

Provisional stenting of a bifurcation lesion in a patient with NSTEMACS – a case report

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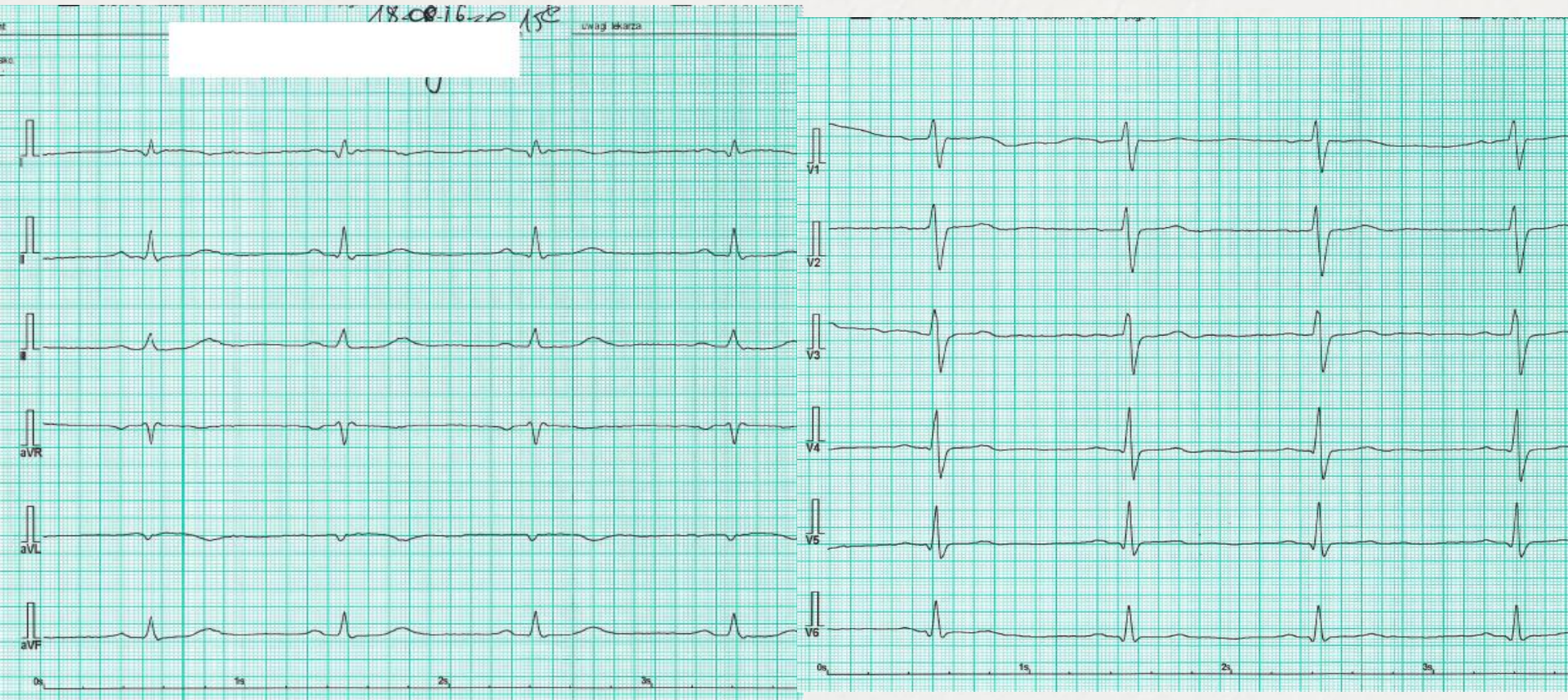
Case report

- Patient J.K.,
 - 66 years old , male
 - **Typical chest pain** for 6 hours – initially diagnosed in another hospital and transferred after TnT results

Case report

- No history of CVD
- Hypothyroidism for 3 years (treated with L-tyroxin), TSH 0.079 IU/ml (N: 0.35-4.94), fT3 and fT4 within normal ranges
- Previous smoker
- hs TnT 1.410 ug/l (N: <0.014)
- CK-MB 135 U/l (N: <24)
- ECHO: Hypokinesis of basal 2/3 part of lateral wall, hypokinesis of basal segment of the inferior wall, EF 45%
- Clopidogrel 600 mg, ASA 300 mg

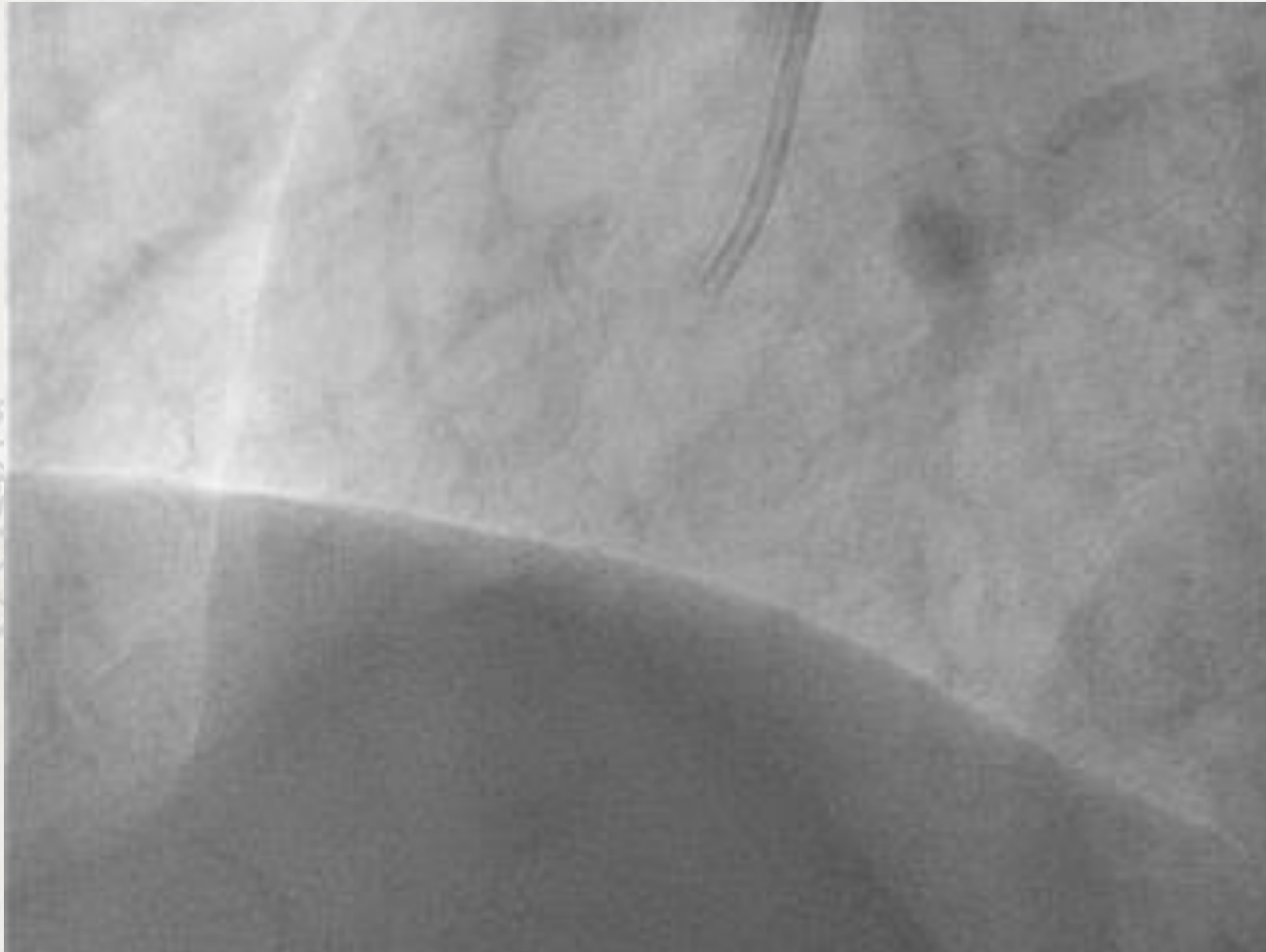
ECG – ischemic changes over lateral wall



