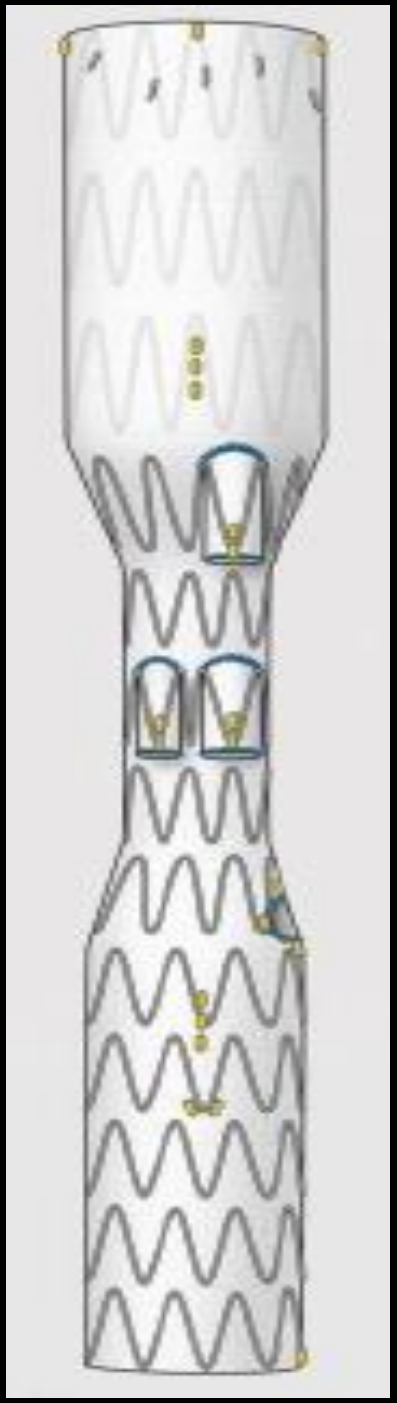
Perioperative technique

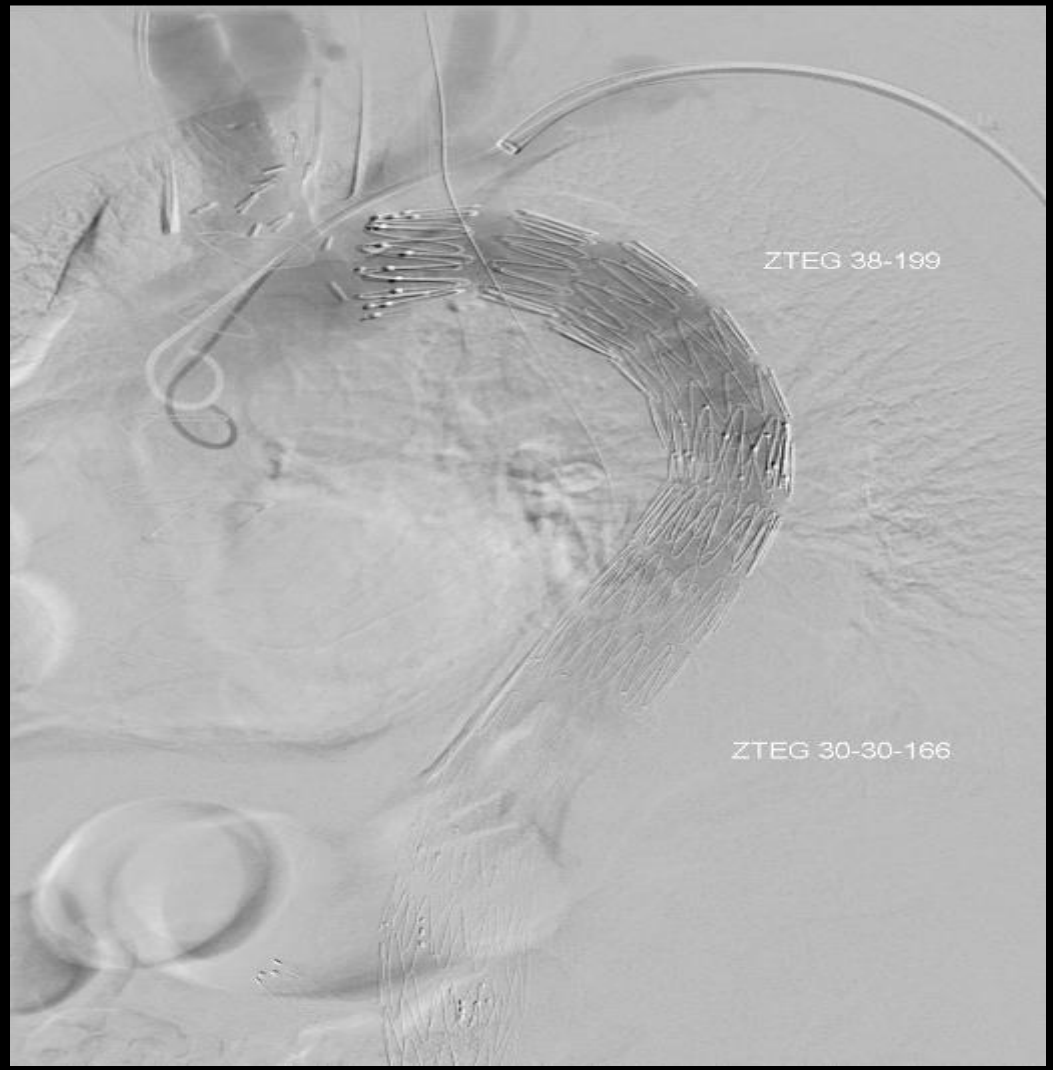
Technical Tips

- Access points
  - Femoral, brachial/axillary
- Intraoperative guidance
- Staggered deployment?
- Preloaded devices
- Final angio - CBCT

