Real incidence of endoleaks after TEVAR

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Disclosure of Interest

Speaker name: .....

- 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

Key variables

- Pathology
- Experience
- Graft
- Surveillance schedule
- Completeness of surveillance
- Mode of surveillance
- Duration of follow up

Endoleaks after endovascular repair of thoracic aortic aneurysms

Shane S. Parmer et al

- 69 TEVAR
- Mean FU 17.3 months
- 20/69 (29%) endoleaks
- 8/20 Type 1 (12%)
- 7/20 Type 2 (12%)
- 4/20 Type 3 (6%)
- 1/20 more than one type

J Vasc Surg 2006;44:447-52

Endoleaks Following Endovascular Repair of Thoracic Aortic Aneurysm: Etiology and Outcomes

Jose P. Morales et al

- 200 TEVAR DTA (2001-2006)
- 75% atherosclerotic
- Mean follow-up 30 months
- 39 (19.5%) endoleaks
- Characterisation not always precise
- Three phase CT?

J Endovasc Ther 2008;15:631–638

Endoleaks Following Endovascular Repair of Thoracic Aortic Aneurysm: Etiology and Outcomes

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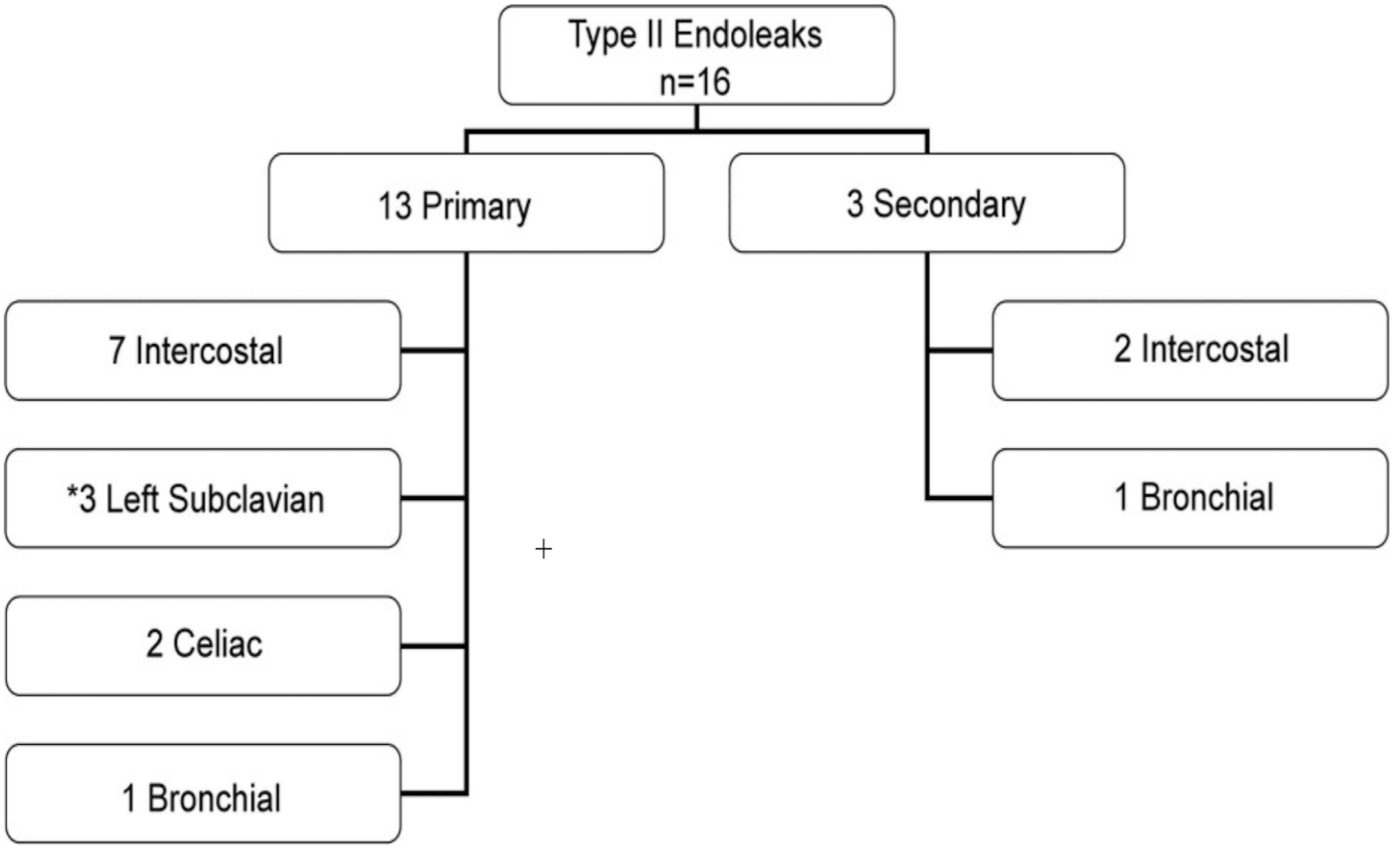

Type II Endoleaks
n=16
13 Primary
3 Secondary
7 Intercostal
*3 Left Subclavian
2 Celiac
1 Bronchial
2 Intercostal
1 Bronchial

Endoleaks Following Endovascular Repair of Thoracic Aortic Aneurysm: Etiology and Outcomes

Jose P. Morales et al

- 39/200 developed endoleak
- 33 primary/8 secondary
- Type 1 11 primary 3 secondary (7%)
- Type 3 5 primary 2 secondary (3.5%)
- Type 2 13 primary 3 secondary (7%)
- Tx for most 1/3, mainly conservative for 2

J Endovasc Ther 2008;15:631–638

Clinical significance of type II endoleaks after thoracic endovascular aortic repair