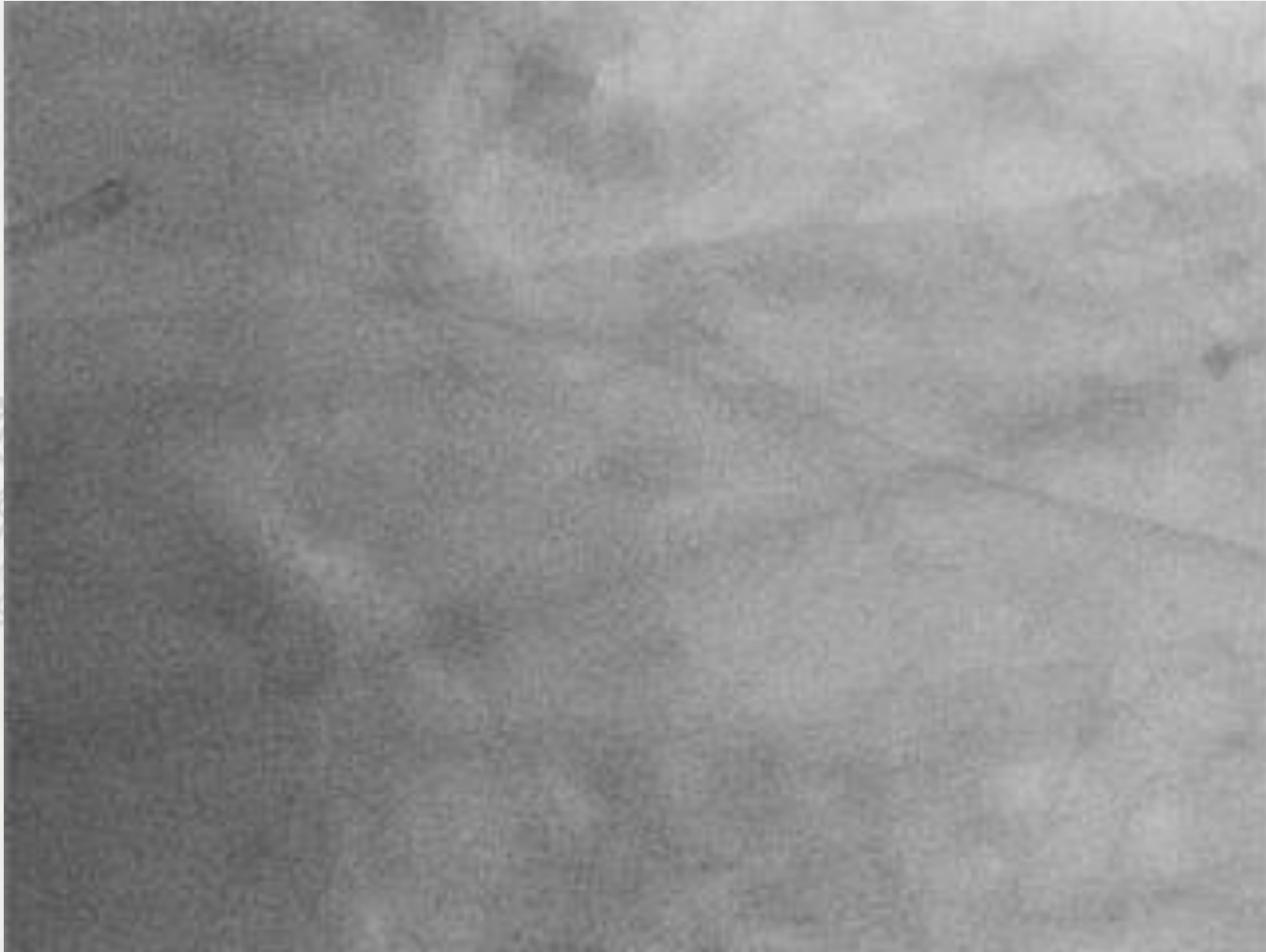
Coronary angiography

- Occluded 1 D (TIMI -1 flow grade)
- Significantly narrowed LAD in prox/med. segment
- Non significant changes in LCX and RCA

Right coronary artery - no significant lesions

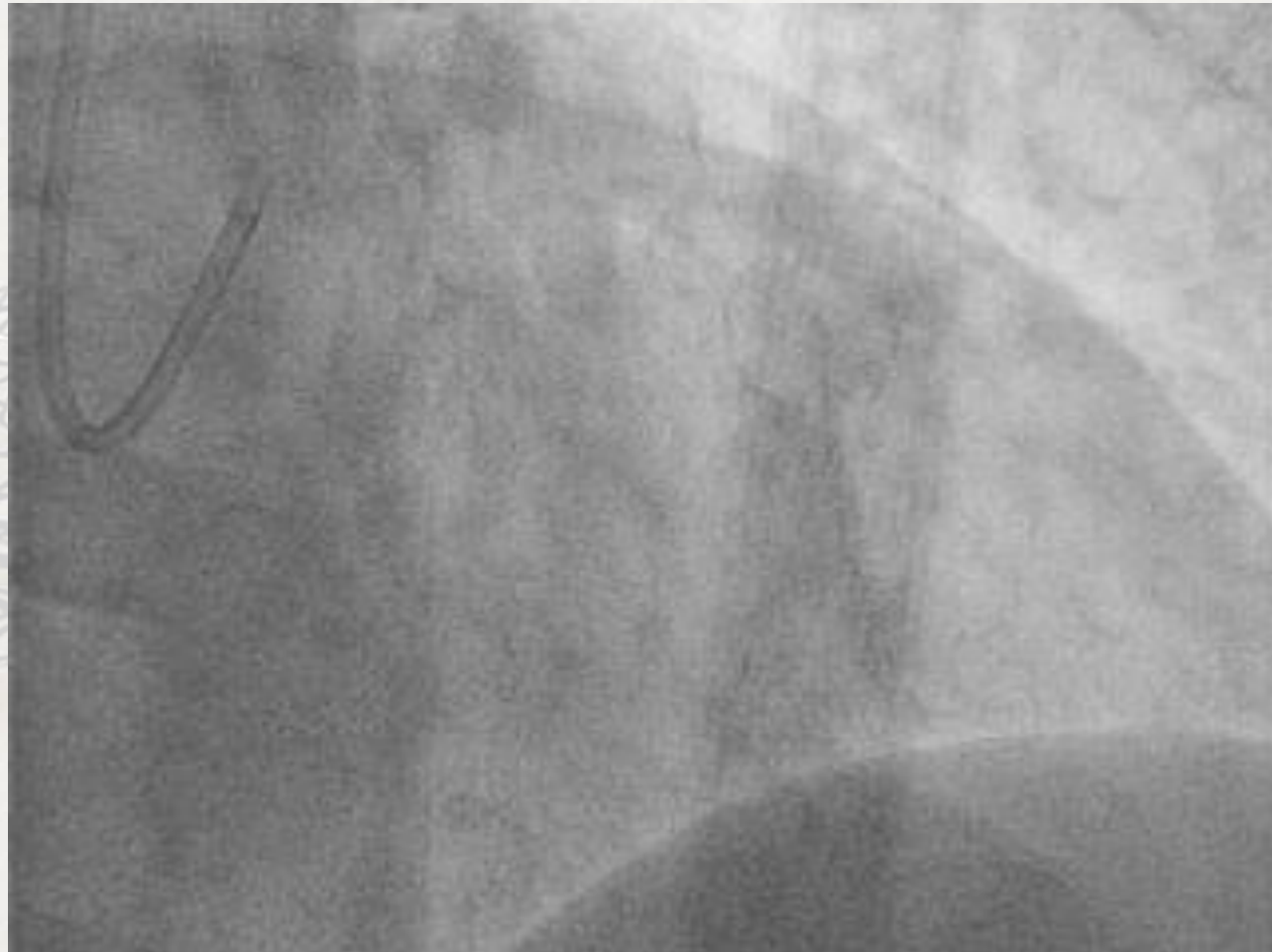


Left circumflex - no significant lesions

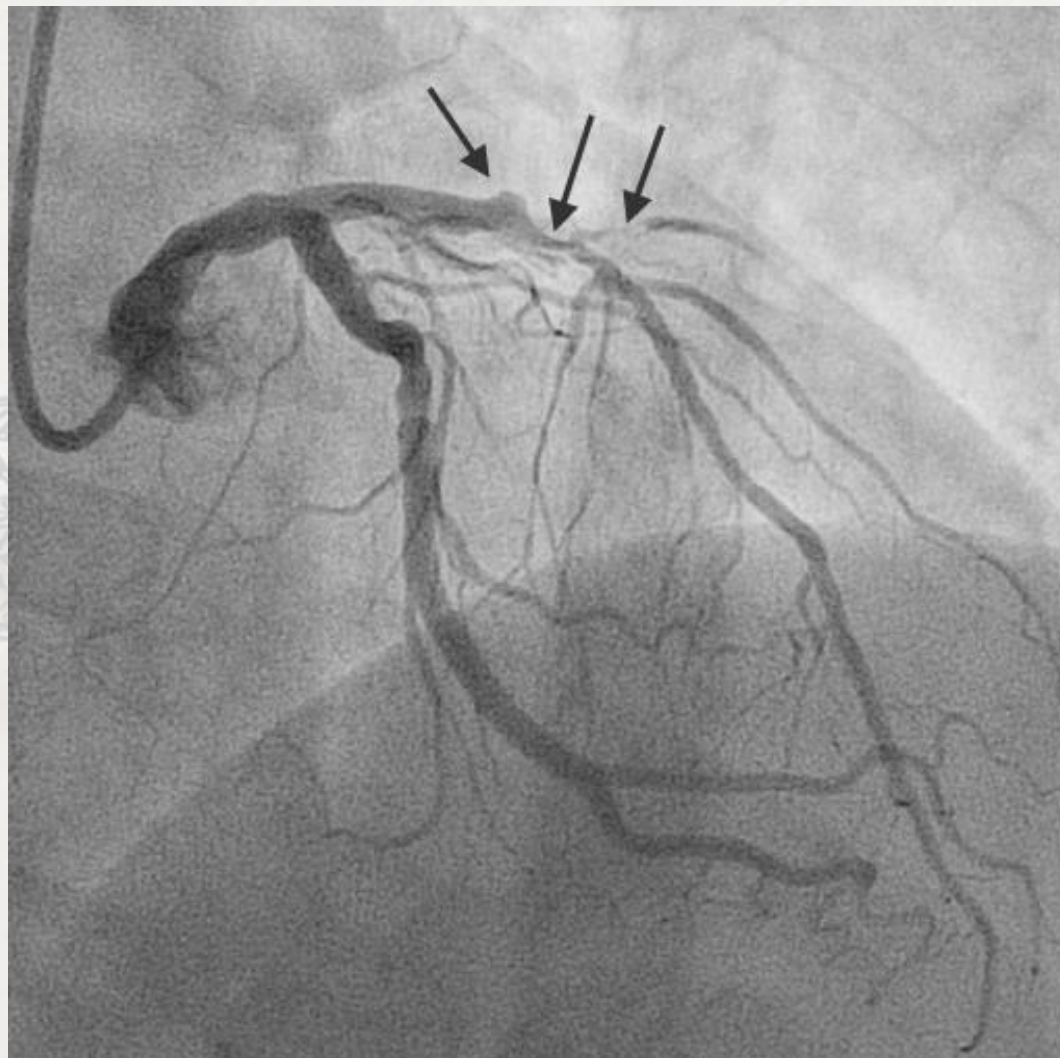


Left Anterior Descending artery

- Occluded small 1D branch with TIMI 1 flow
- Significantly narrowed LAD in mid segment
- Aneurysm/erosion in prox LAD mimicking occluded large diagonal branch



