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Unusual thoracic lesions. New concepts. When and how to treat them

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What is unusual?





Sometimes it depends on how you look





**If you concentrate too much you
may miss the goal**





But I will try to focus on rare birds





Disease

Anatomy

PAU	2-5%	Bicarotid arch	14%
IMH	2-5%	L vert.art. from the arch	4%
Aortic thrombus	5-8%	Rightsided arch	<1%



When to treat ?

Symptomatic

Large (>2cm)

Progress

How

Always bloodpressure control
(<120mmHG)

Active

TEVAR



How often embolization?

Unknown

The most patients seen by vascular surgeons already have embolized

Treatment

Medical therapy

If large wall adherence

In the arch if not massive thrombus

TEVAR

In the descending aorta



Left vertebral artery from the arch

Only case reports in the literature

Open surgery

TEVAR

Bypass to the vertebral artery from the left common carotid/subclavian artery



Arch embolization

Surgical treatment of nonaneurysmal aortic arch lesions in patients with systemic embolization.

Gouëffic Y¹, Chaillou P, Pillet JC,
Duveau D, Patra P.

JVS 2002

Results

28 Patients

1 death

3 strokes



Author

Arch replacement using
antegrade selective cerebral
perfusion for shaggy aorta.

Takagi Y¹, Ando M, Akita K, Ishida
M, Kaneko K, Sato M.

