Let's Fix The Things Timely

AICT 2018 7th September 17:19-17:27 **Case 5**

Dr. Simon Lam
Queen Mary Hospital, Hong Kong

Disclosure

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Clinical Presentation

- F/87
- Lives alone, ADL-I
- Known history of mod AS last Echo 2013
- Hypertension
- Admitted on 25/12/2017 for chest pain onset 3 days prior to admission
- BP 95/50 P110

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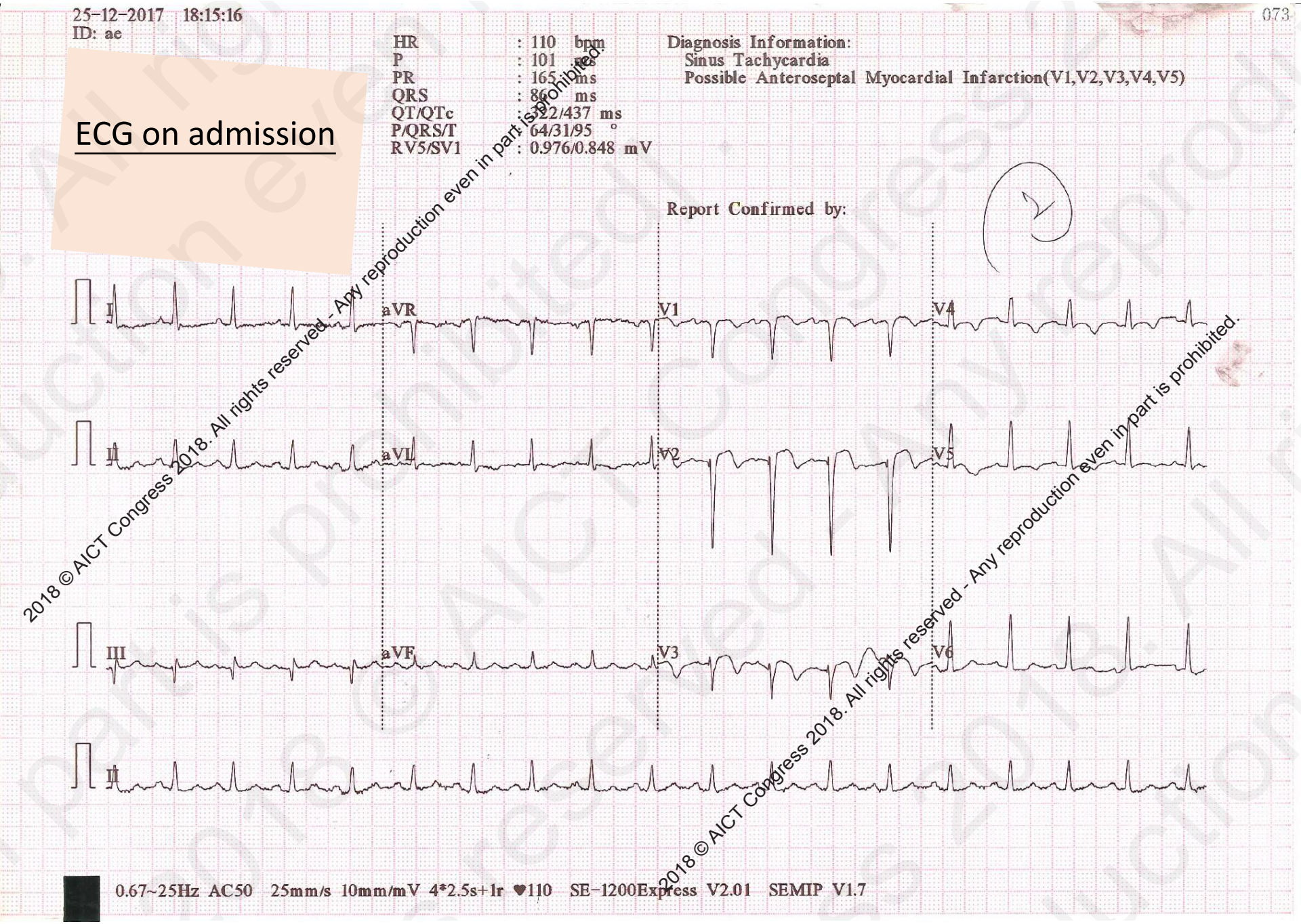
ECG on admission



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- TTE on admission
  - LVEF 35%, severe anteroseptal HK from base to apex
  - Calcified AV with severe AS PG/MG 82/55mmHg, AVA 0.6cm^2
  - Moderate MR, TR RVSP 50mmHg

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Progress

- Managed as delayed presentation of anteroseptal STEMI with progression of underlying aortic stenosis
- LMWH, DAPT and guideline-directed therapy
- Started on low dose dopamine 5ml/hr (2:1 concentration) borderline BP

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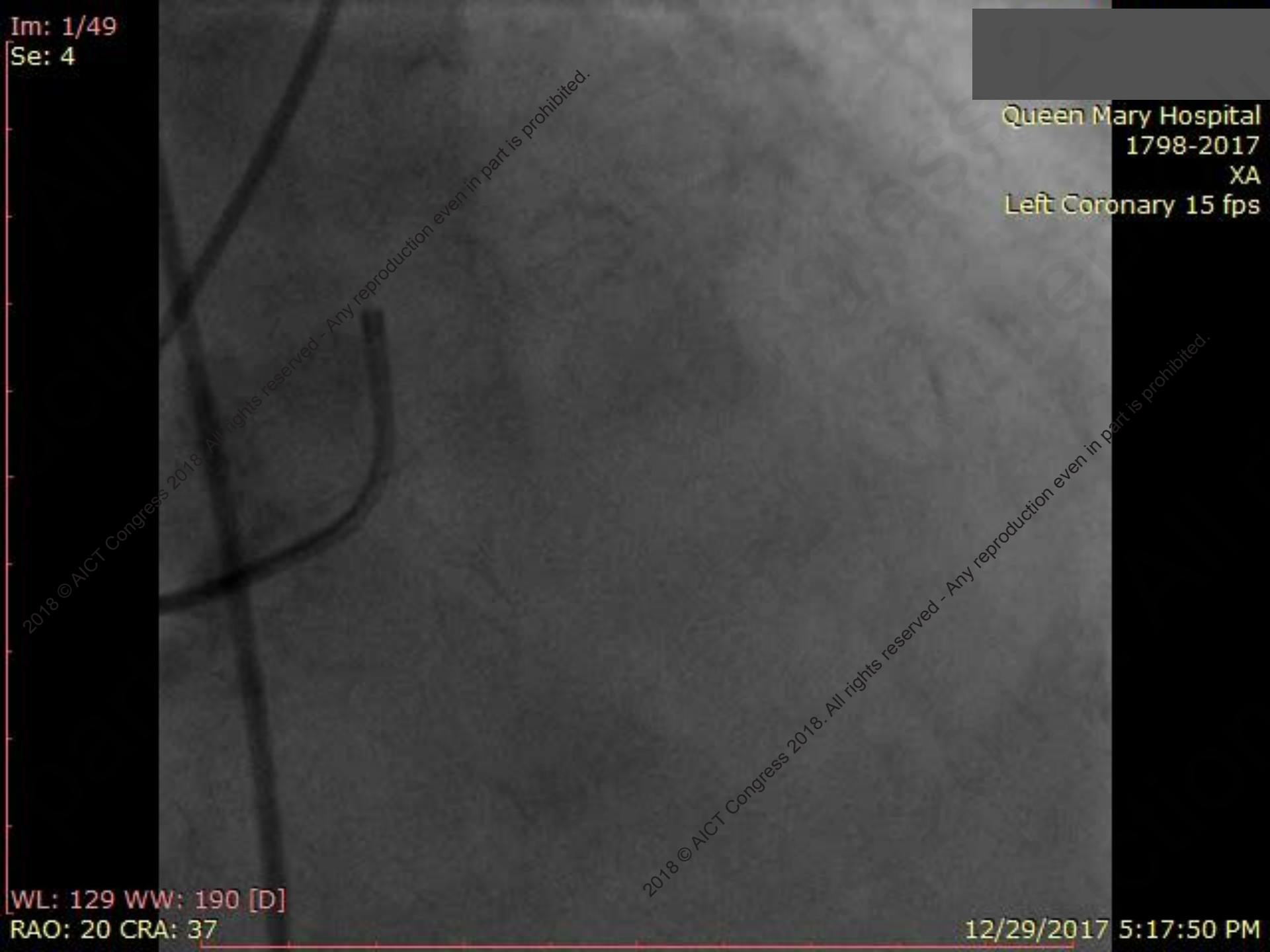
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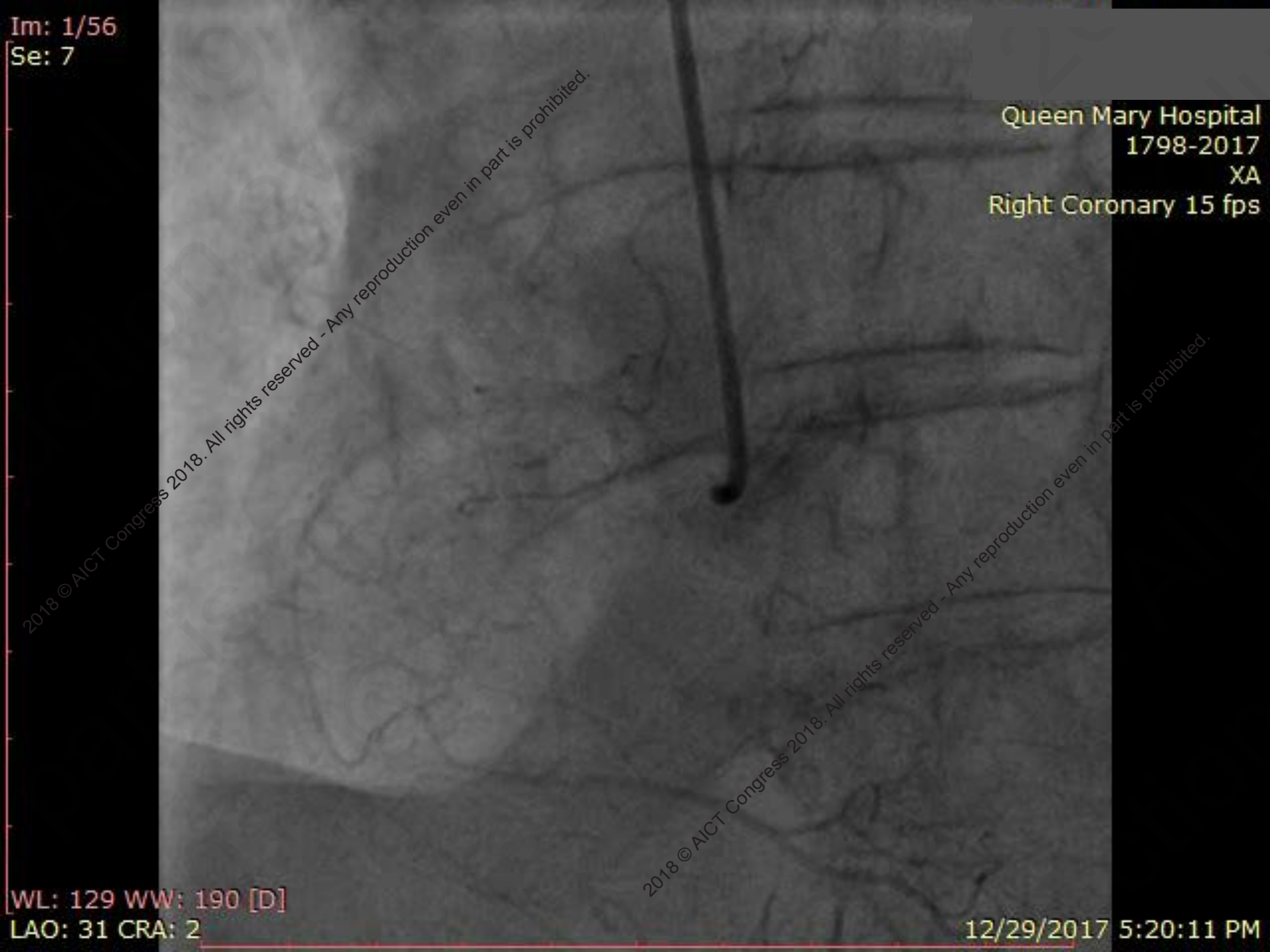
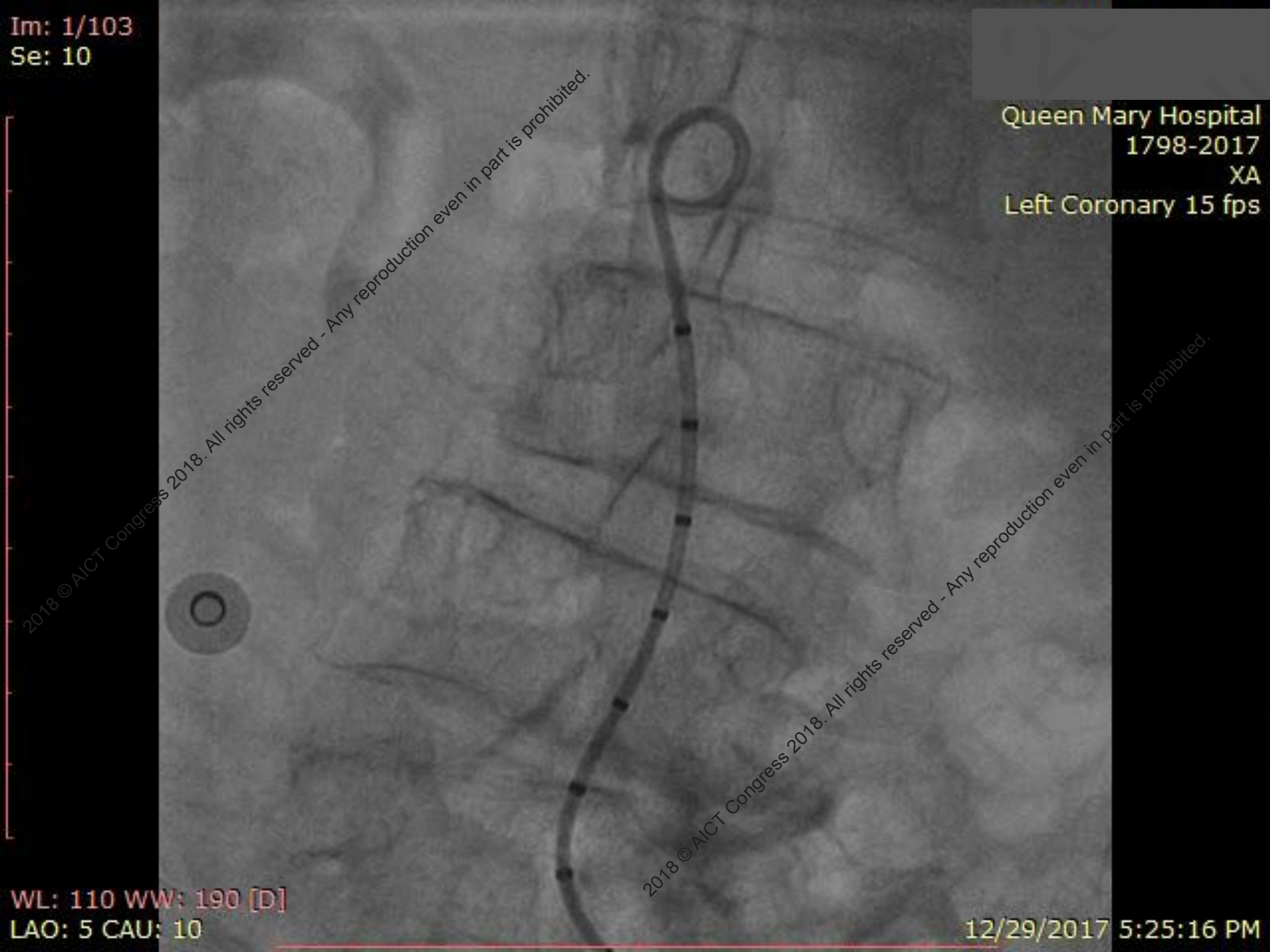
RAO: 20 CRA: 37
12/29/2017 5:17:50 PM