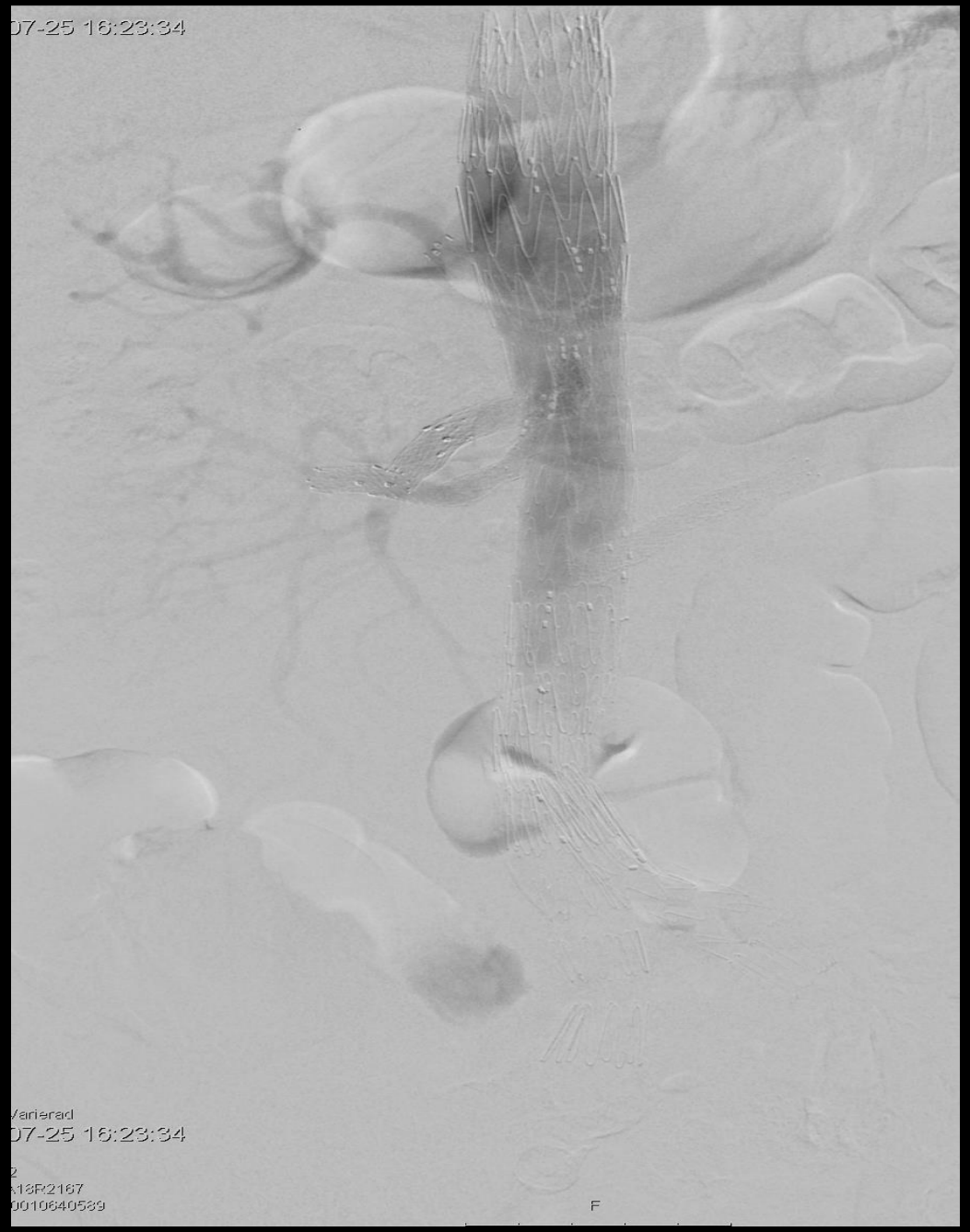

A
B
D

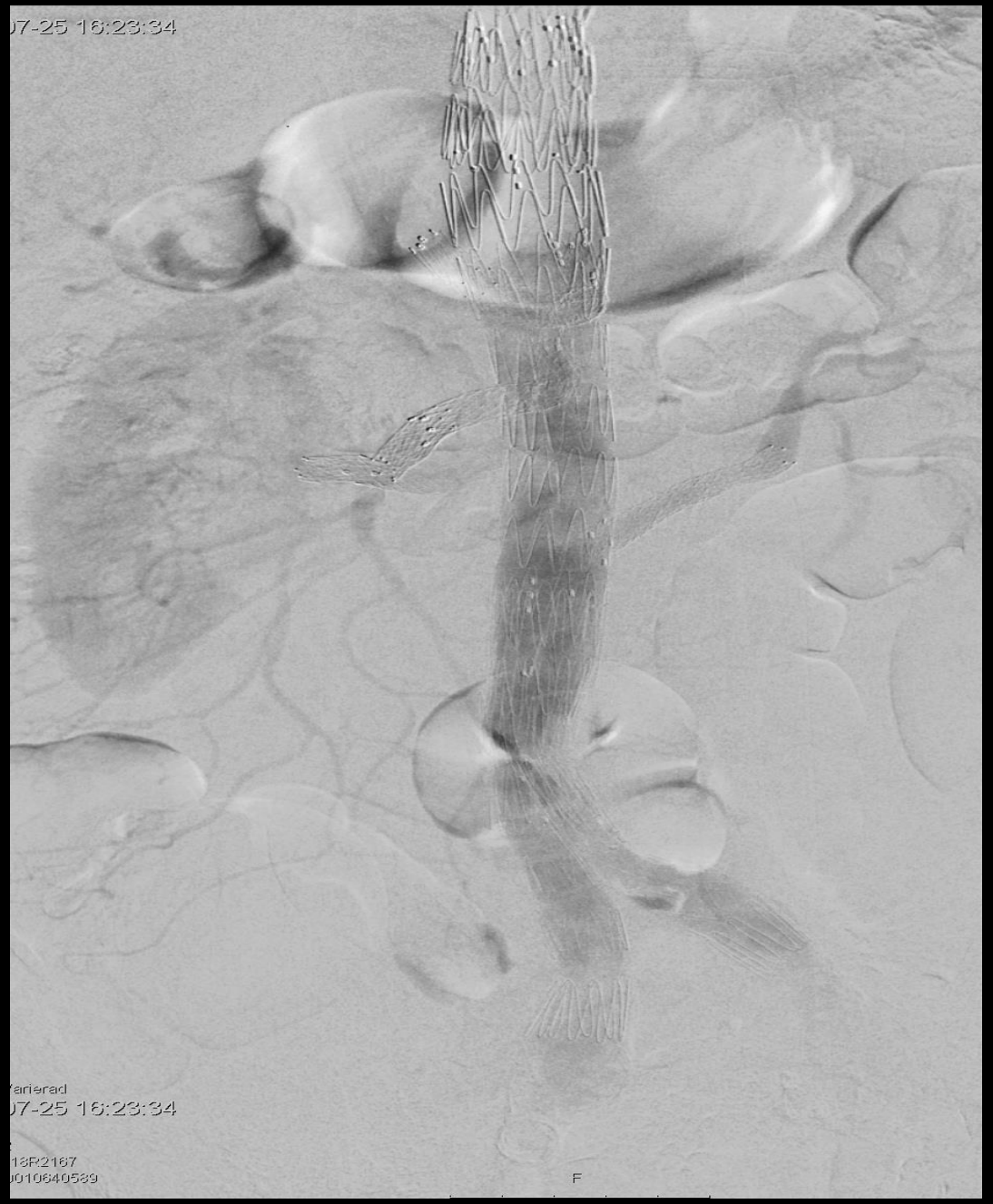





ZTEG 38-199
ZTEG 30-30-166


Advanta 7-38+7-22+Protege 7-20

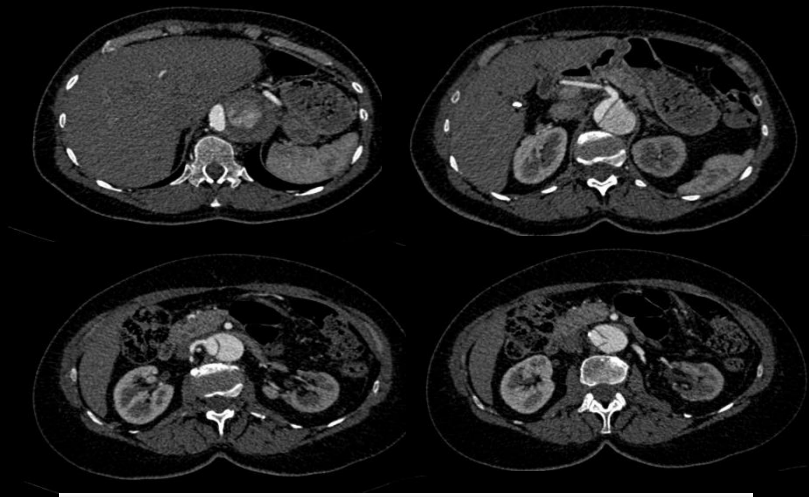

07-25 16:23:34
Varierad
07-25 16:23:34
F

