What is the cause of total LV failure?

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AICT 2018, Hong Kong

Speaker's name : Michael Kang-Yin, Lee, Hong Kong

☑ I do not have any potential conflict of interest

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CASE DESCRIPTION

- F/92
- AF on warfarin, HT, gastritis
- Anaemia with on and off PR bleeding
- Repeated admission for CHF and ACS since 2017
- CHADs VASC: 5, HASBLED: 3
- ECG: AF, QRS 84ms
- BW: 40 kg, BH: 146 cm, BSA: 1.28 m2

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TTE

- LV: 60-65 %
- Bilateral enlargement
- Mod to severe MR
- Severe TR, RVSP 34mmHg
- Heavily calcified AV, severe AS, AVA 0.39 cm2, mean gradient 60 mmHg

Coro

- 20 % pRCA
- Normal LAD and Lcx and LMN

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CT measurement

- motion artifact in CT
- moderate calcification in leaflet
- borderline width on SoV (for self expanding valve)
- LCA height of 9.1, however minimal calcification on LCC leaflet tip

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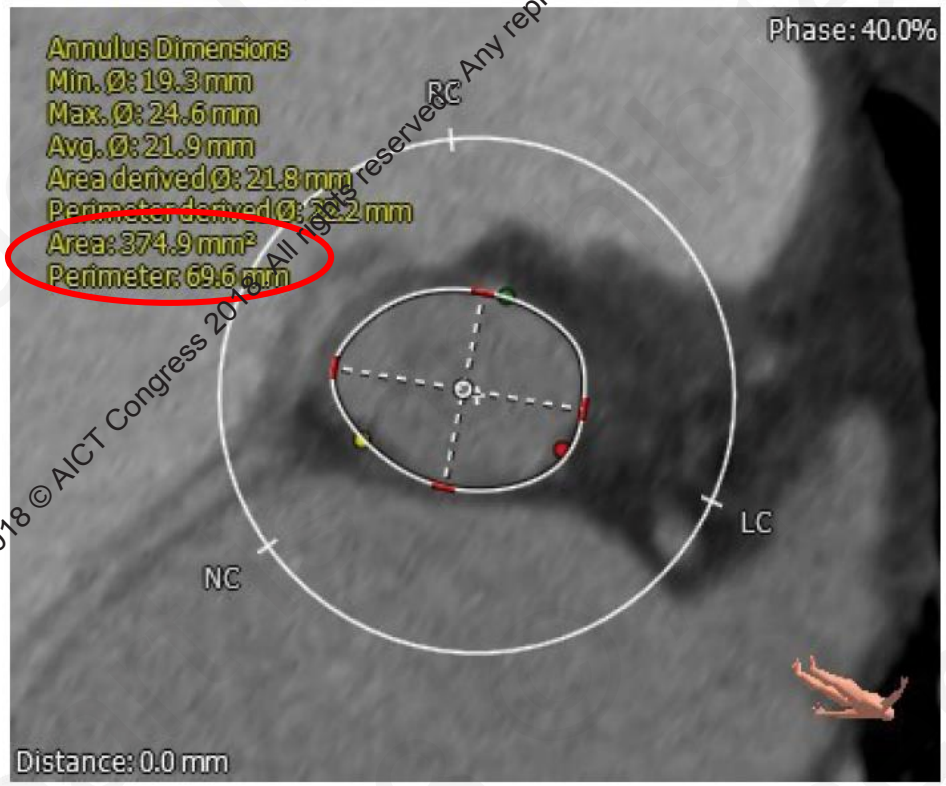
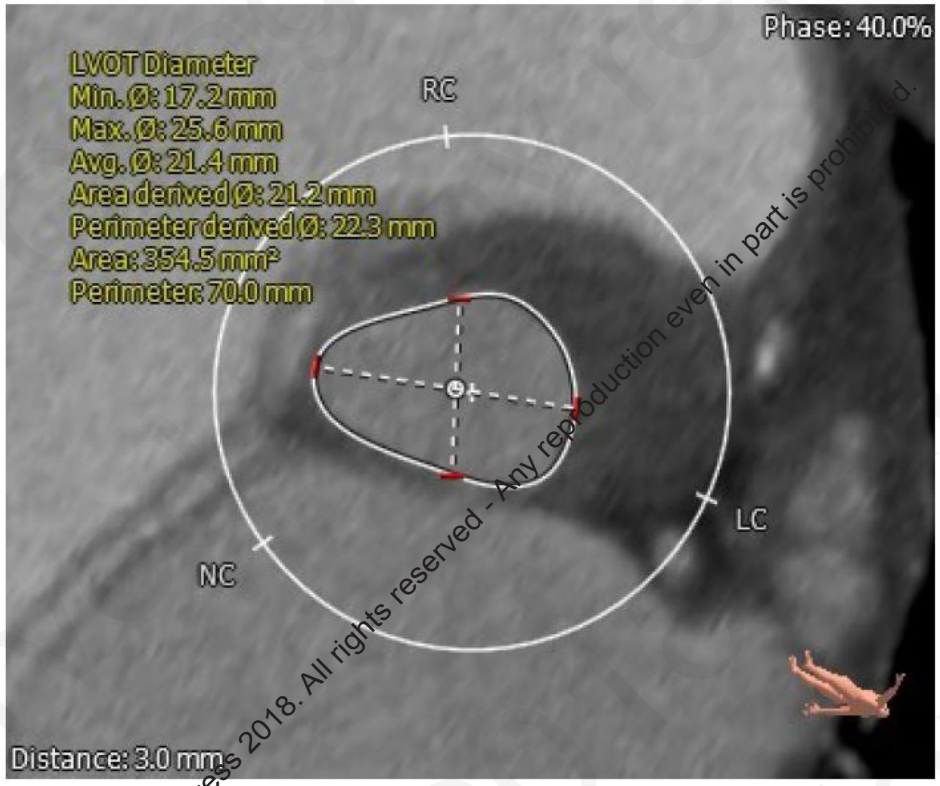
Annulus