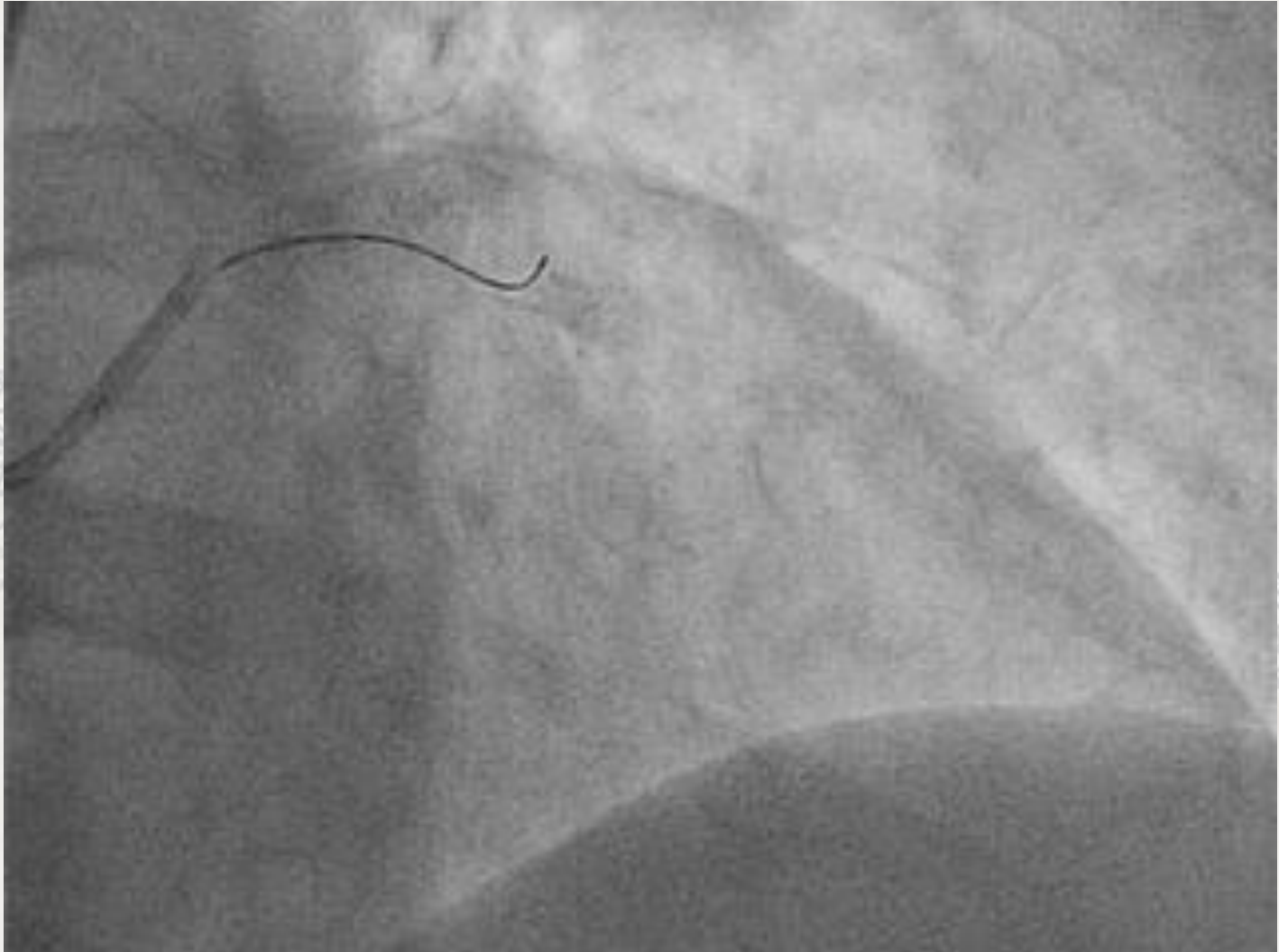
Left Anterior Descending artery



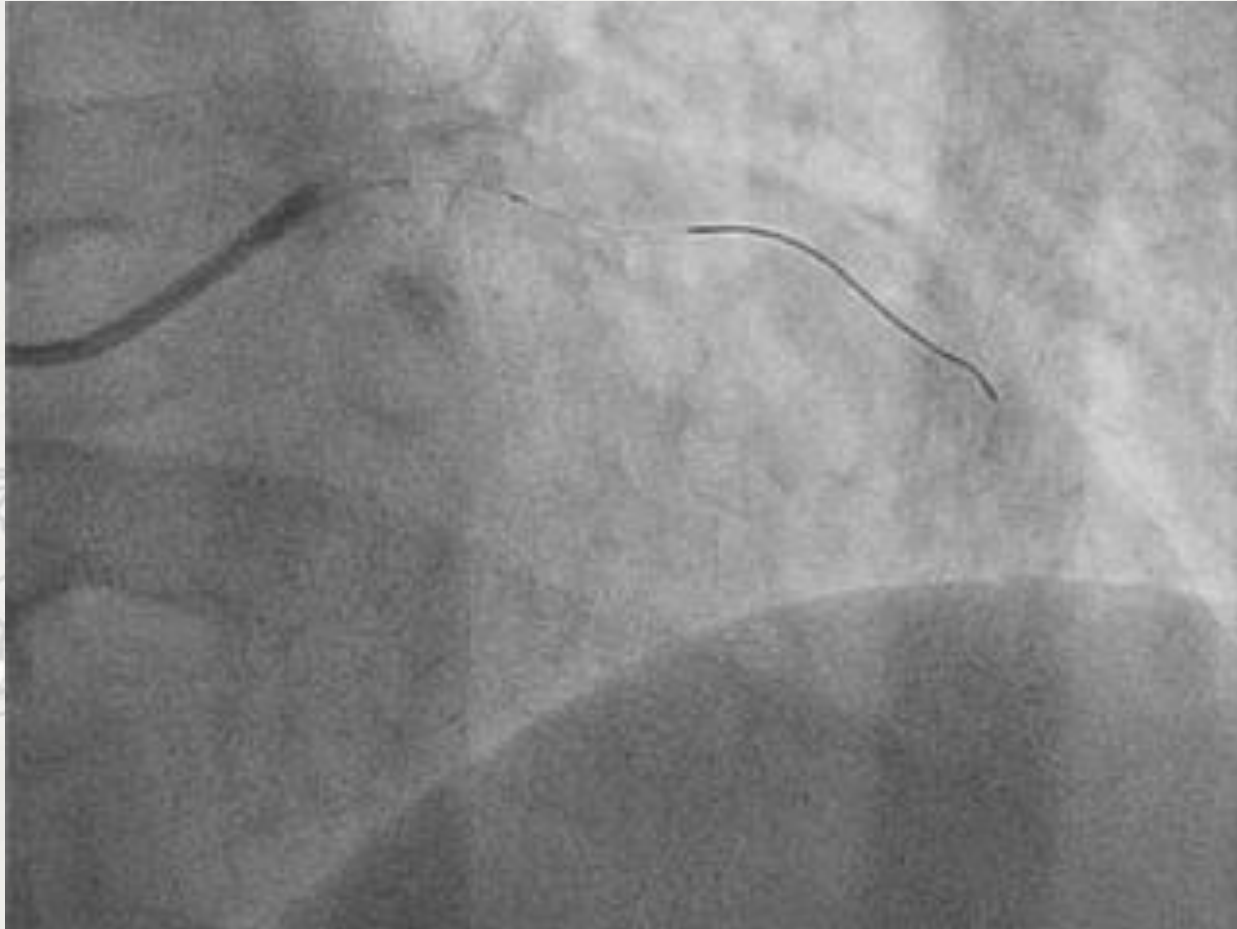
Planning the procedure

- Identifying the target lesion
- Opening 1D
 - Quite small branch
 - PBA only (?)
 - Provisional stenting
- LAD stenting