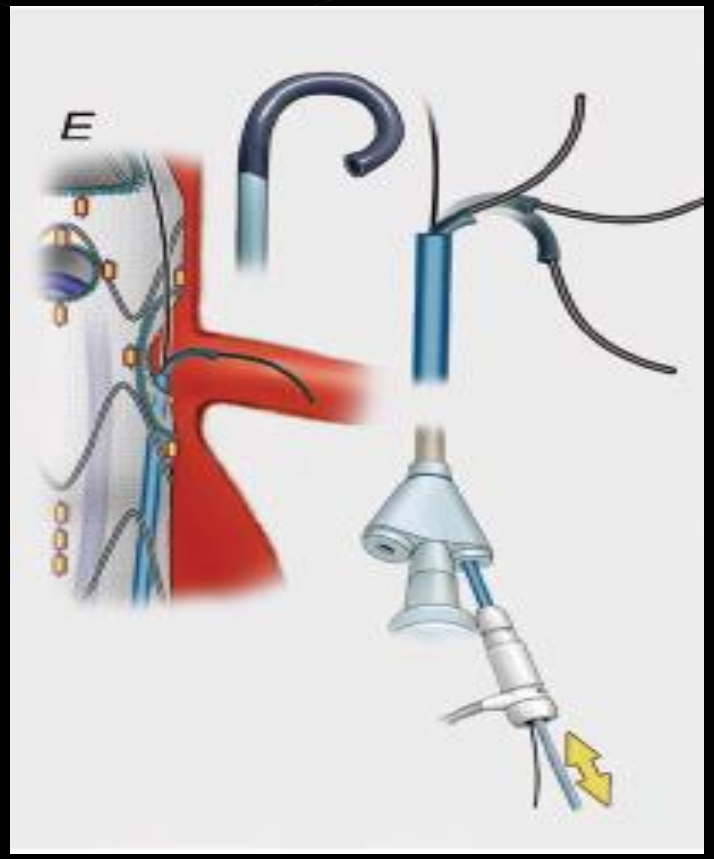

07-25 16:23:34
Varierad
07-25 16:23:34
F

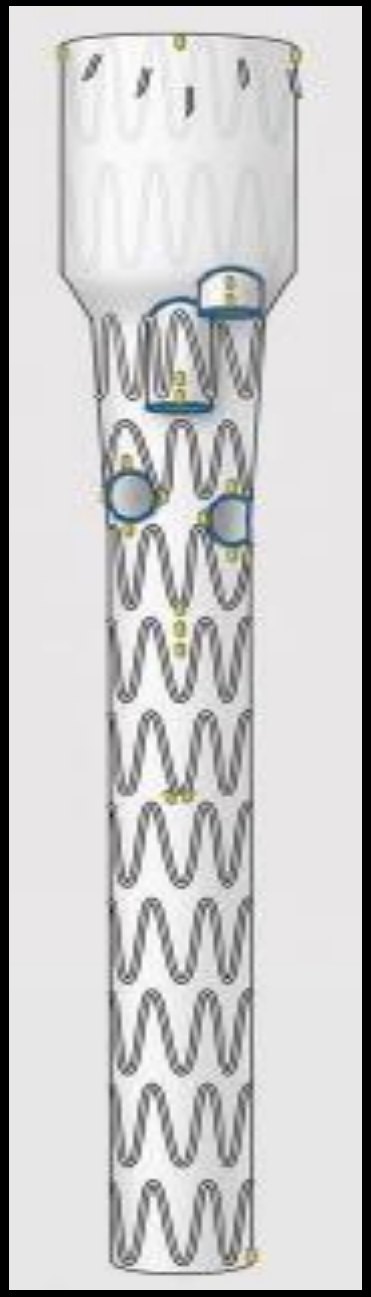
Chronic Dissection TAAA

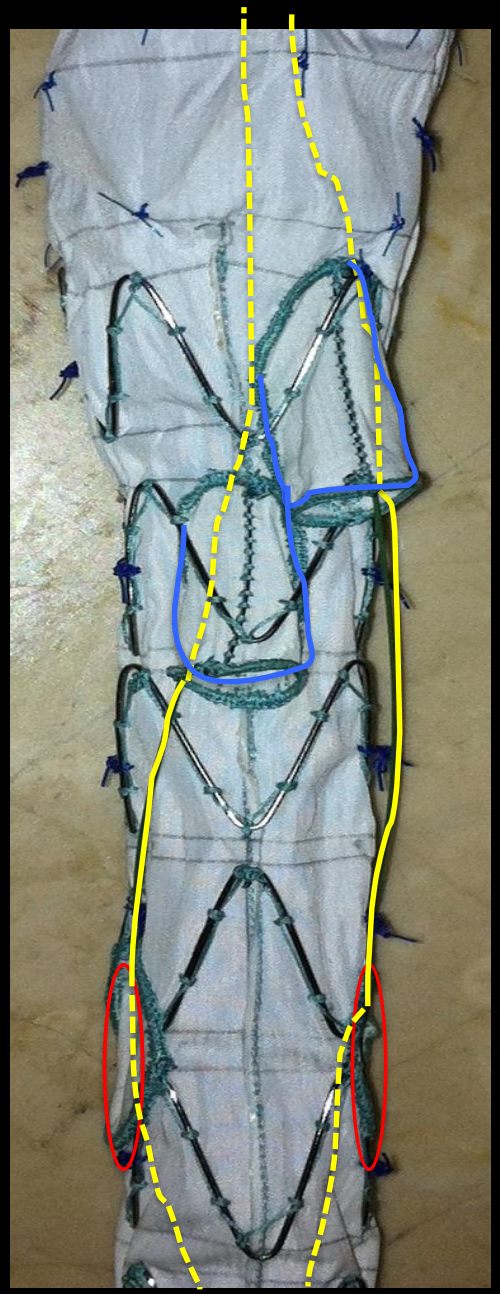
- 68 yr woman
- Type II TAAA/dissection
  - Rapid expansion to 6cm
- Pulmonary failure