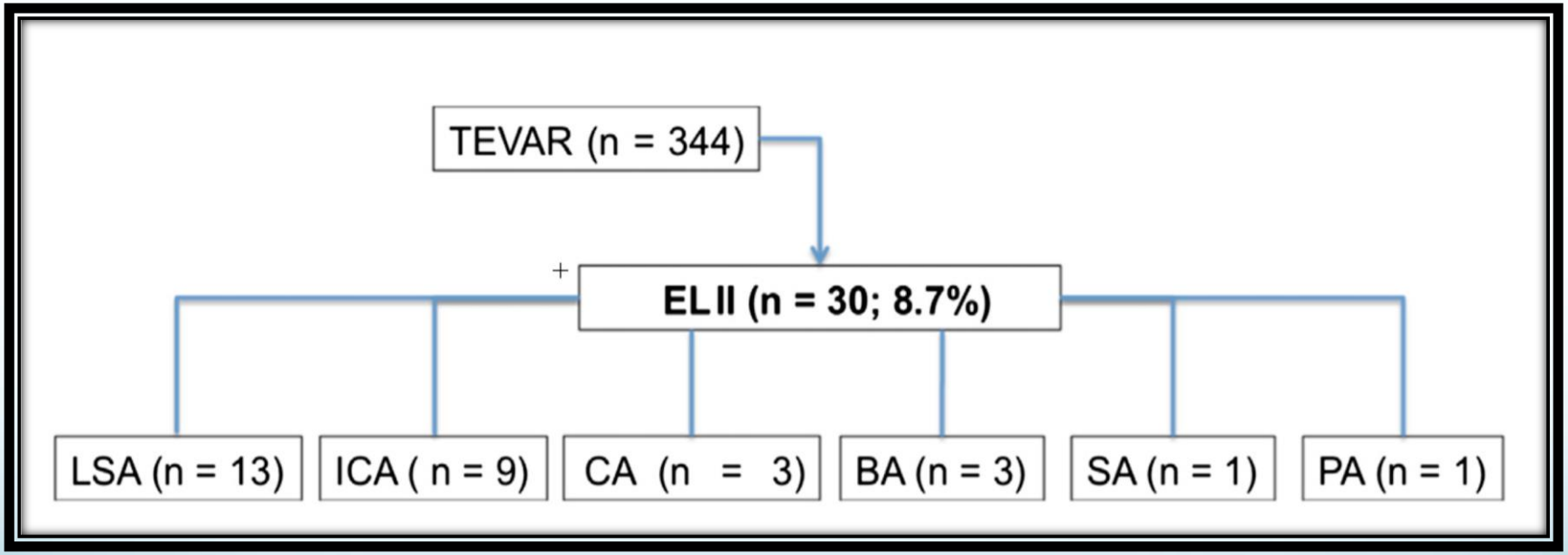
Bischoff MS et al

- 344 TEVAR (1997-2012)
- Type 2 in 30/344 – 8.7%
- Median FU 29.5 months
- Multiphase CT
- Reintervention 9/30 (30%) 5/9 LSA

J Vasc Surg 2013;58:643-50

Clinical significance of type II endoleaks after thoracic endovascular aortic repair

Bischoff MS et al



J Vasc Surg 2013;58:643-50

Mechanisms of Failure and Outcome of Secondary Surgical Interventions After Thoracic Endovascular Aortic Repair (TEVAR)

Julia Dumfarth et al

- 421 TEVAR (1996-2009)
- 21 secondary surgical interventions
- Type 1, retrograde type A, distal aneurysm and infection
- Median interval 24 months
- In-hospital mortality 19%
- “the majority of these events could have been avoided by a more strict indication.”

Ann Thorac Surg 2011;91:1141–6

Thoracic Endovascular Aortic Repair (TEVAR) for the treatment of aortic diseases: a position statement….

Martin Grabenwoger et al

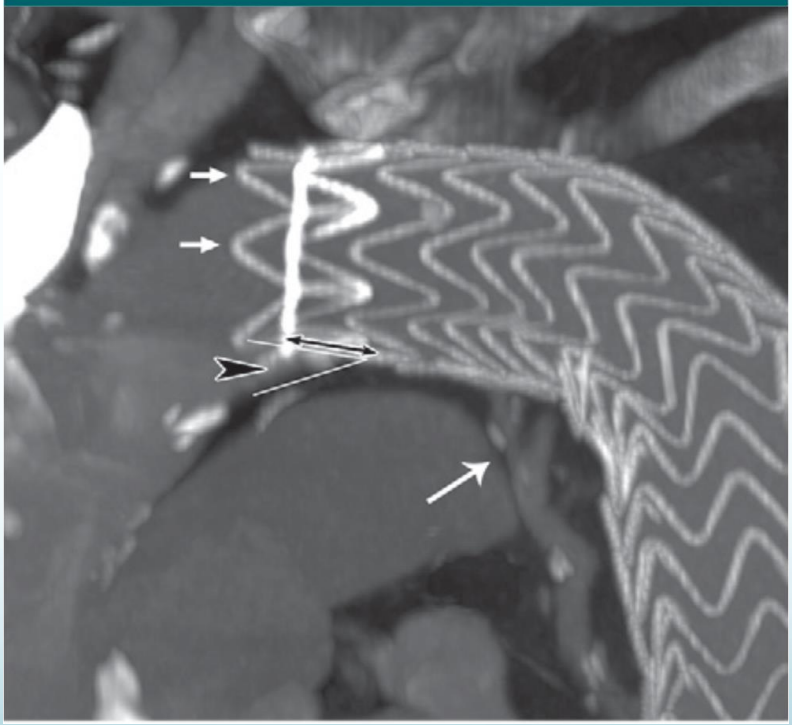
- **The majority of endoleaks can be avoided by careful selection** particularly with regard to important morphological details such as the length of the landing zone, use of multiple stents, length of overlapping segments as well as severe angulation and massive aortic calcification (porcelain aorta).