Asian Cardiovasc Surg 2013

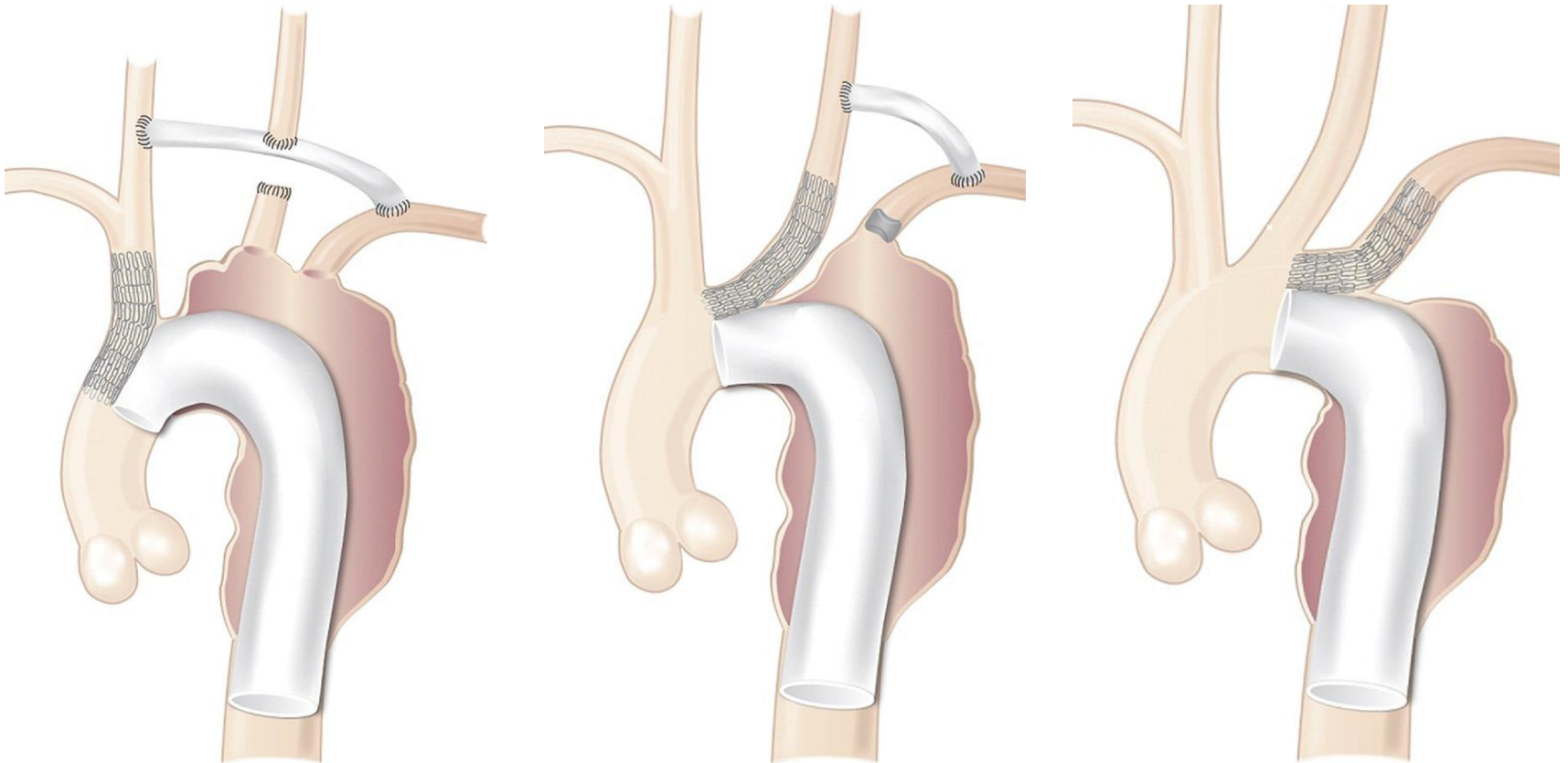
Result

N=63