Identifying the target lesion
- try to open doubtful place



Opening 1D – RAO/CRAN



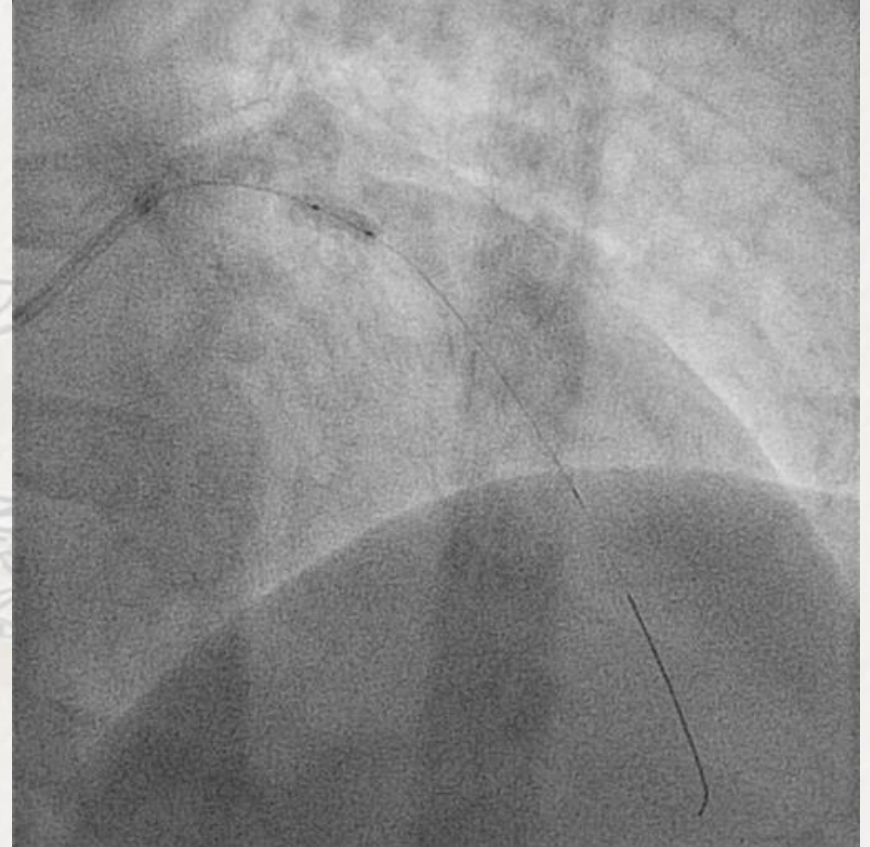
- Balloon 2.0x15 mm (12 atm), good angio result

Opening 1D – LAO/CRAN



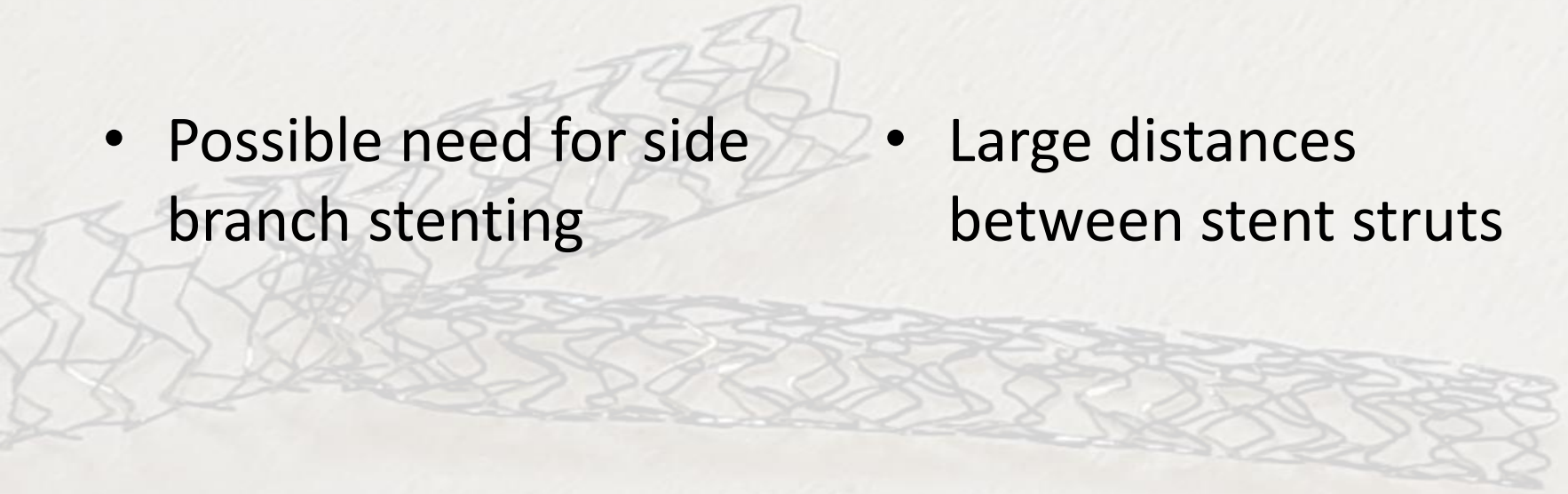
LAD – stenting after pre-dilatation

- Quite complex lesion
- Calcifications
- Significant prox-to-dist reference size reduction




Stent selection

- Significant vessel size reduction
- Possible need for side branch stenting
- Possibility to enlarge diameter
- Large distances between stent struts



Our choice in this case

– Orsiro 3.0x13 mm

 BIOTRONIK excellence for life		∅ NP	∅ Max* (max doprężenie)
ORSIRO Pro Kinetic Energy PK Papyrus	(min. ∅ 2.25mm) (min. ∅ 2.0mm) (min. ∅ 2.5mm)	2.0 - 3.0 mm	3.50 mm
ORSIRO Pro Kinetic Energy PK Papyrus		3.5 - 4.0 mm	4.65 mm

Maximal Expansion and Stent Strut Opening

Pro Kineti
PK Papyru

Nominal diameter	2.25 mm	2.50 mm	2.75 mm	3.00 mm	3.50 mm	4.00 mm
Strut thickness	60 μm	60 μm	60 μm	60 μm	80 μm	80 μm
Strut width	75 μm	75 μm	75 μm	75 μm	85 μm	85 μm
Number of connectors	3	3	3	3	3	3
Number of crowns at the end of the stent	8	8	8	8	8	8
Stent strut opening diameter at NP*	0.79 mm	0.92 mm	0.92 mm	0.92 mm	1.06 mm	1.25 mm
Maximal diameter of expanded stent cell	3.59 mm	3.59 mm	3.59 mm	3.59 mm	4.42 mm	4.42 mm
Nominal outer diameter of the stent at NP	2.37 mm	2.62 mm	2.87 mm	3.12 mm	3.66 mm	4.16 mm