European Heart Journal doi:10.1093/eurheartj/ehs074

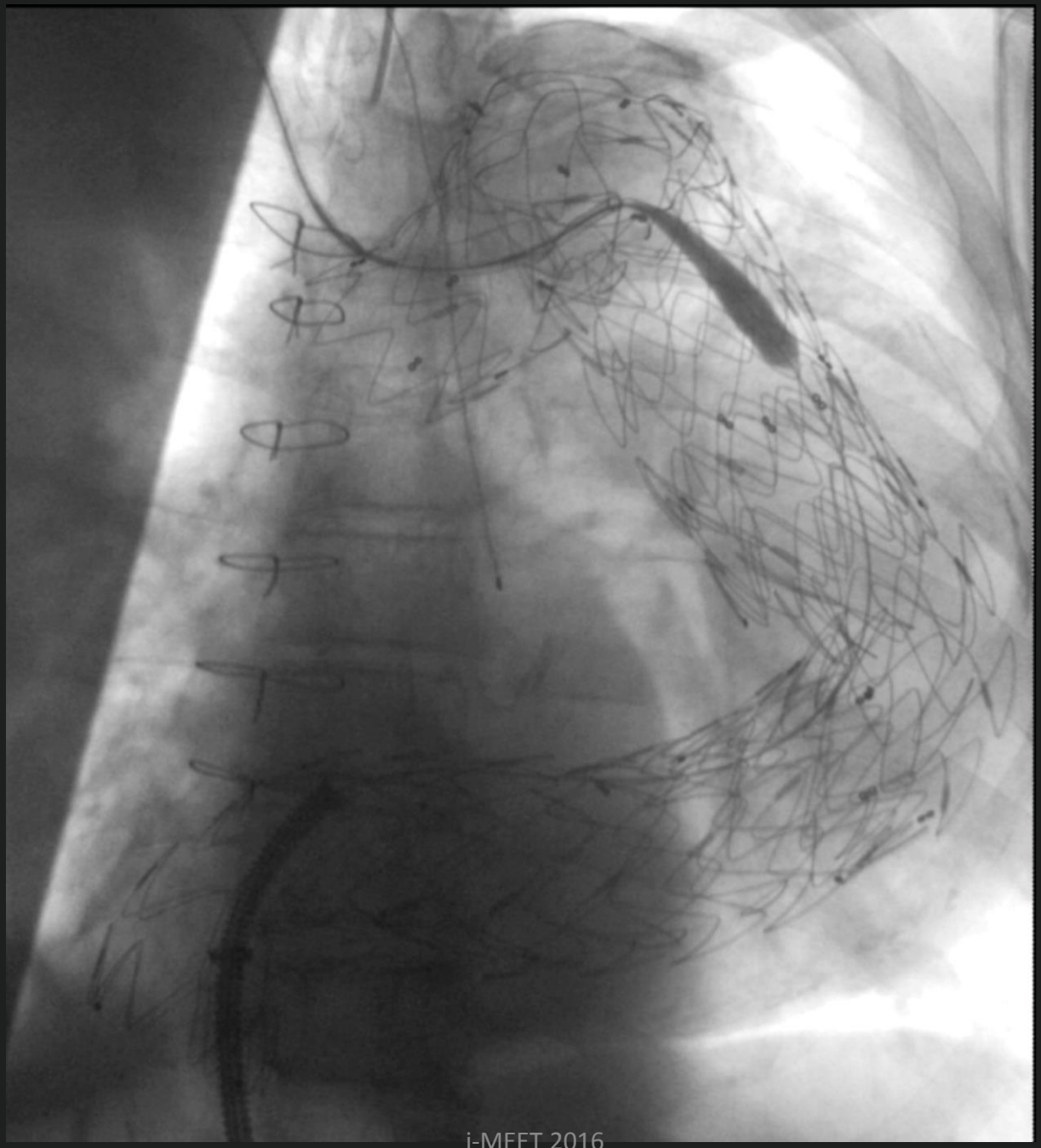
Incomplete Endograft Apposition to the Aortic Arch: Bird-Beak Configuration Increases Risk of Endoleak Formation after Thoracic Endovascular Aortic Repair