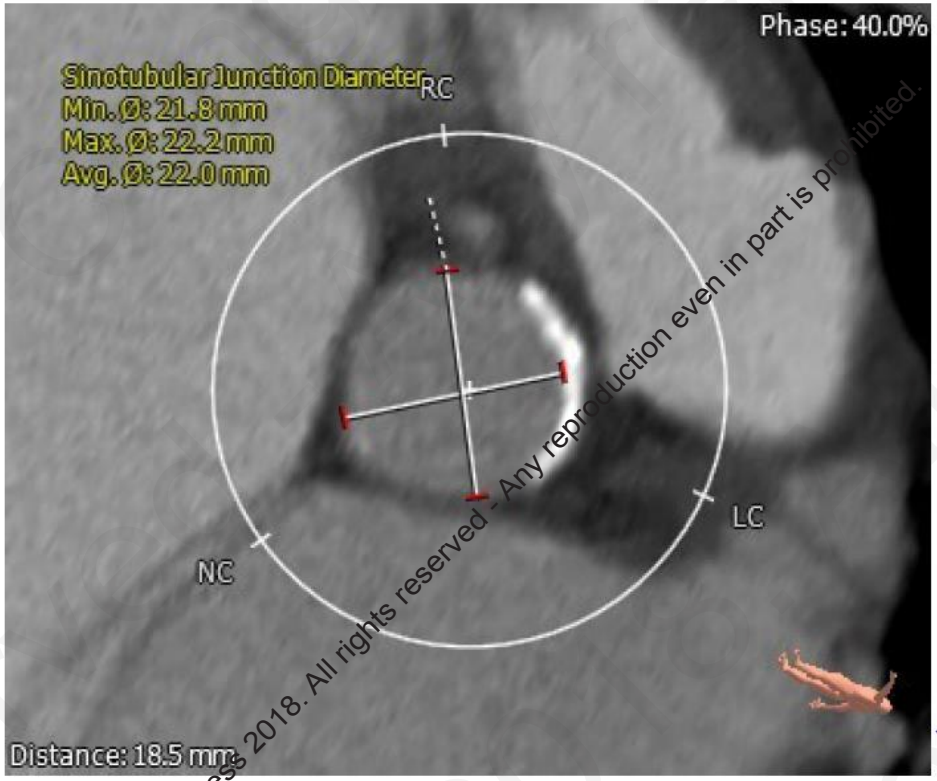


LVOT

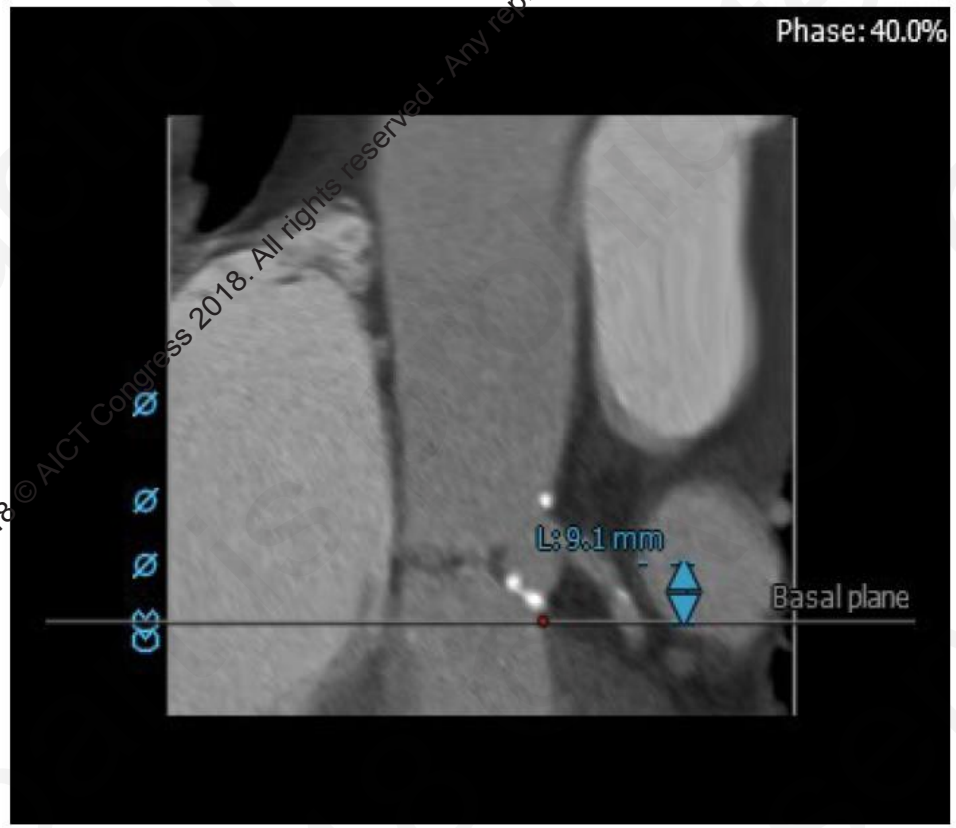


Perpendicular Plane

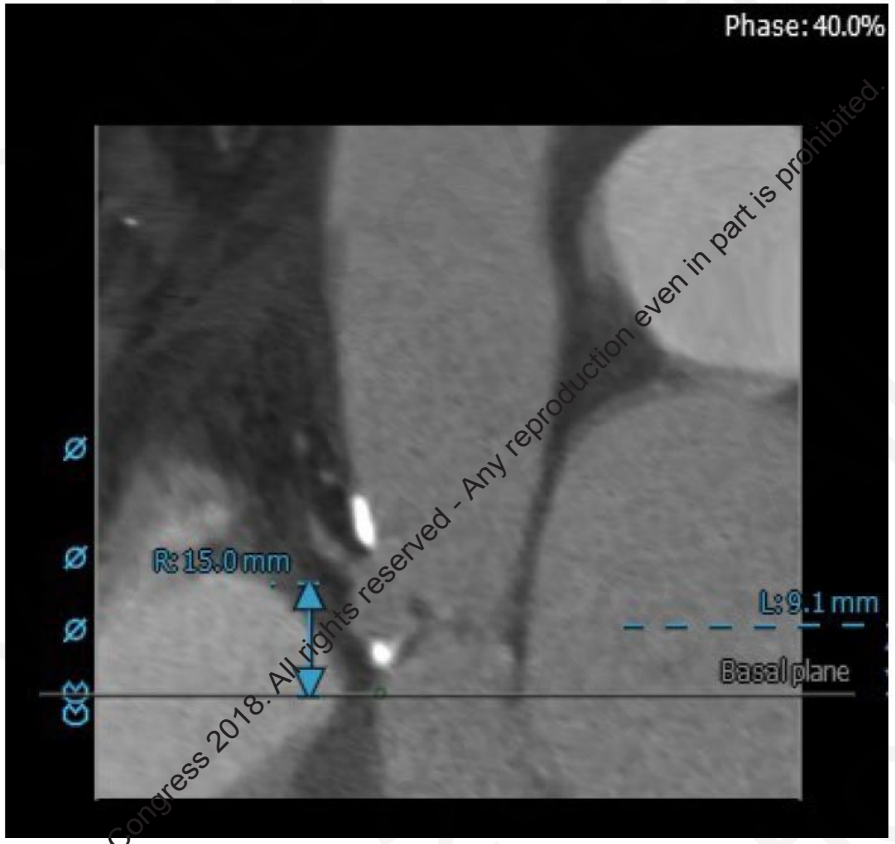
Sinotubular Junction

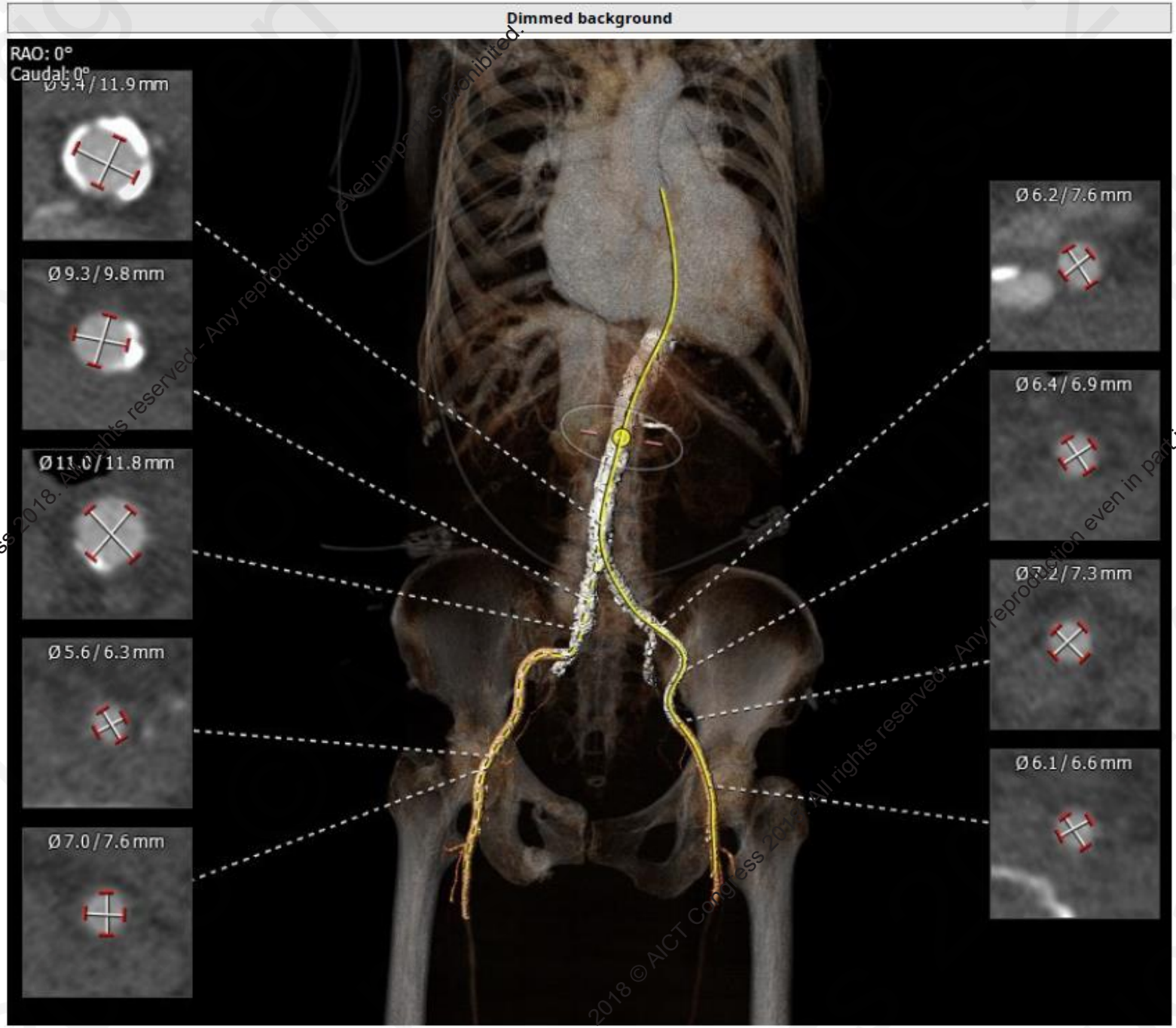


LCA



RCA





Aortic Valve

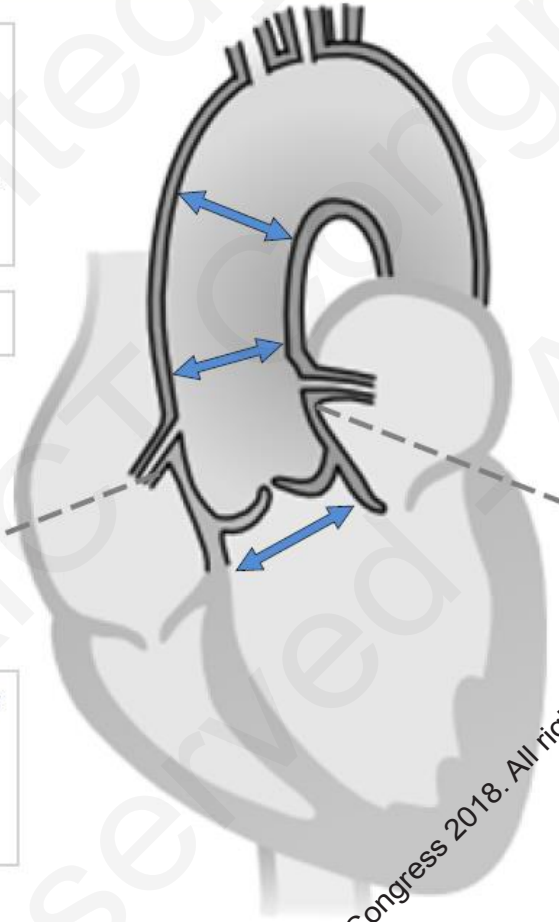
Aortic Annulus

Perimeter:	69.6	mm
Perimeter Derived Ø:	22.2	mm
Area:	374.9	mm²
Area Derived Ø:	21.8	mm

LVOT Ø: 21.4 mm

Sinus Of Valsalva Diameters:

Left:	26.3	mm
Right:	24.0	mm
Non:	27.4	mm



Asc. Aorta Ø: 28.2 mm

STJ Ø: 22.0 mm

RCA Height: 15.0 mm

LCA Height: 9.1 mm

Aortic Valve Calcification: Moderate

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What will you do for this patient?

A TAVI only

B LAAO only

C TAVI + LAAO

D Surgical AVR + LAA closure

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Heart Team

- Inoperable candidate
- STS: 8 %
- Euro II: not measureable
- Logistic Euroscore: 30
- Frailty: 8

→ TAVI + LAAO

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Area 375

Size	Area oversize
22 (380)	1.06
23 (415)	1.10
24 (452)	1.2
25 (490)	1.3
26 (530)	1.41
27 (572)	1.52
28 (615)	1.64
29 (660)	1.76

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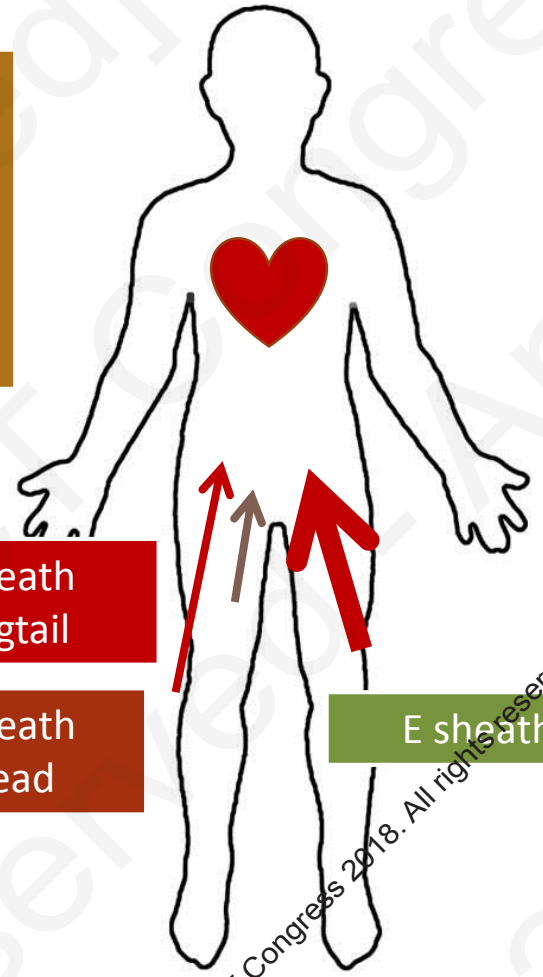
SETUP GA TAVI then LAAO

Pre-dilatation :
PRE dilatation 16mm
Valve size :
S3 20mm
Perpendicular View :
LAO 30, CAU 8



6Fr sheath
6Fr pigtail

7Fr sheath
PM lead

E sheath

6Fr sheath

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LCA height 9.1mm, RCA height 15mm, borderline SOV

How to protect the Left Main?

A No need to protect

B Protect with a guidewire

C Protect with a balloon

D Protect with a stent

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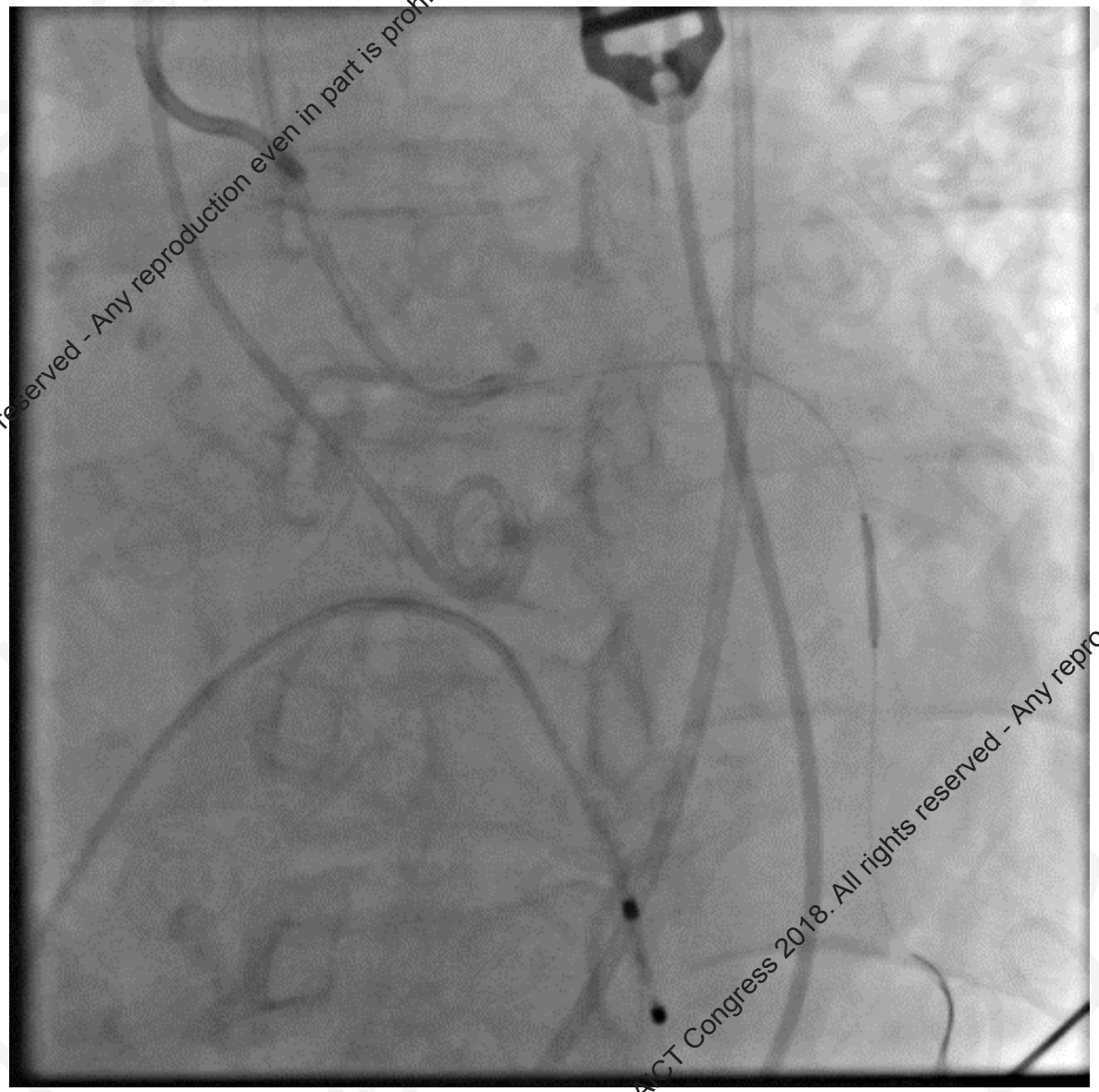
6F JL5 Guiding
4.5x15 DES



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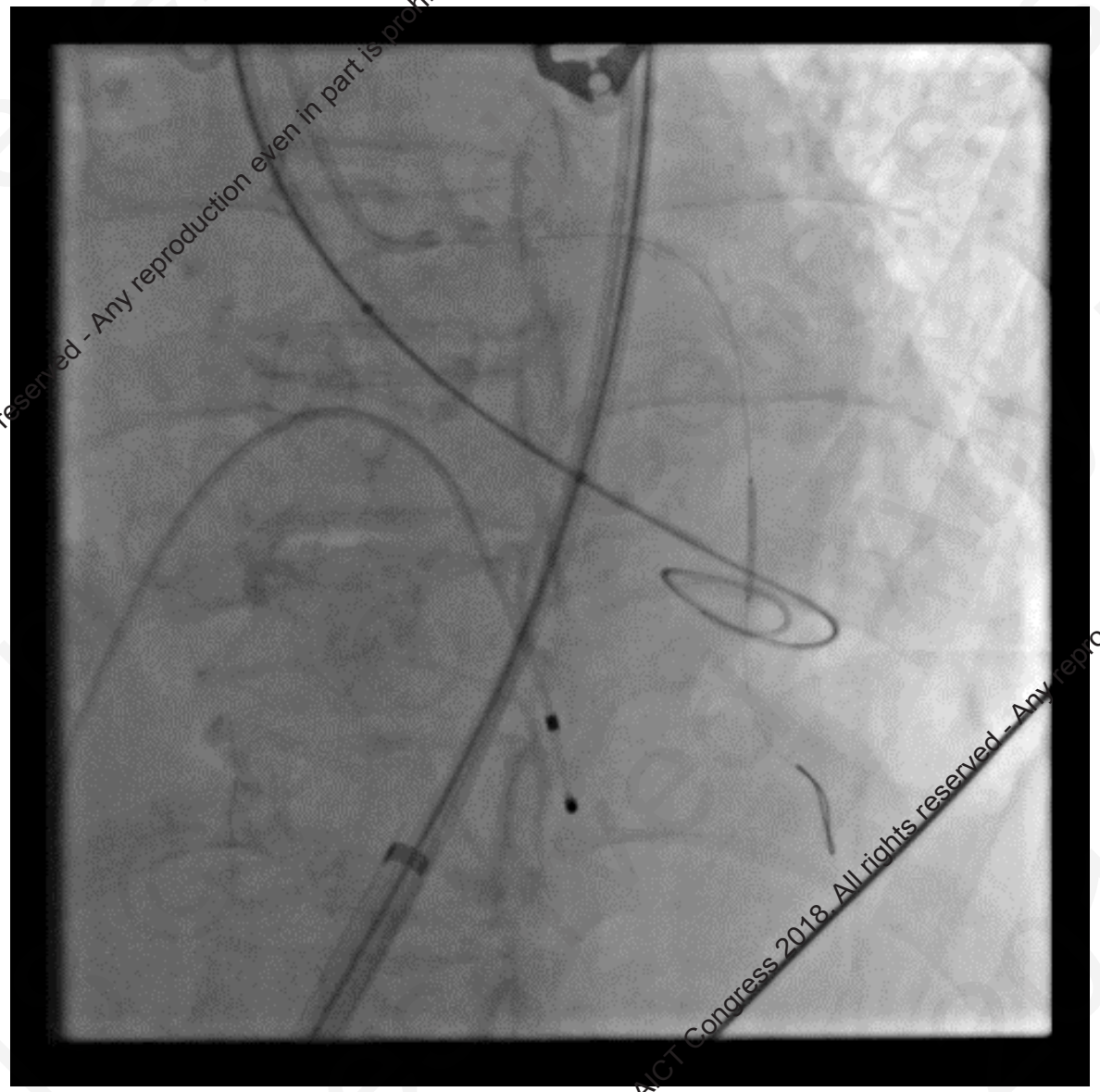
Confida GW 16mm True balloon