* Mean of the largest possible opening diameter within a stent cell at NP

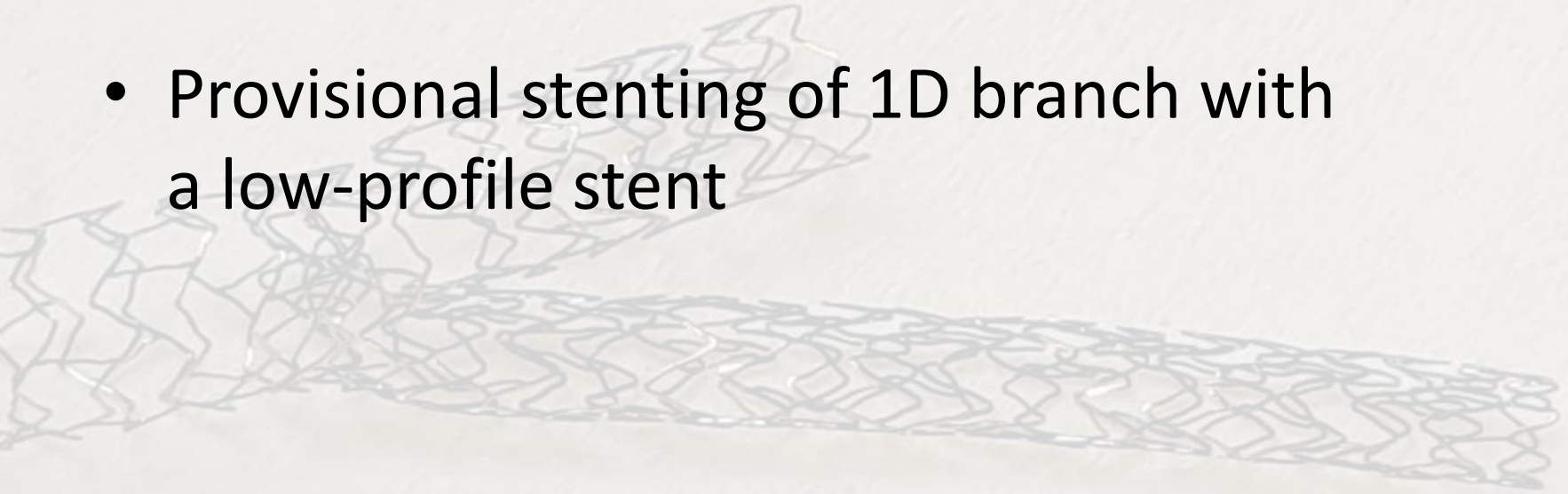
LAD stenting result

- Need for postdilatation in LAD
- Significant lesion in 1D ostium

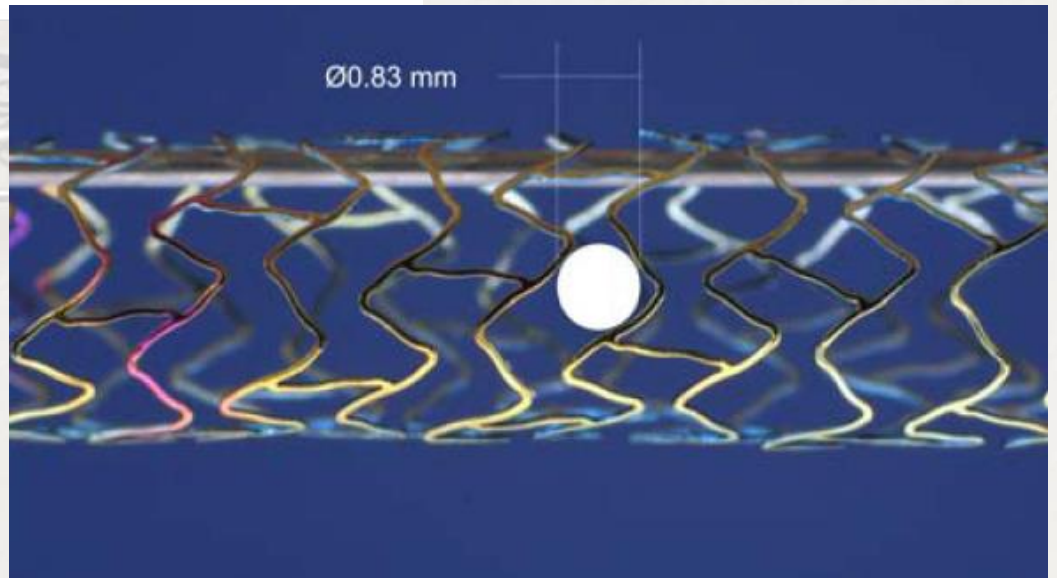
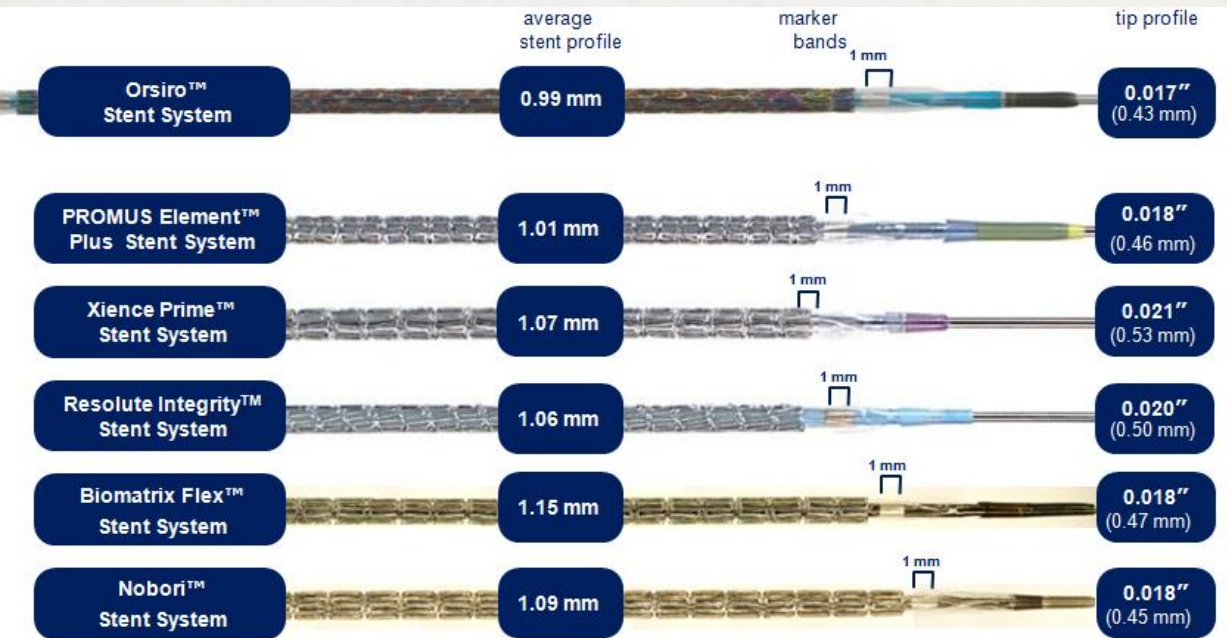


Next step

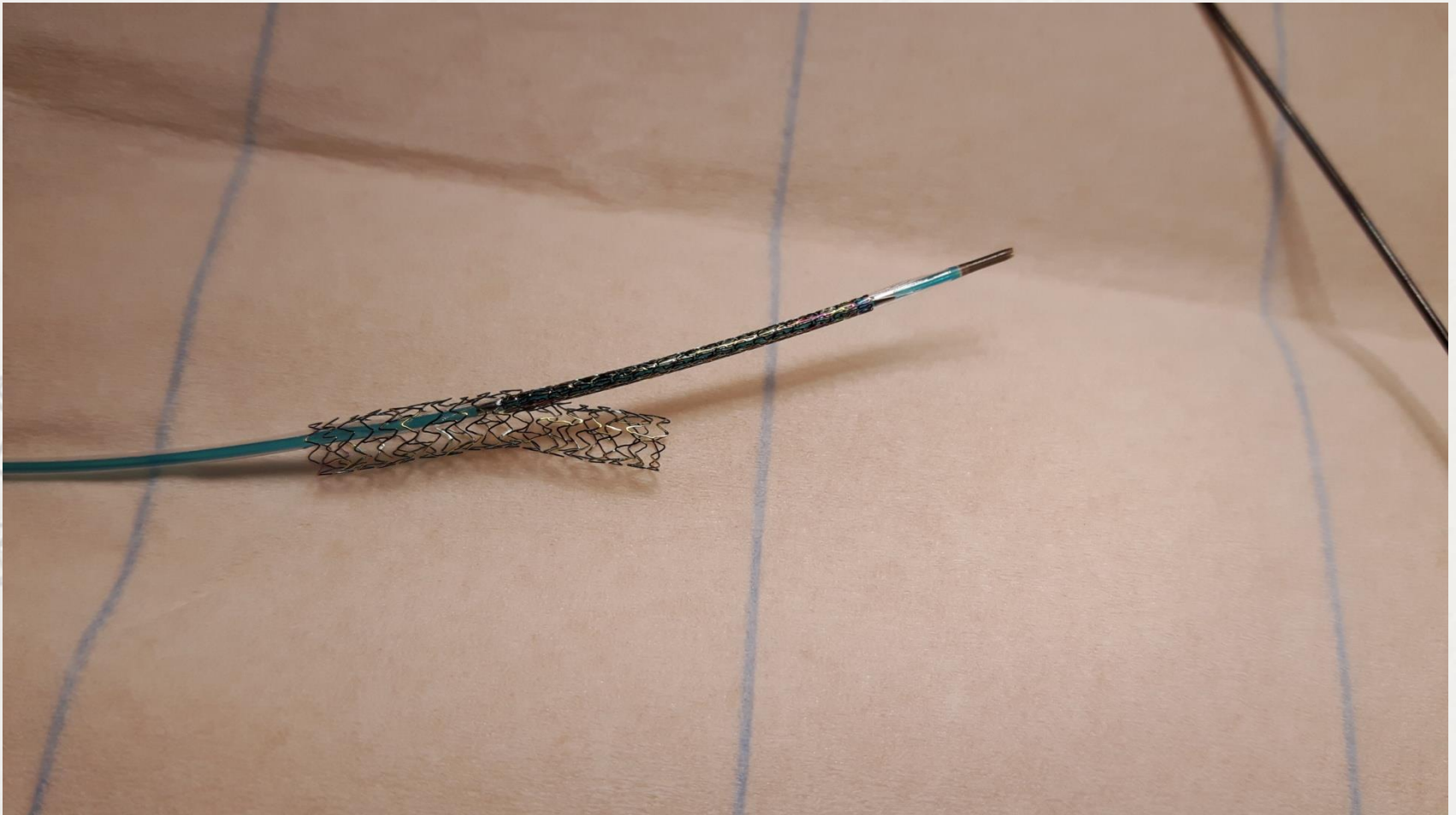
- Provisional stenting of 1D branch with a low-profile stent



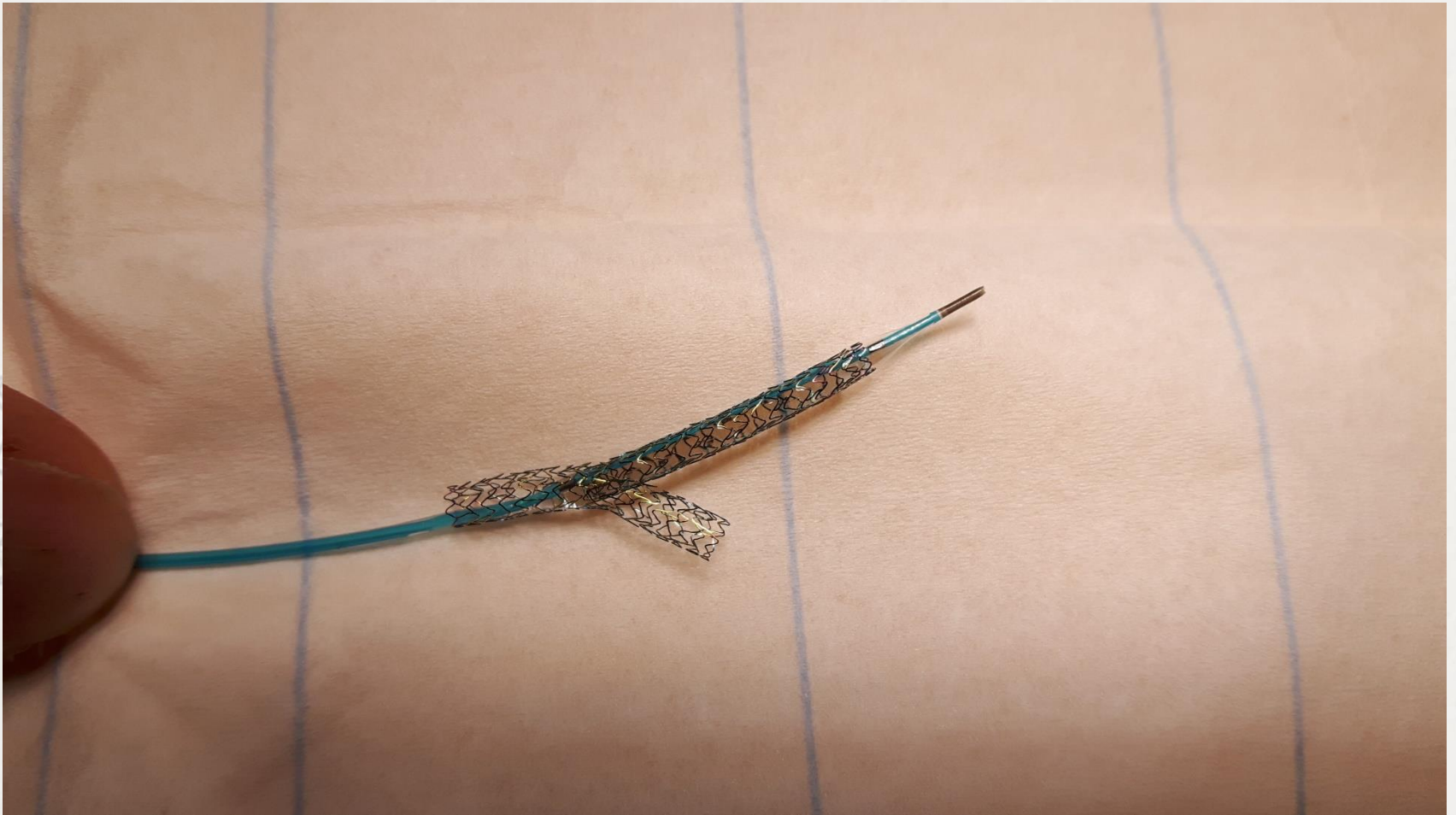
Orsiro



Provisional stenting in vitro (Orsiro 3.0x18mm, Orsiro 2.5x20 mm)