Takaya Ueda et al

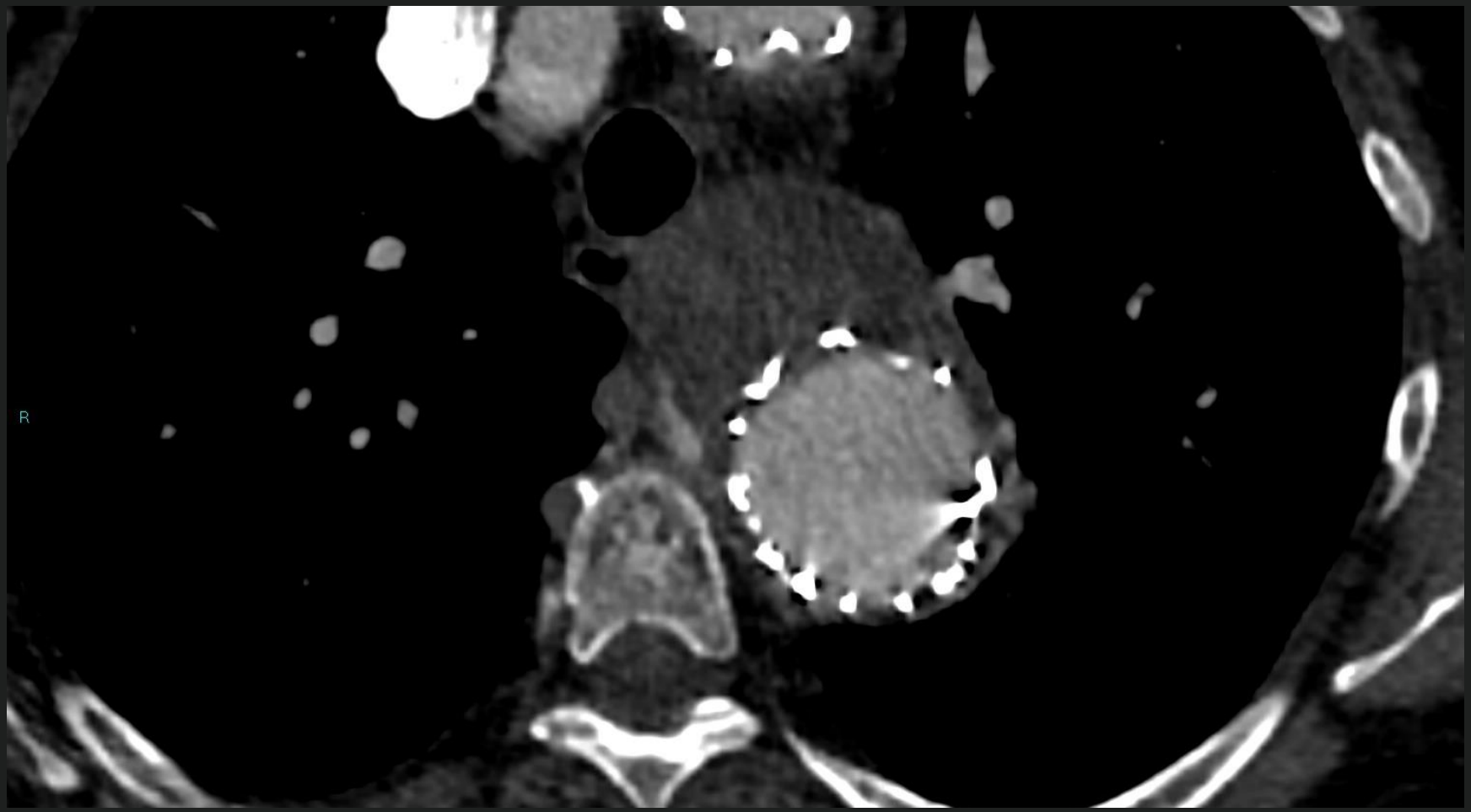
Figure 1



Radiology: Volume 255: Number 2— May 2010



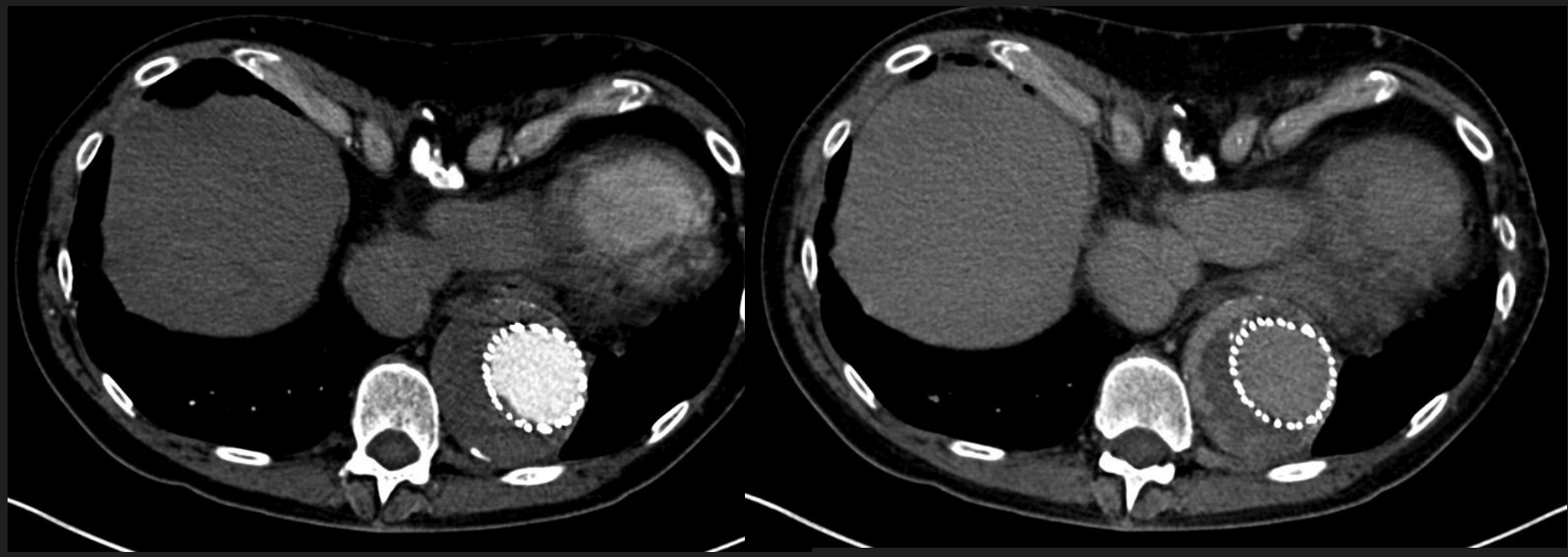
Type 2