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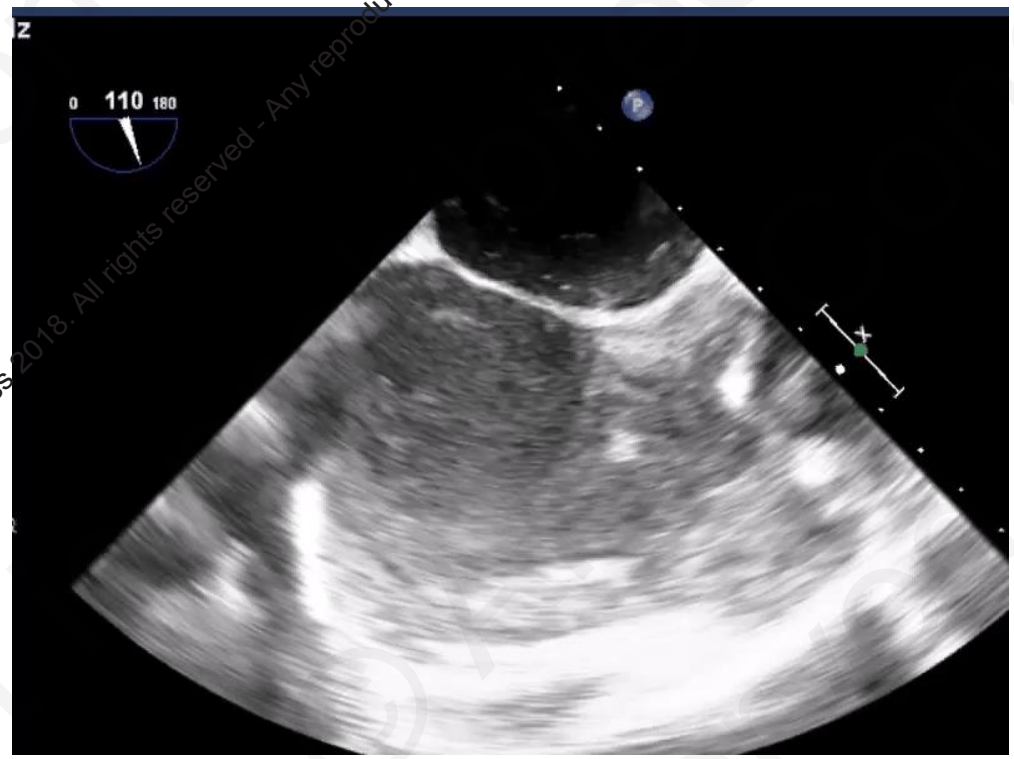
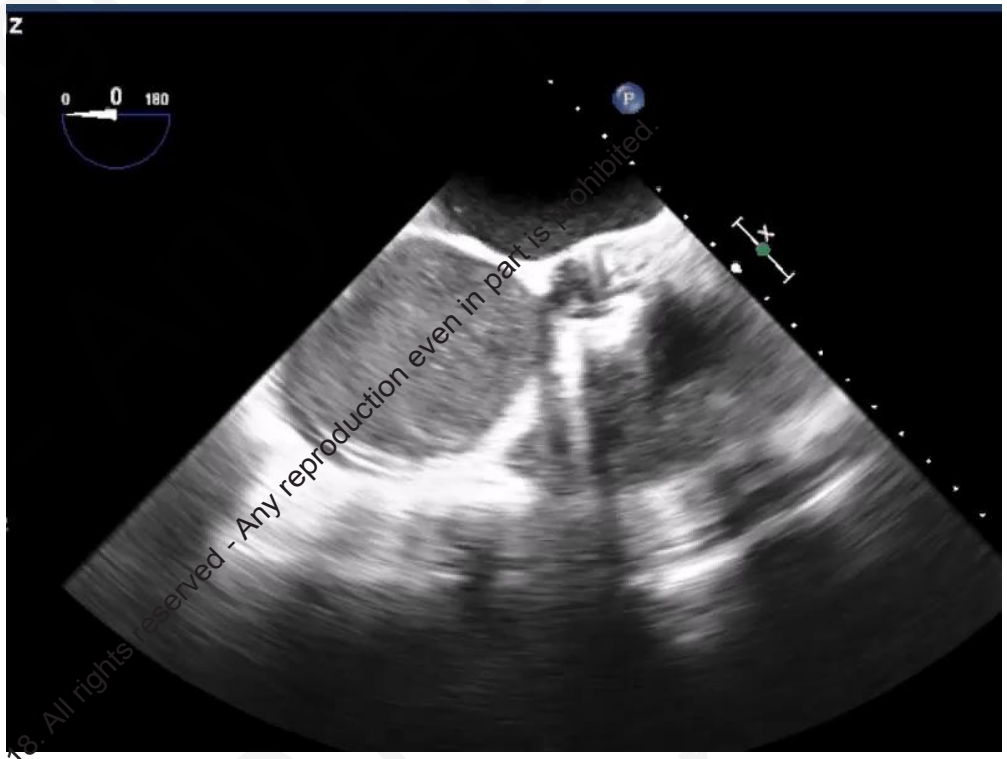
Hypotension
RV stunning
LV standstill

Resuscitation
CPR
Adrenaline
bolus





What is the cause of acute LV failure?

A Left Main occlusion

B Acute AR

C LV perforation

D Annular rupture

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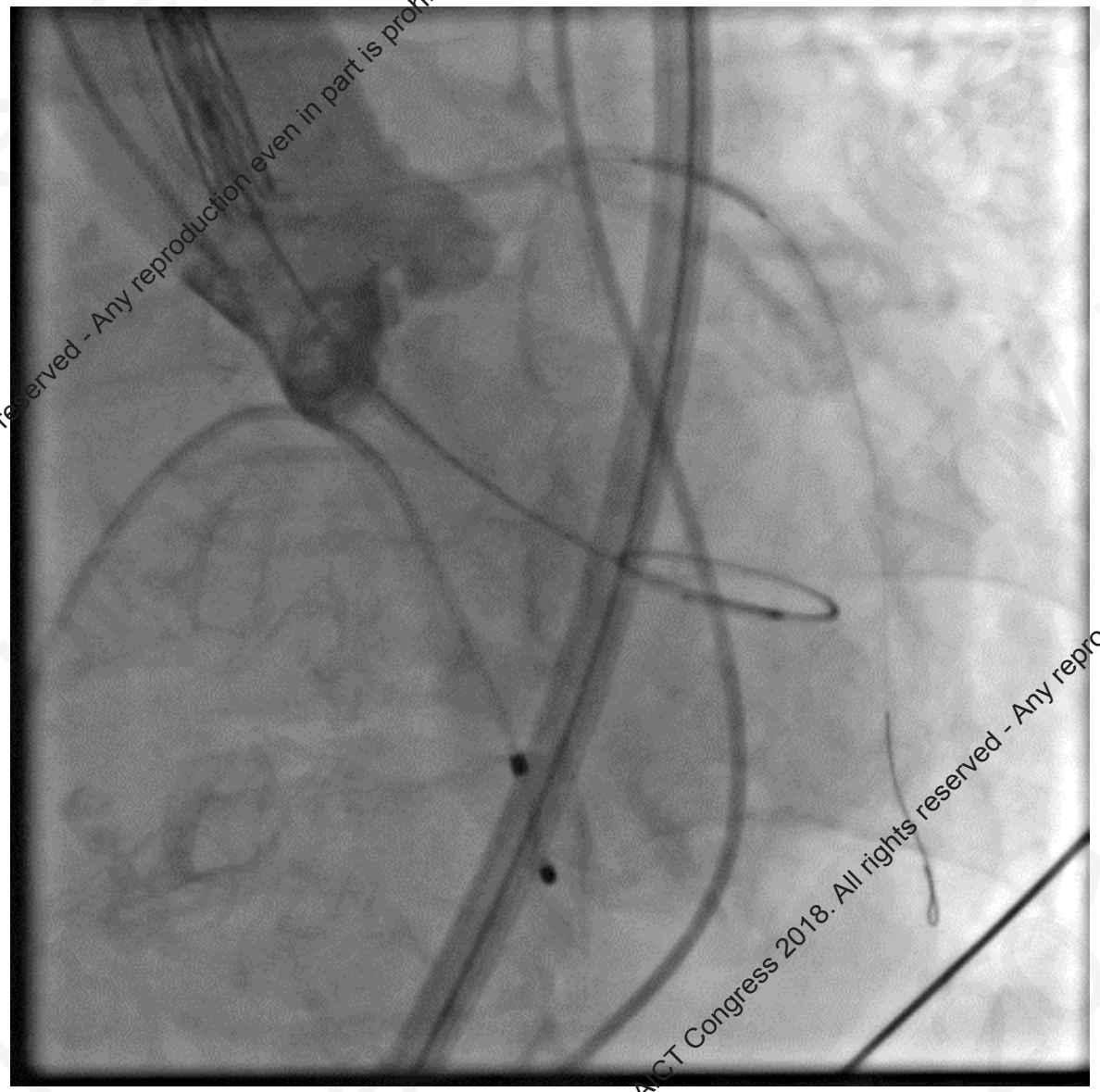
Acute severe AR post-BAV



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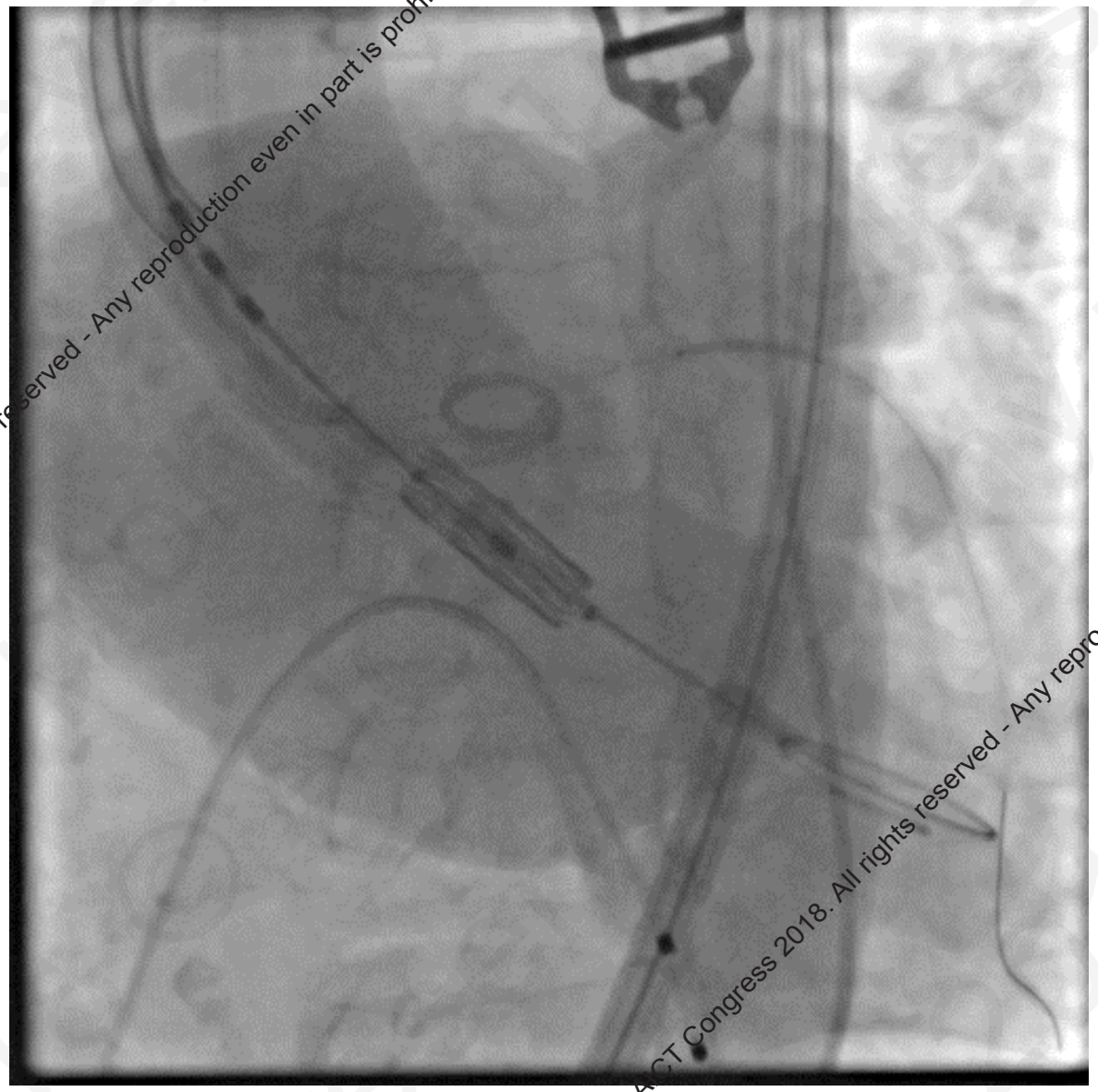
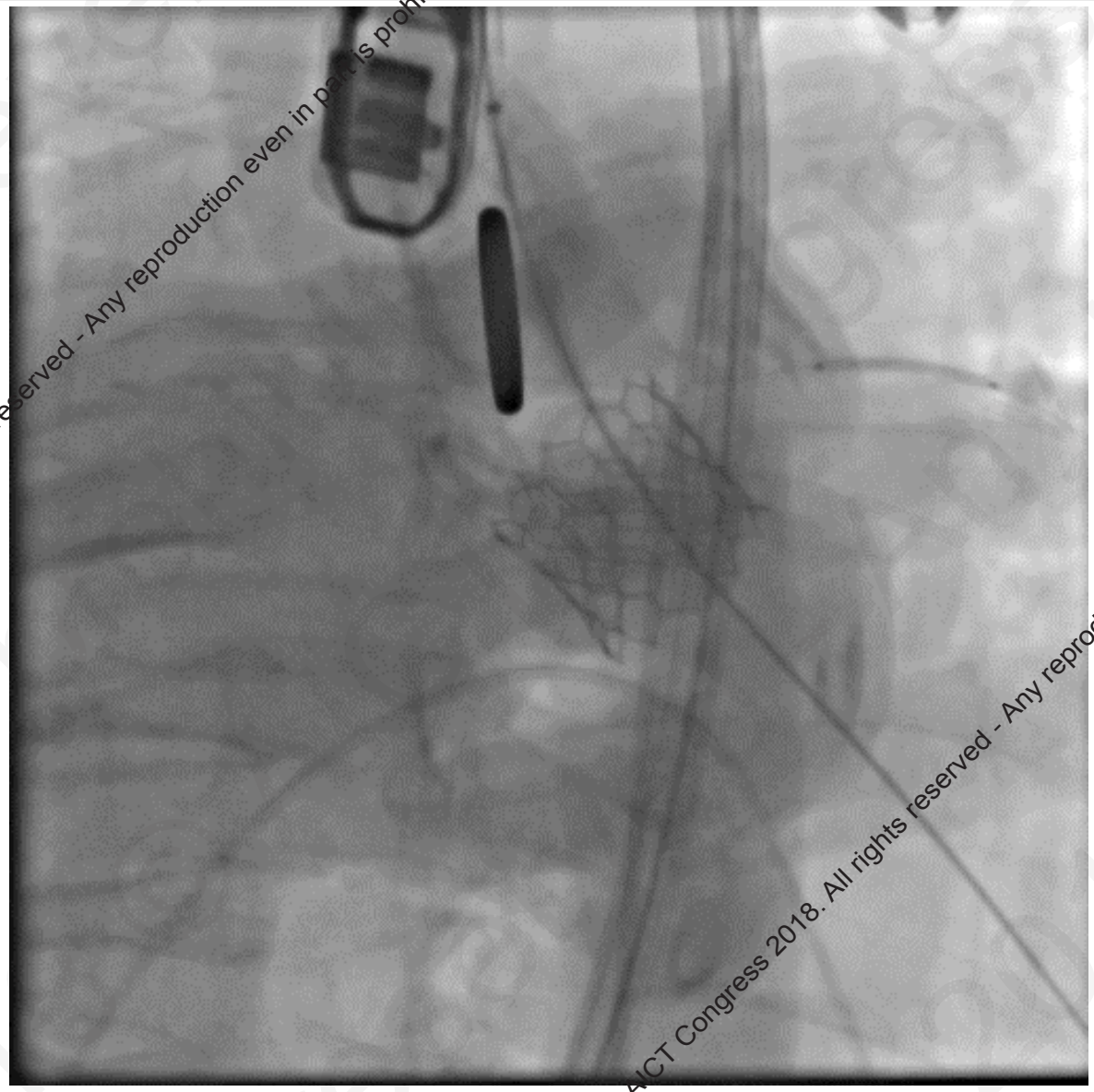
20mm S3 Valve
(+1 cc)