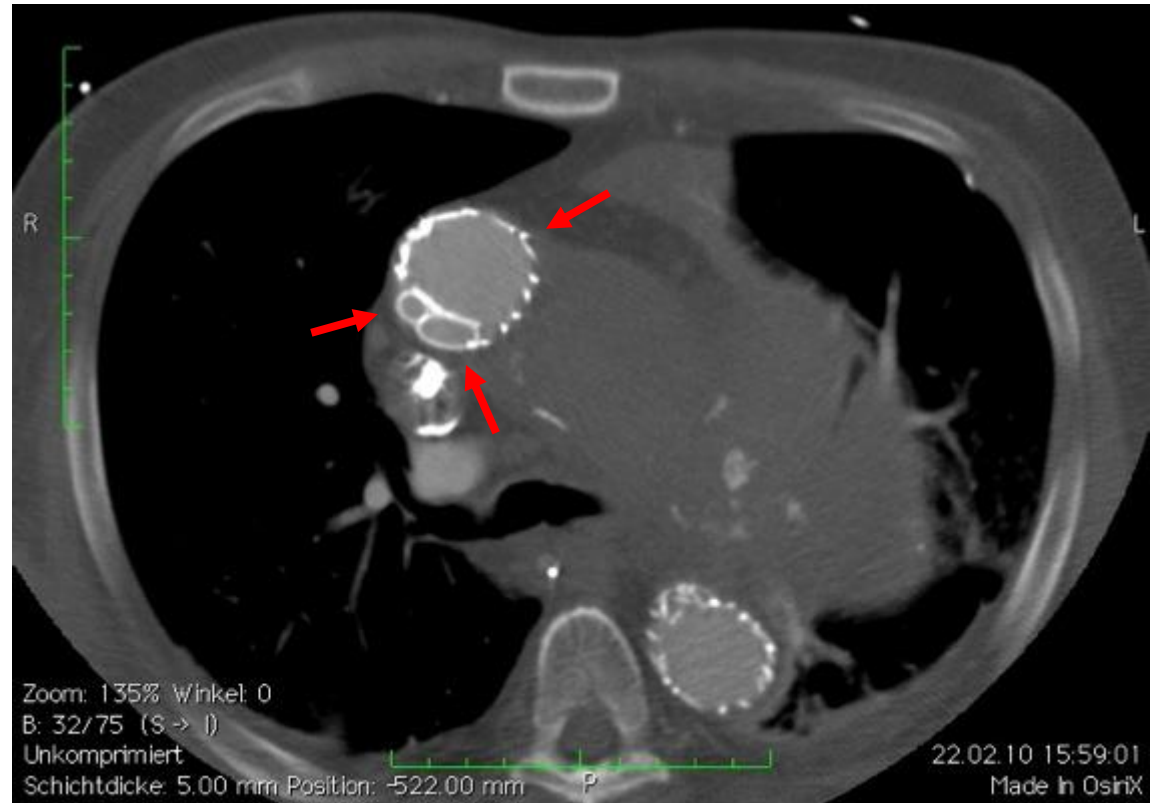
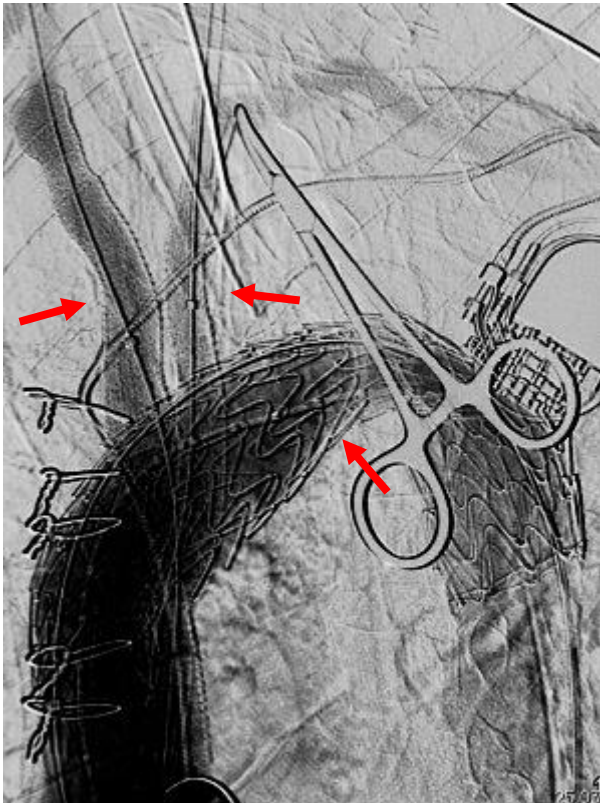
Mortality 1