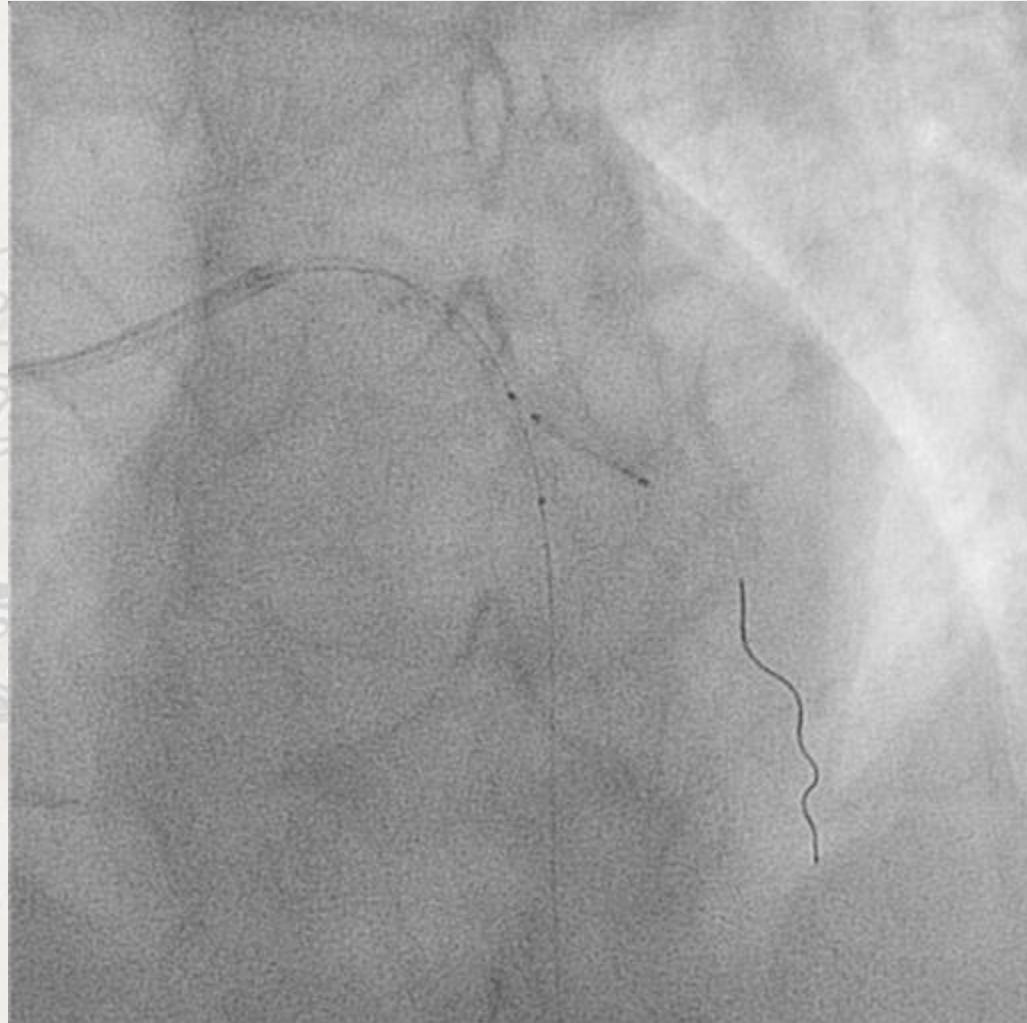


Provisional stenting in vitro (Orsiro 3.0x18mm, Orsiro 2.5x20 mm)