Moderate PVL
?LM occlusion



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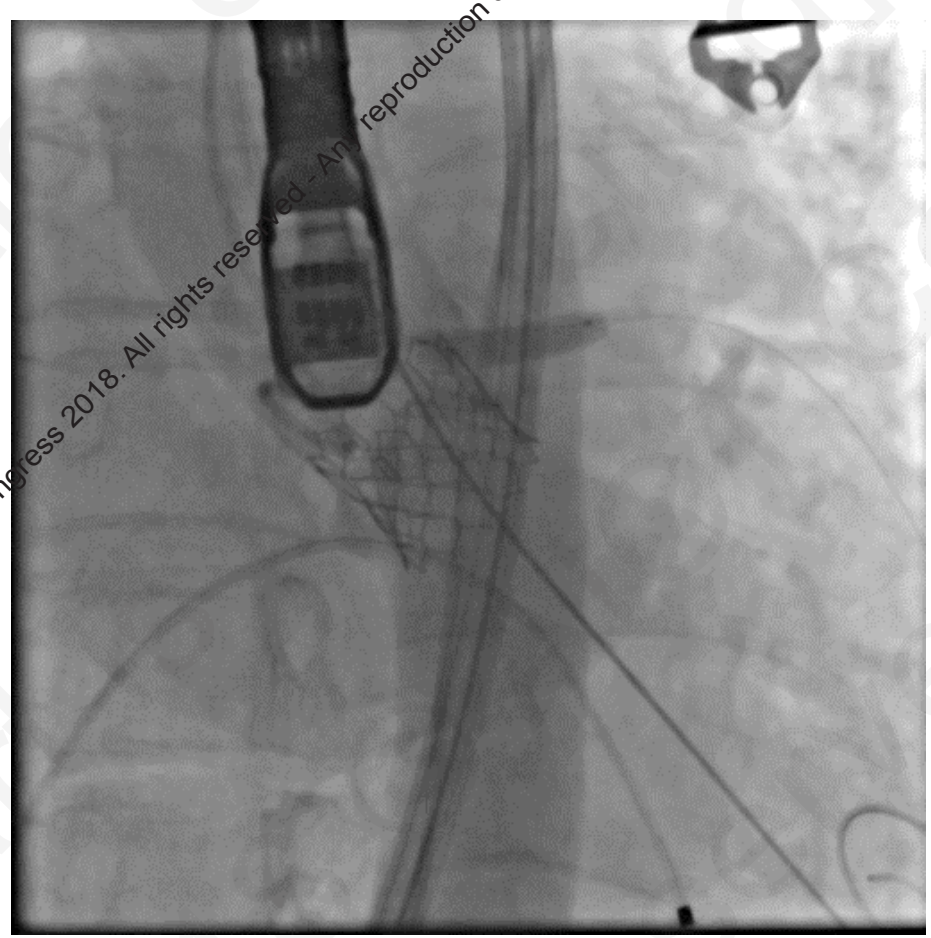
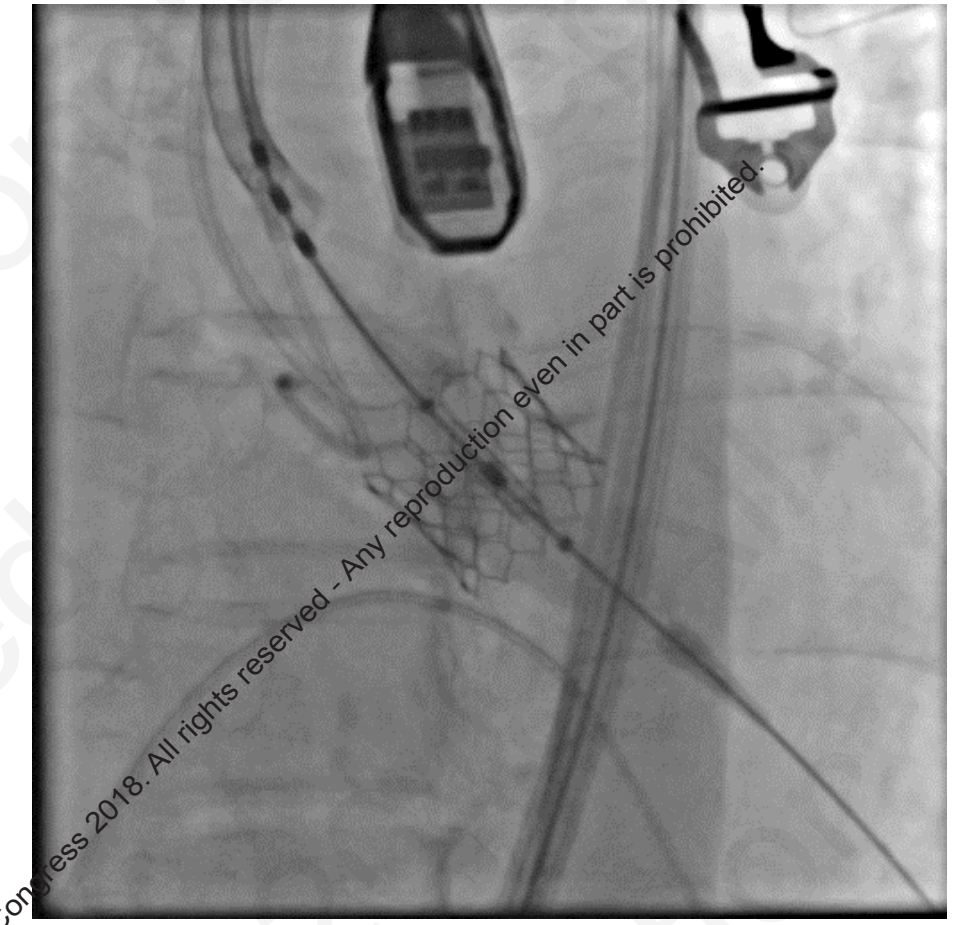
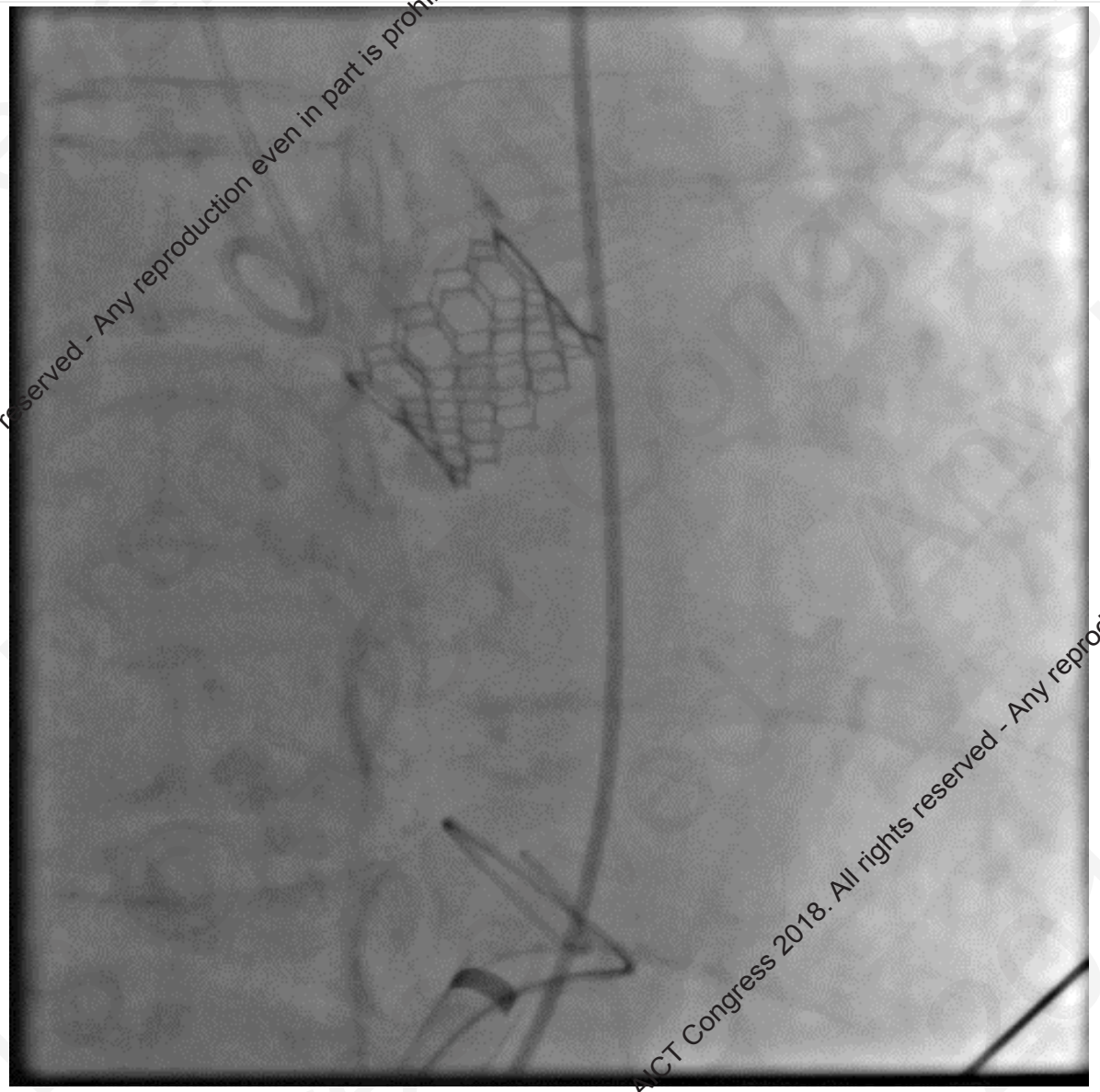
Deployment of LM stent (chimney)