Stroke 2

Chimney-technique



Triple-Barrel Technique

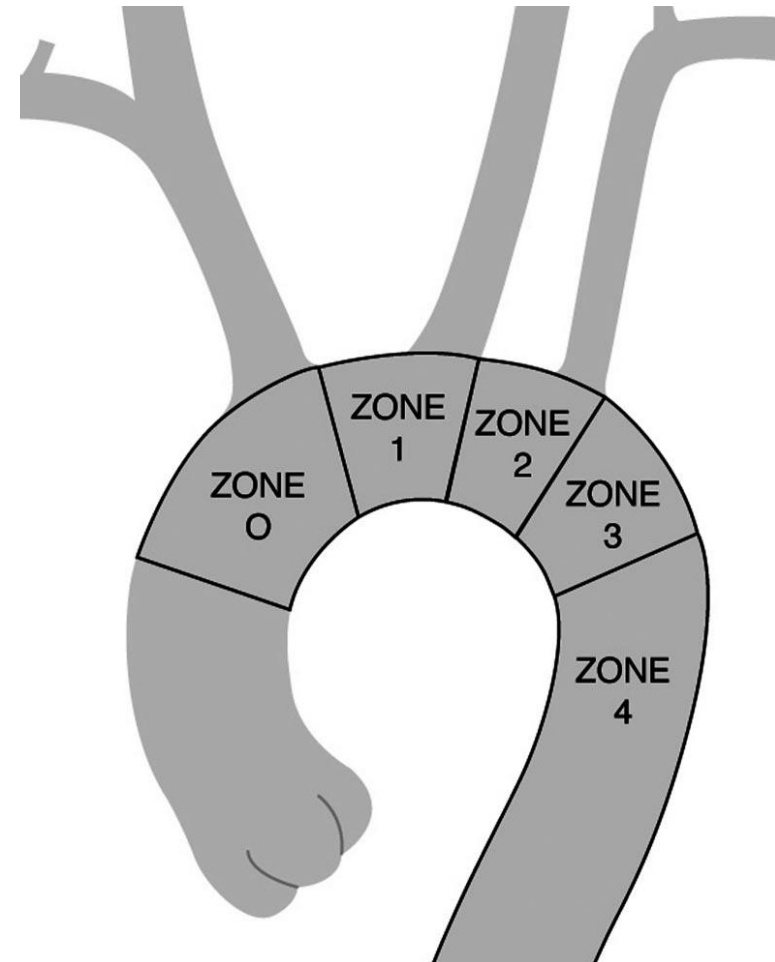


Patients

18 Patients (16 M, 2F)

70,5 years

Zone 0



Criado et al. *J Endovasc Ther* 2002



Results

Technical Success in 17 Cases

OP-Time: 160 Min (106-316 Min)