Decision Timepoint #1

- Shall we
  - wait for stabilization and optimization of medical treatment before doing anything?
  - Intervene early because still need dopamine and medical treatment cannot stop clinical deterioration?
  - What intervention
    - On-go approach
      - PCI + BAV?
      - PCI + TAVI?
    - Stepwise approach
      - PCI then see what happens
      - PCI then BAV/TAVI
    - "No touch" approach
      - Conservative treatment?

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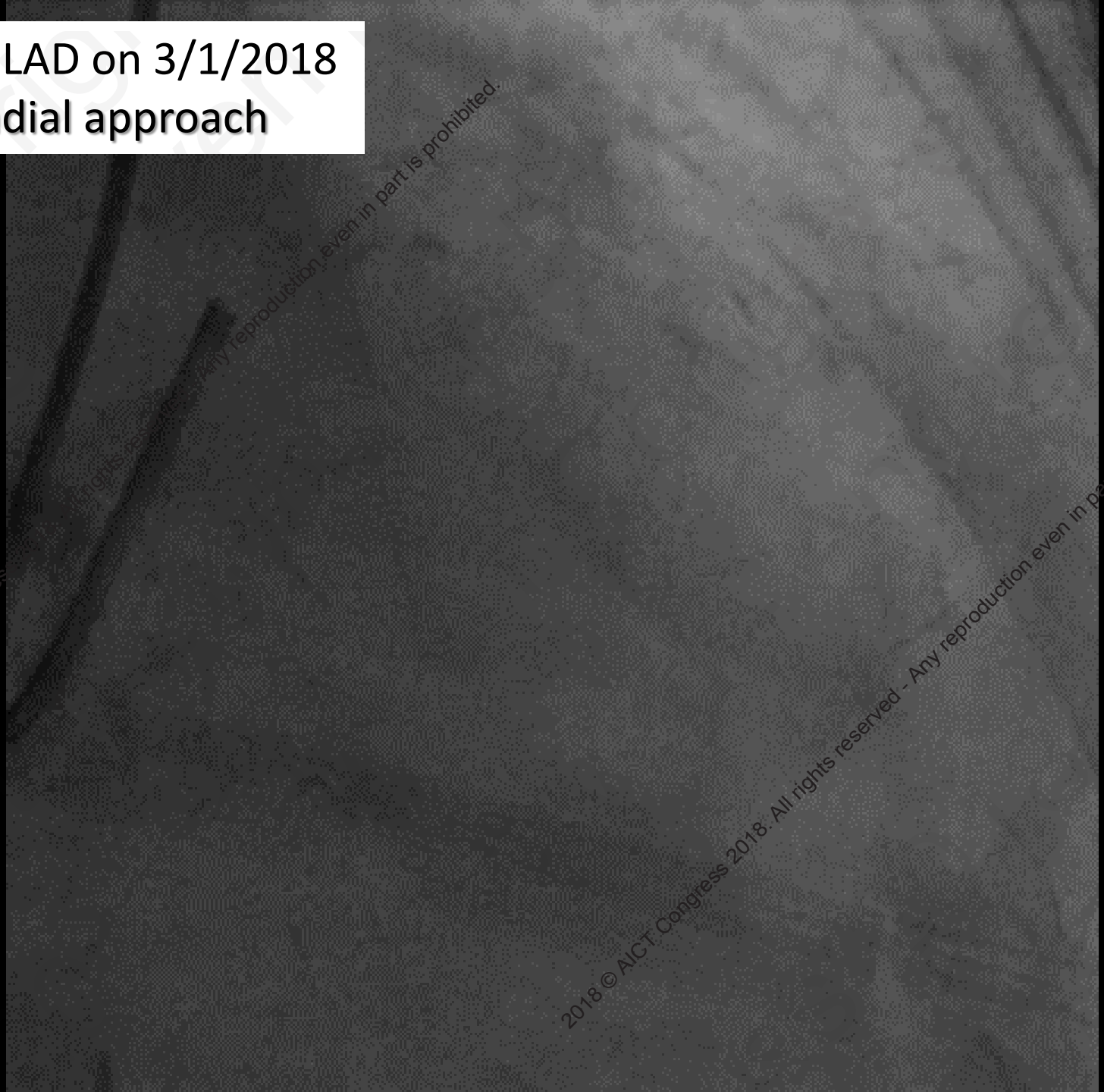
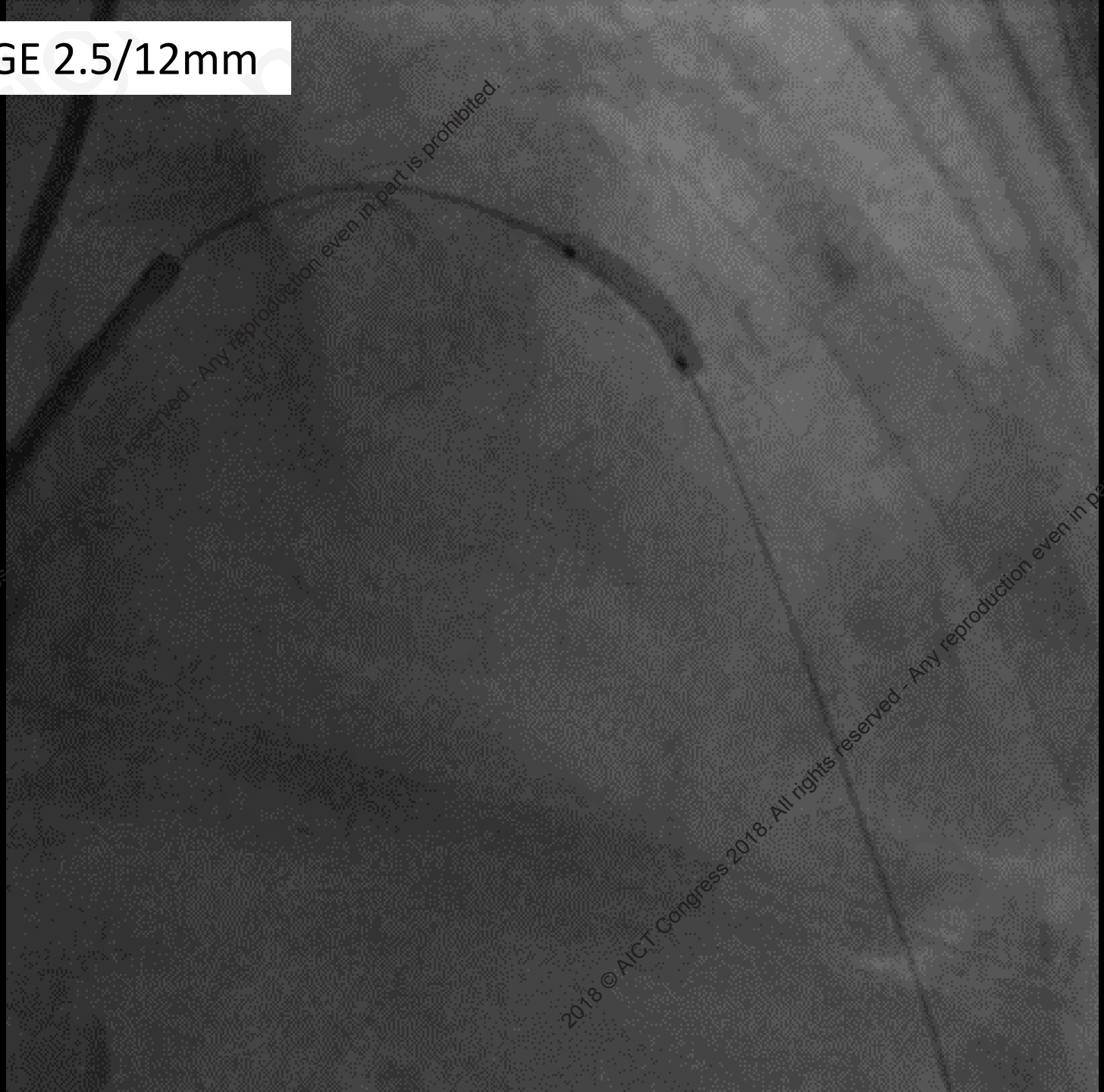
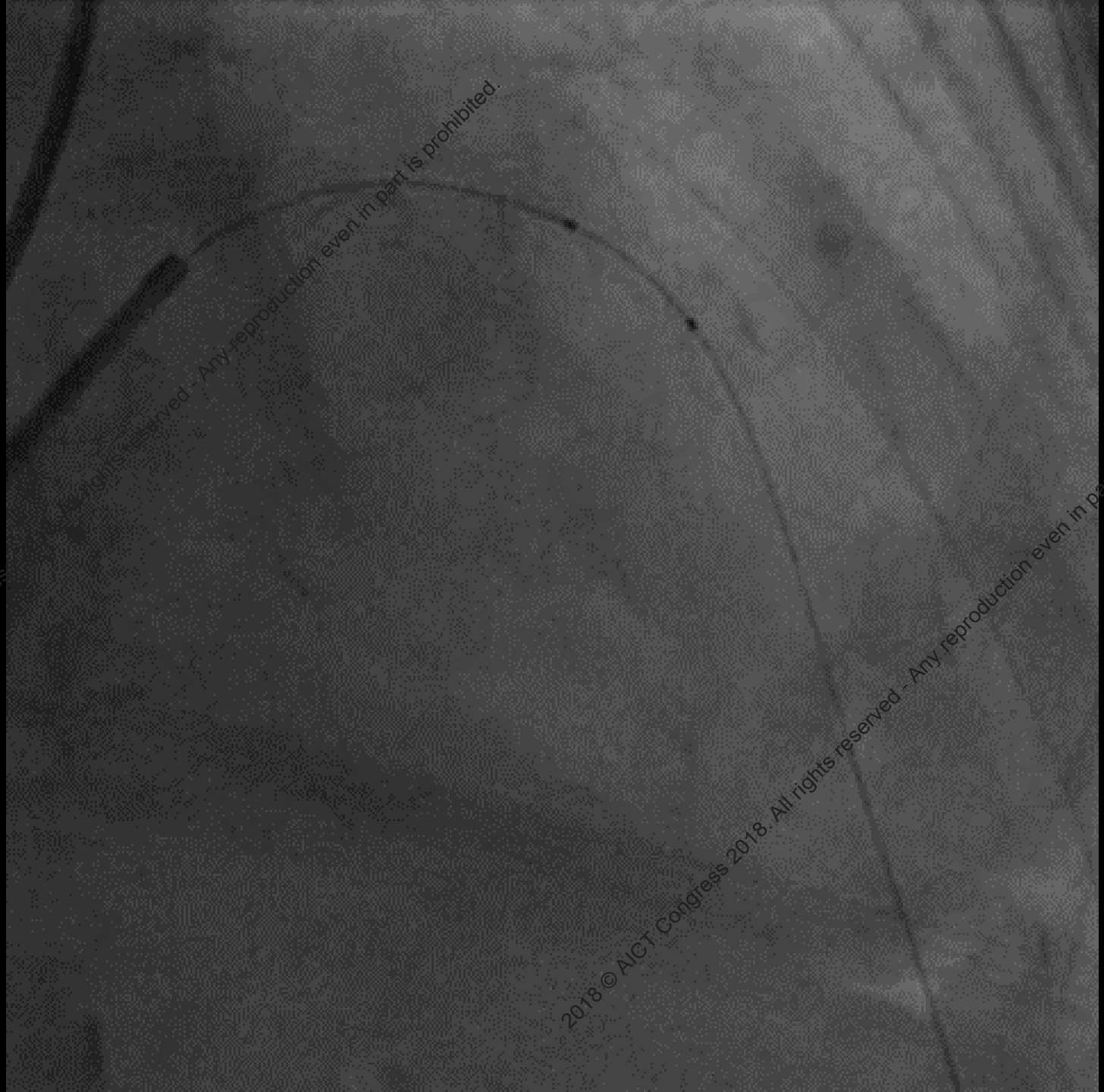
- Family interviewed and explained on coronary angiogram findings and concomitant severe aortic stenosis
- Advanced age and patient have many family members – Eldest Son in UK, Daughter in Australia, the rest of family in Hong Kong
- Take time for Family consensus – diversion of decision among family
- Can only make decision for PCI first
- Cannot have consensus for BAV and TAVI