+1cc added to S3 balloon for post-dilatation





Mild PVL



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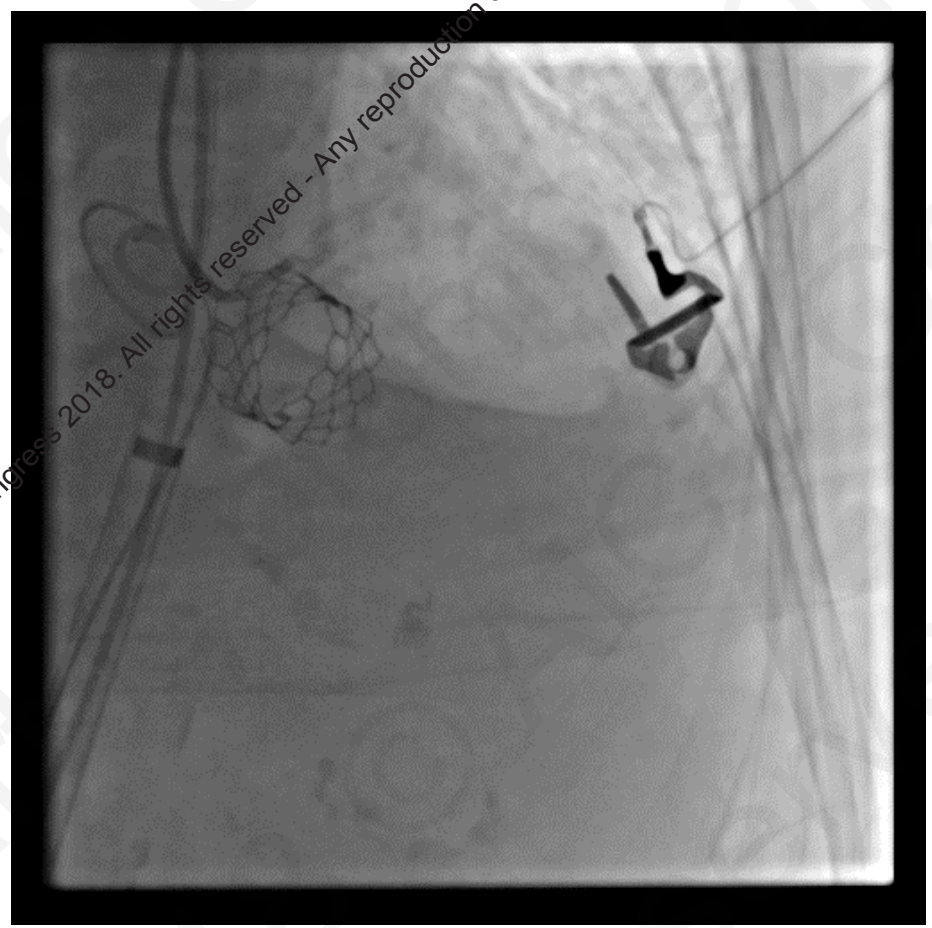
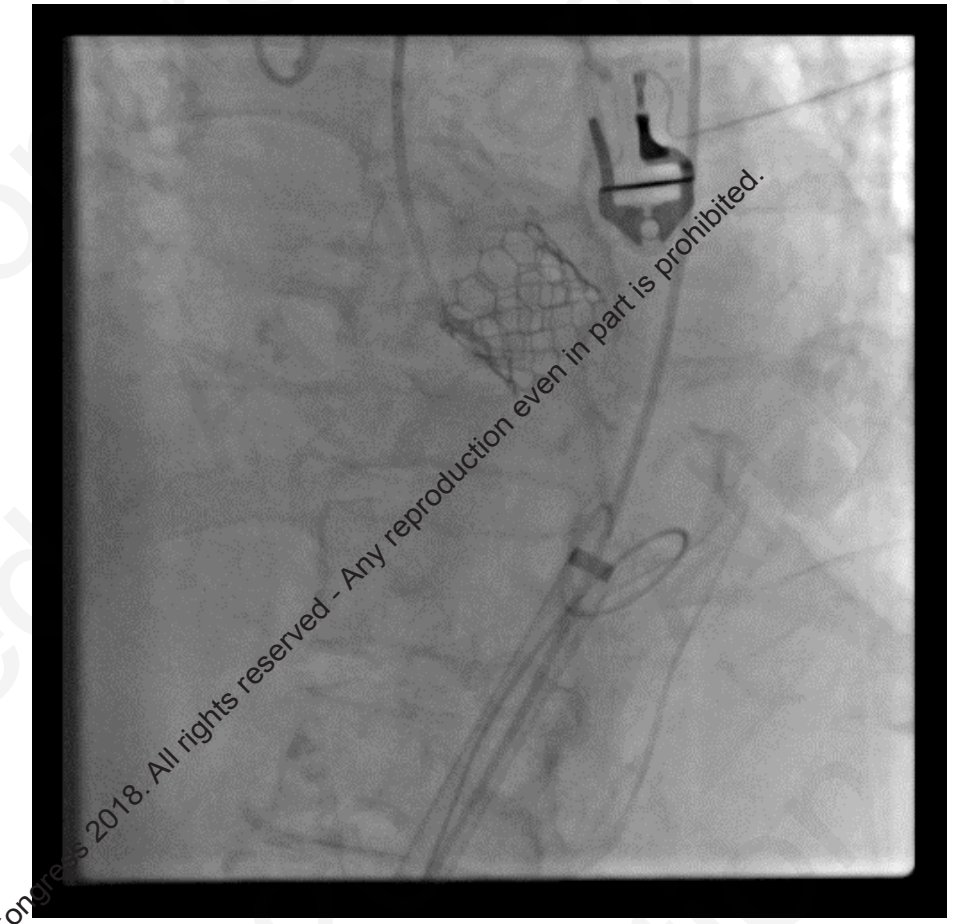
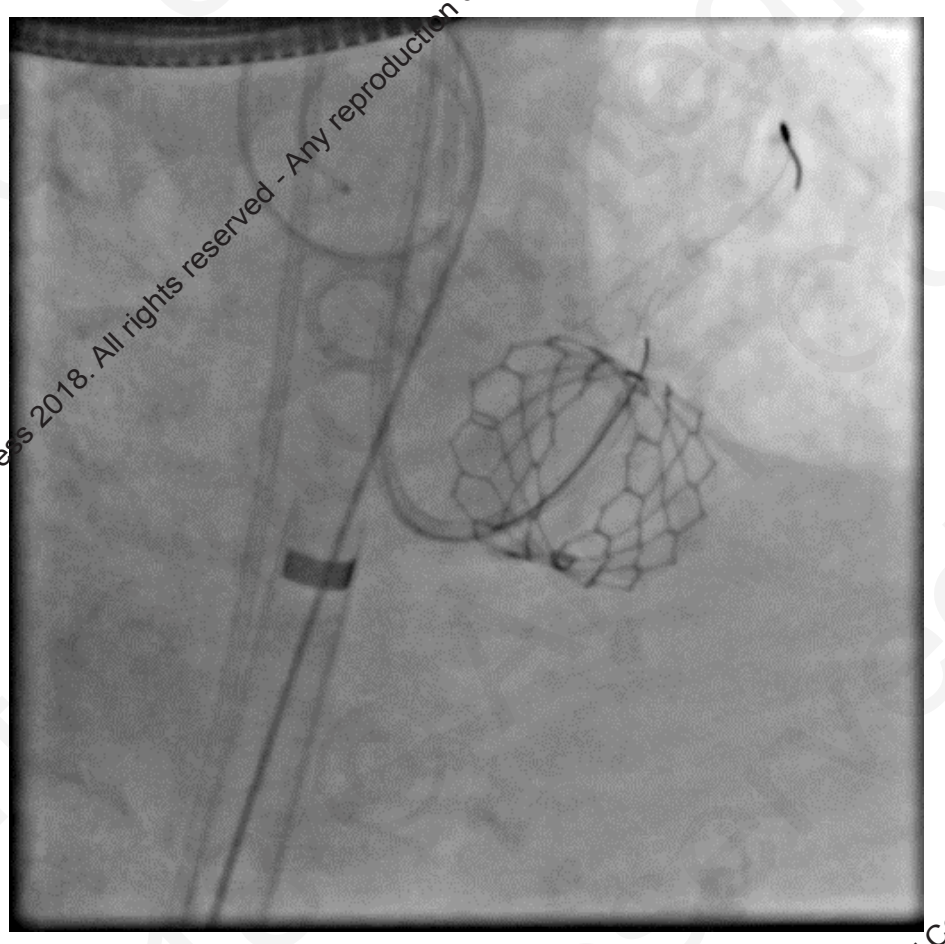
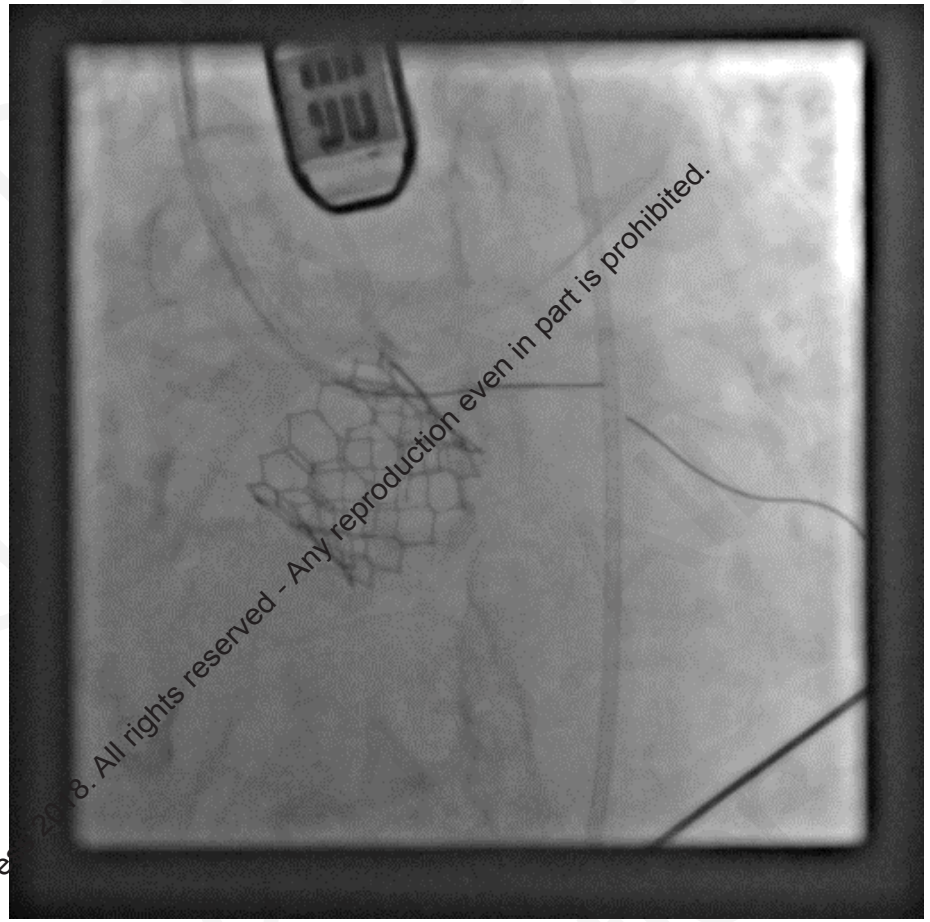
Good coronary flow