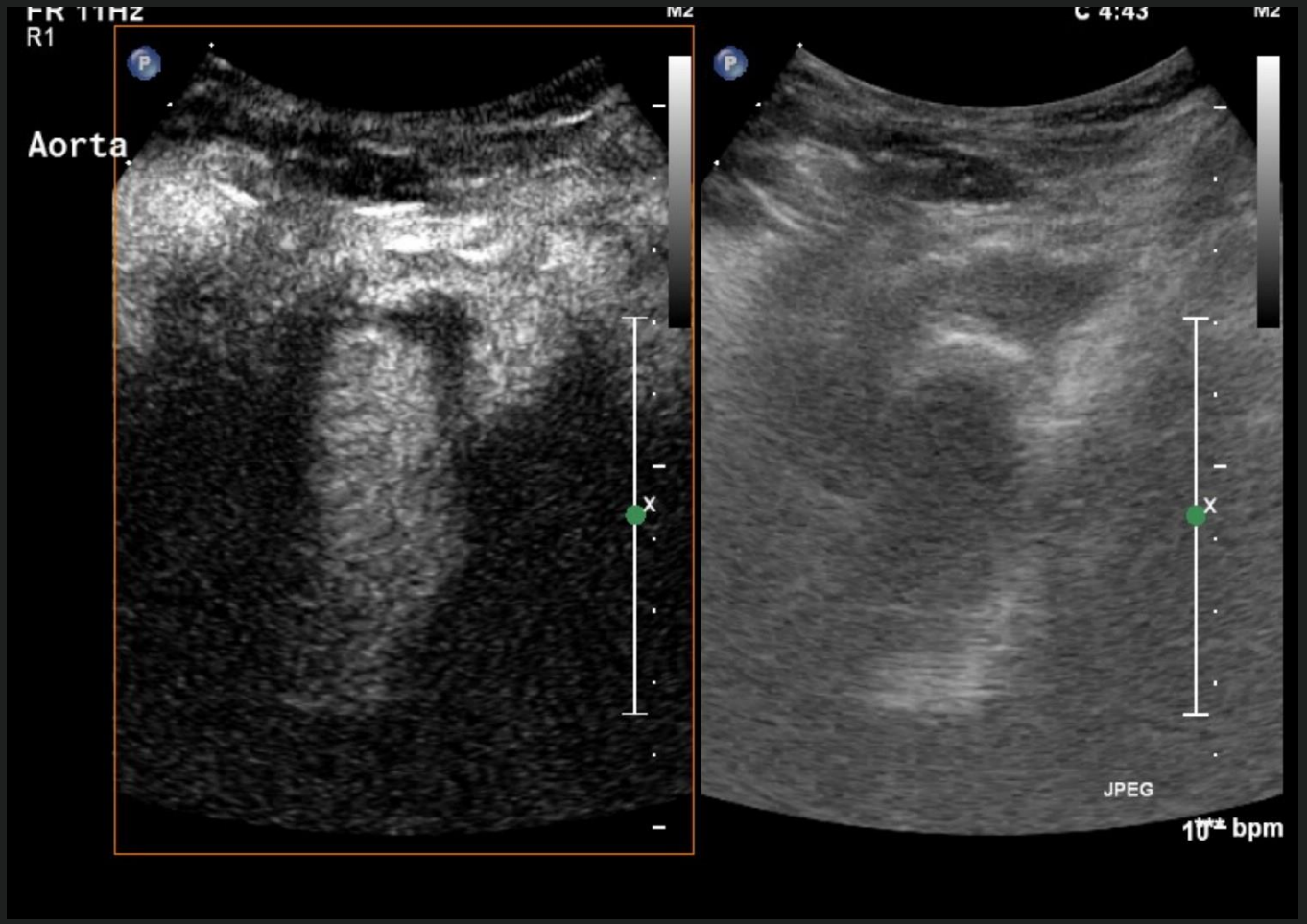
Type 2

Bridging stent dislocation

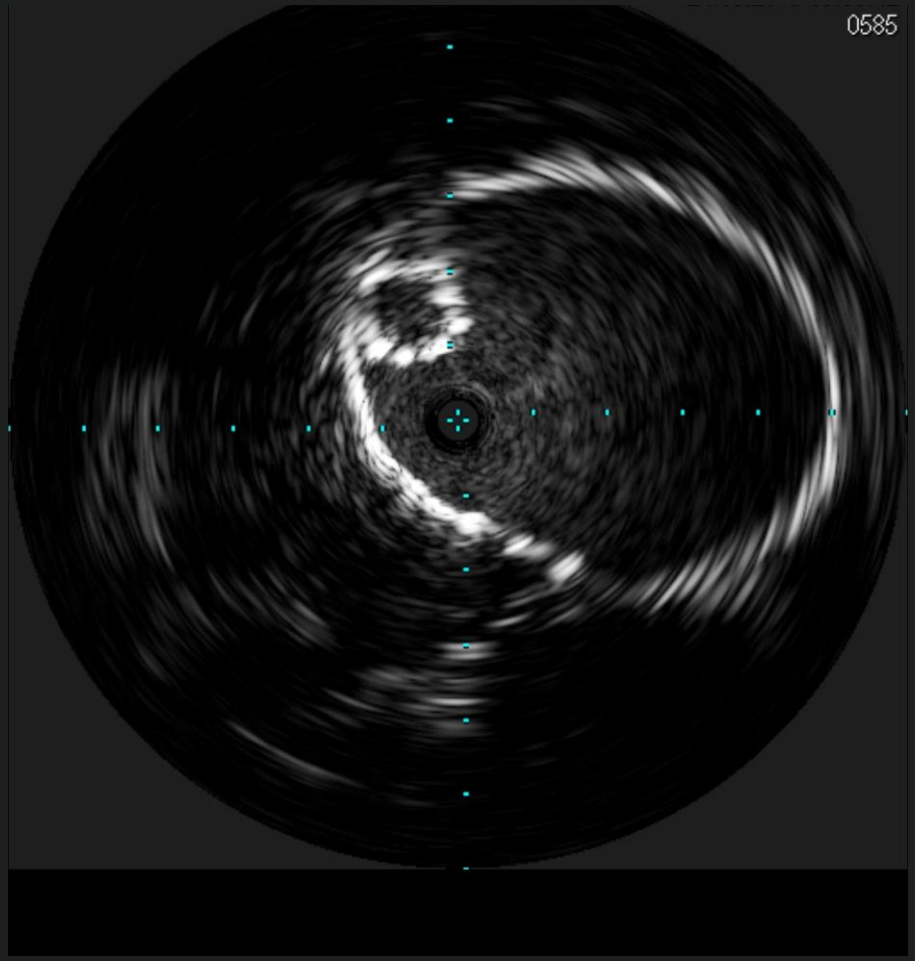
Investigation of endoleak



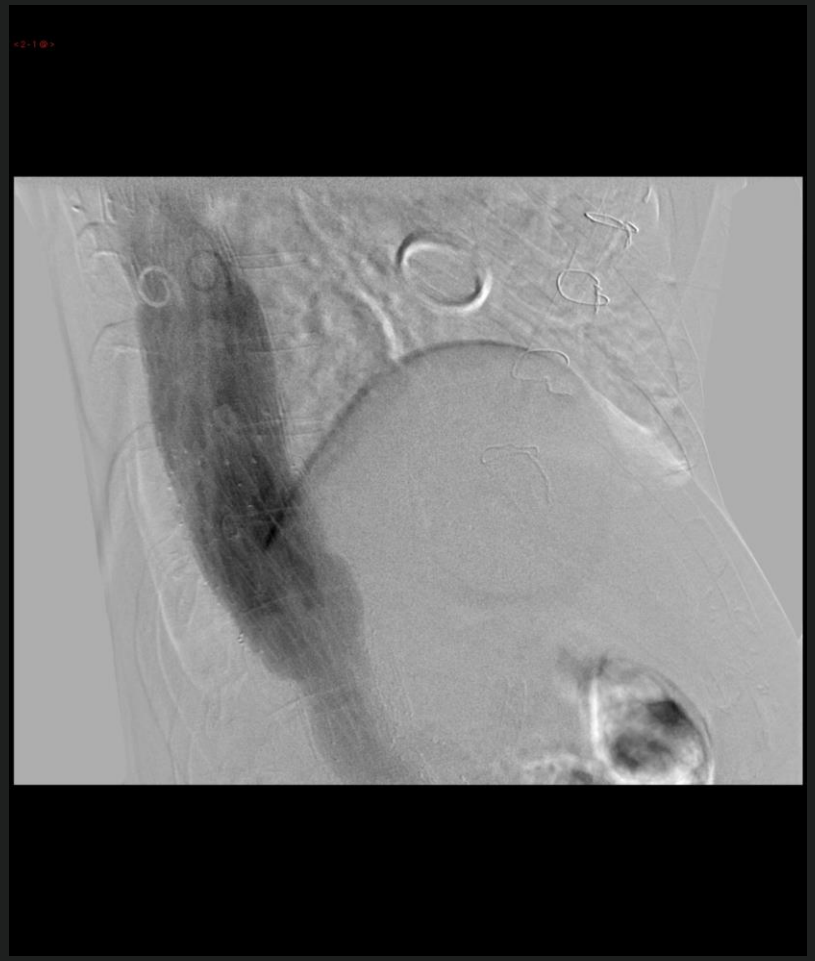