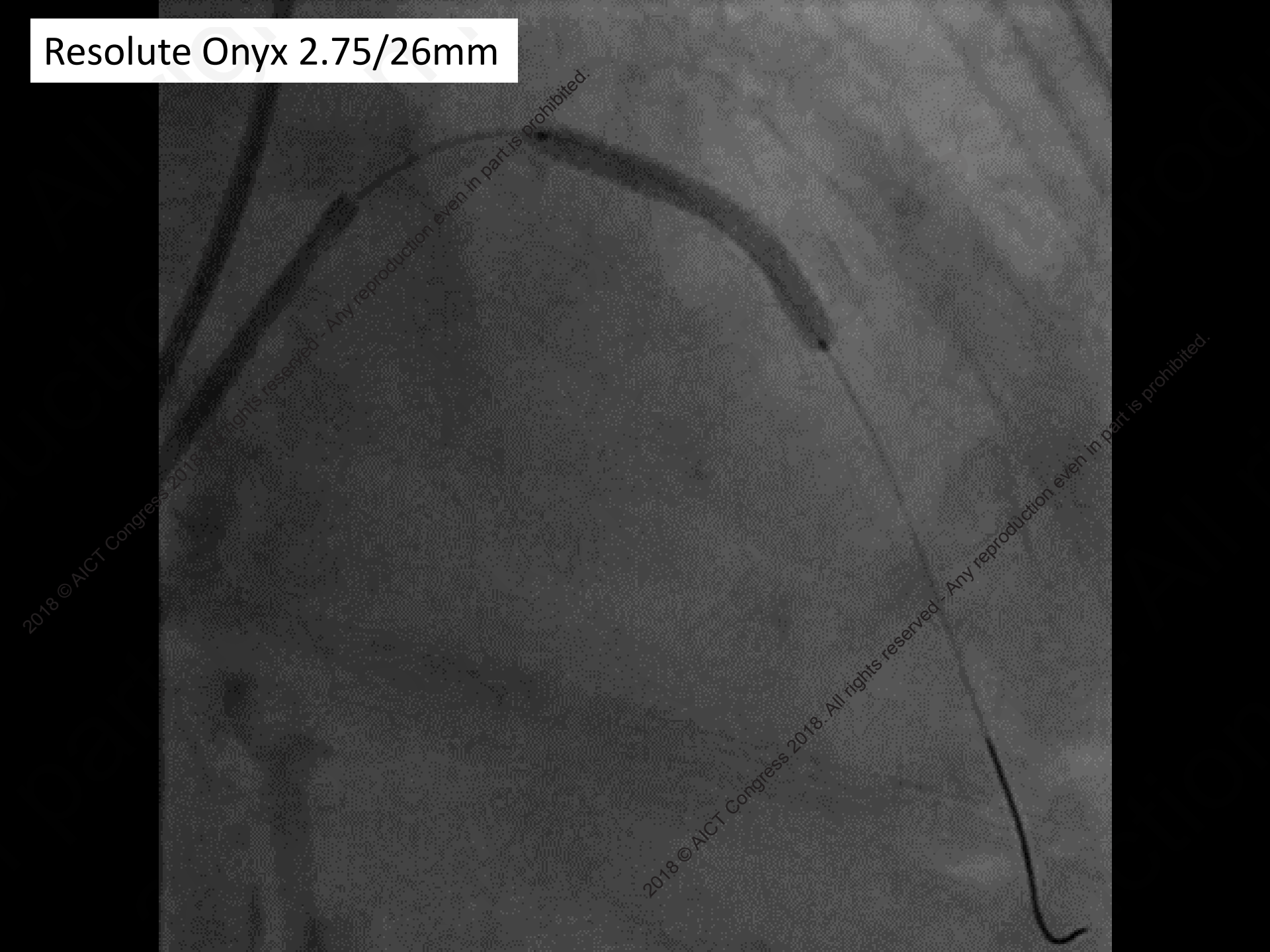
PCI to LAD on 3/1/2018
Left radial approach