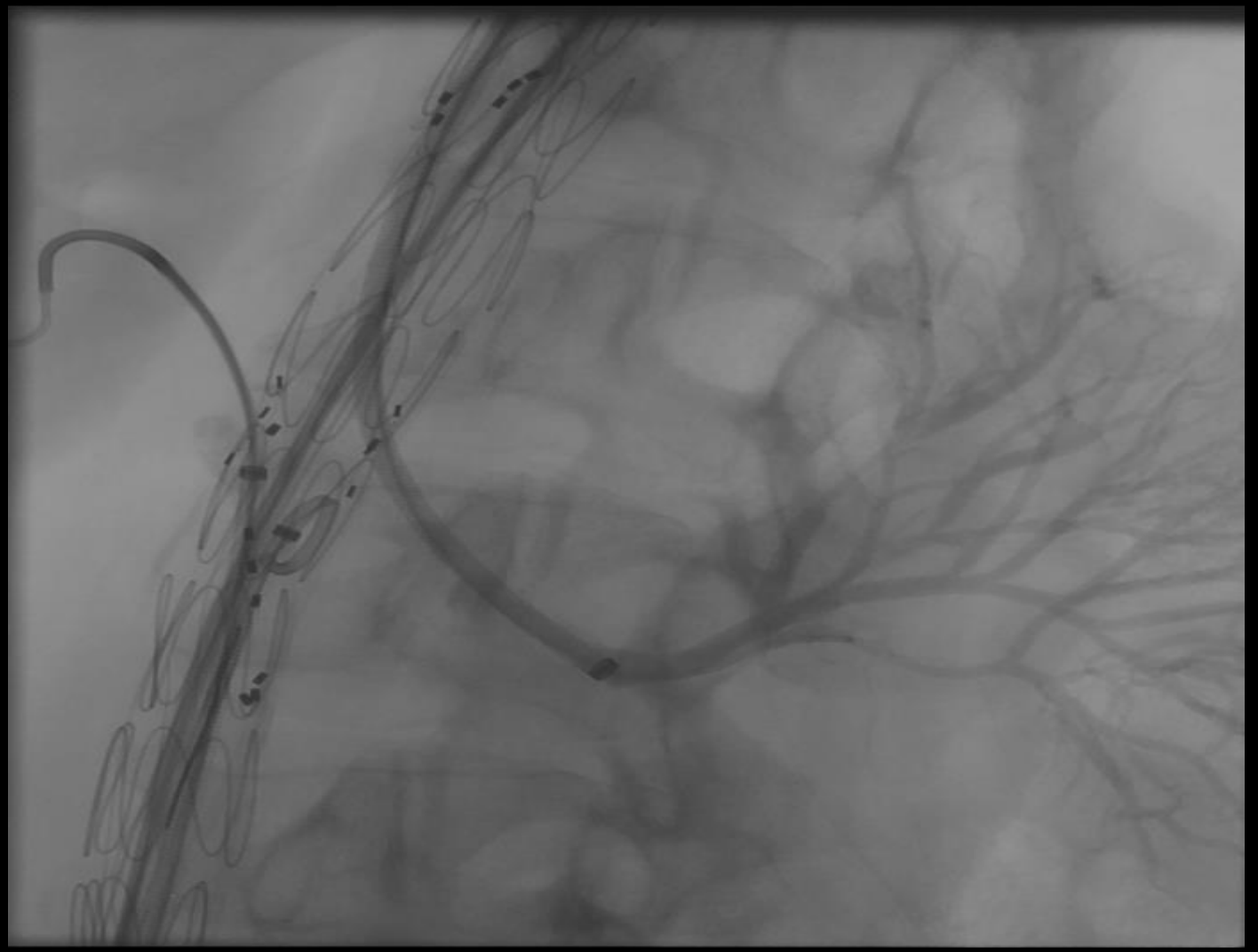


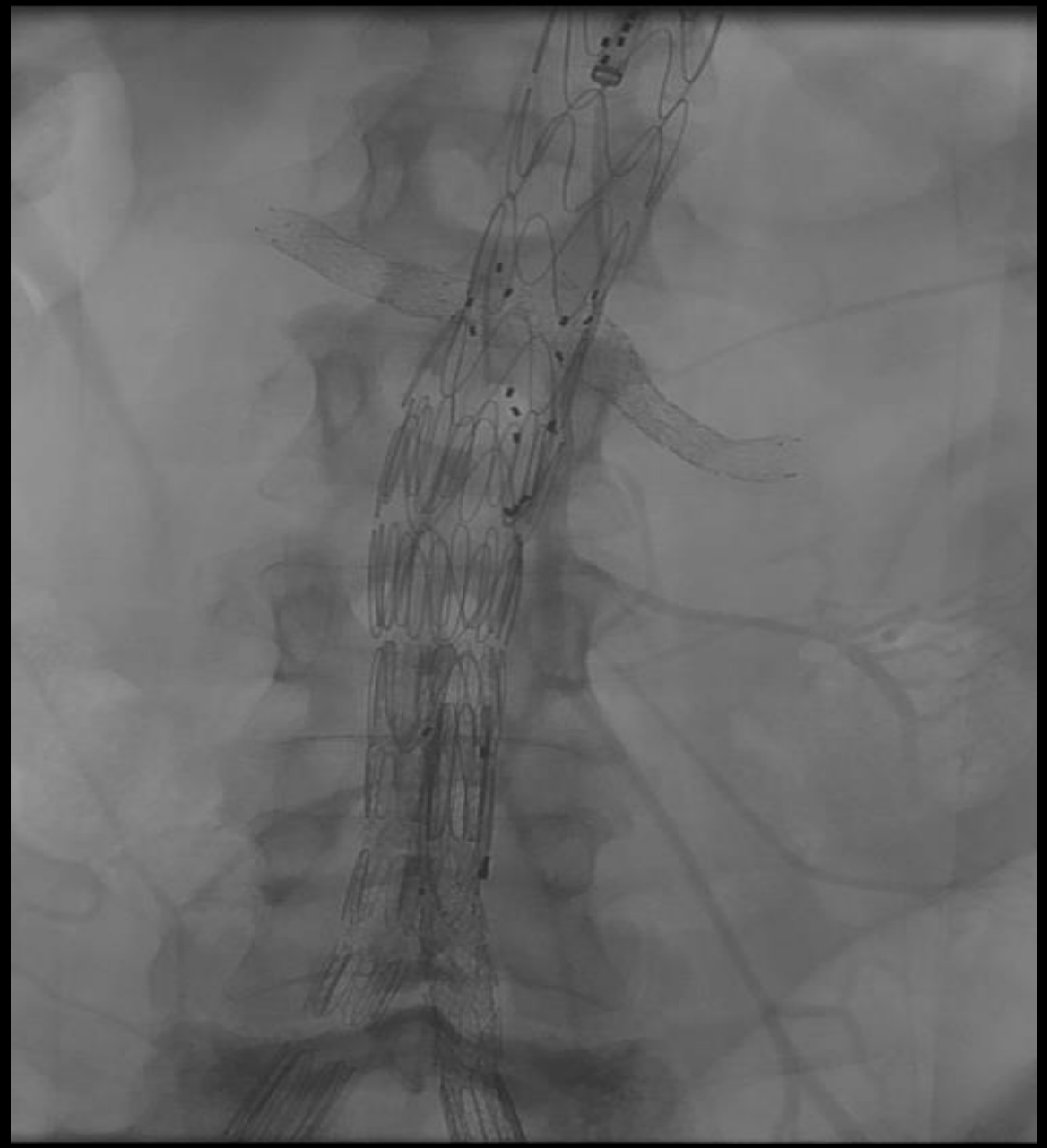



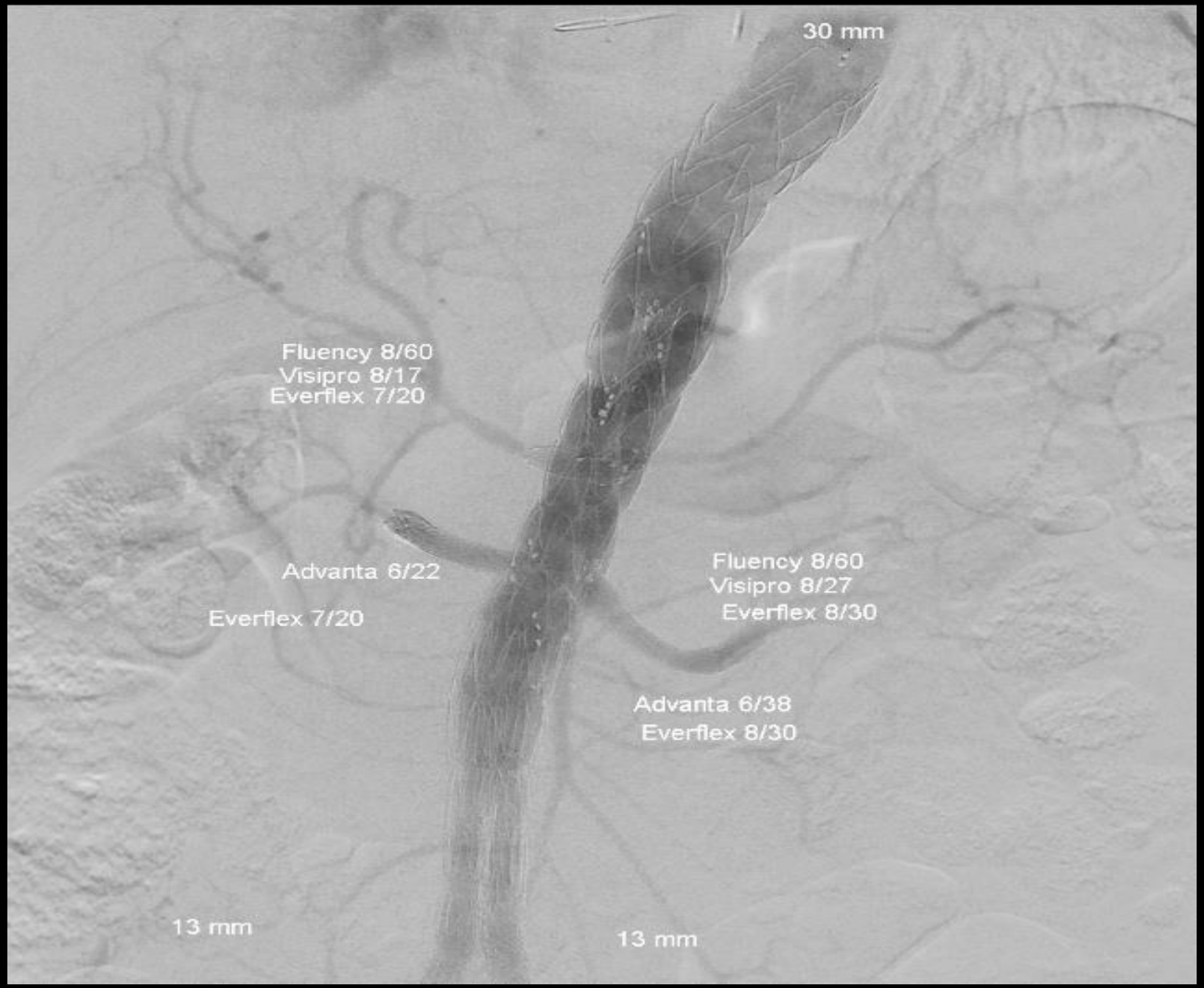

E







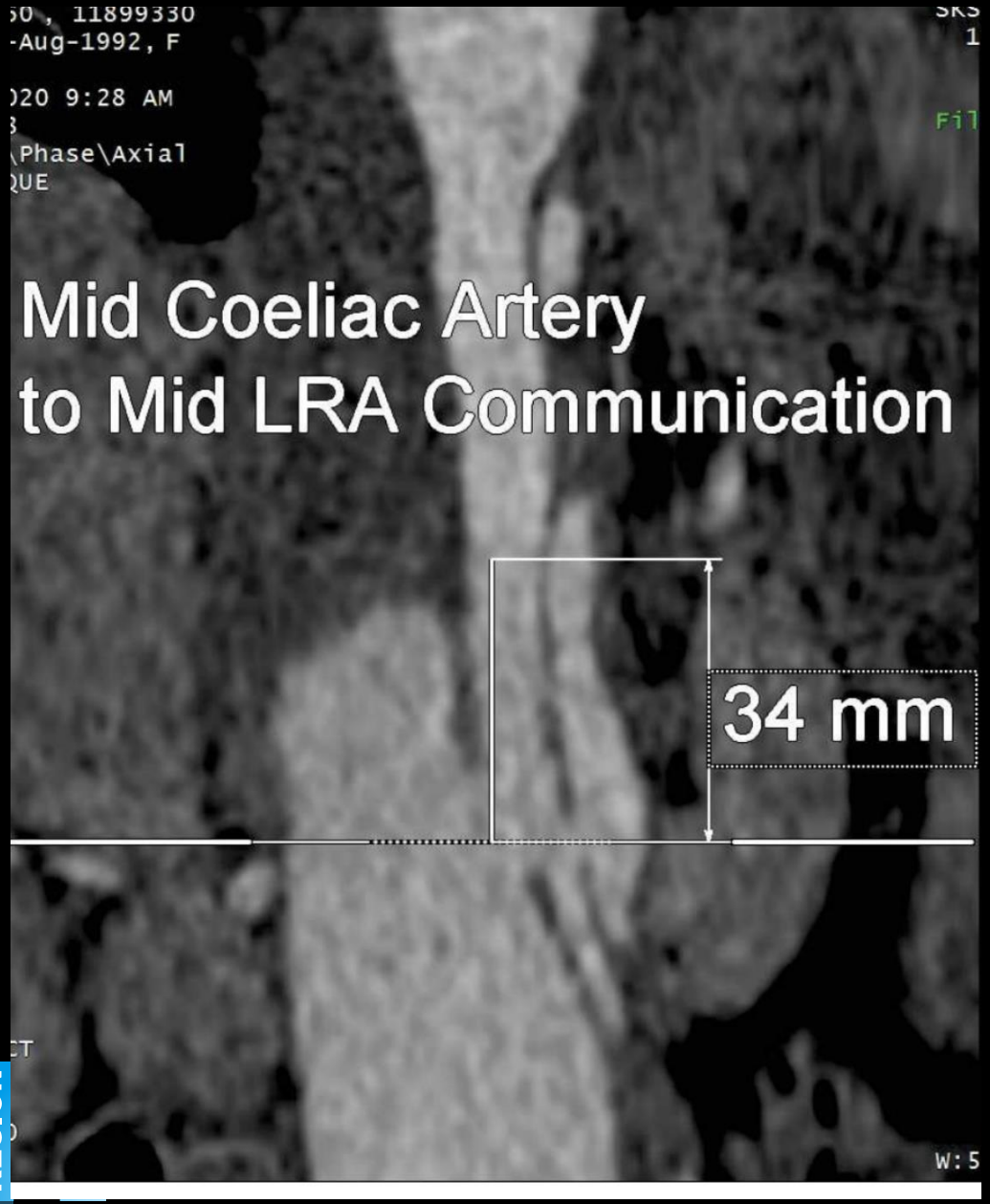


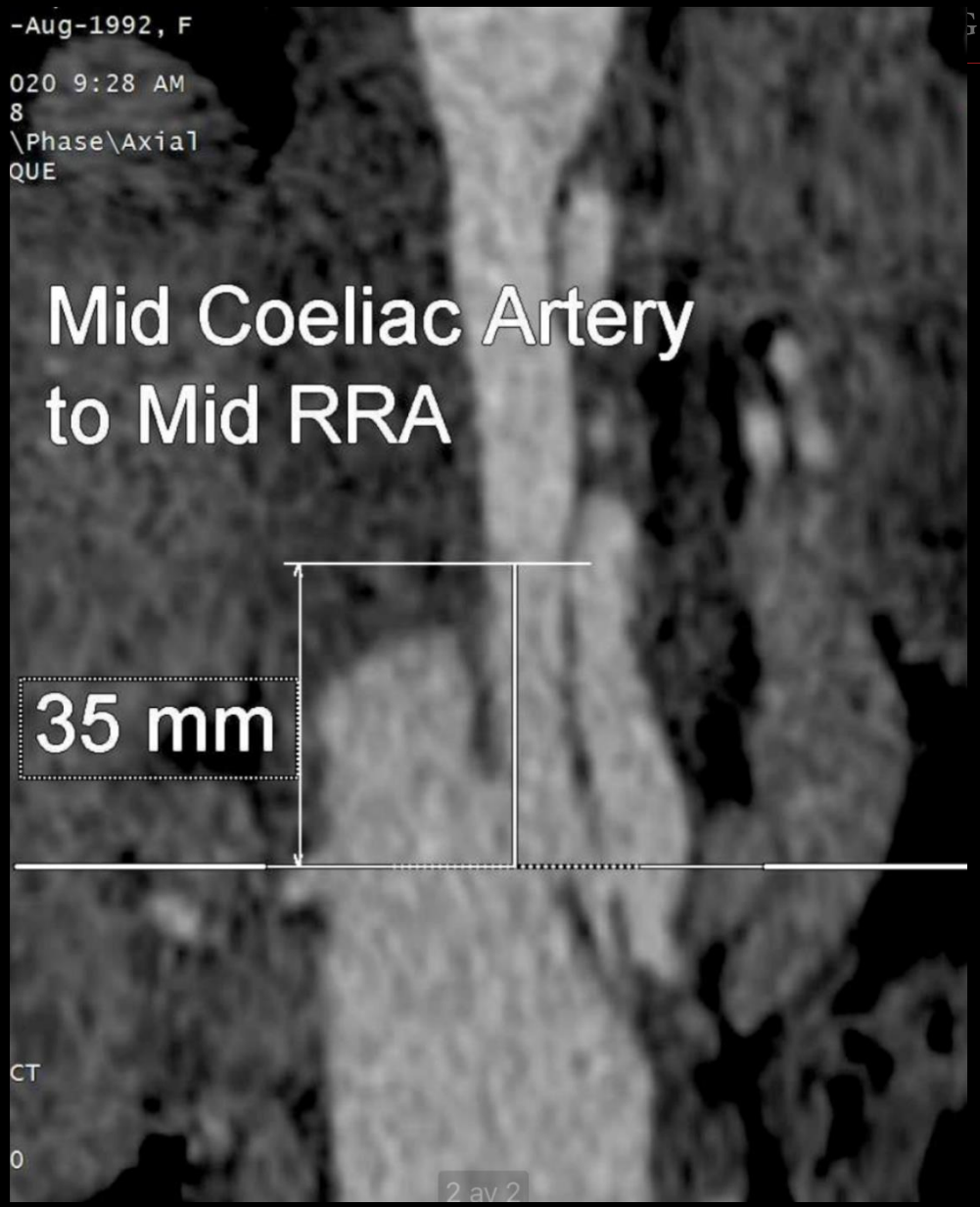

30 mm
Fluency 8/60
Visipro 8/17
Everflex 7/20
Advanta 6/22
Everflex 7/20
Fluency 8/60
Visipro 8/27
Everflex 8/30
Advanta 6/38
Everflex 8/30
13 mm
13 mm

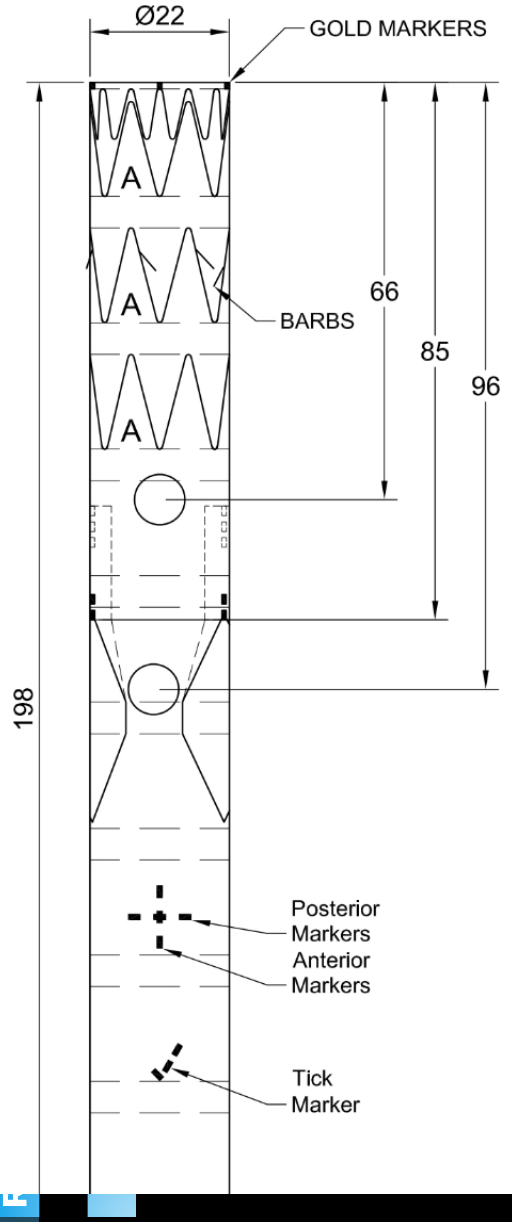
50mm AAA expanding
CTD

VERY narrow TL
LRA from FL small entry

Timothy Andrew Resch


-Aug-1992, F
020 9:28 AM
\Phase\Axial
QUE
Mid Coeliac Artery
to Mid LRA Communication
34 mm
CT
W:5


-Aug-1992, F
020 9:28 AM
8
\Phase\Axial
QUE
Mid Coeliac Artery
to Mid RRA
35 mm
CT
0
2 av 2



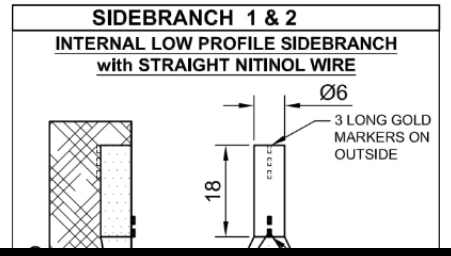
REINFORCED LARGE FENESTRATION #1
Strut Free
DIAMETER: 8mm
DIST FROM PROX EDGE: 66mm
CLOCK: 12:00
IVD: 16mm