One „low-flow“ Typ-Ia Endoleak;

30 day Death 2/16 (12%)

One Stroke

Two type A dissection (transapical approach)



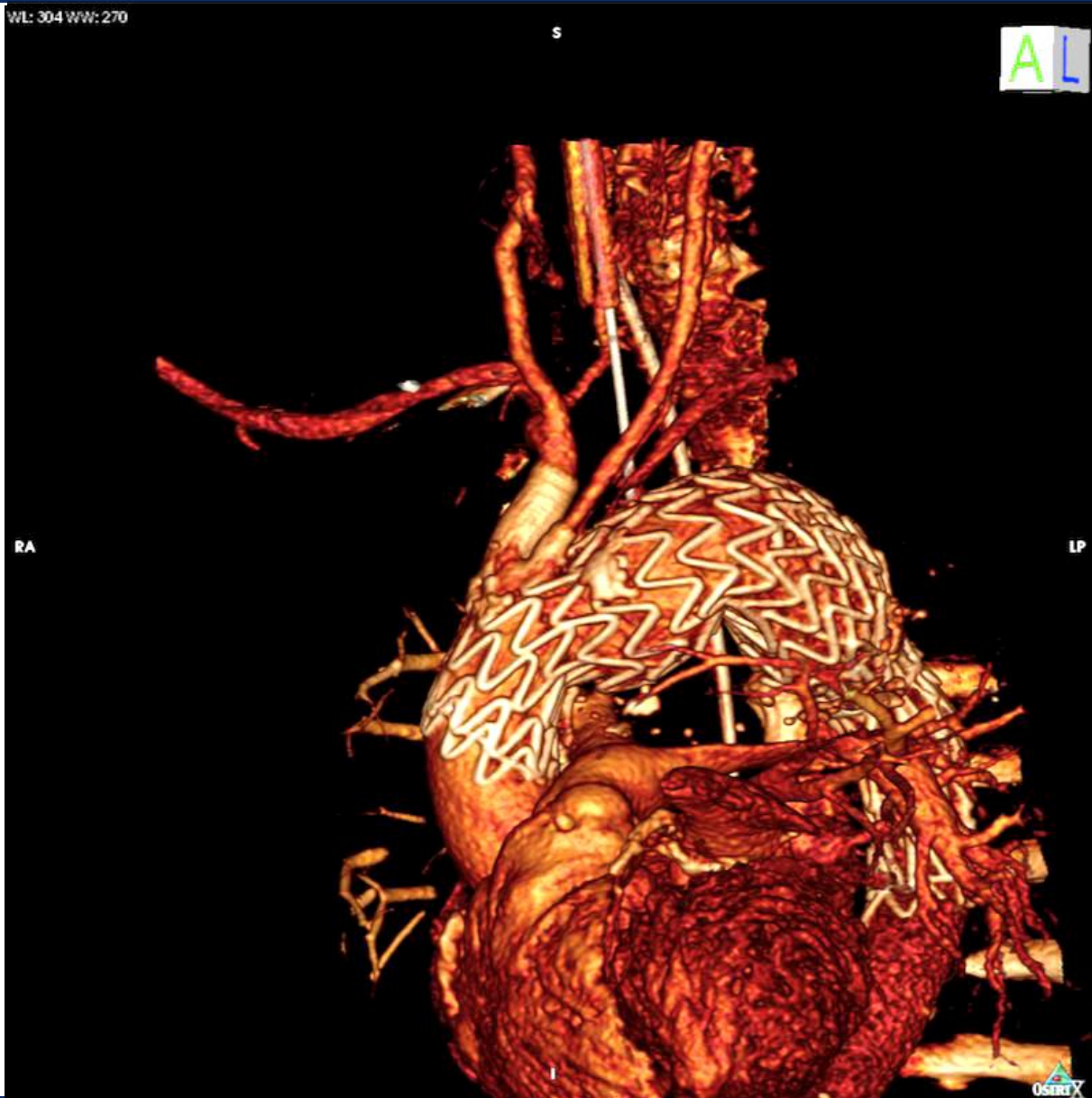
WL: 304 WW: 270

S

A L

RA

LP



OstraX



Literature review



Ann Cardiothorac Surg. 2013 May; 2(3): 339–346.

PMCID: PMC3741865

doi: [10.3978/j.issn.2225-319X.2013.05.14](https://doi.org/10.3978/j.issn.2225-319X.2013.05.14)

The chimney-graft technique for preserving supra-aortic branches: a review

[Konstantinos G. Moulakakis](#),^{1,2} [Spyridon N. Mylonas](#),^{1,2,3} [Ilias Dalainas](#),¹ [George S. Sfyroeras](#),¹ [Fotis Markatis](#),¹