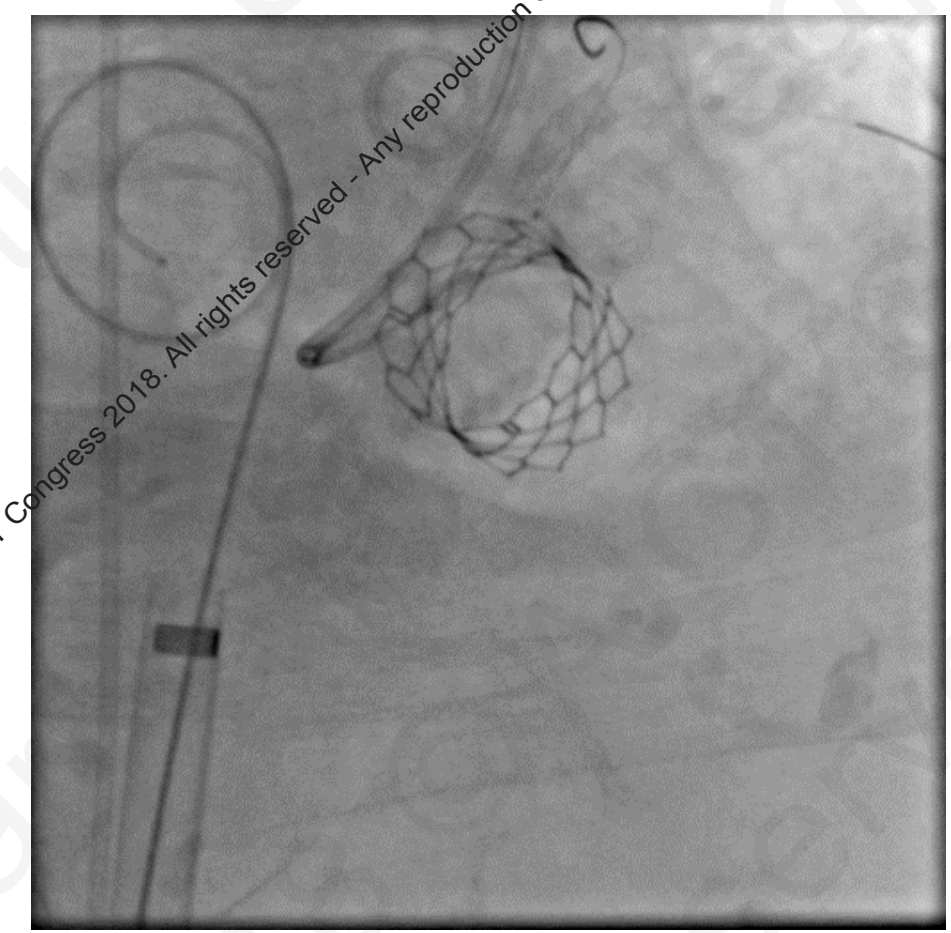


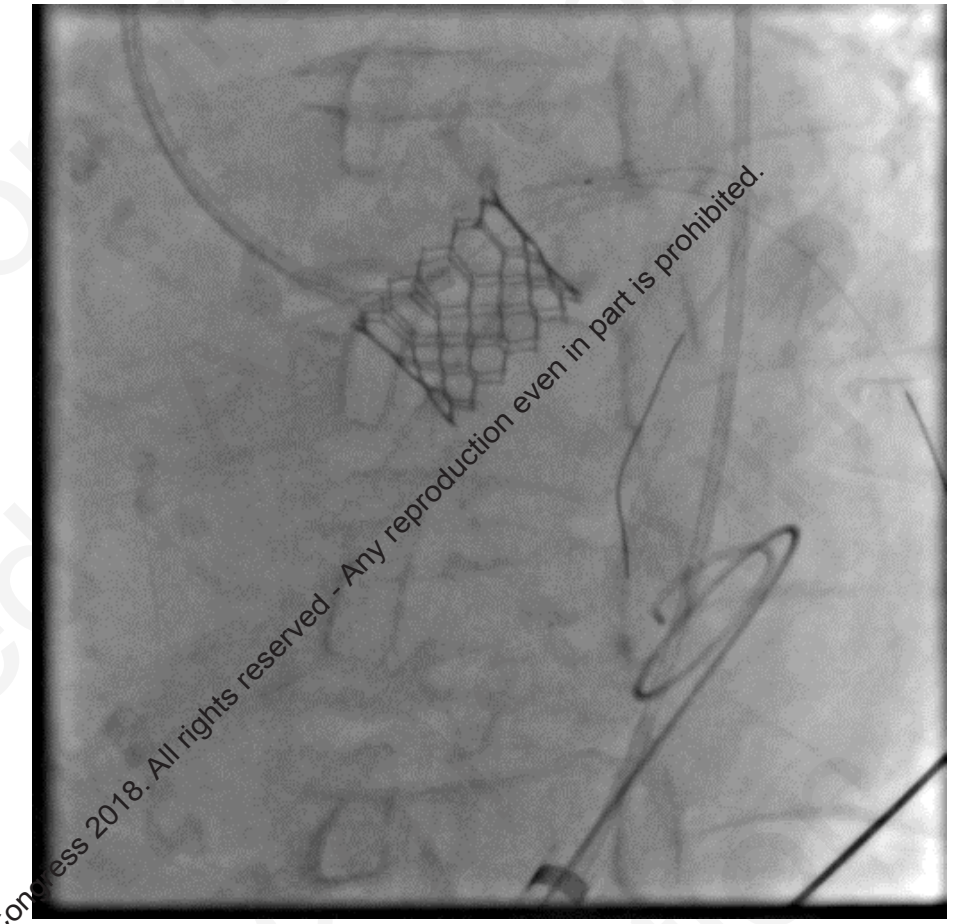


6F JL4 Guiding GW passed through stent struts

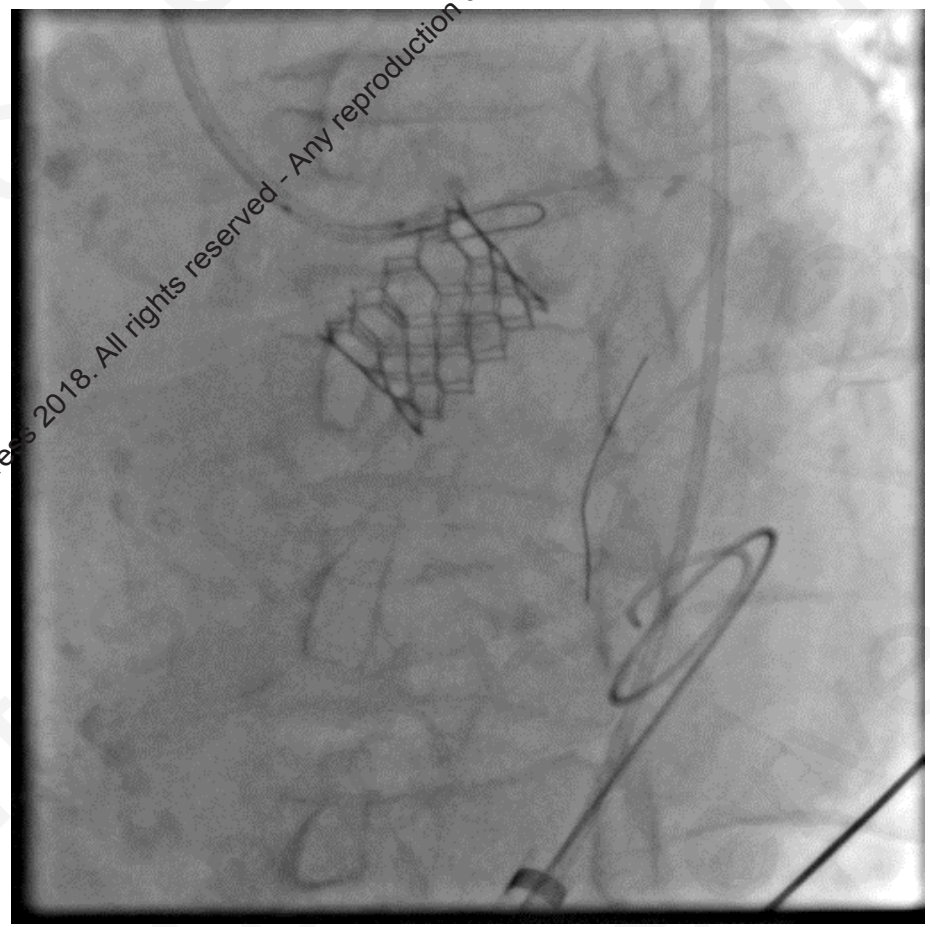


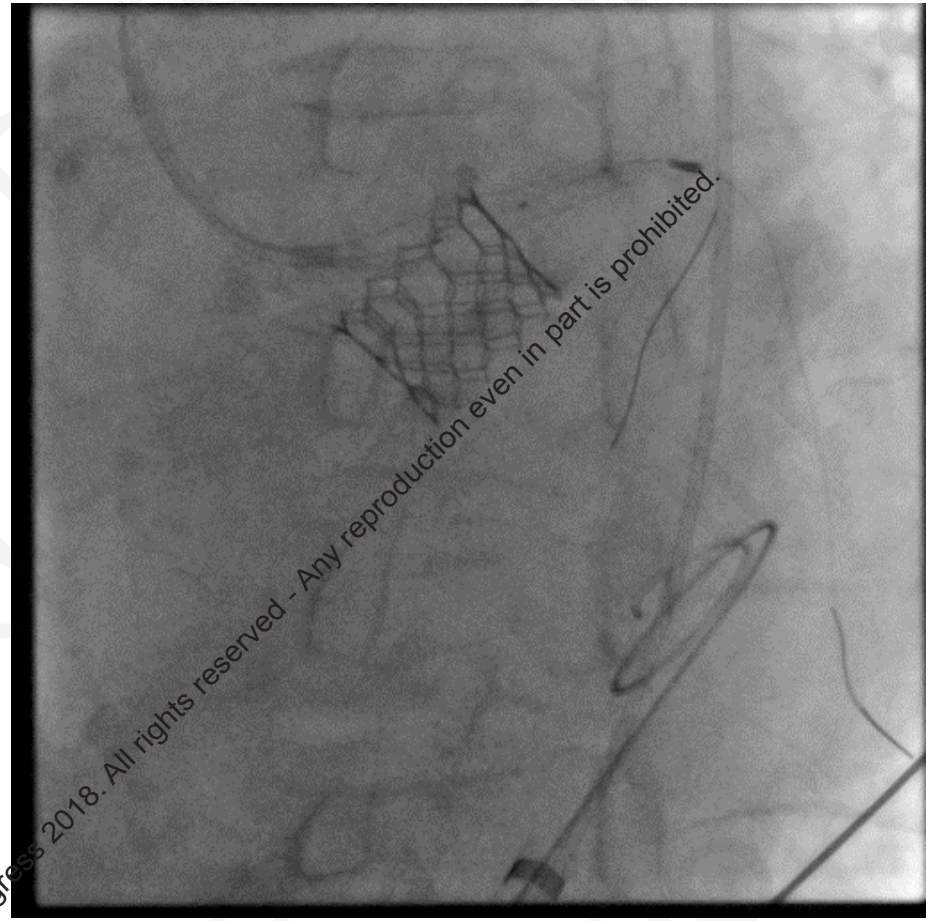




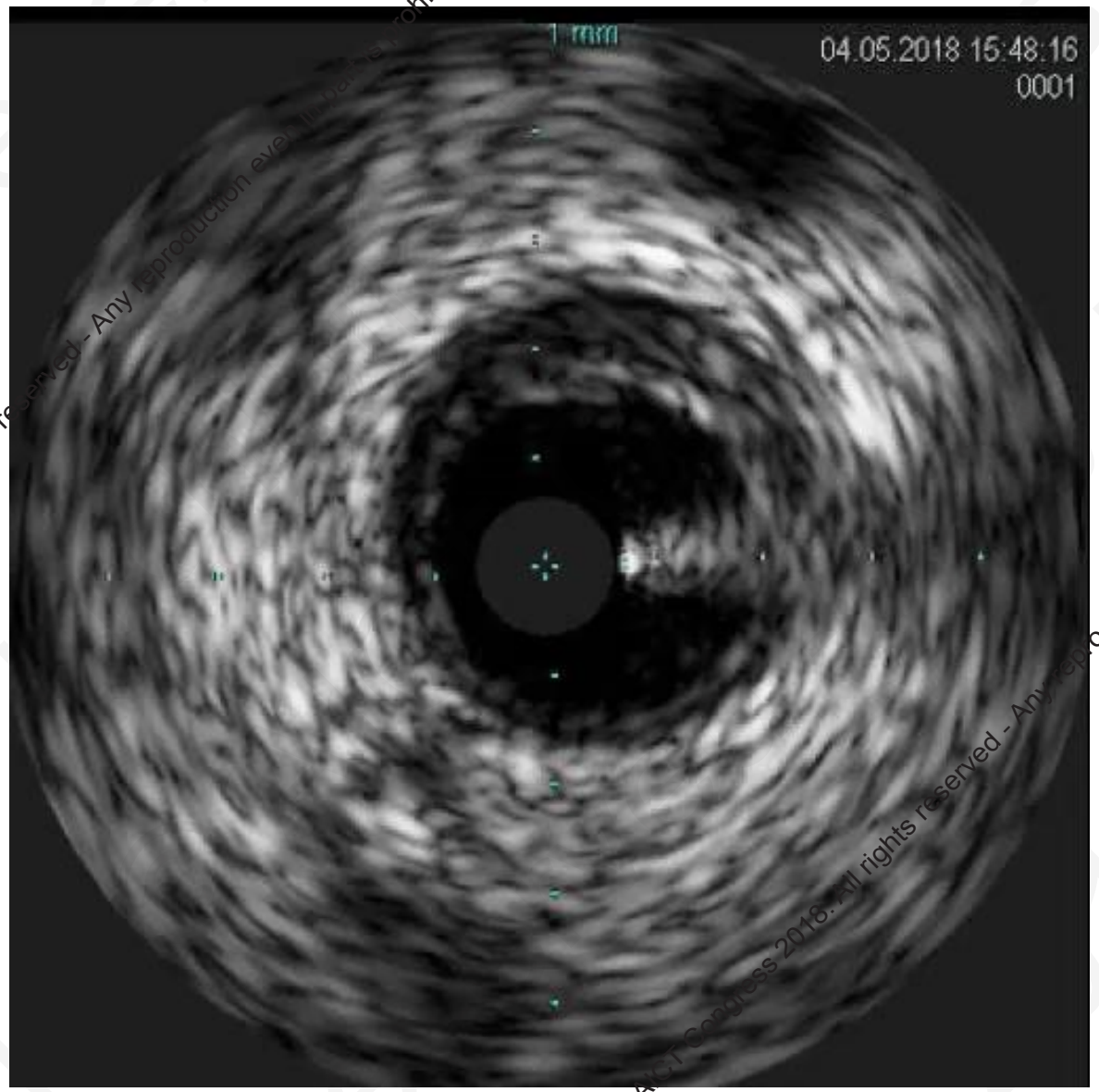


Loop wire
IVUS

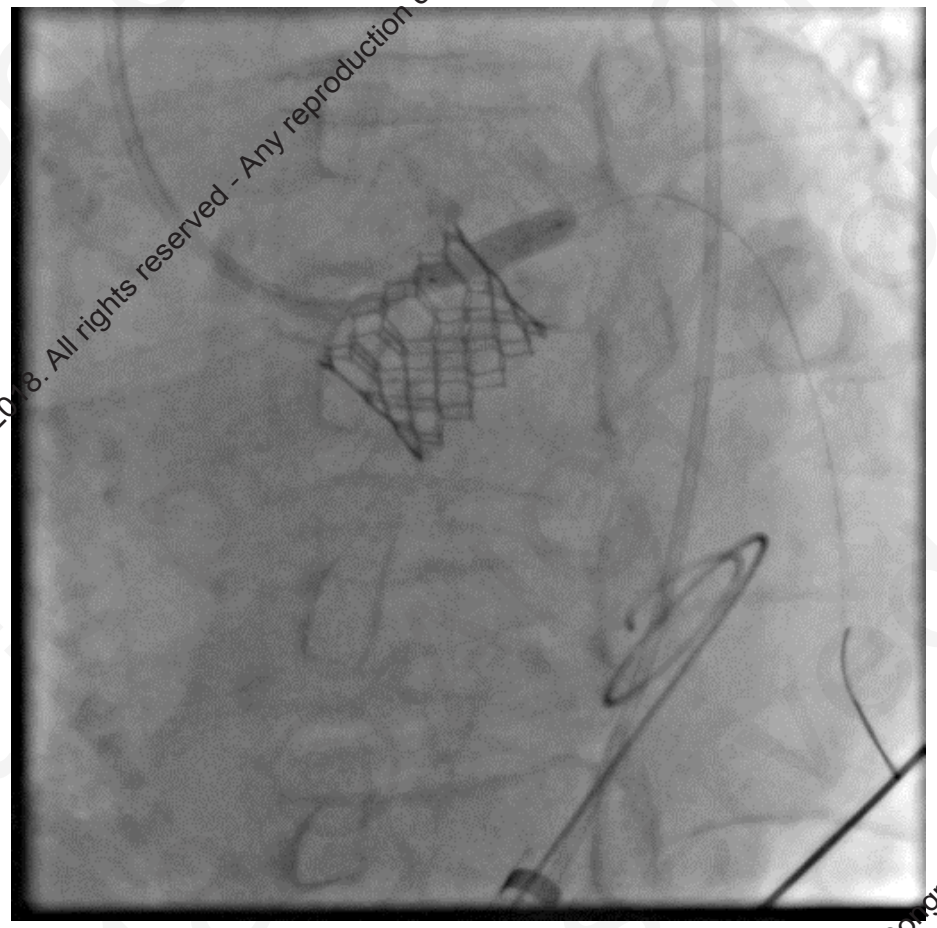


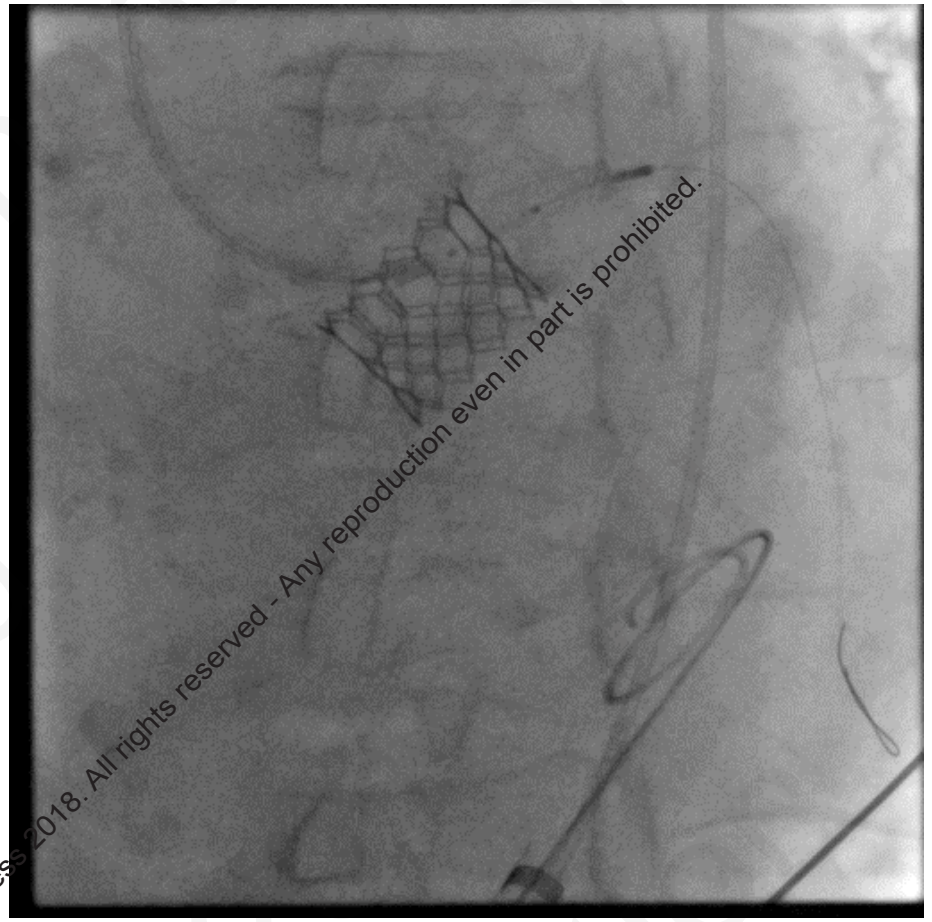


Ostial stent mildly compressed

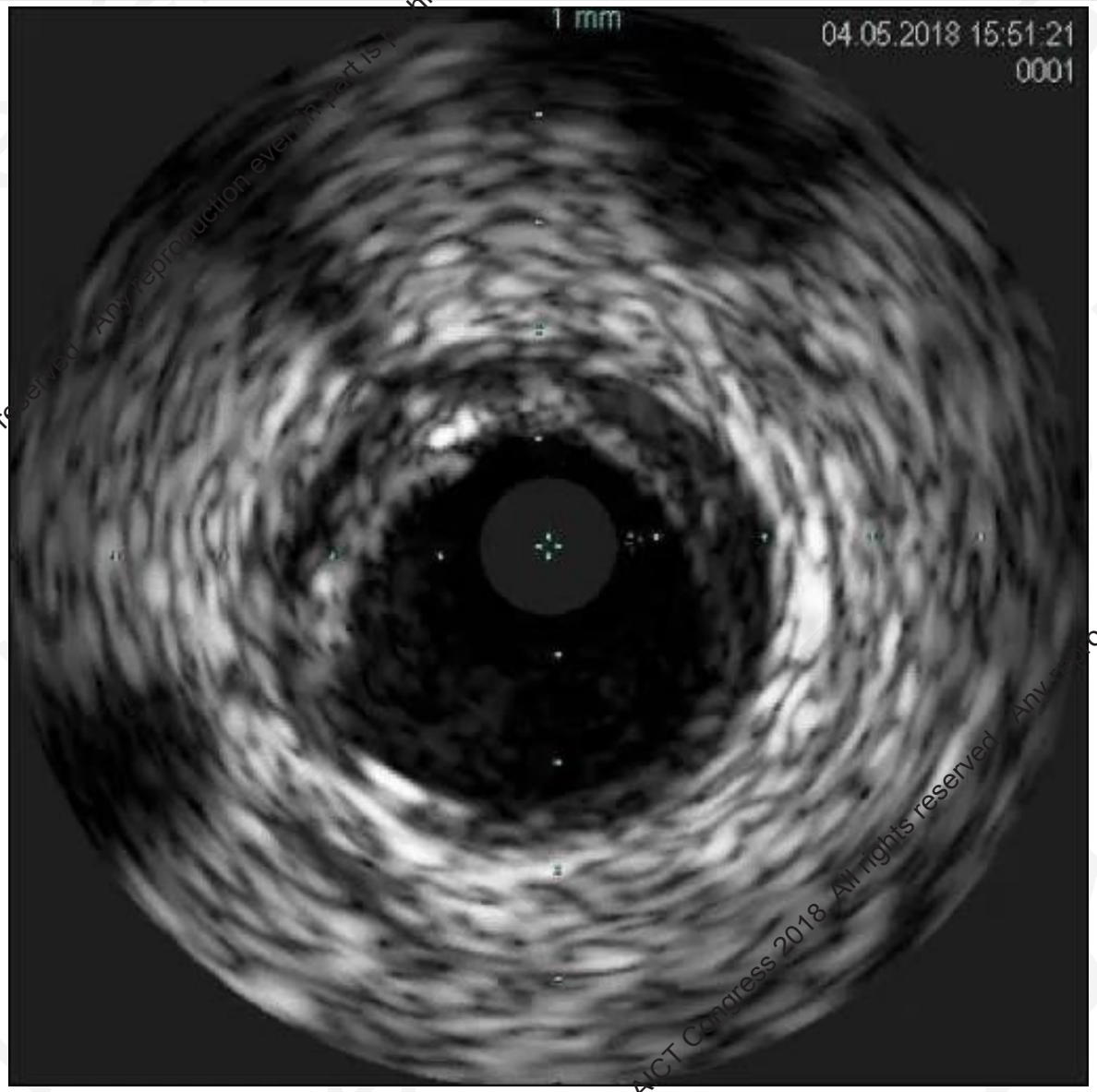