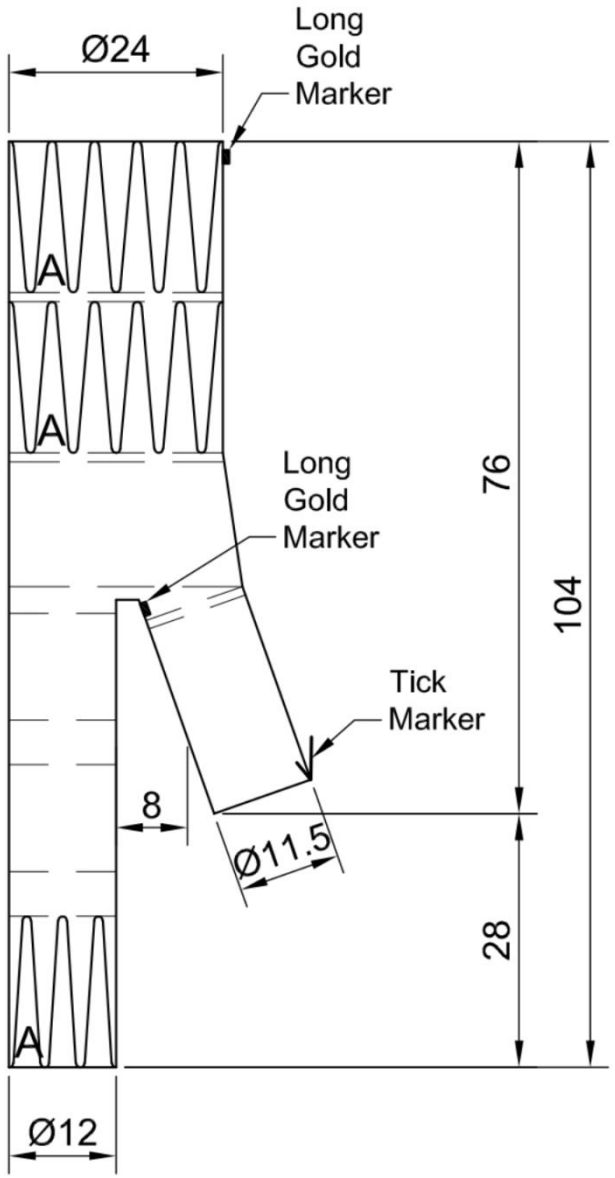
INTERNAL LOW PROFILE SIDEBRANCH #1
DIAMETER: 6mm
LENGTH: 18mm
DIST FROM PROX EDGE: 85mm
CLOCK: 9:30

INTERNAL LOW PROFILE SIDEBRANCH #2
DIAMETER: 6mm
LENGTH: 18mm
DIST FROM PROX EDGE: 85mm
CLOCK: 2:15

REINFORCED LARGE FENESTRATION #2
Strut Free
DIAMETER: 8mm
DIST FROM PROX EDGE: 96mm
CLOCK: 11:45
IVD: 21mm

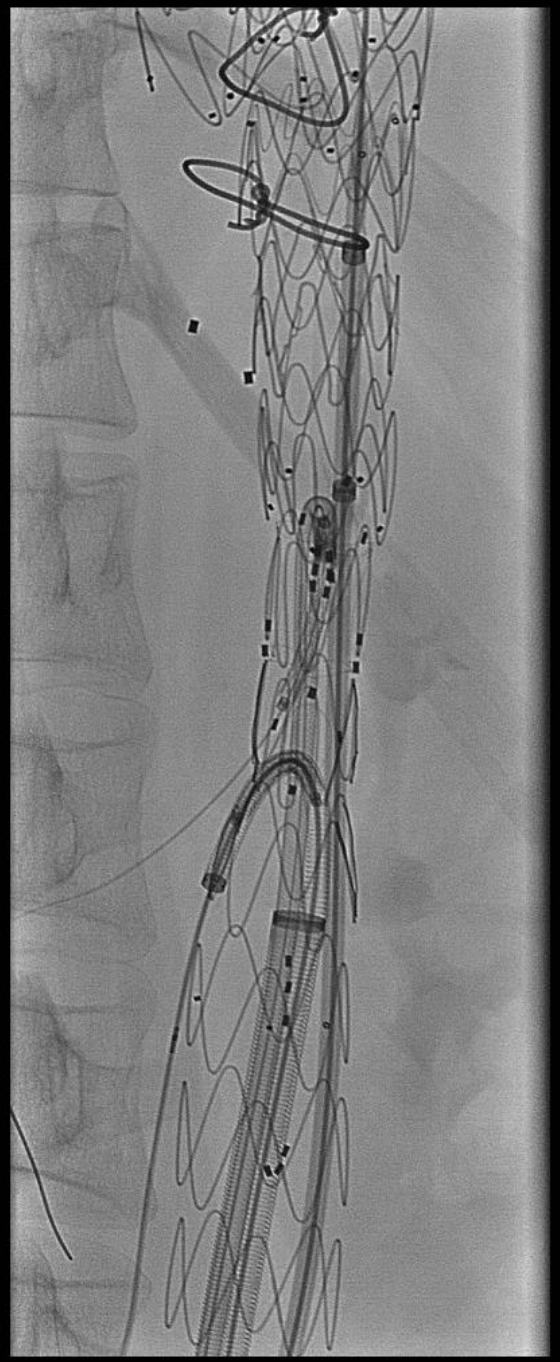
- SINGLE DIAMETER REDUCING TIES
- LOW PROFILE FABRIC
- NITINOL STENTS

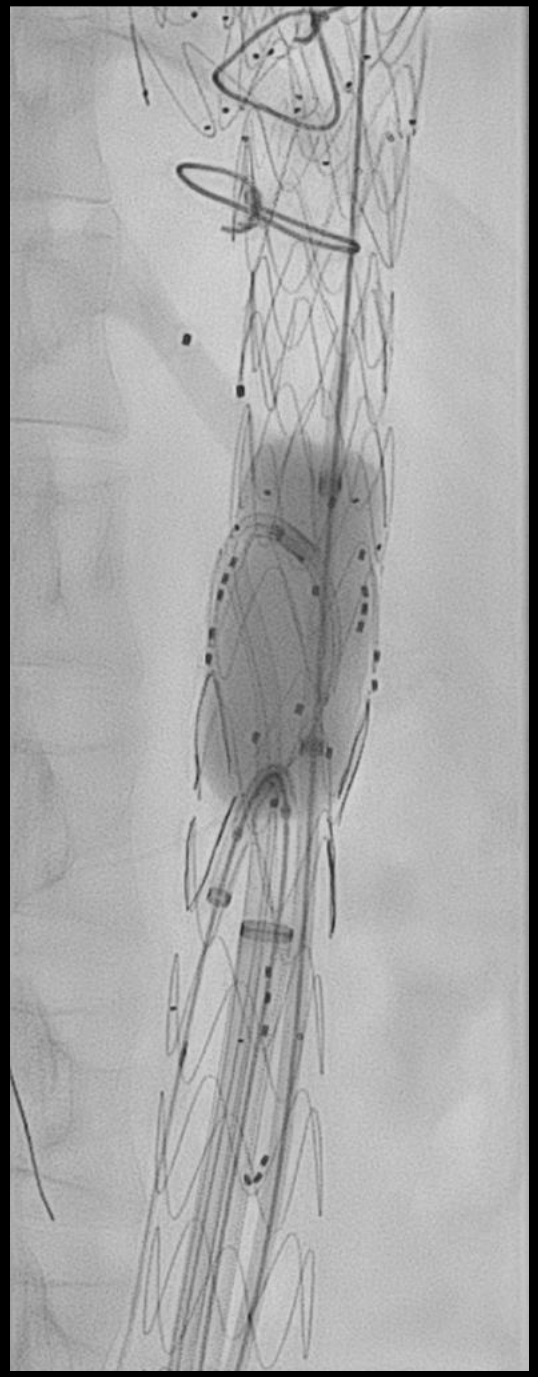




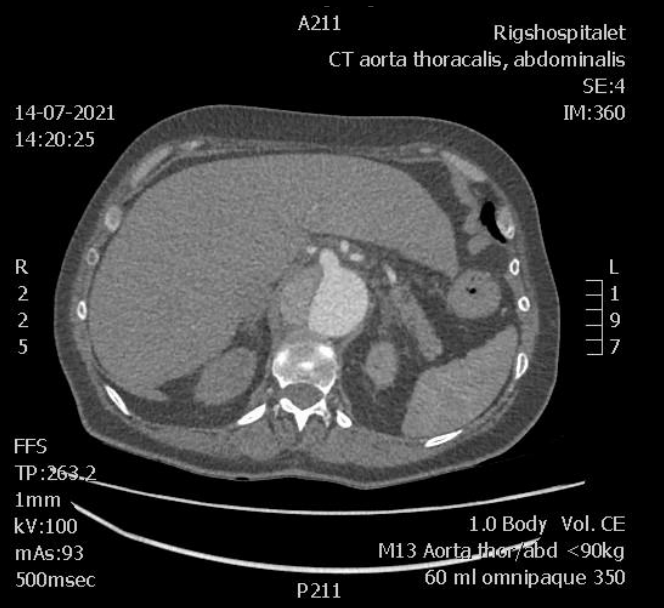
Plus:

ZSLE-13-56-ZT (x2)
ZSLE-13-39-ZT

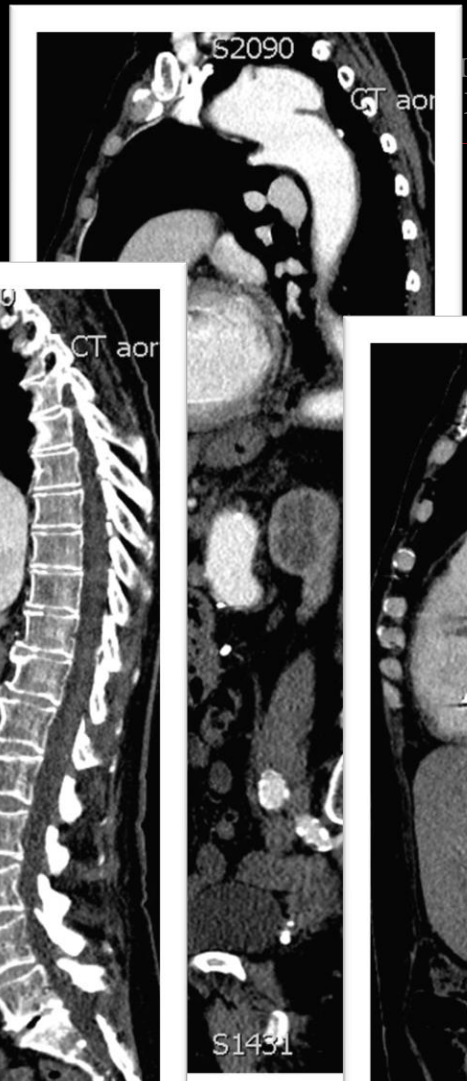





31°
5°
cm
5:17

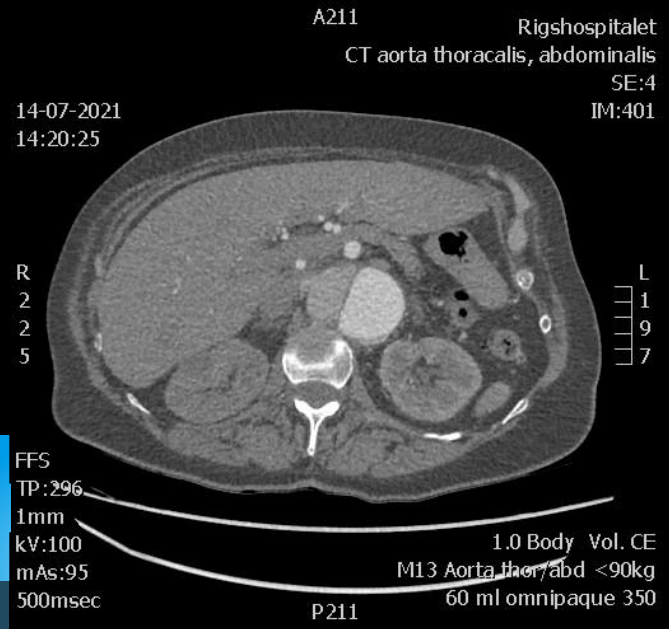

A211
Rigshospitalet
CT aorta thoracalis, abdominalis
SE:4
IM:360
14-07-2021
14:20:25
R
2
2
5
L
1
9
7
FFS
TP:263.2
1mm
kV:100
mAs:93
500msec
1.0 Body Vol. CE
M13 Aorta thor/abd <90kg
60 ml omnipaque 350
P211

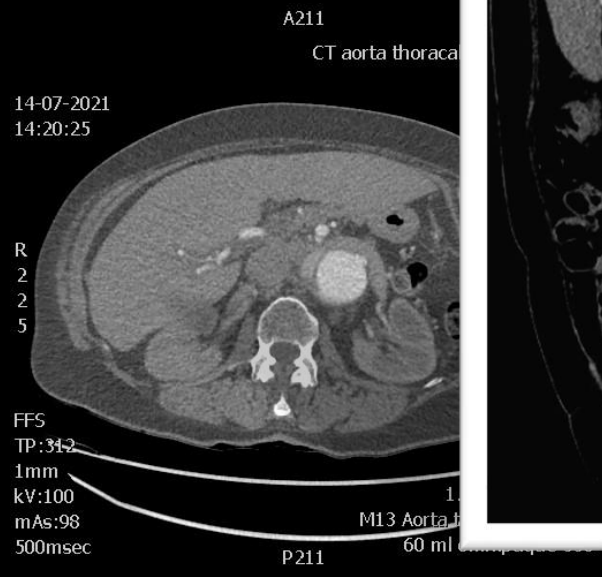

A211
Rigshospitalet
CT aorta thoracalis, abdominalis
SE:4
IM:316
14-07-2021
14:20:25
R
2
2
5
FFS
TP:228
1mm
kV:100
mAs:90
500msec
P211