CEUS



IVUS



Rotational angiography



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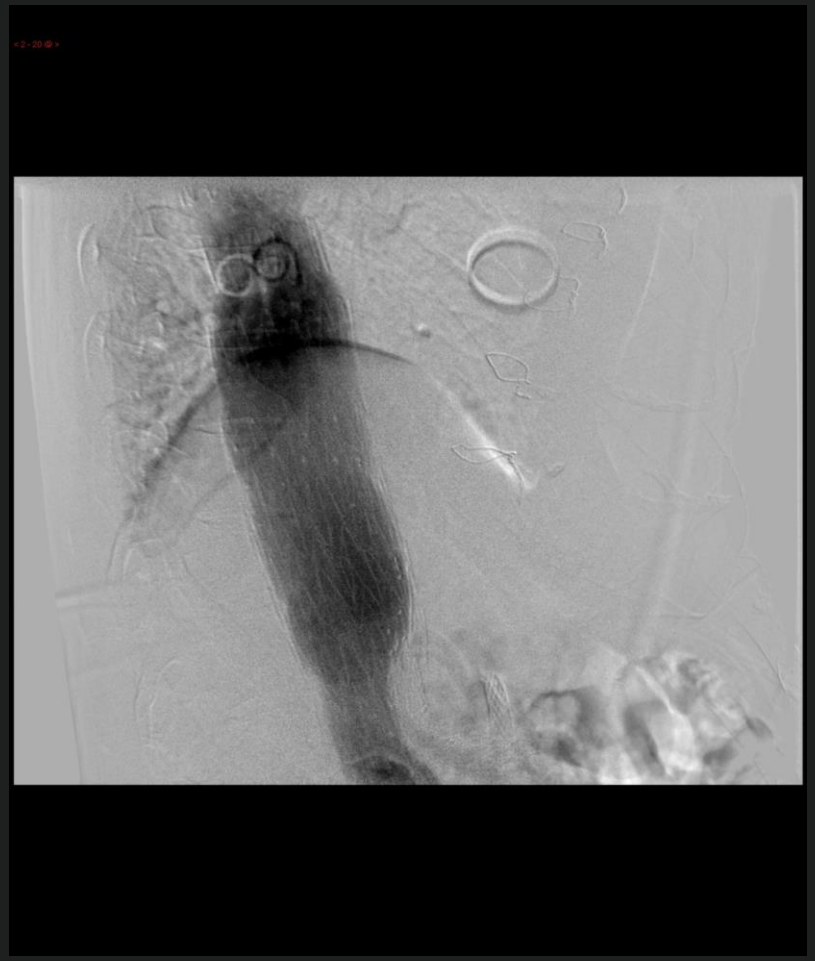
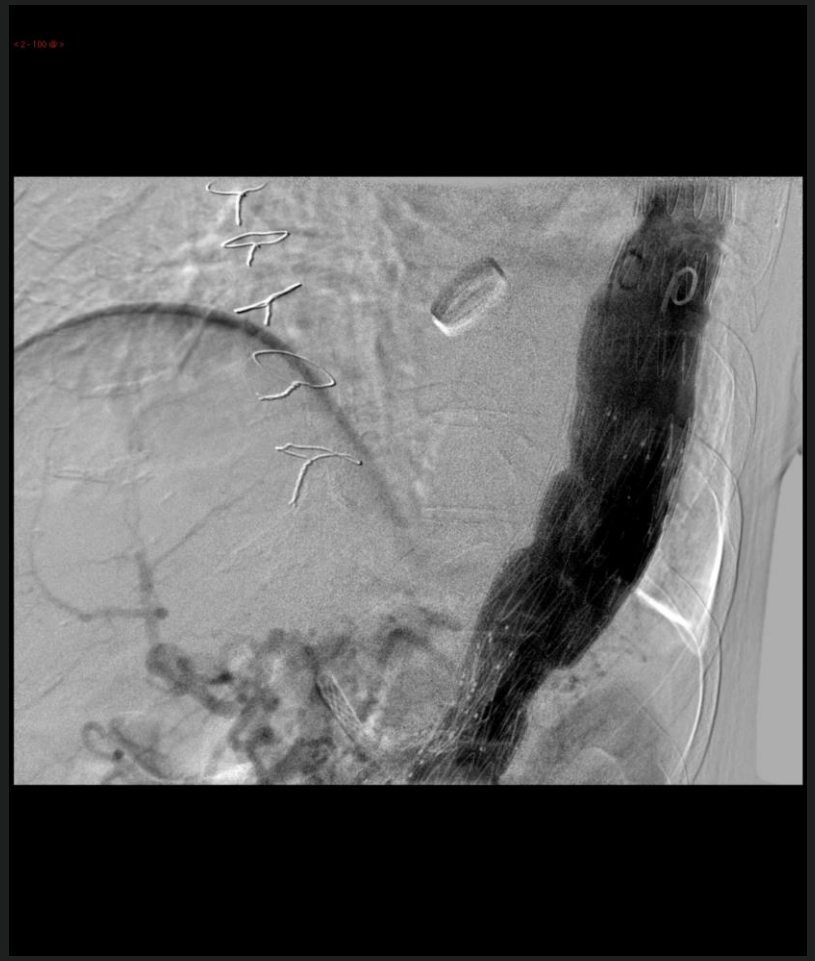