Post-dilated with 5.0 NC balloon

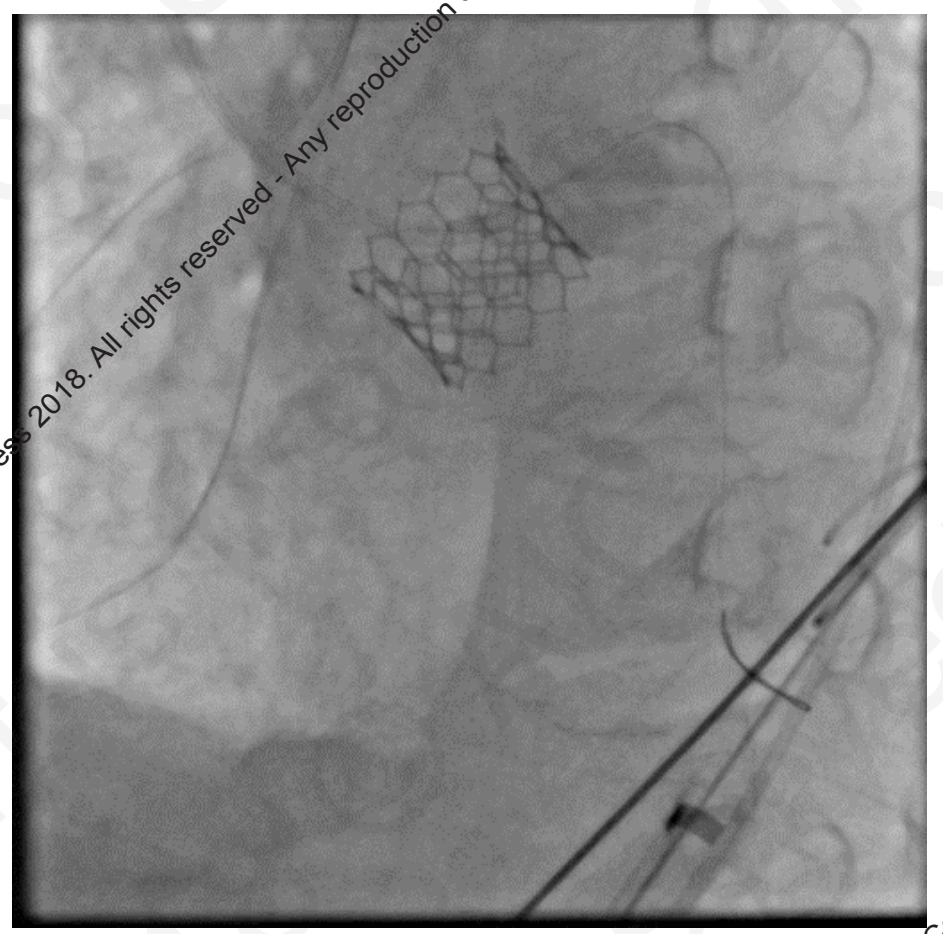


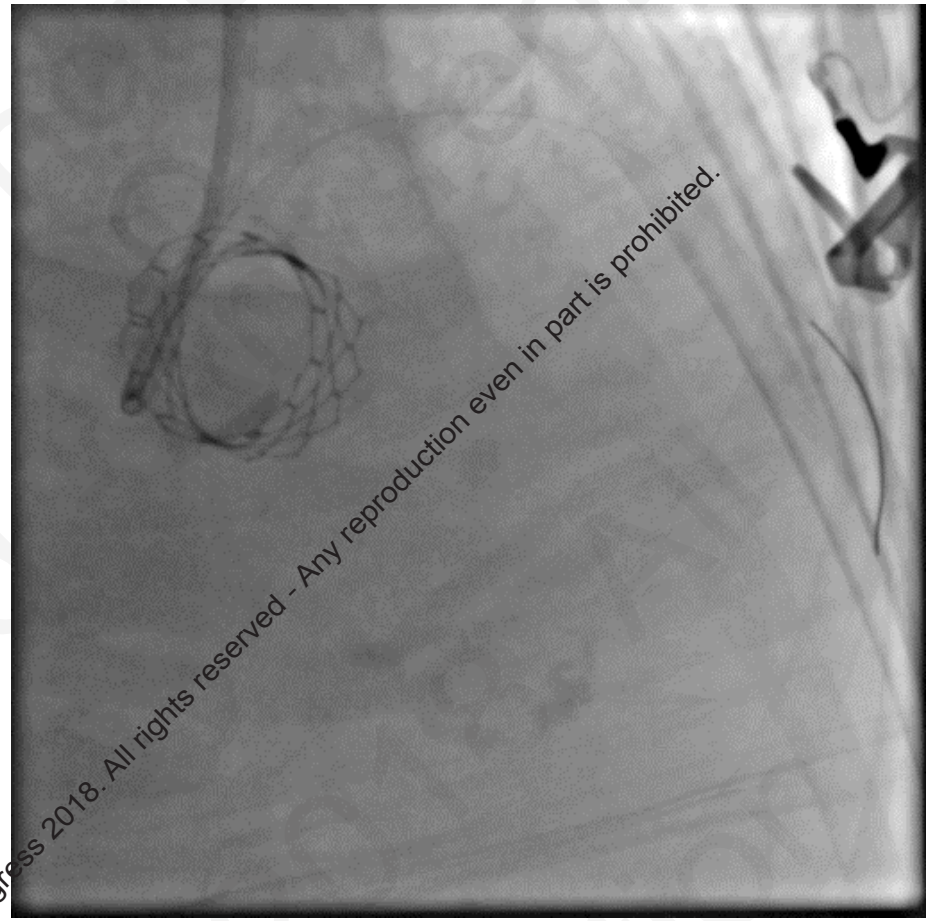


Stent adequately expanded



Final Coronary Angiogram





Should we continue with LAAO?

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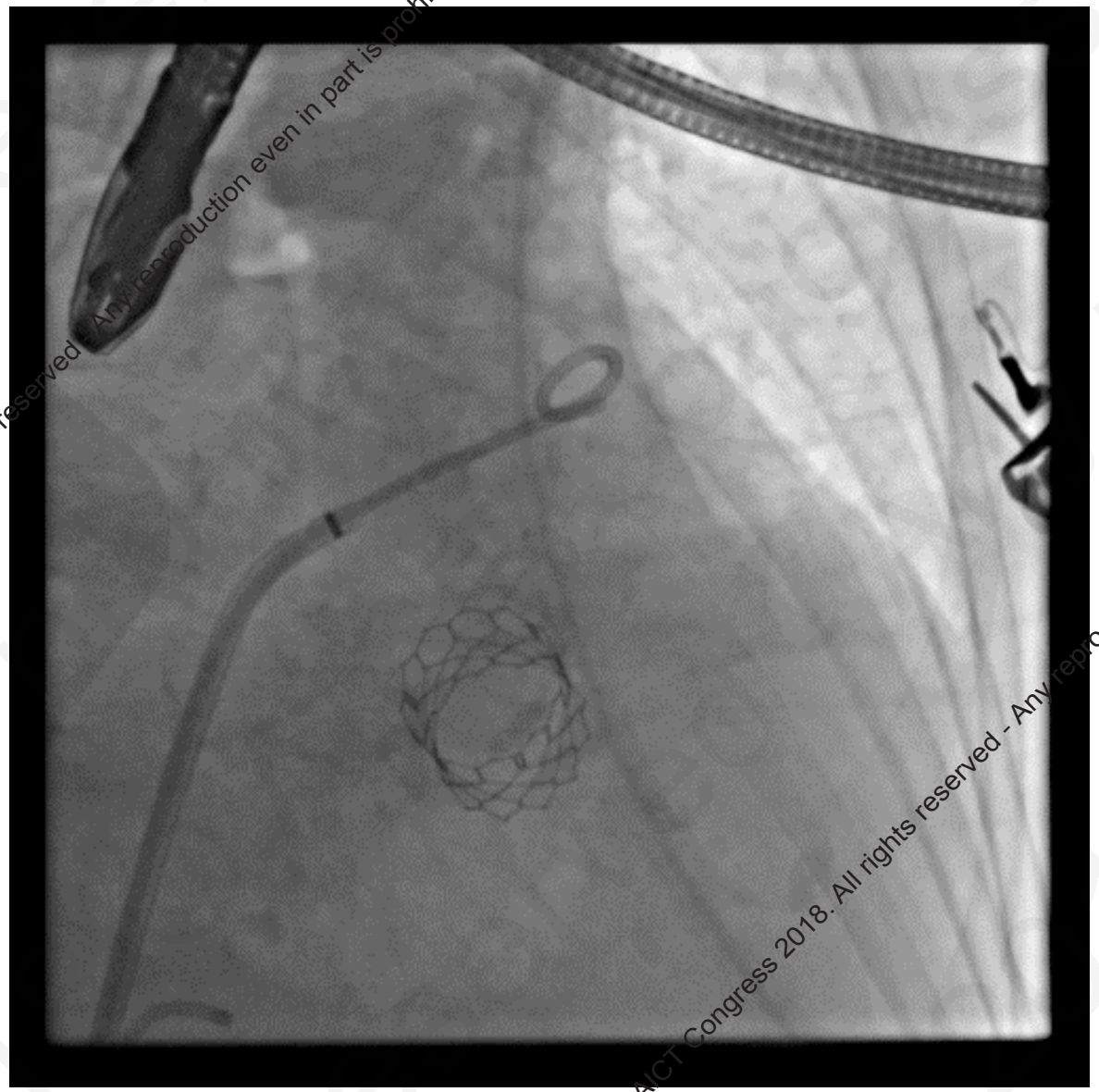
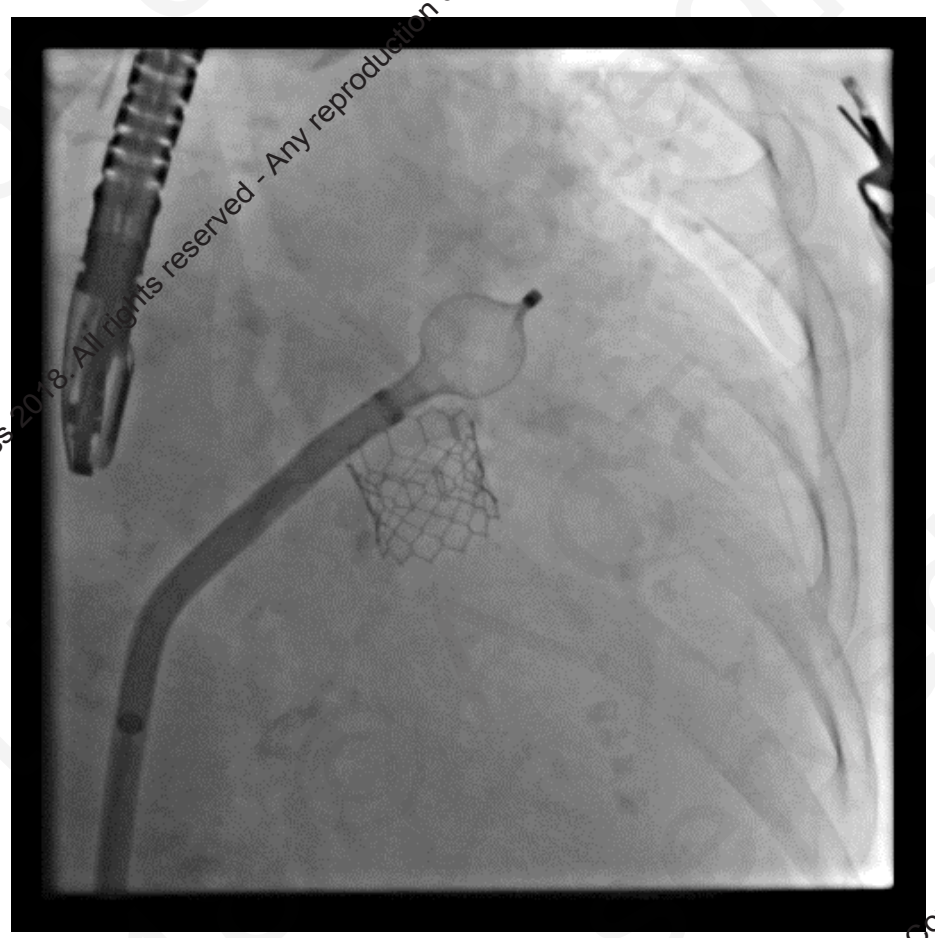
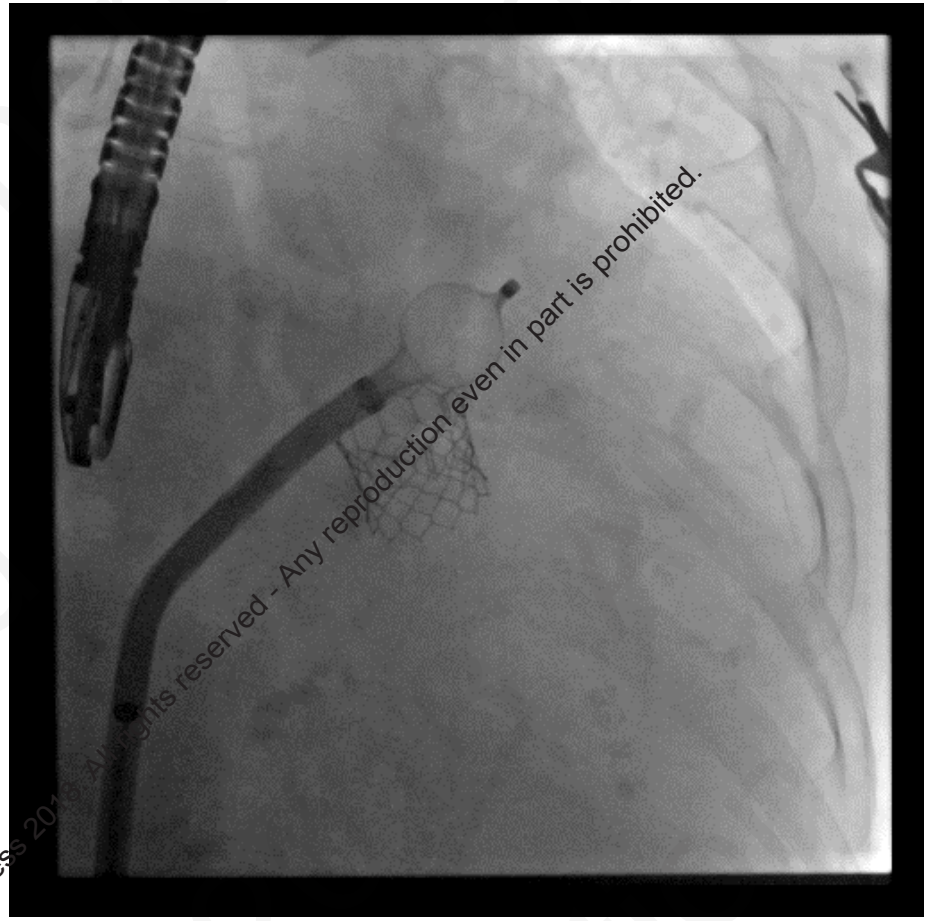
Trans-septal puncture