S2090
CT aor
S1431

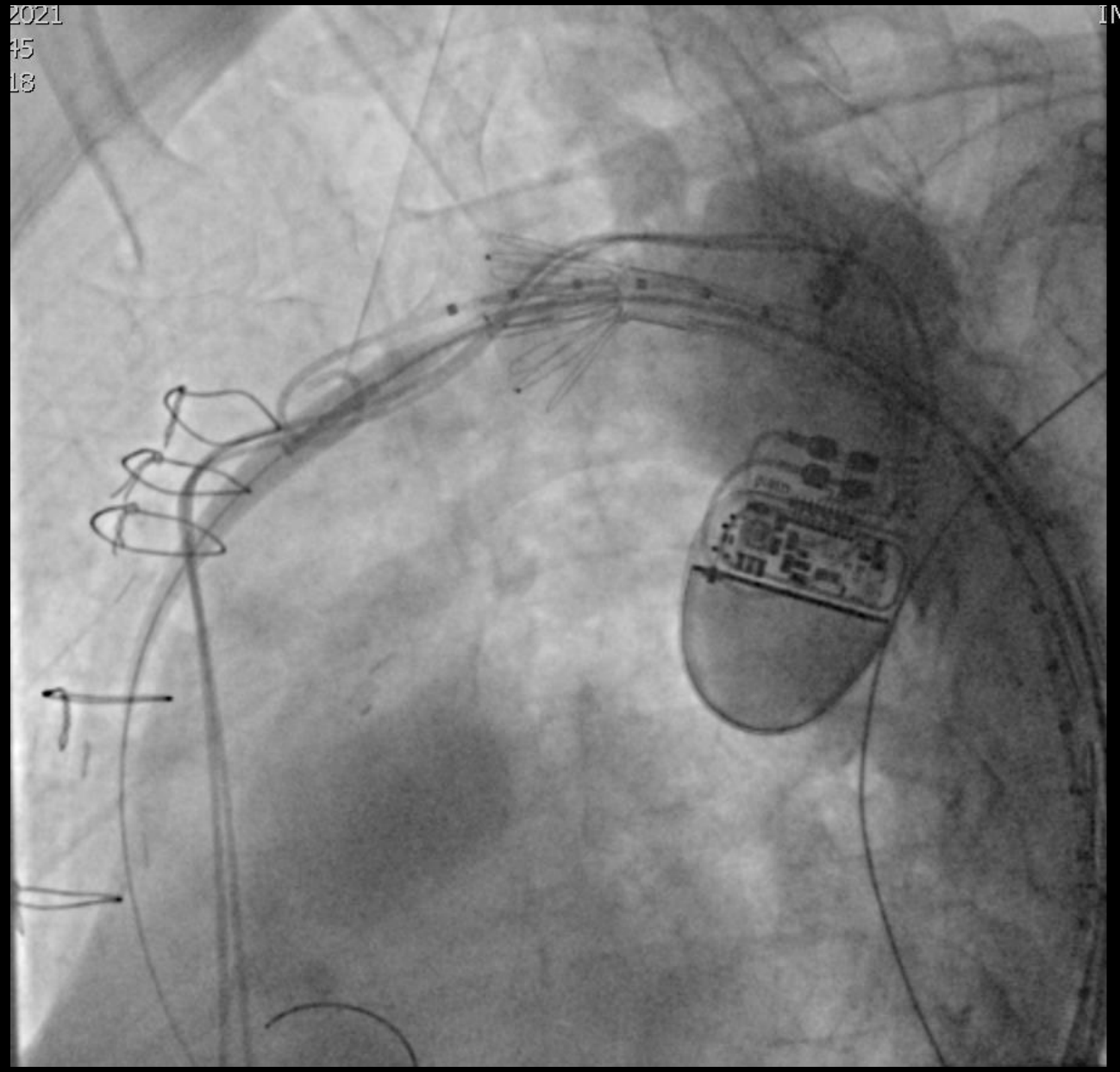

S2090
CT aor
S1431


S2090
CT aor
S1431

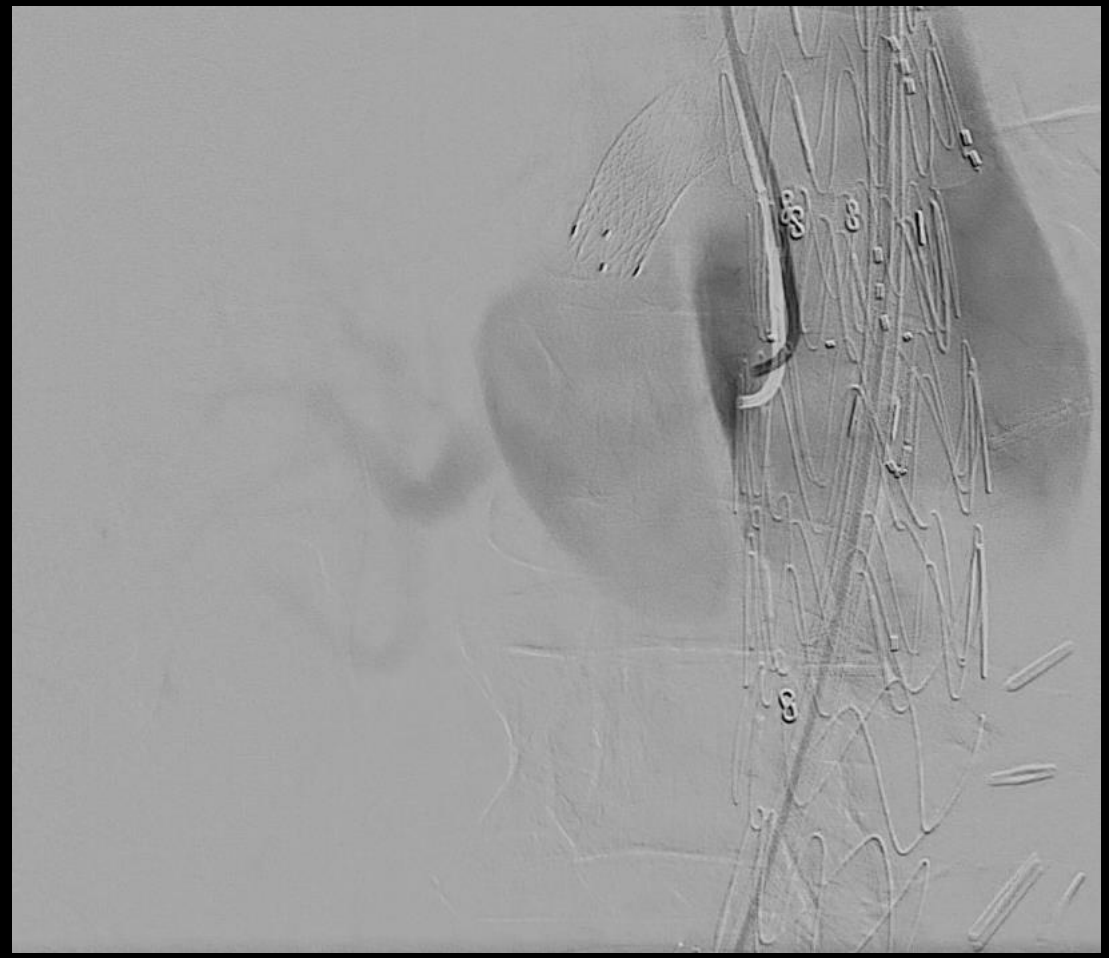

A211
Rigshospitalet
CT aorta thoracalis, abdominalis
SE:4
IM:401
14-07-2021
14:20:25
R
2
2
5
L
1
9
7
FFS
TP:296
1mm
kV:100
mAs:95
500msec
1.0 Body Vol. CE
M13 Aorta thor/abd <90kg
60 ml omnipaque 350
P211


A211
14-07-2021
14:20:25
R
2
2
5
FFS
TP:312
1mm
kV:100
mAs:98
500msec
P211

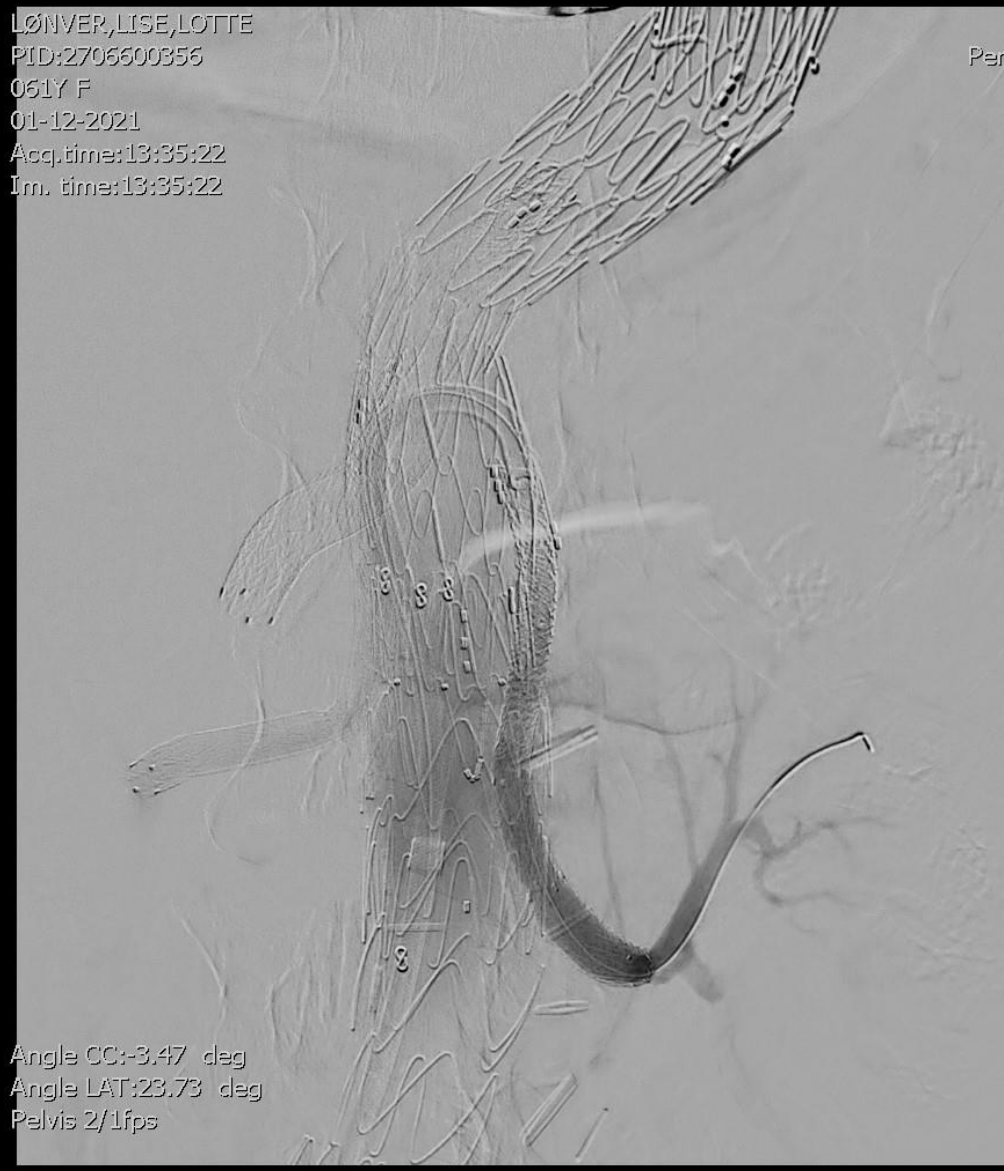
REGION


2021
45
18


0356
Kongenit Hje




12:54:19
12:54:19


LØNVER,LISE,LOTTE
PID:2706600356
061Y F
01-12-2021
Acq.time:13:35:22
Im. time:13:35:22
Angle CC:-3.47 deg
Angle LAT:23.73 deg
Pelvis 2/1fps


21
:14:10:04
:14:10:04
:-0.92 deg


LOTTE
56
6:35
5:35
6 deg
2 deg

Summary - prevention

- Standalone TEVAR has high failure rate
- Proximal dilatation
  - Cover LSA
- SINE
  - Go down to CA
  - Limit oversize (TL measurement)

Summary

- Planning according to anatomy
- Use intraoperative adjuncts
- Proper final imaging