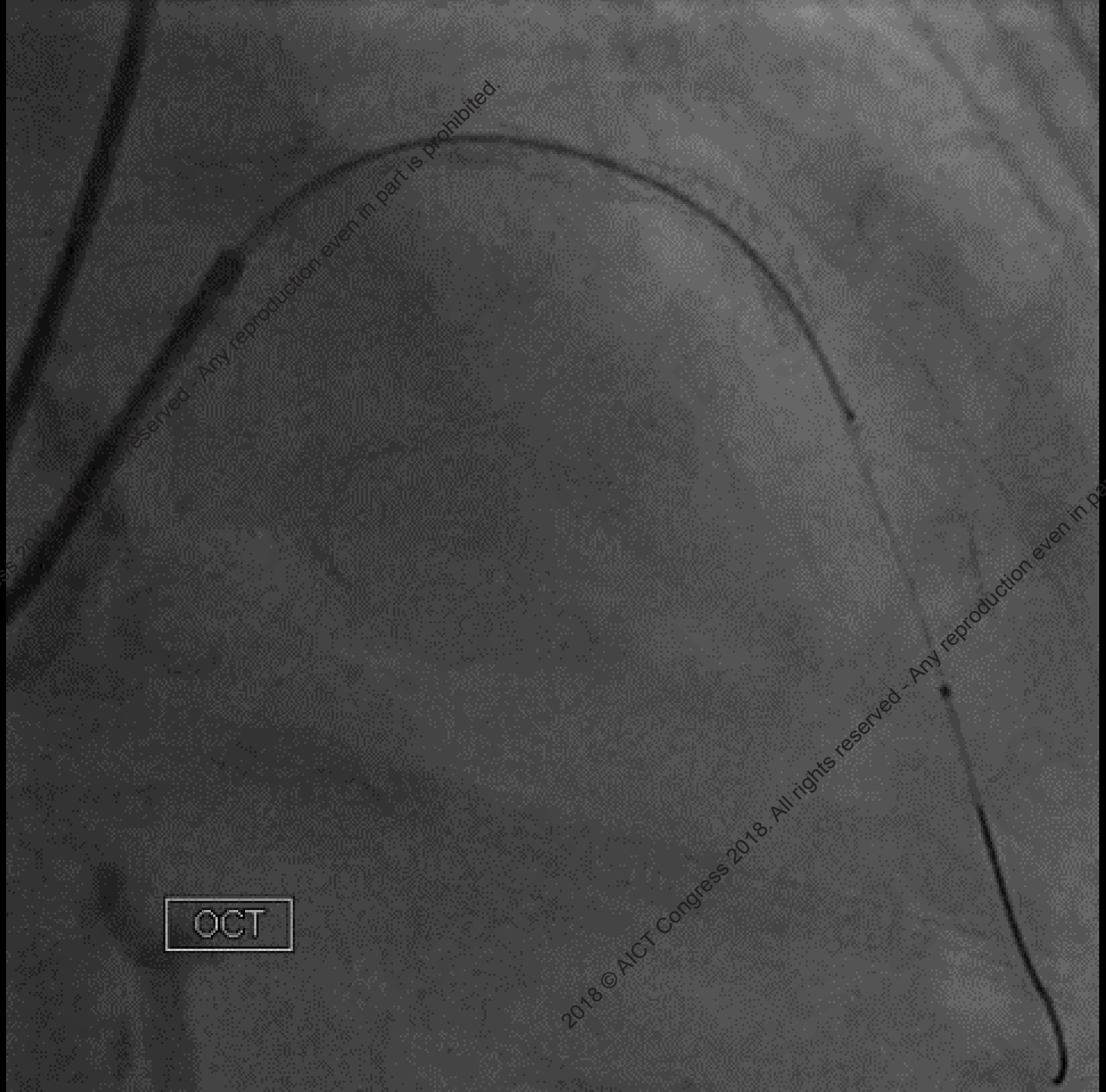


EMERGE 2.5/12mm

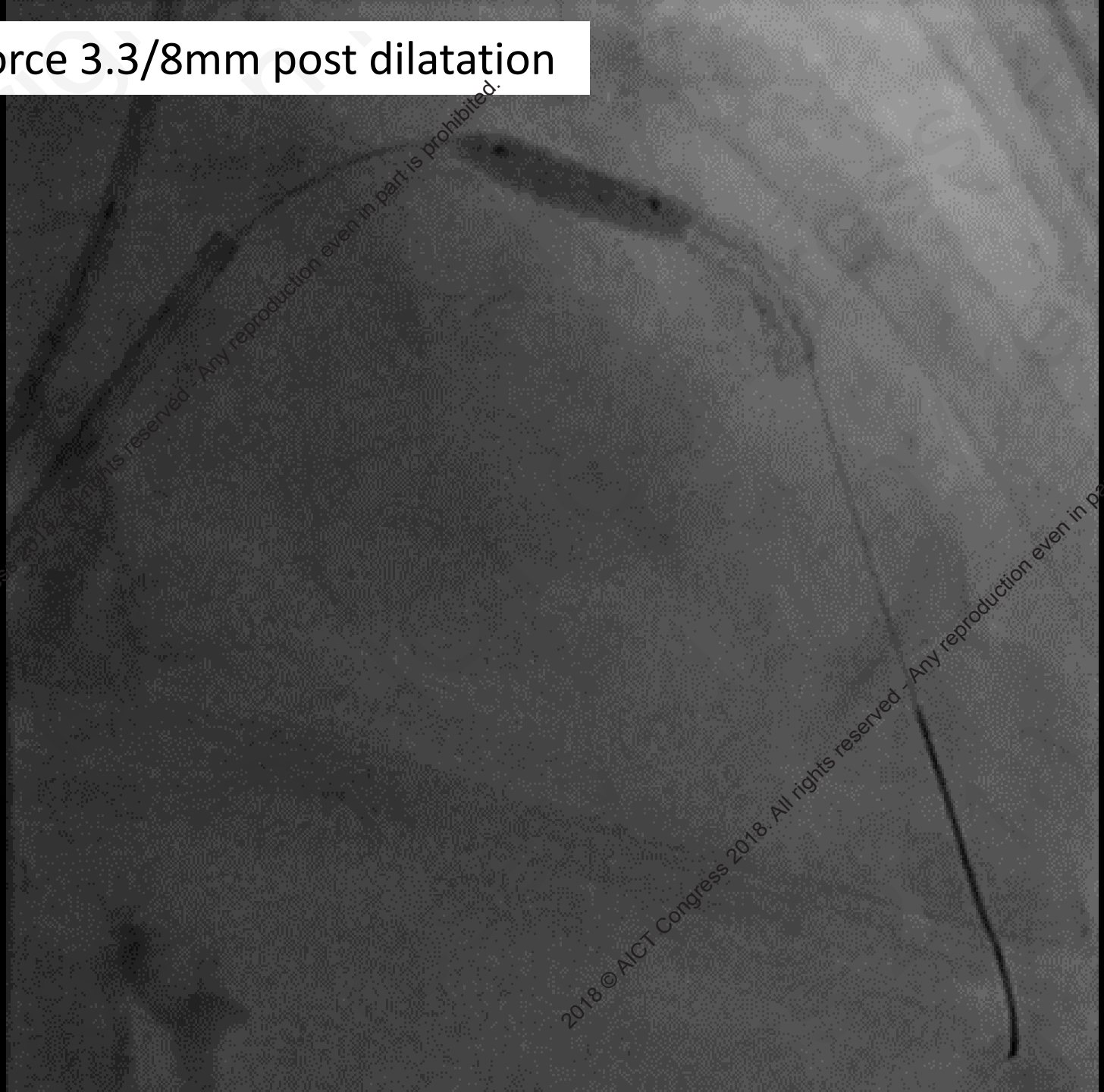


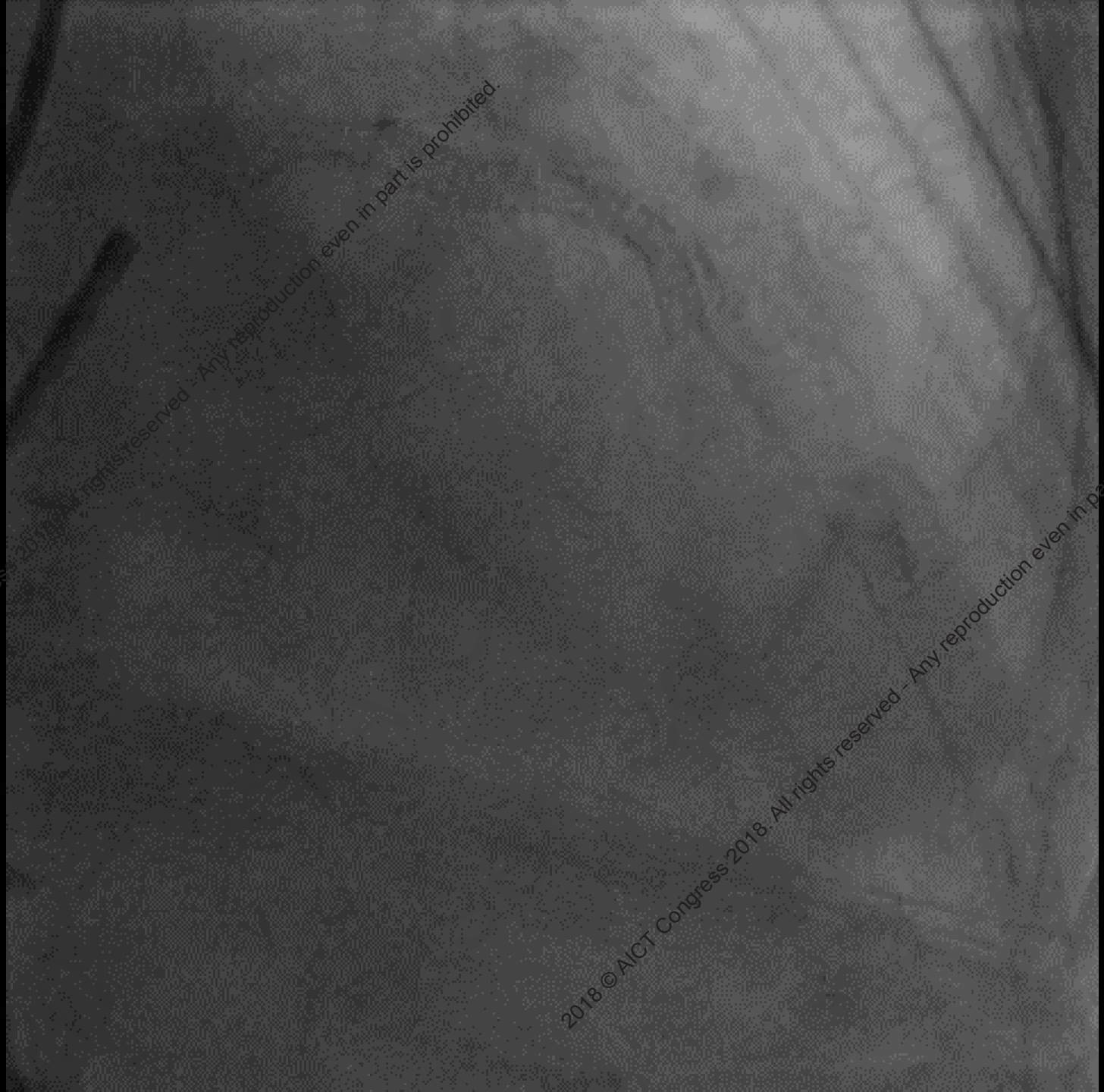






Accuforce 3.3/8mm post dilatation





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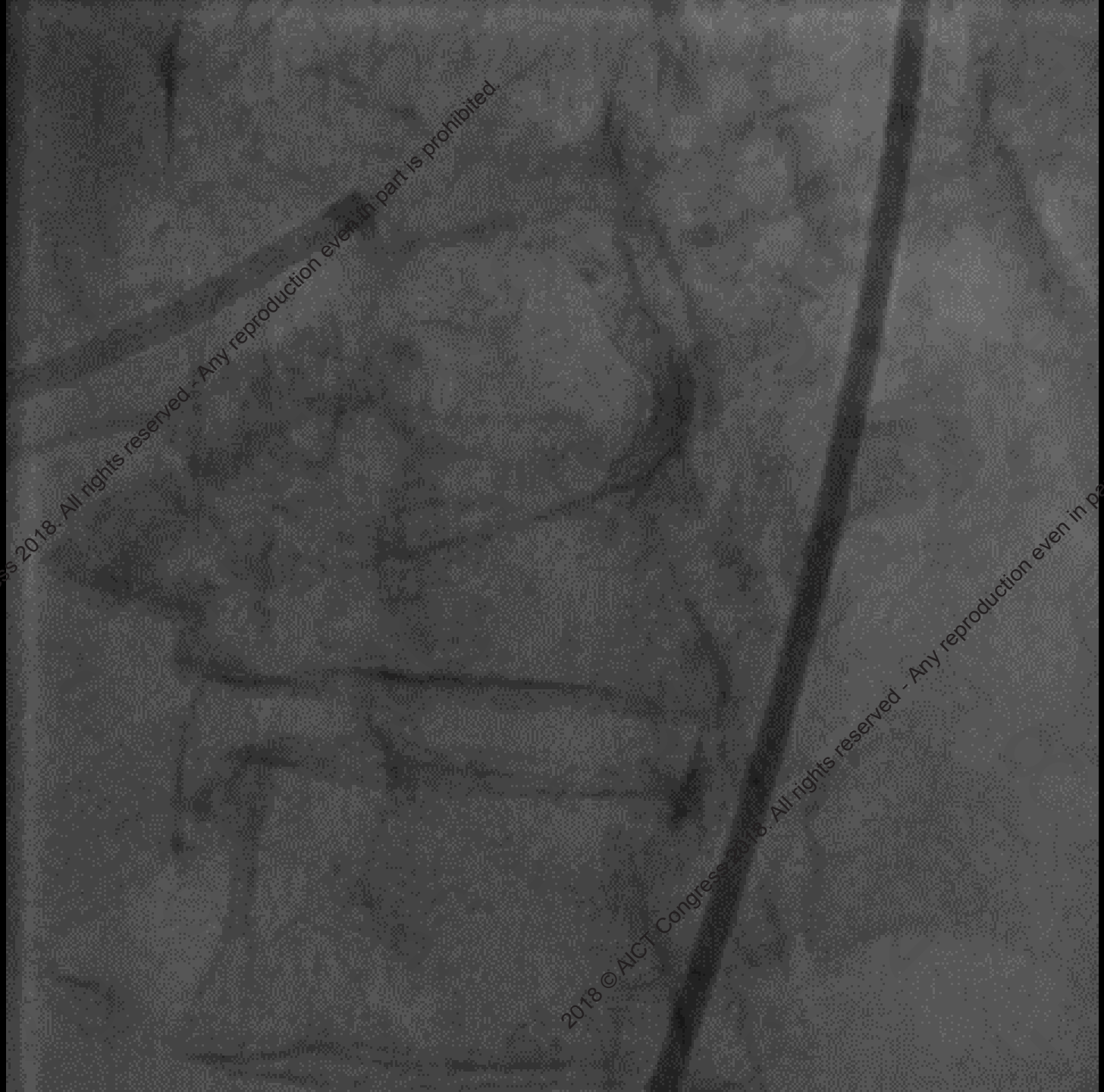

Progress

- Successful PCI pLAD critical lesion with DES
- Significant PR Bleeding with increasing Dopamine demand 5 days post PCI
- OGD and Flexible Sigmoidoscopy done in ICU
  - Rectal ulcer and multiple sigmoid diverticuli
- Temporary withhold Plavix and resumed after Hb stabilized with close monitoring

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Progress

- Still dopamine dependent on 5ml/hr (2:1 concentration)
- 2L O2 CXR - status quo
- BP borderline ~90
- Echo – LVEF 35% severe LAD territory HK, severe AS
- Probably some chest infection given antibiotics with iv Tazocin

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Decision Timepoint #2

- Anticipating potential deterioration
- Episodic change in condition with up and down titrating of dopamine and BIPAP support
- Patient and Family members cannot make up any mind
- Overall likely downhill course and DNACRP signed

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Decision Timepoint #3

- Status quo for subsequent 1 month in CCU with supporting treatment
  - No worsening no improvement
  - 2L O2
  - 5ml dopamine (3-8ml)
  - Patient with clear mind and communicable
  - Can tolerate diet
  - overall frail
  - Changing iv access many times
  - Regular sitting out, ripple bed to present bedsores

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Family Conference

- All family members come back for thorough discussion on patient condition
- Understood current condition
- Patient made her own decision –
  - “if survice through till after Chinese New Year…..”

TF TAVI

- Heart team approach
- TAVI on compassionate ground on 23/2/2018
- L femoral Access
- Embolic protection with Sentinel

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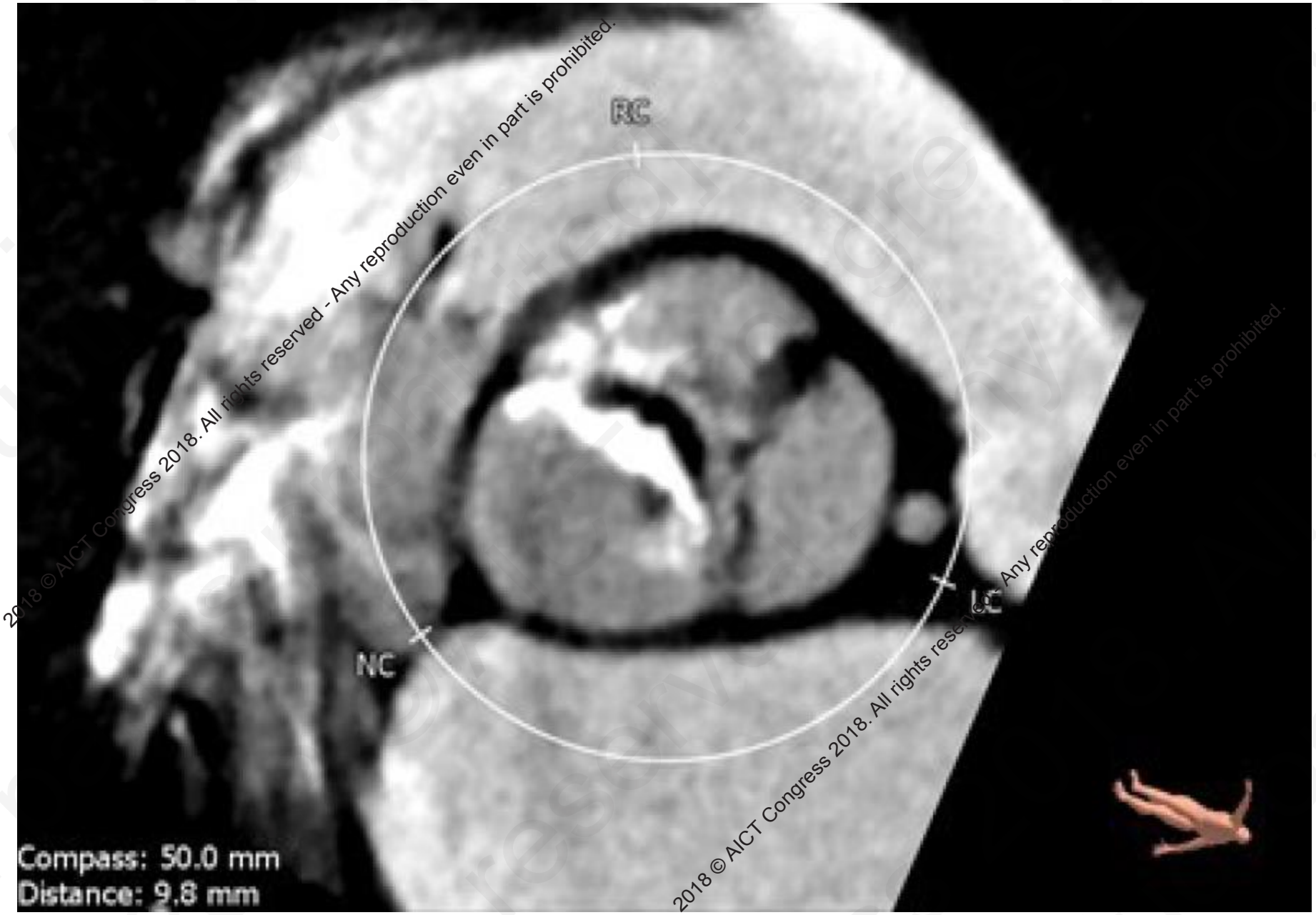
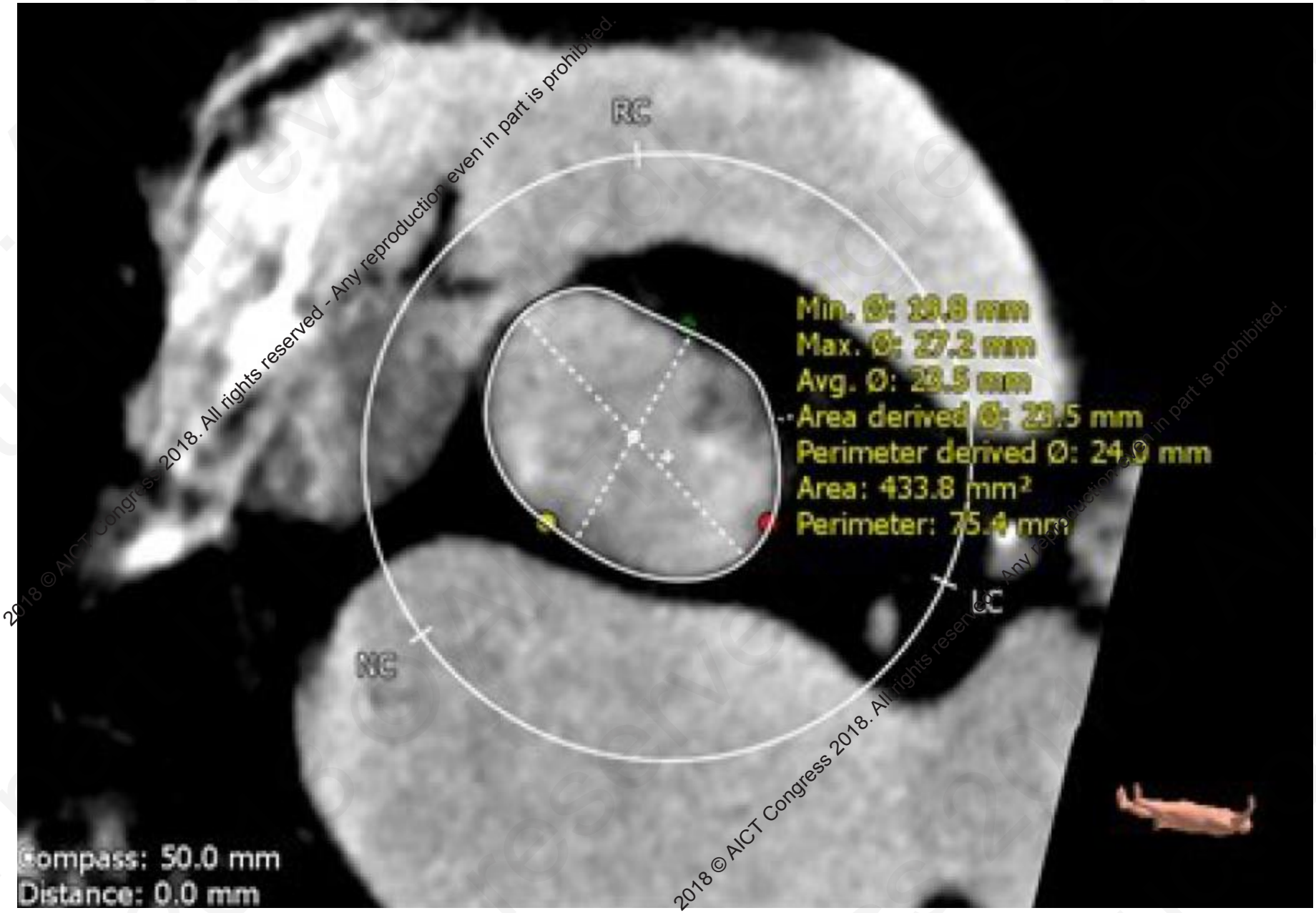