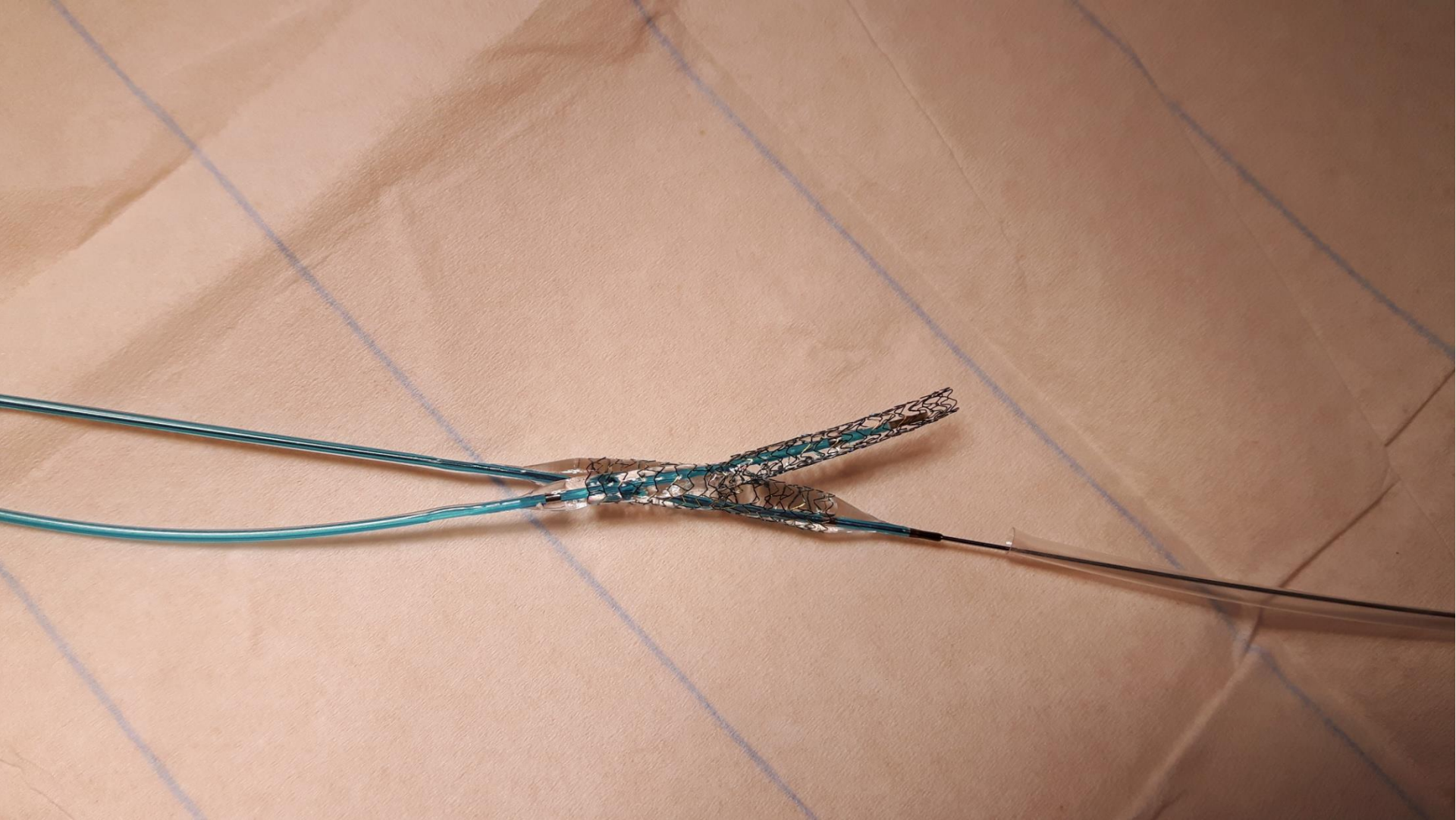


Provisional stenting

- Low-profile stent
- Orsiro 2.5x13 mm

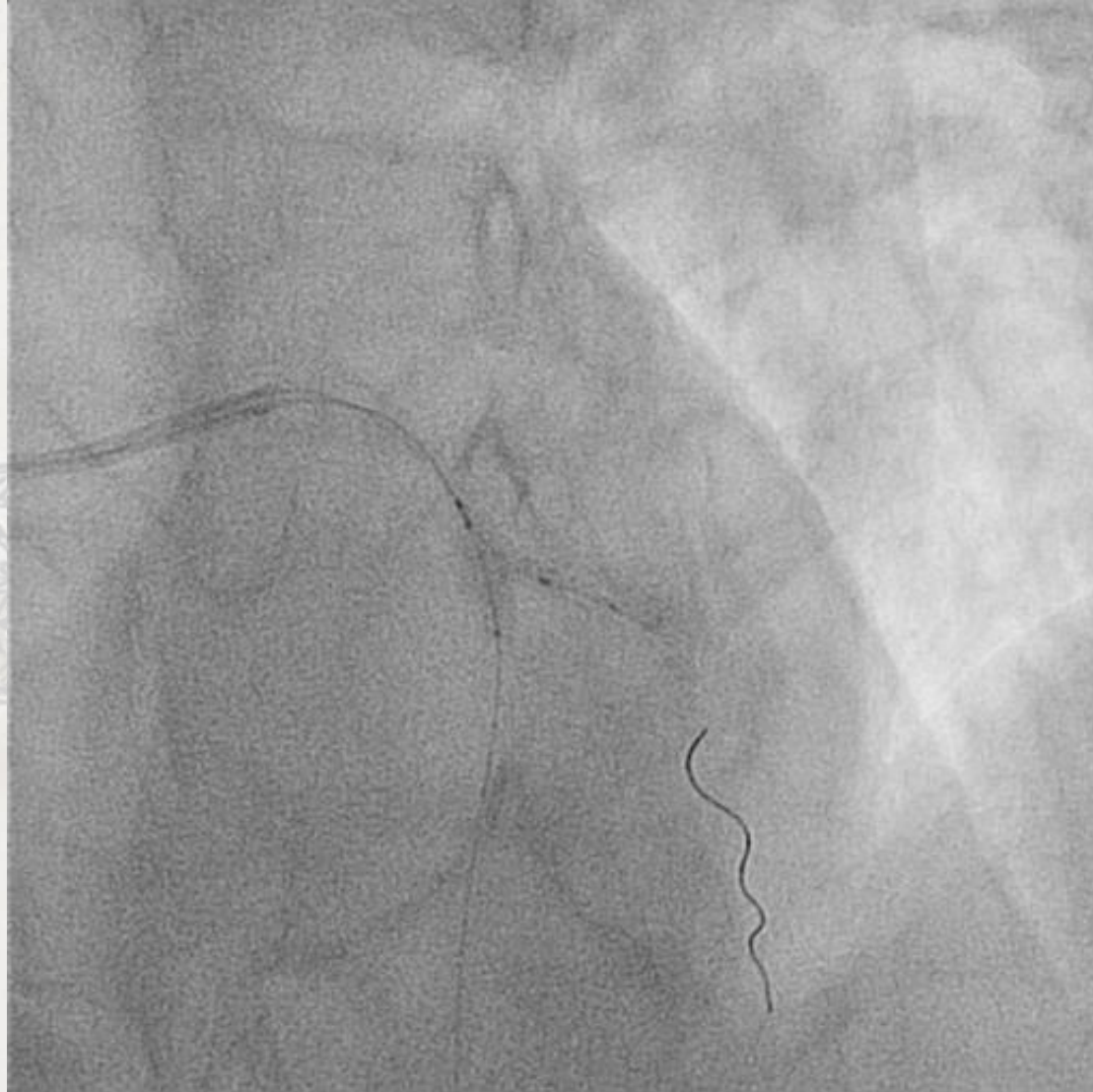


Post stenting kissing



Post stenting kissing

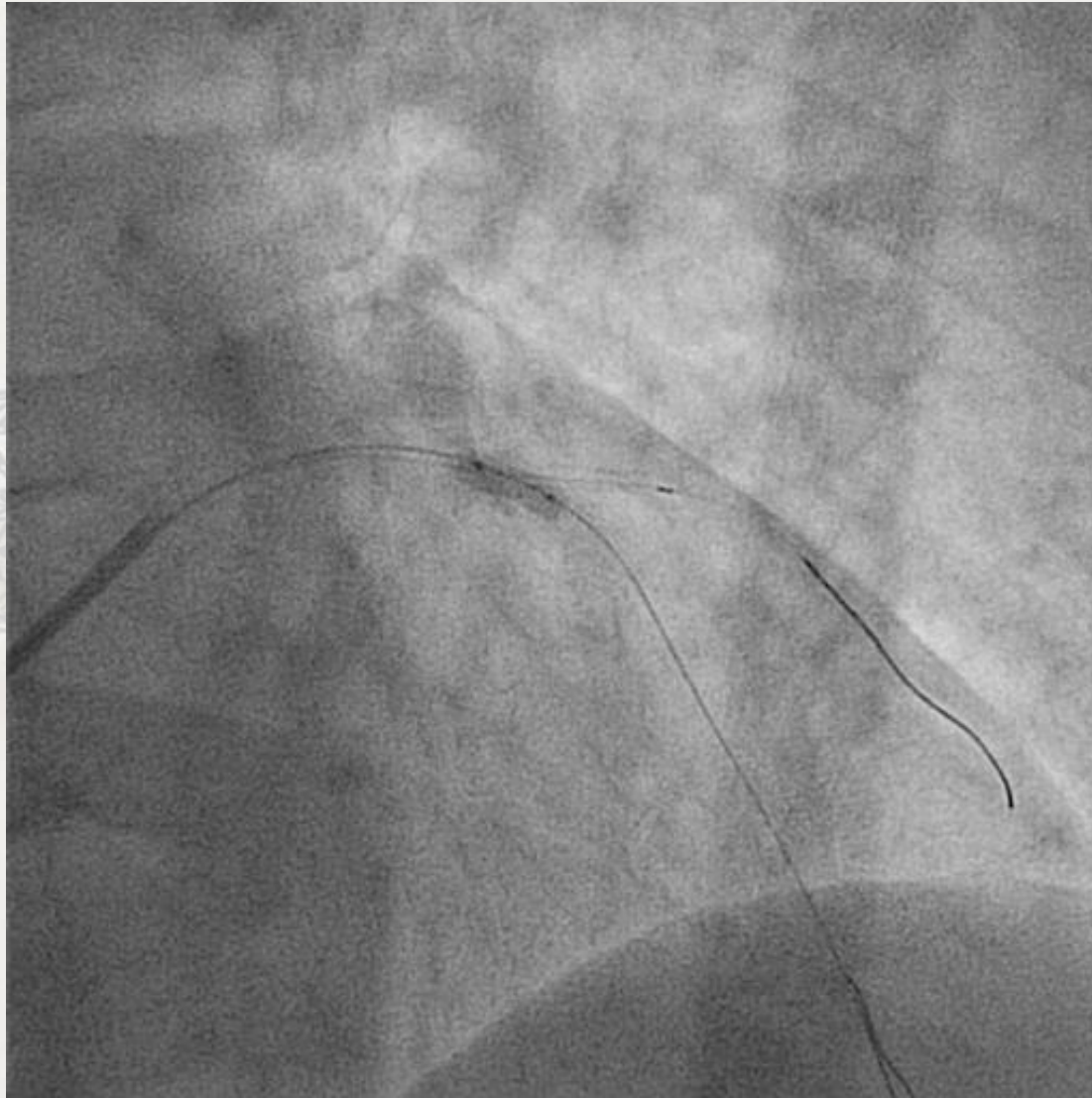
NC 3.0x12 mm -10 atm, 2.5x13 mm -



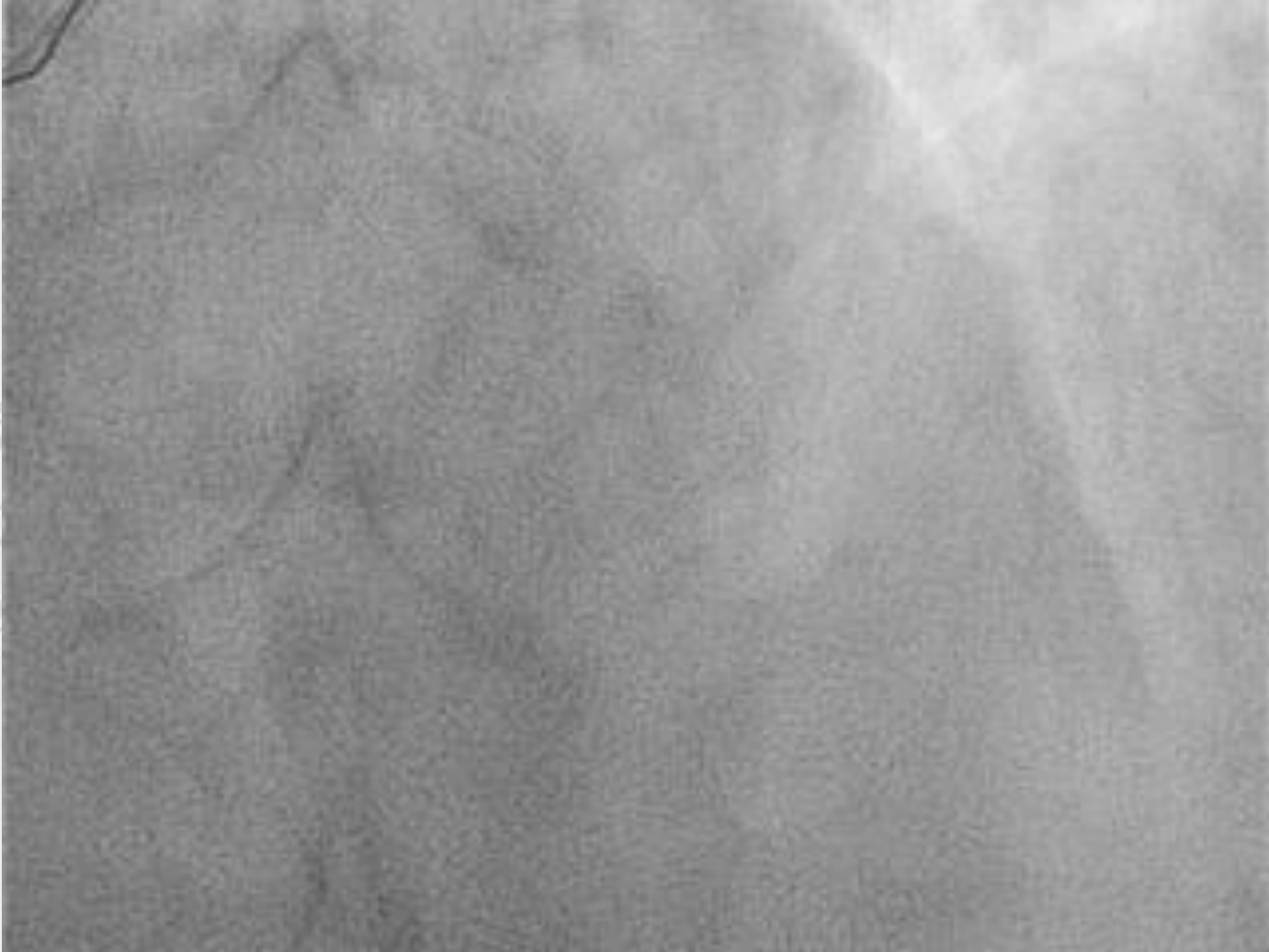
Final proximal optimization
- ballon NC 4.0x9 mm -20 atm