[Thomas Kotsis](#),³ [John Kakisis](#),¹ and [Christos D. Liapis](#)¹



Literature review Chimneys

124 patients

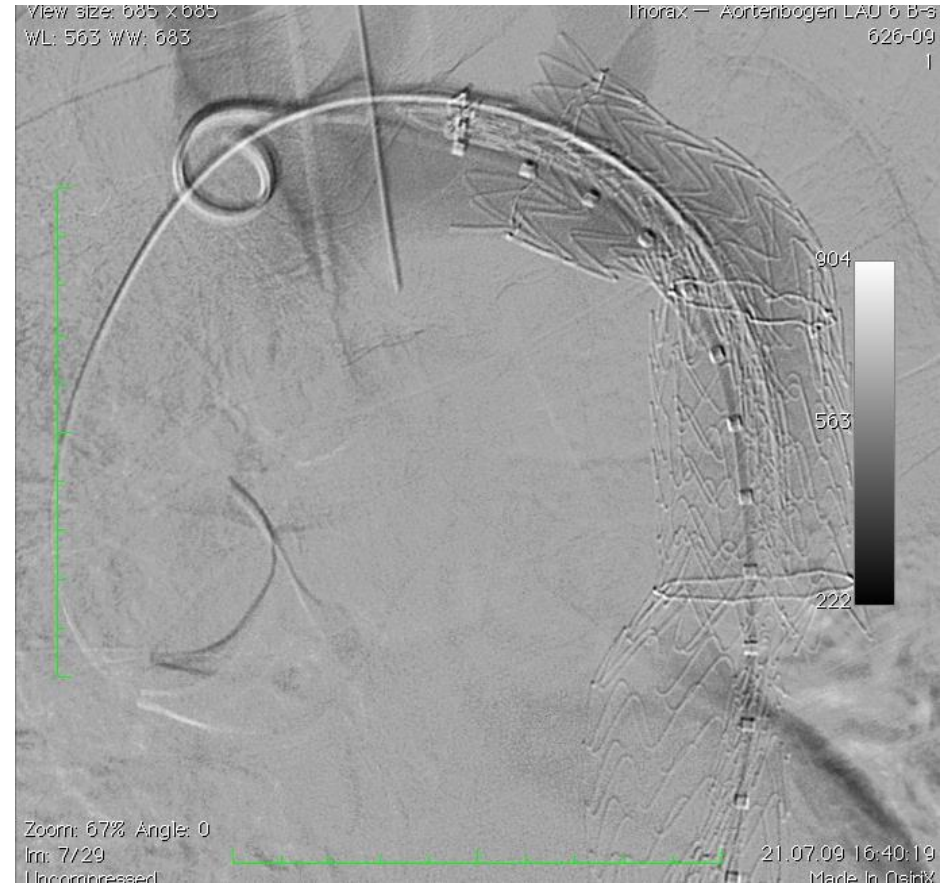
136 Chimneys



Results

n	Mortality	Stroke	EL	EL type 1
124	4 %	4.8%	19%	10%

Postcoarctatio aneurysm





Hybrid approach

55 year old man

Coarctatio operated with a patch at the age of 23 years

Mechanical heart valve replacement 10 years later

Now shortness of breath. CT showed 11 cm large pseudo aneurysm starting just behind the left subclavian artery.