SAPIEN 3 Valve Sizing: Confirm THV Size

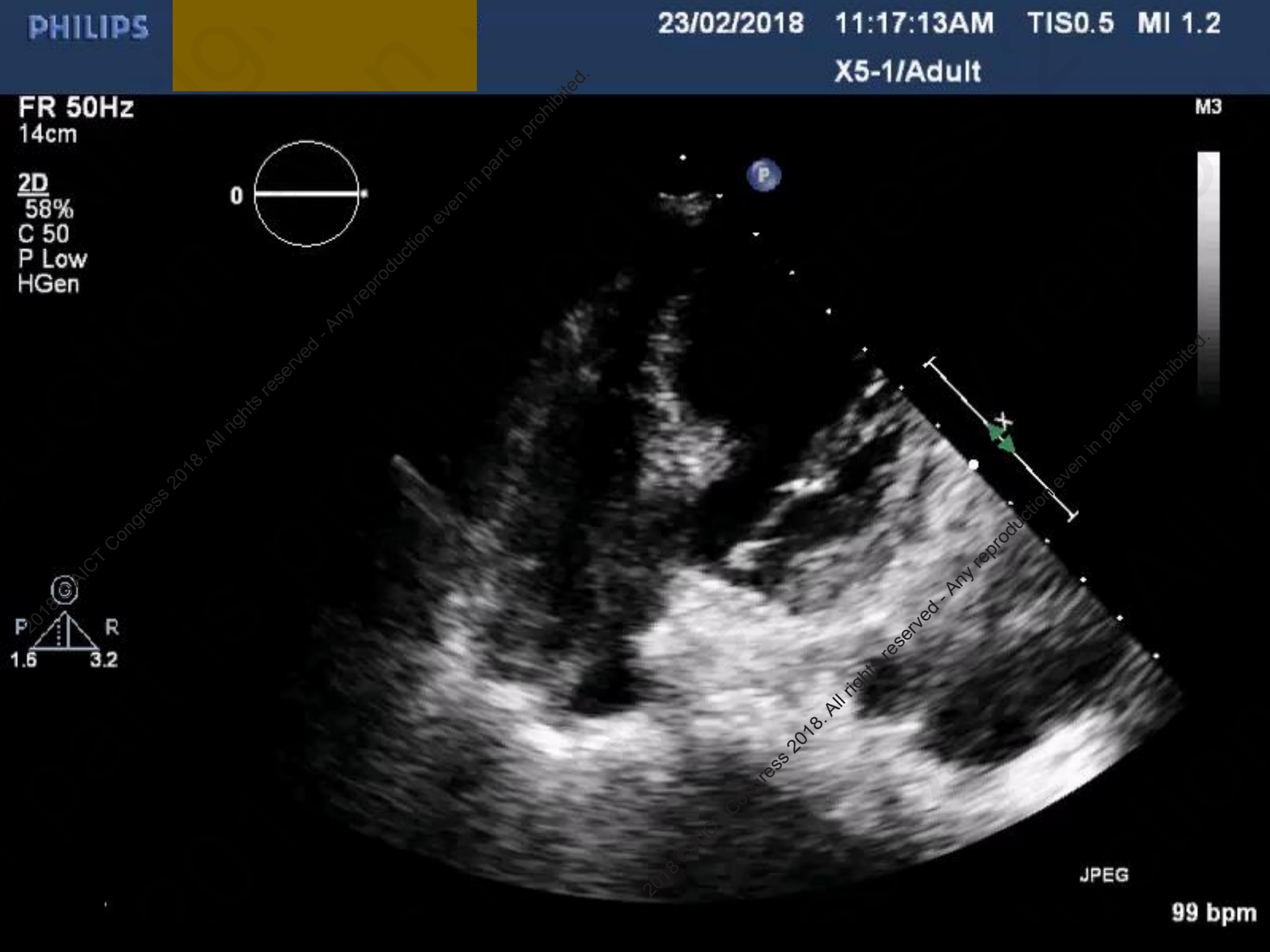
NOTE:
Systolic measurements are recommended

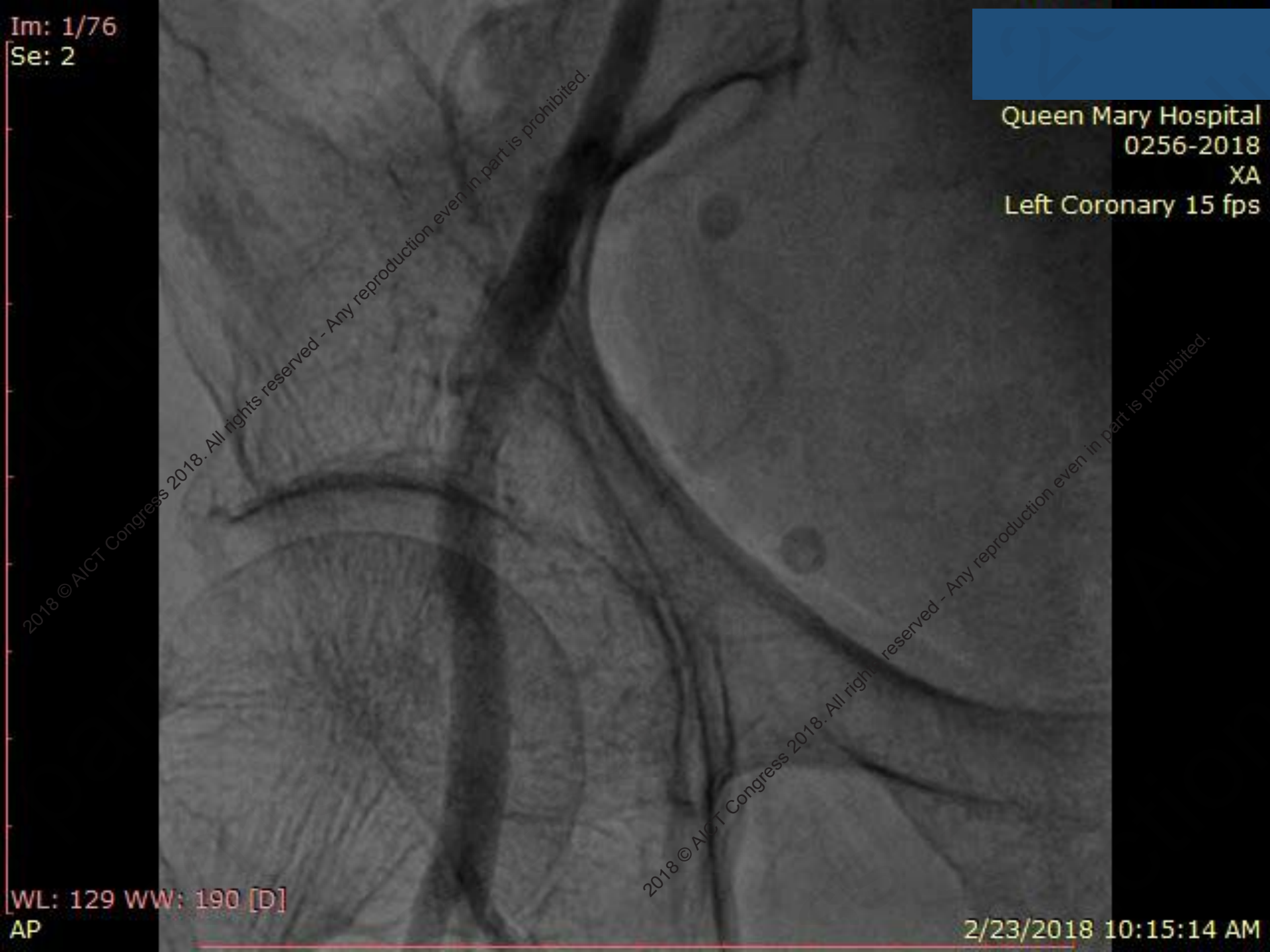
3D Area - derived Diameter (mm)		20.0	20.2	20.5	20.7	21.0	21.1	21.4	21.7	22.0	22.3	22.6	22.8	23.0	23.1	23.4	23.7	23.9	24.0	24.2	24.7
3D Annular Area (mm^2)		314	320	330	338	346	350	360	370	380	390	400	410	415	420	430	440	450	452	460	480
% Annular Area Over (+) or Under (-) Nominal by 3D CT	23mm	29.3	26.9	23.0	**20.1**	**17.3**	**16.0**	**12.8**	**9.7**	**6.8**	**4.0**	**1.5**	**-1.0**	**-2.2**	**-3.3**	**5.6**	-7.7	-9.8			
	26mm											29.8	26.6	25.1	23.6	**20.7**	**18.0**	**15.3**	**14.8**	**12.8**	**8.1**
	29mm																				

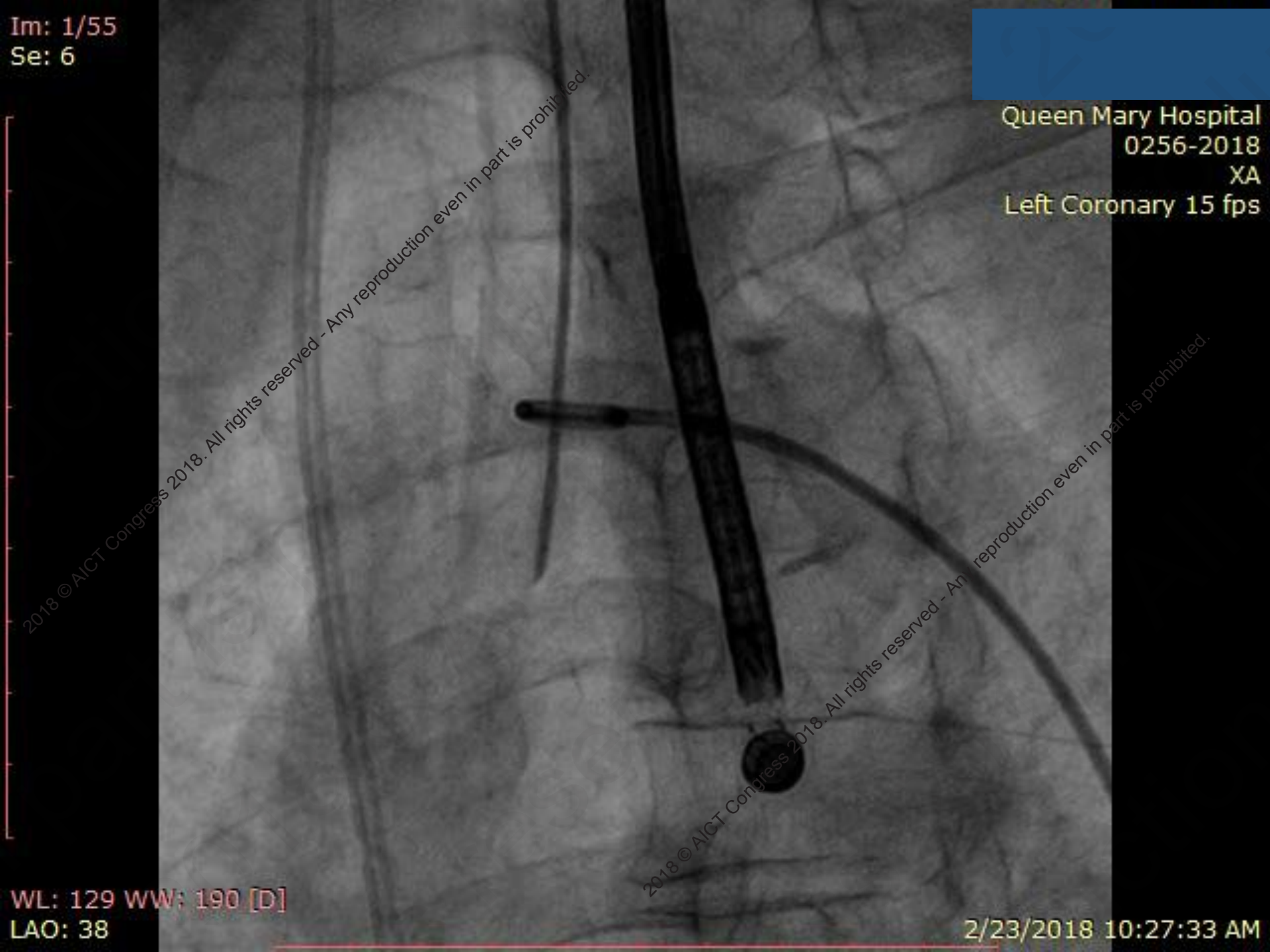
3D Area-derived Diameter (mm)		25.0	25.2	25.5	25.7	26.0	26.2	26.4	26.5	26.7	26.9	27.2	27.4	27.6	27.9	28.0	28.1	28.3	28.5	28.8	29.0	29.2	29.4	29.5	29.6	29.9	30.1	30.3
3D Annular Area (mm^2)		490	500	510	520	530	540	546	550	560	570	580	590	600	610	615	620	630	640	650	660	670	680	683	690	700	710	720
% Annular Area Over (+) or Under (-) Nominal by 3D CT	23mm																											
	26mm	**5.9**	**3.8**	**1.8**	**-0.2**	**-2.1**	**-3.9**	**-4.9**	-5.6	-7.3	-8.9																	
	29mm		29.8	27.3	24.8	22.5	**20.2**	**18.9**	**18.0**	**15.9**	**13.9**	**11.9**	**10.0**	**8.2**	**6.4**	**5.5**	**4.7**	**3.0**	**1.4**	**-0.2**	**-1.7**	**-3.1**	**-4.6**	**-5.0**	-5.9	-7.3	-8.6	-9.9

NOTE:
Bold = recommended Sealing Zones relate only to valves that are deployed with nominal volumes