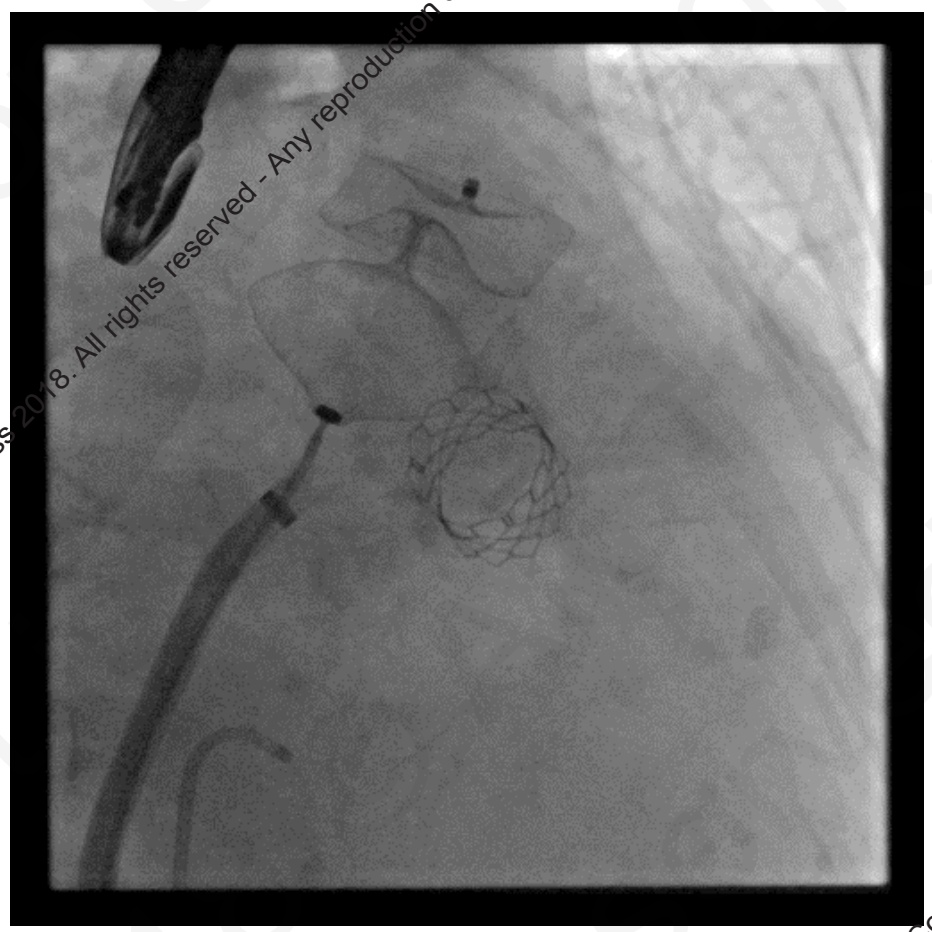
31mm Amulet

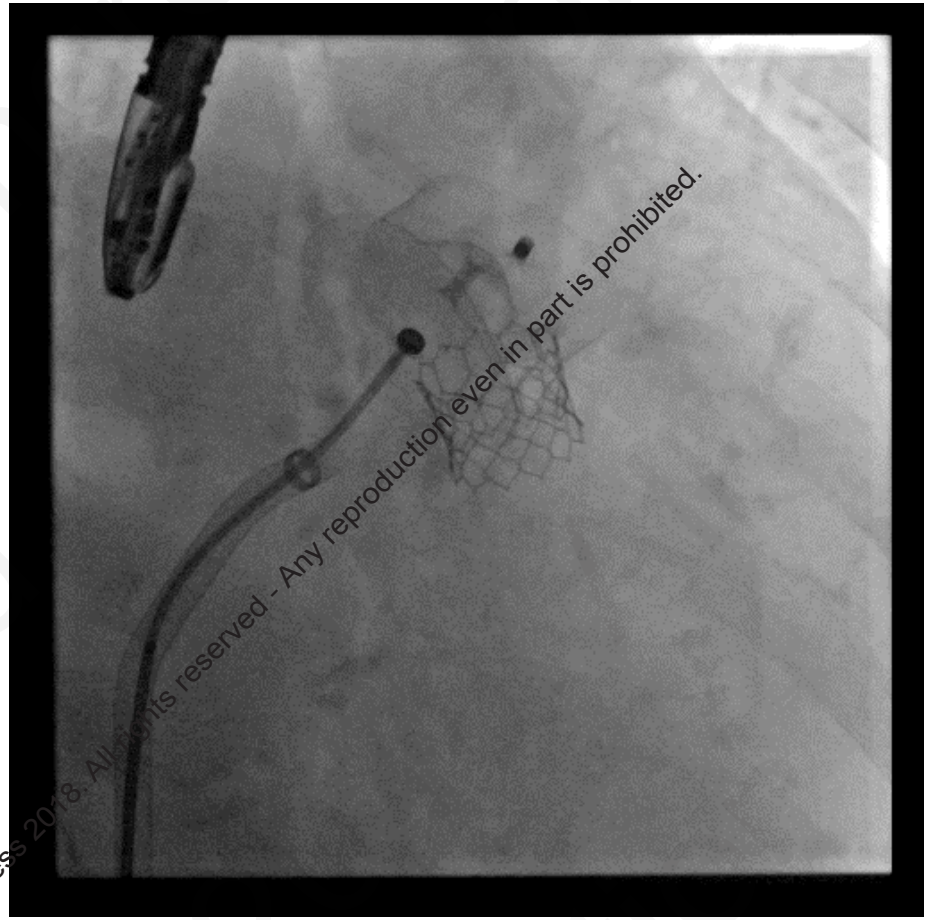




Tug test

Final release





Progress

- Stable BP/P
- Extubated 2 hours later
- Echo – EF 50%, Trivial PVL
- Discharged 5 days later
- Currently Functional Class II

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Learning Points

- Look out for causes of acute LV failure during TAVI
  - Acute AR vs. LM occlusion
- Immediate deployment of TAVI device to treat acute AR
- Beware of coronary chimney stent during TAVI post-dilatation
- Meticulous rewiring of chimney stent + adequate post-dilatation
- Simultaneous TAVI + LAAO feasible even after stormy procedure

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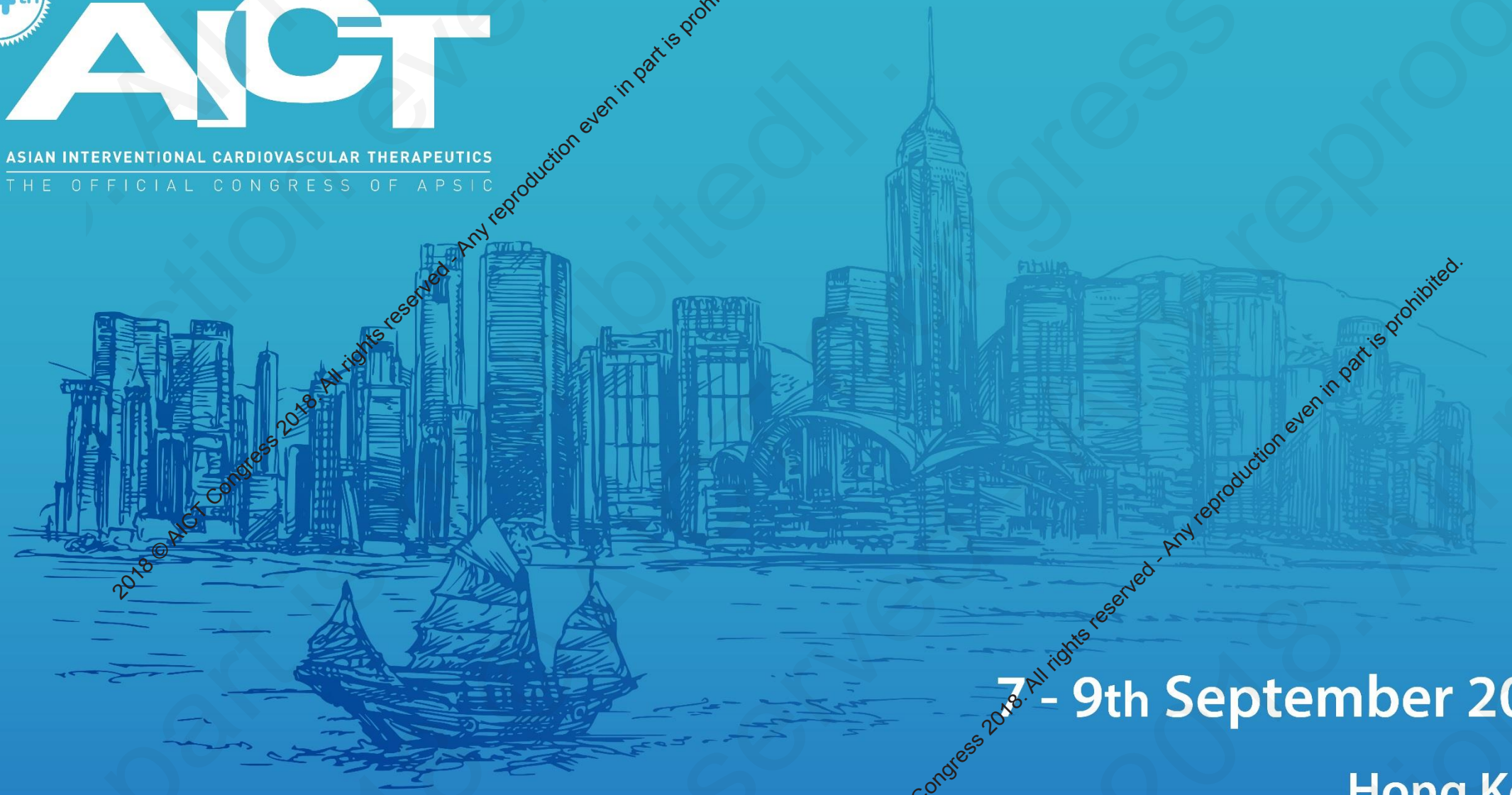

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