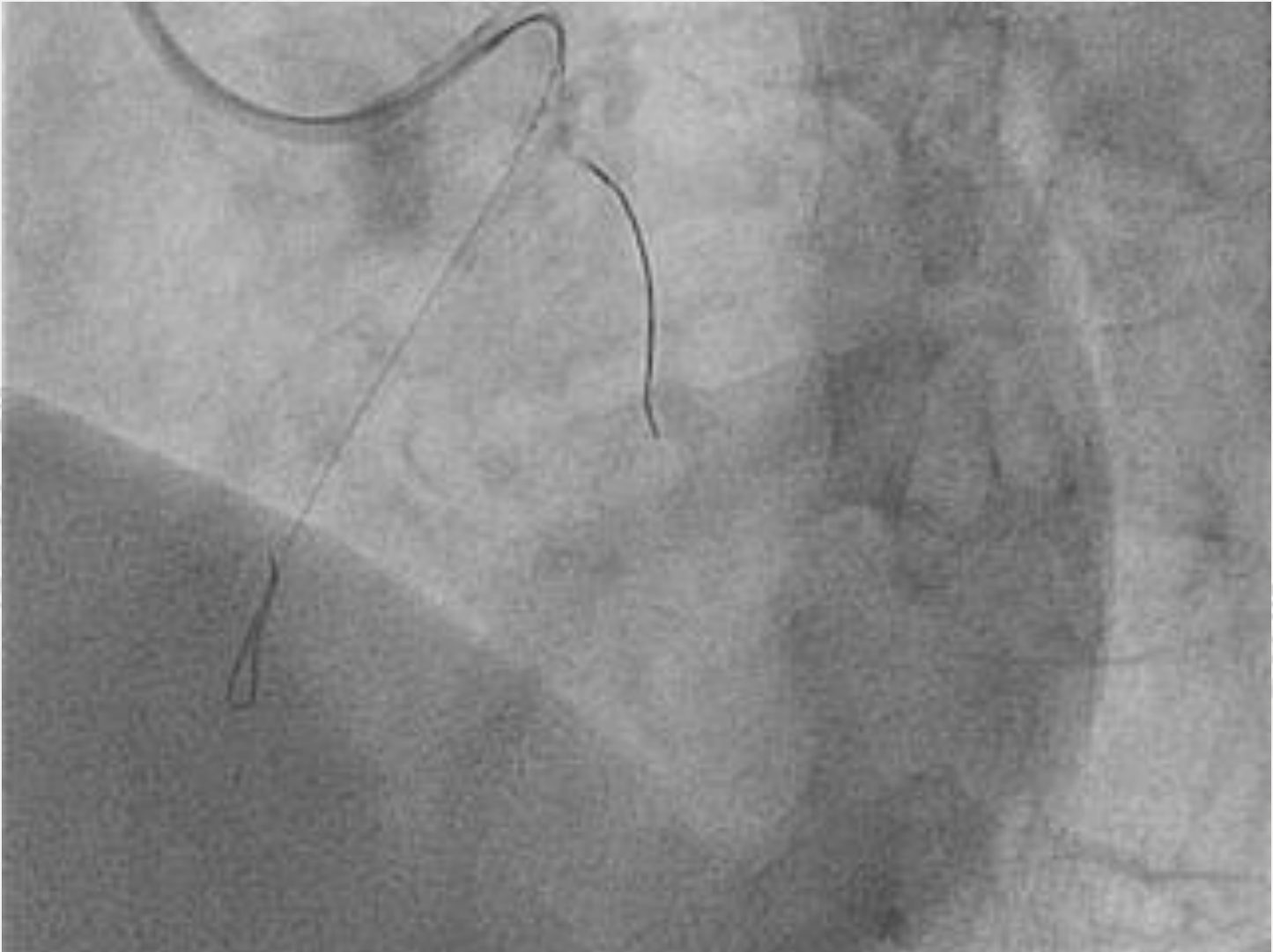
Final proximal optimization
- ballon NC 4.0x9 mm -20 atm



Final result (1)



Final result (2)



Final result (3)

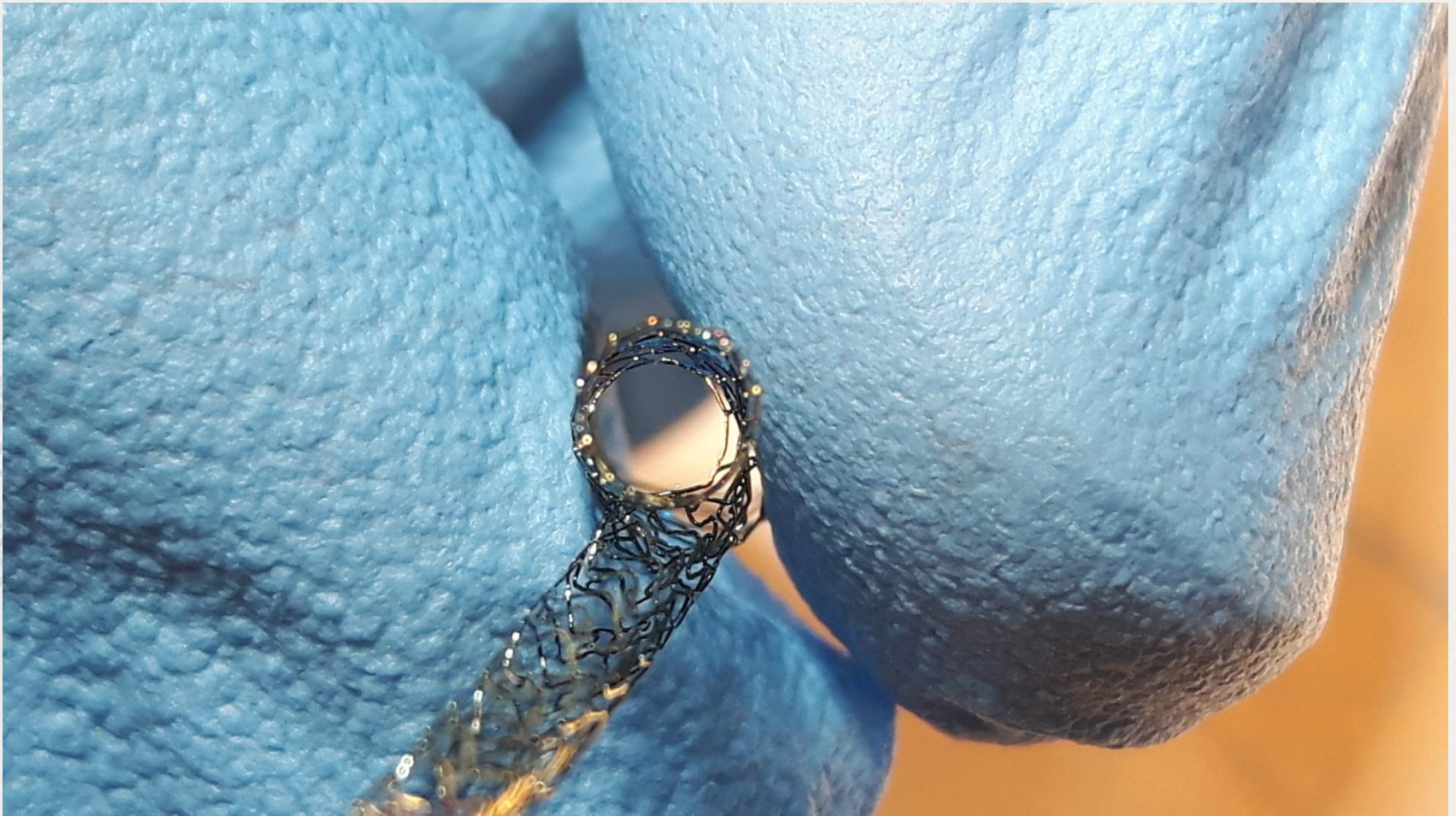


Why kissing is not enough for a cardiologist?



- Proximal end of the stent after kissing balloons - oval

Distal stents after kissing – circle lumen – no protruding struts



Final optimization of 3.0 stent after kissing 3.0 and 2.5

Ballon NC 3.0 (12 atm) – not satisfactory



Ballon NC 3.5 (12 atm) – not satisfactory



Final optimization of 3.0 stent after
kissing 3.0 and 2.5 - NC 4.0 balloon (18 atm)
- optimal result



Thanks to

- Alicja Dąbek (Biotronik)
 - for stents
- Dr Tomasz Kucharczyk
 - For help with concept and „in vitro” stenting and ballooning



Thank You