NOTE:
All values presented are based on nominal/recommended inflation volumes



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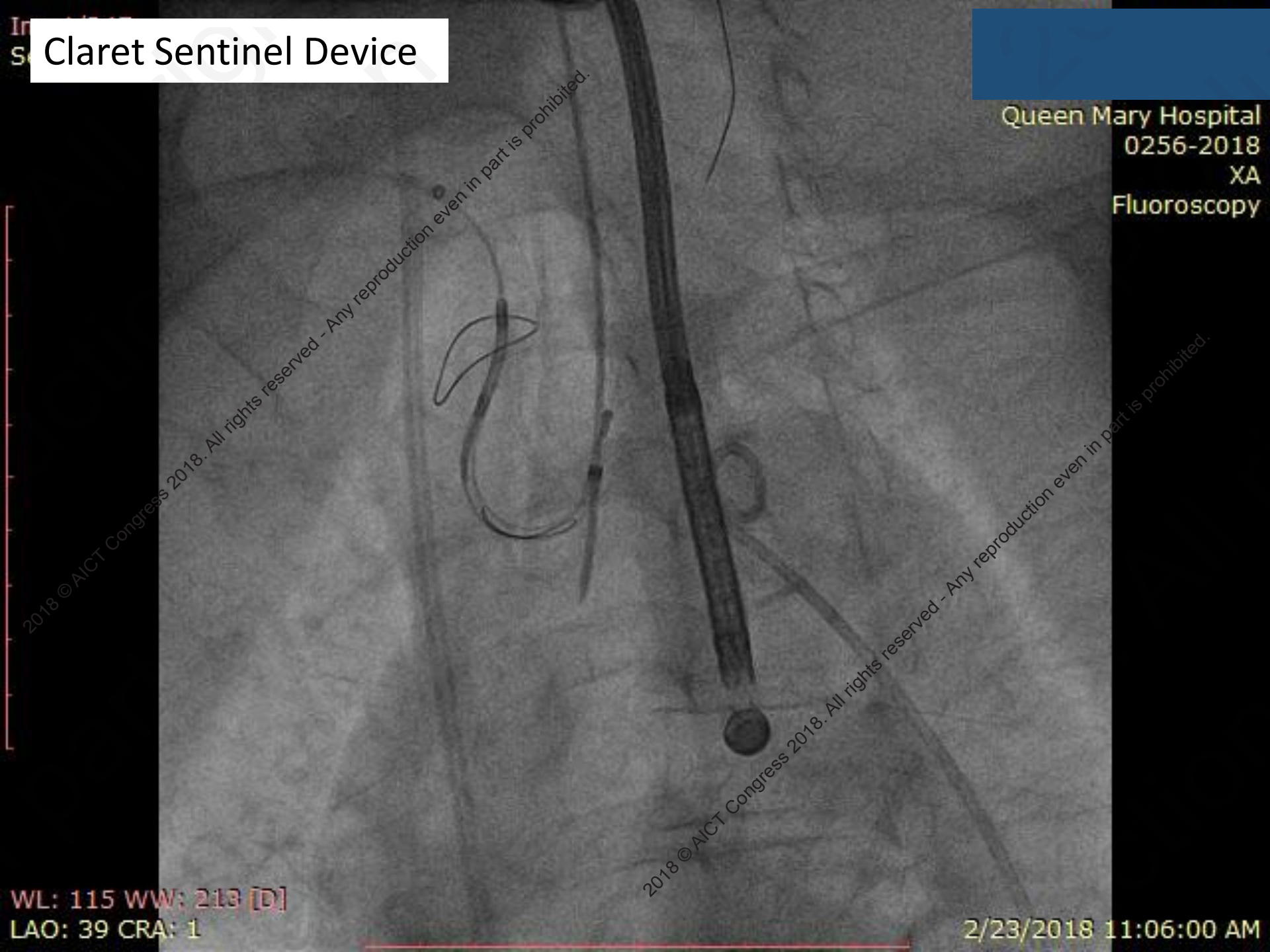
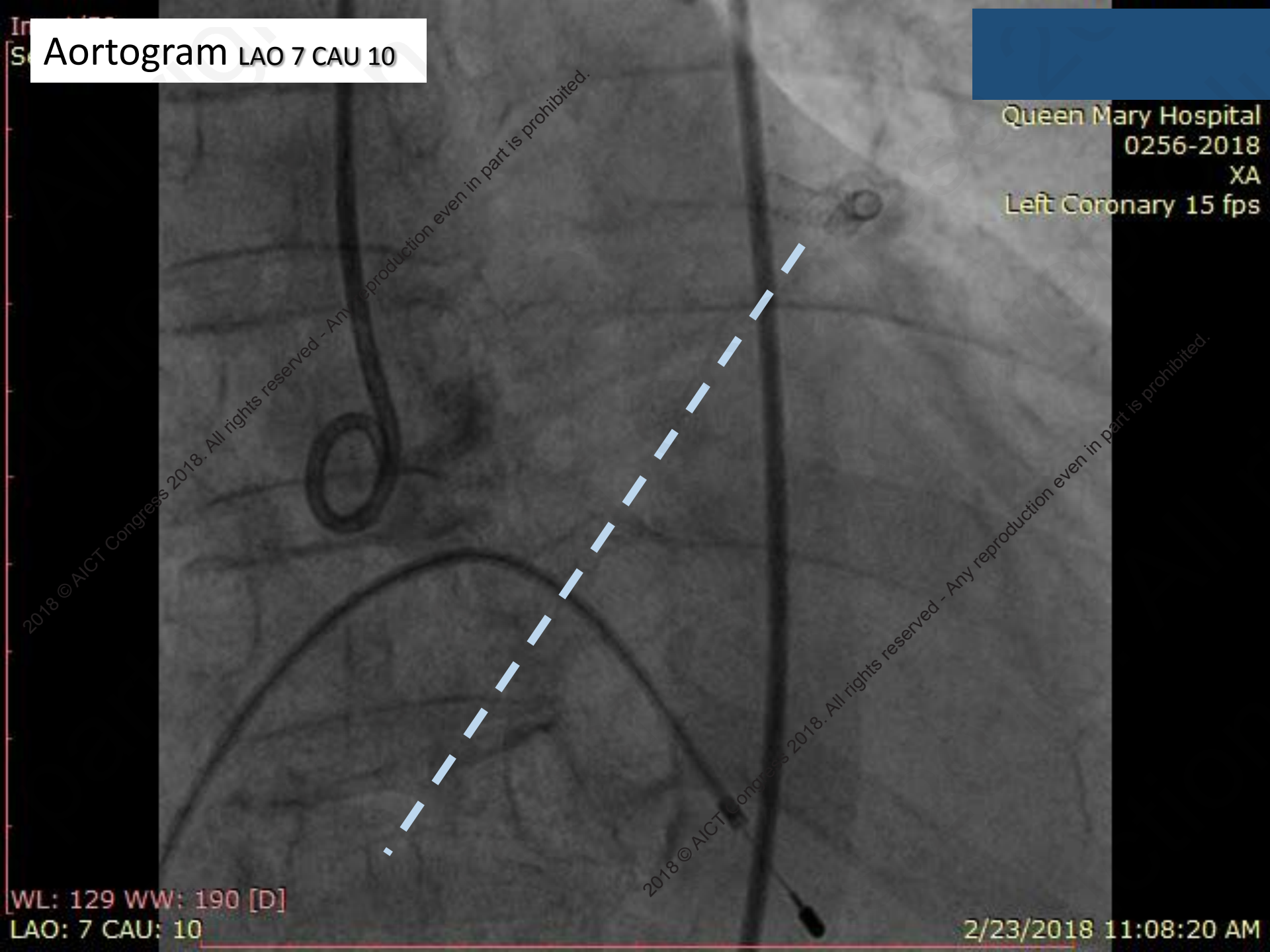
Claret Sentinel Device




Aortogram LAO 7 CAU 10
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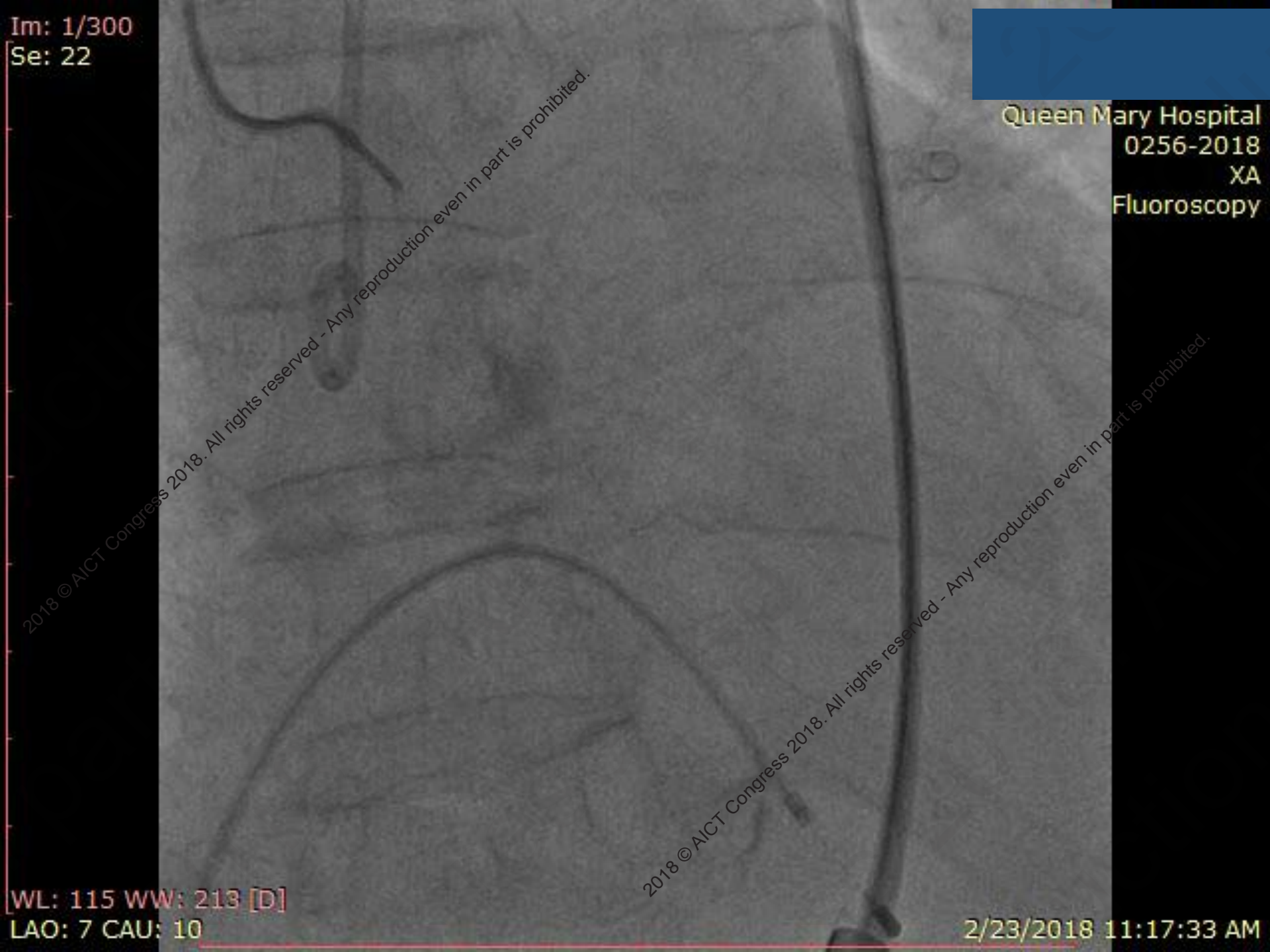
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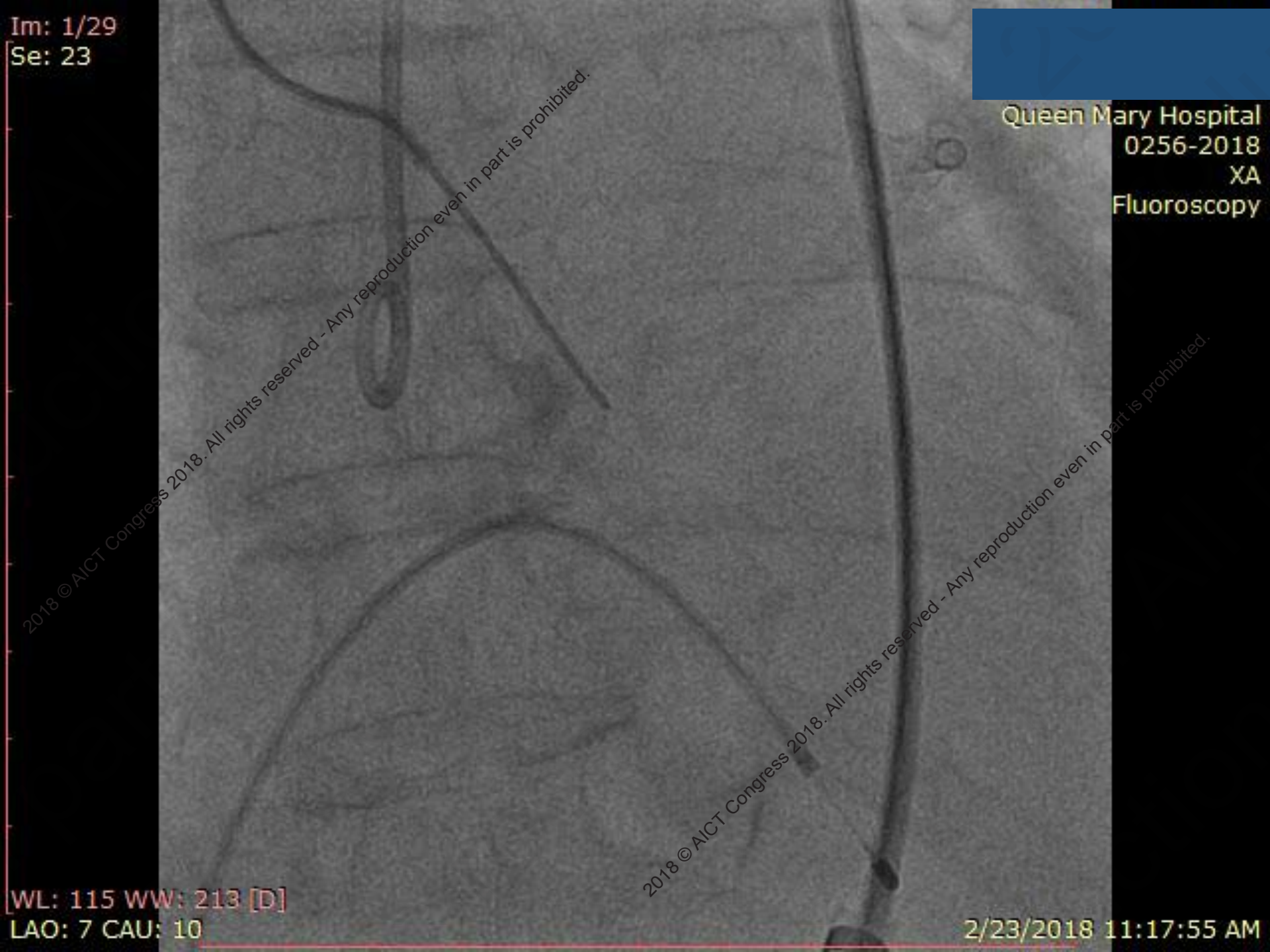