Rotational angiography

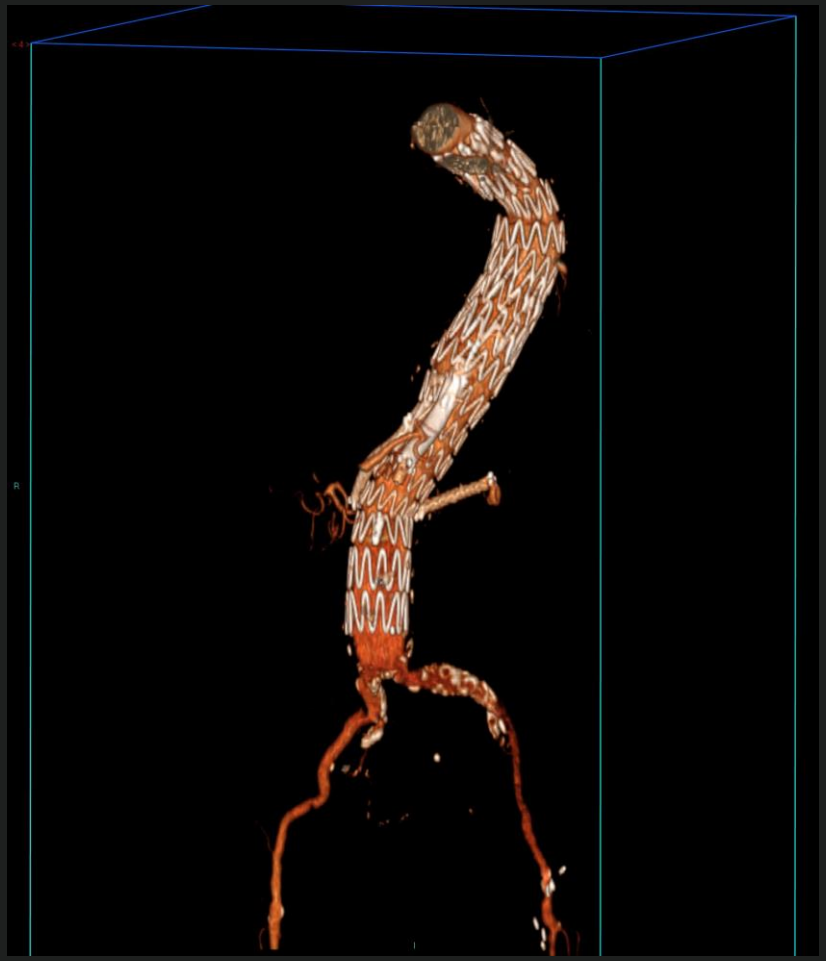
Rotational angiography

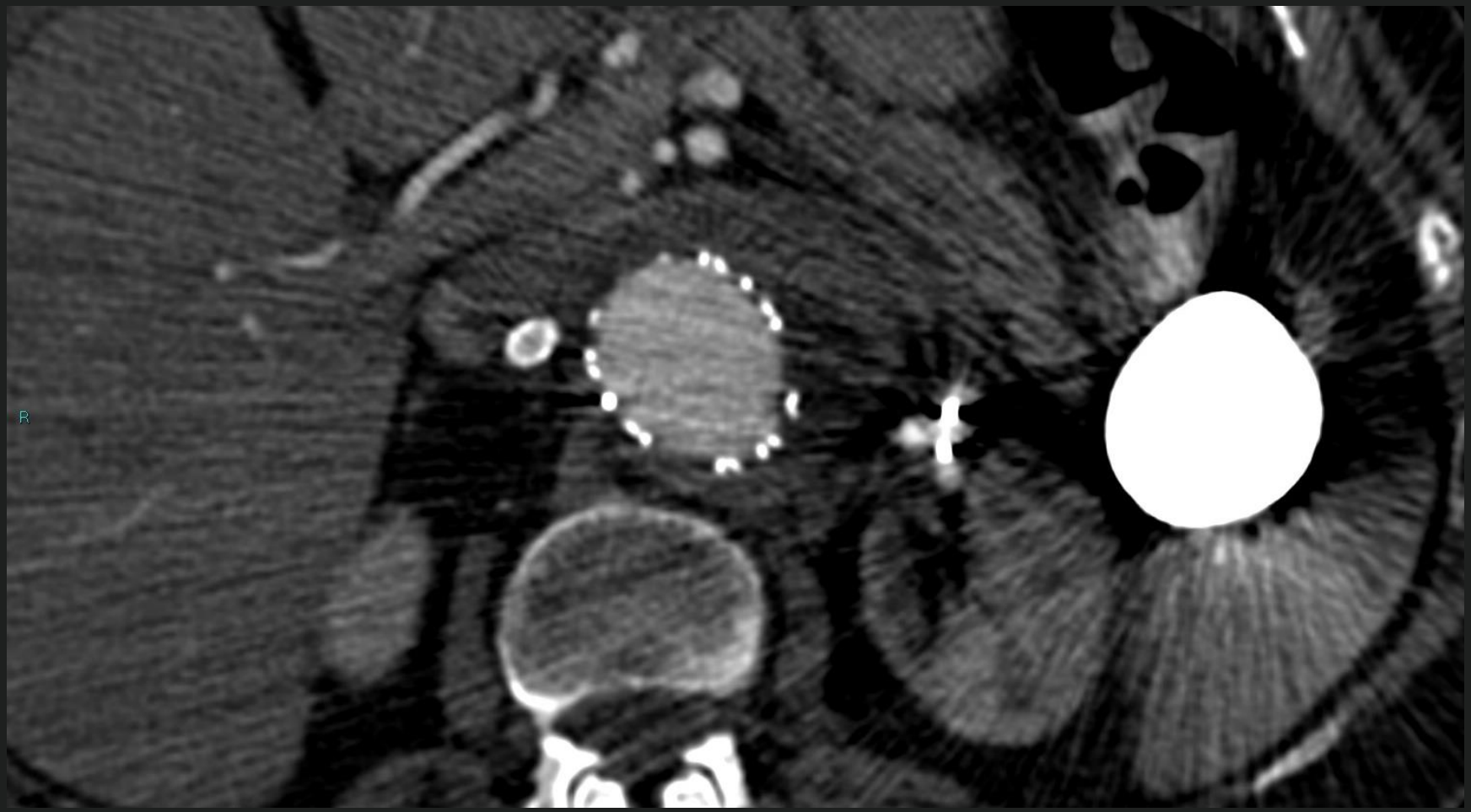
Rotational angiography

Rotational angiography



Possible 3b

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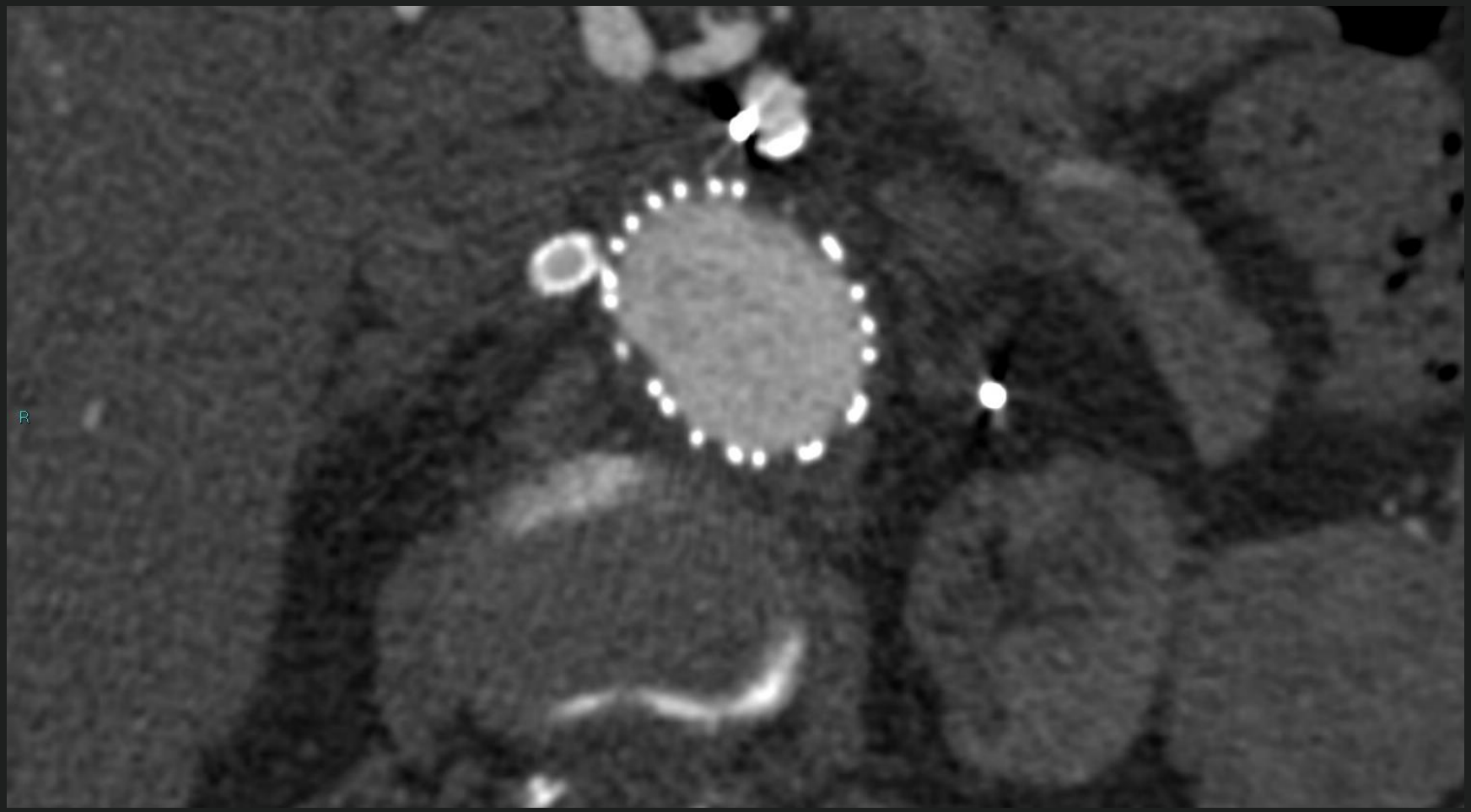
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Conclusions

- Endoleak rates high
- Type 1 ~ 10%, Type 2 ~ 10%, Type 3 ~ 5%, Overall 20-30%
- Classification can be imprecise
- US/CEUS not an option
- Avoidance – improved grafts, more overlap, patient selection