VERY GOTHIC ARCH.



Standard TEVAR

Failed to come around the neck with the stentgrafts as there was no stability (No shoulder back up).

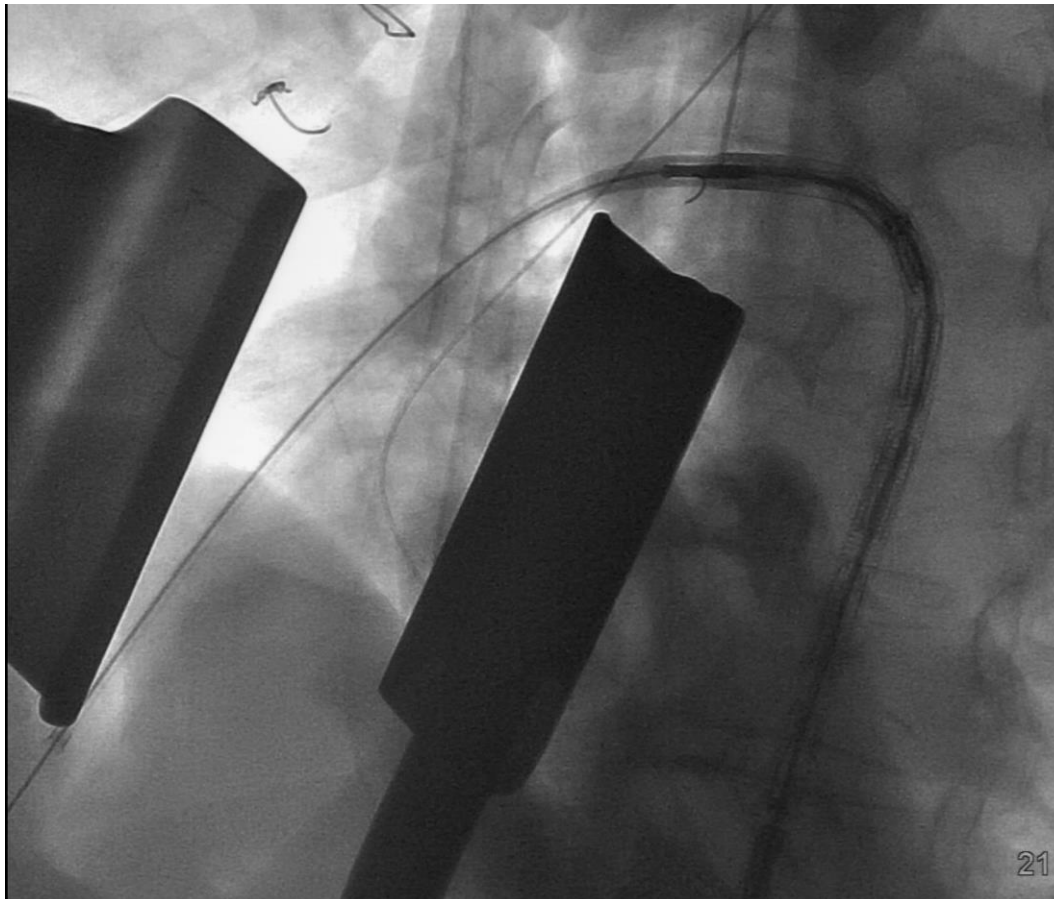
Therefore “through and through” wire

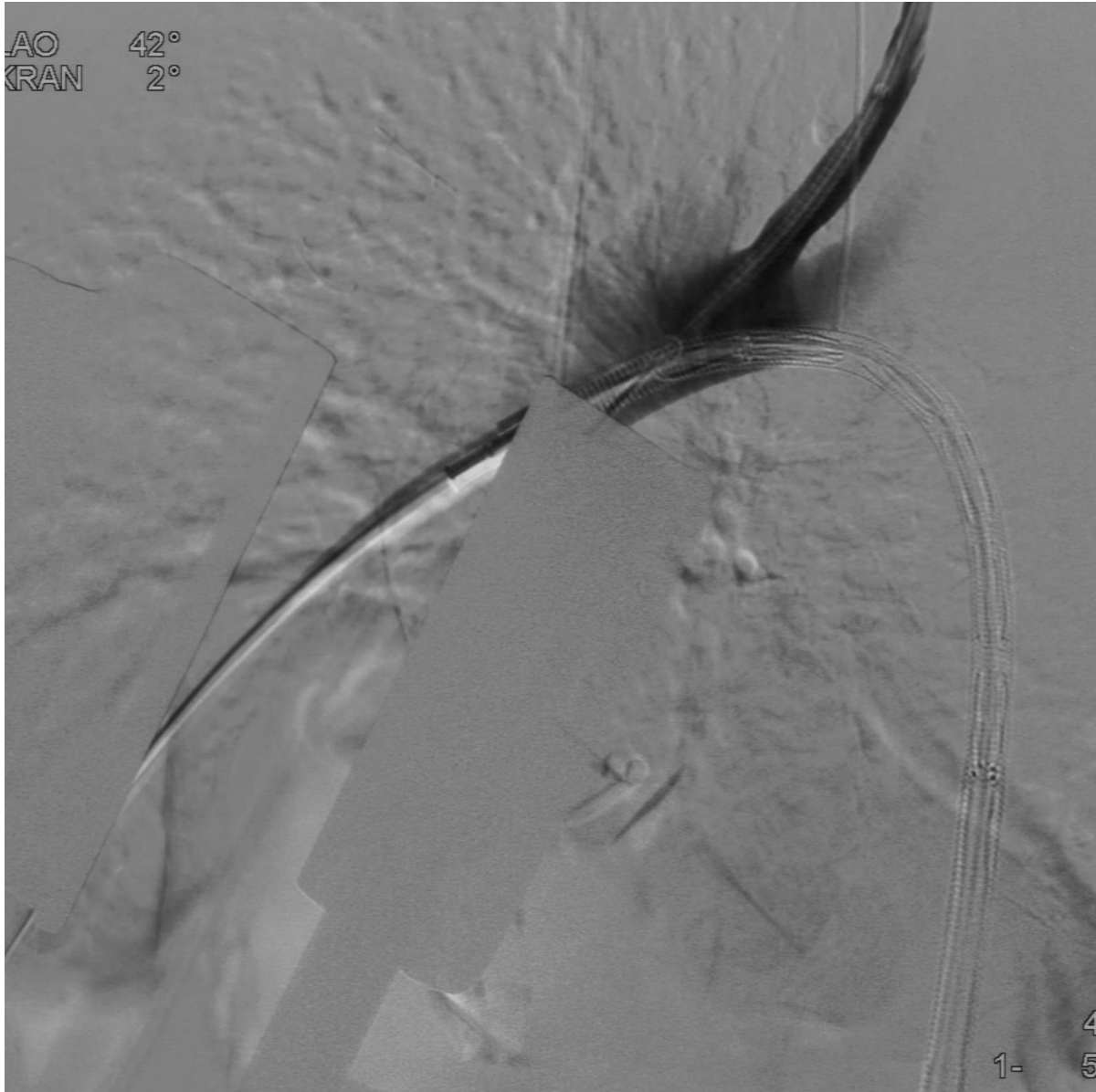
Not possible through the mechanical heart valve

Angle too sharp and no distance for the wire through the brachiocephalic trunk

Wire through the ascending aorta!?