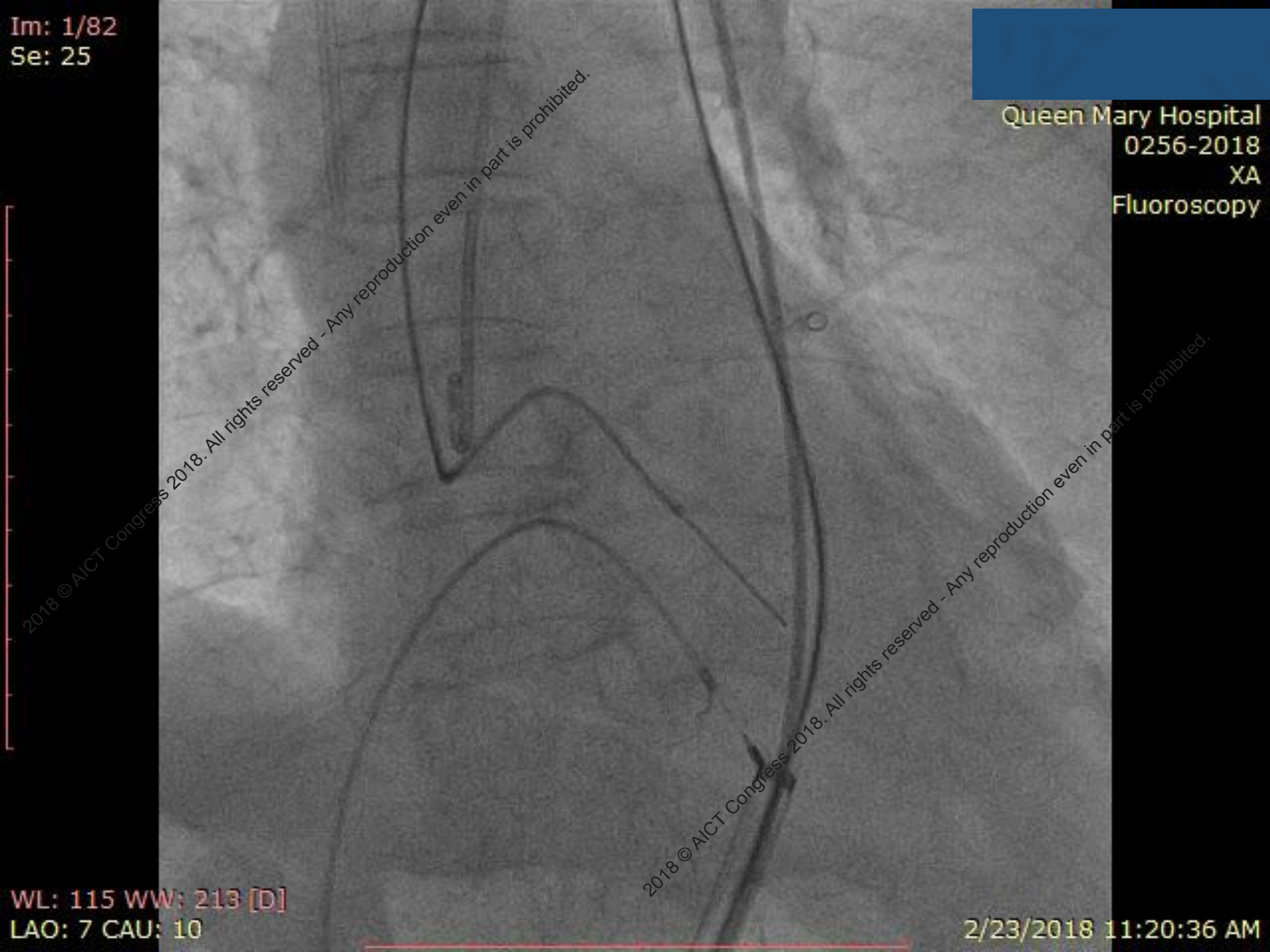

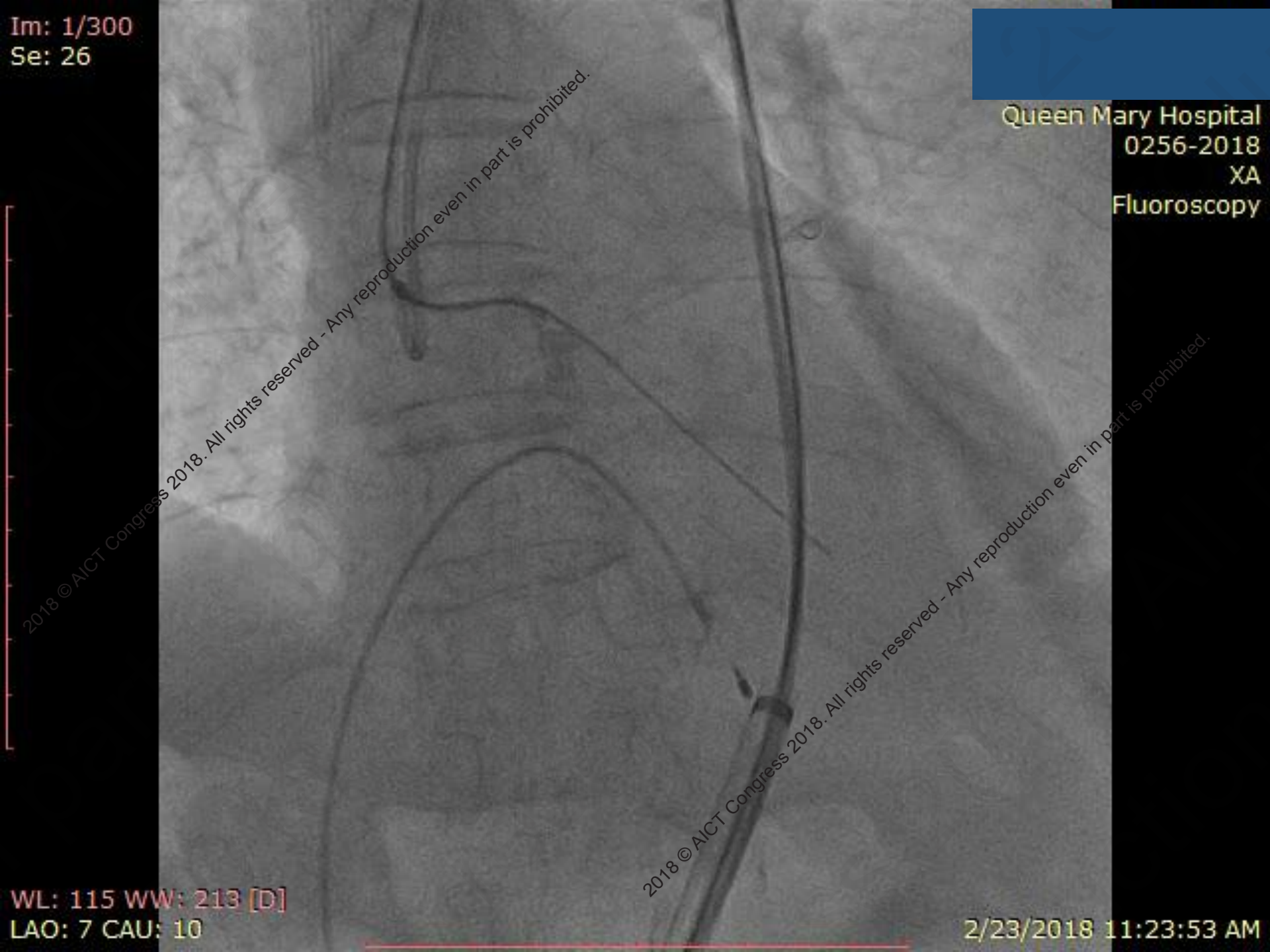
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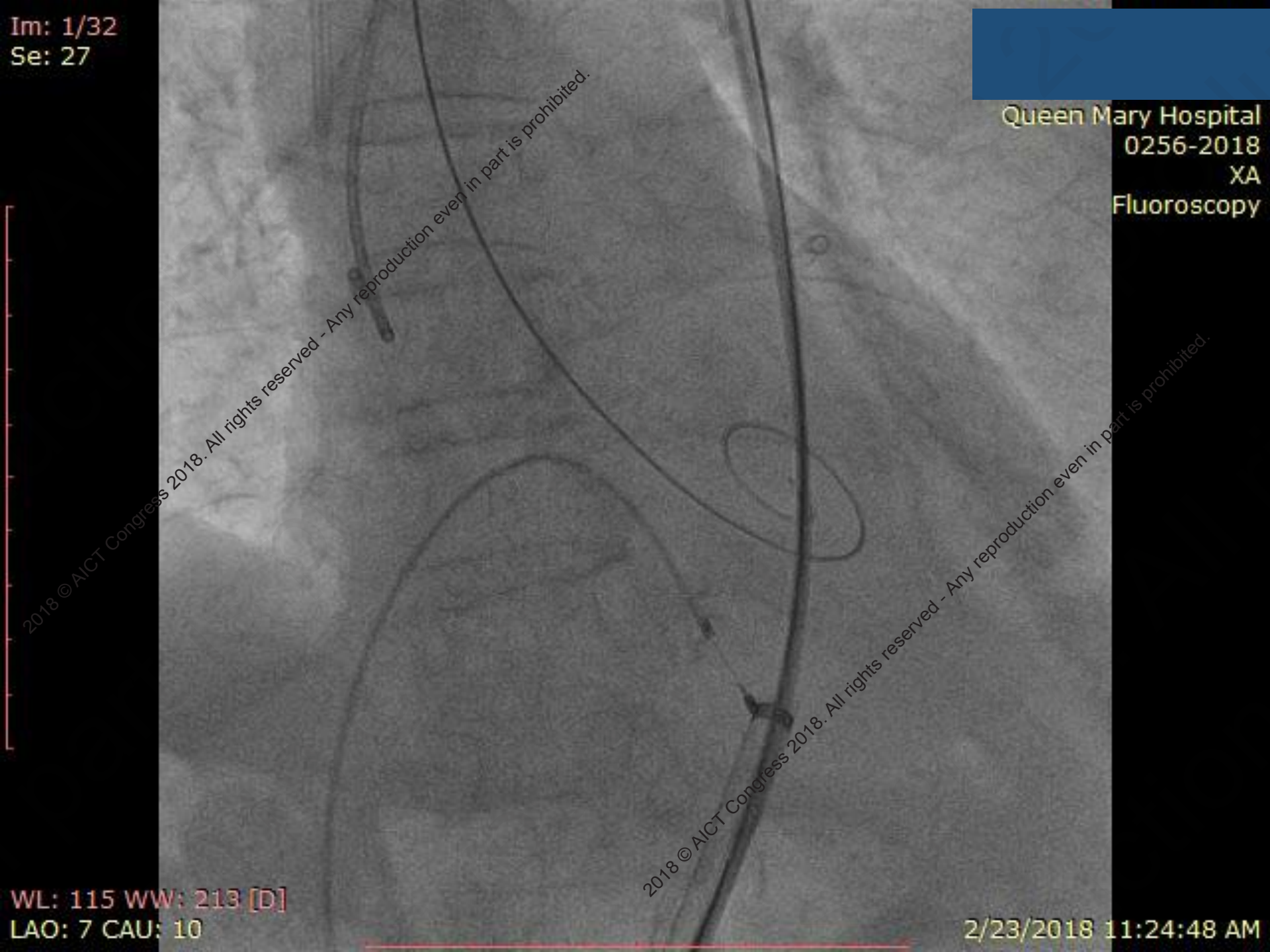