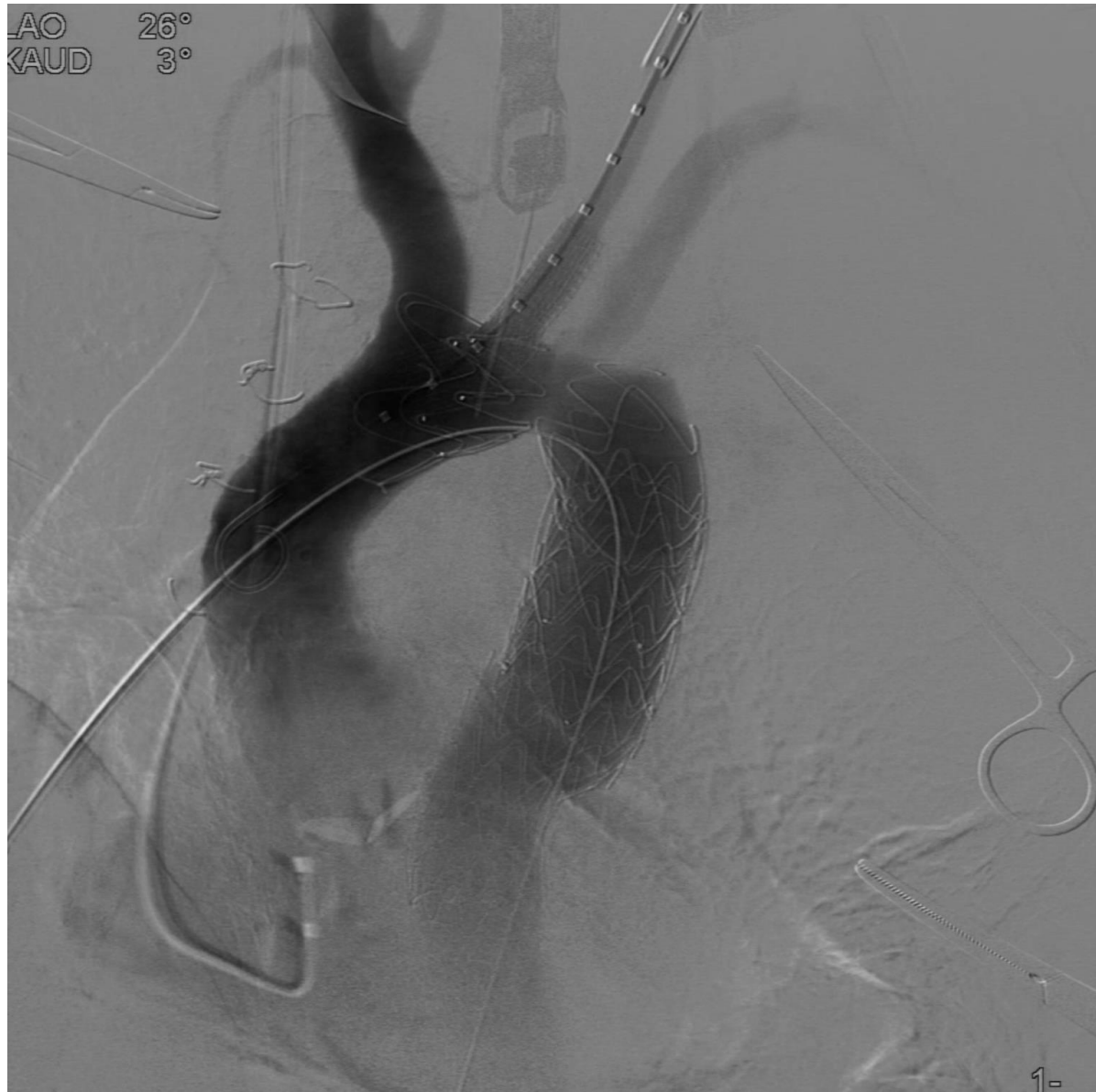
Through and through ascending aorta







Control angiography







Arch Chimney Technique

Feasible

All supra-aortic vessels can be vascularized



Advantages:

Cheap

Emergency or after
Sternotomy

Short OP-Time

Acceptable results

Drawbacks

“Gutter” Endoleak

Retrograde type A
dissection?



Summary

For unusual cases
nonscientific
endovascular
innovations might help



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Thank you very much for your attention