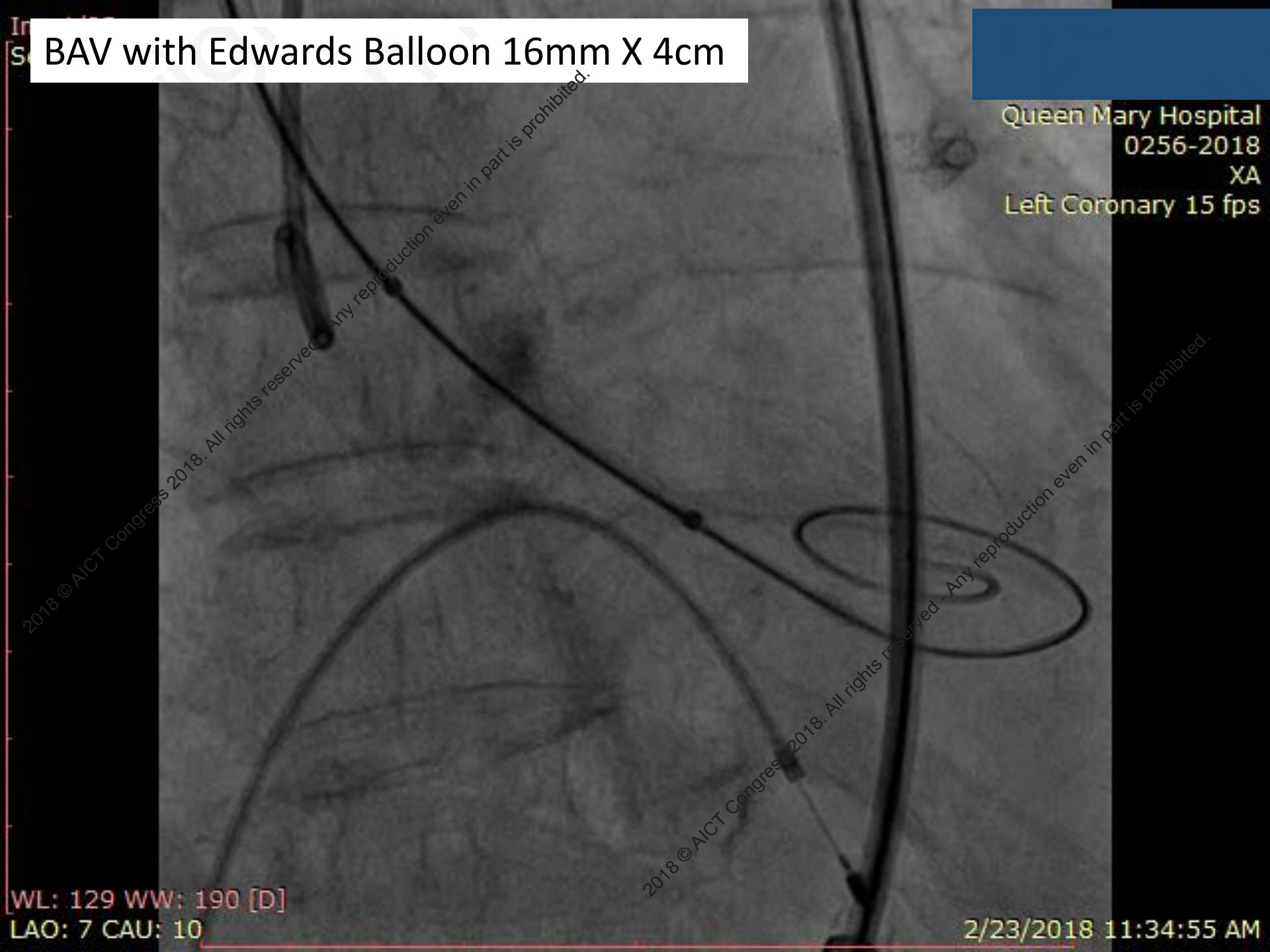
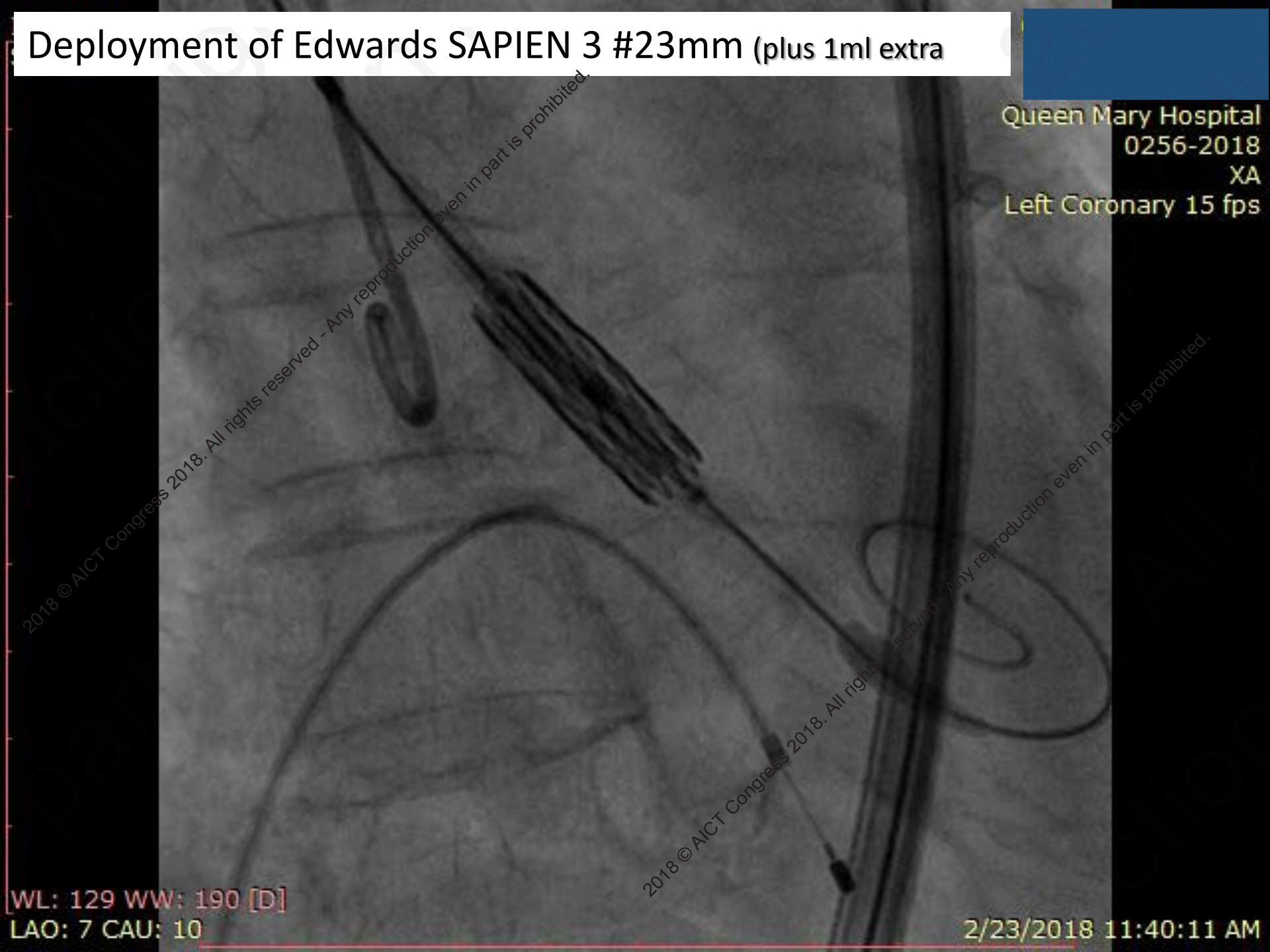
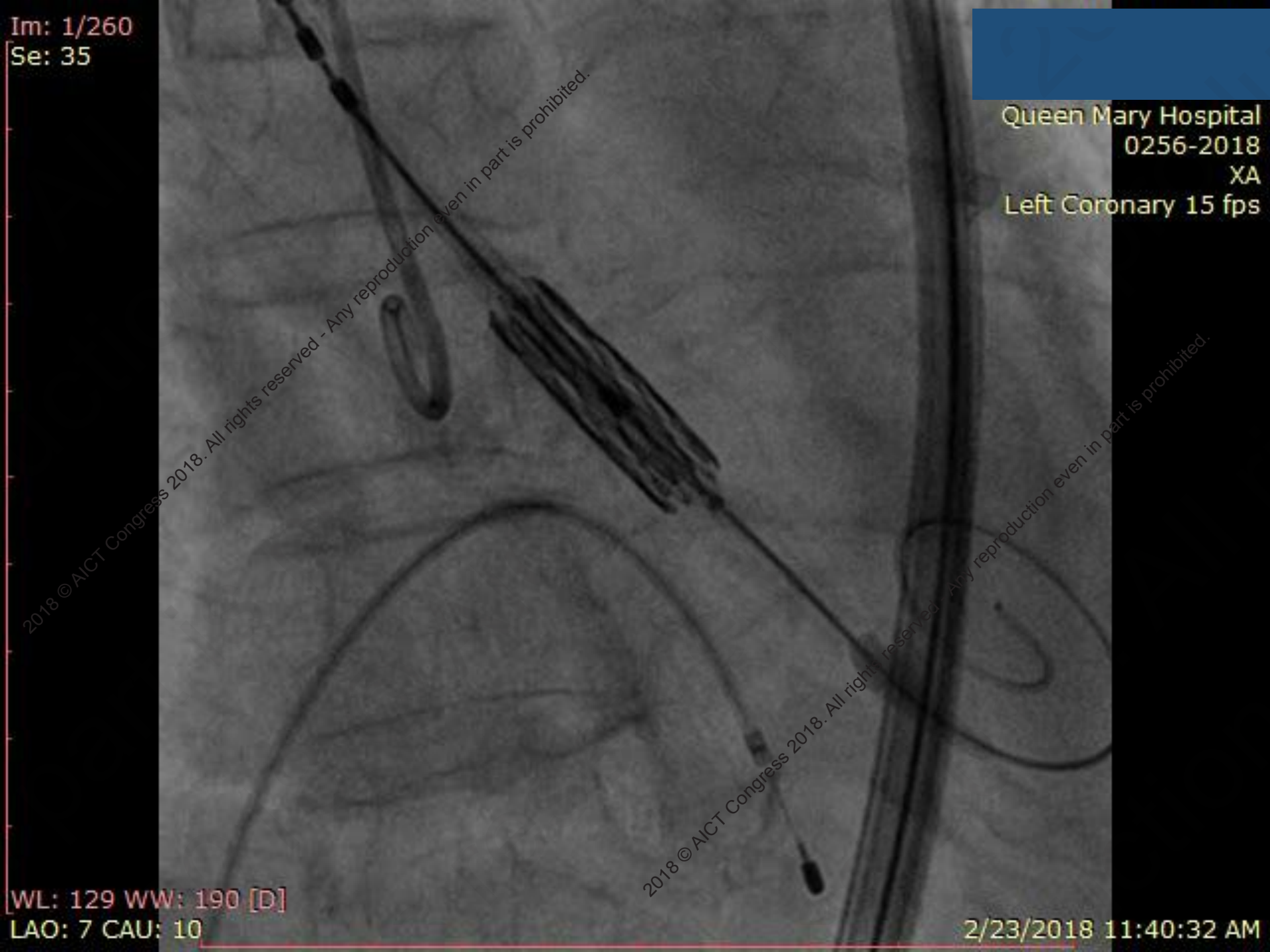


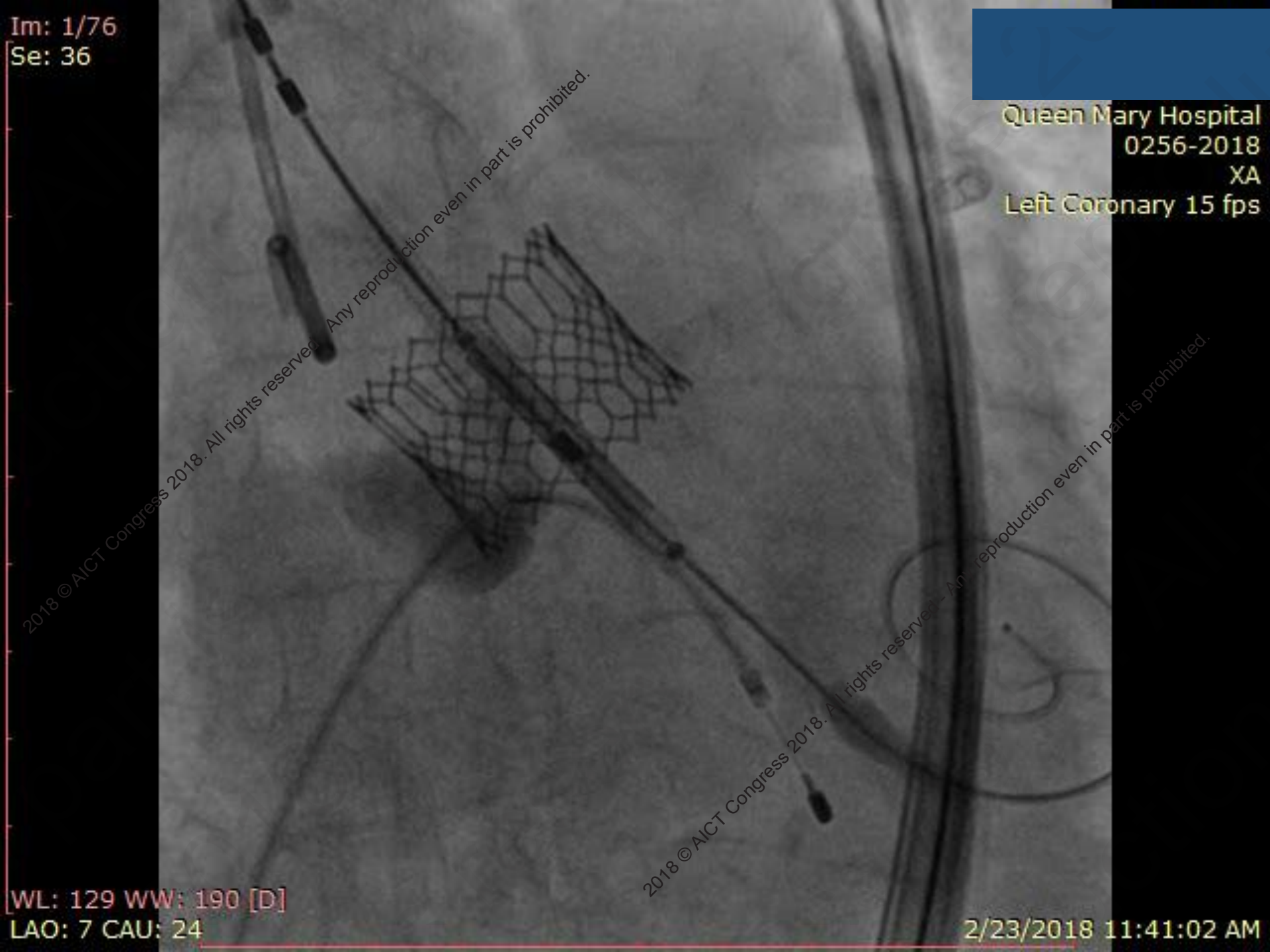
BAV with Edwards Balloon 16mm X 4cm

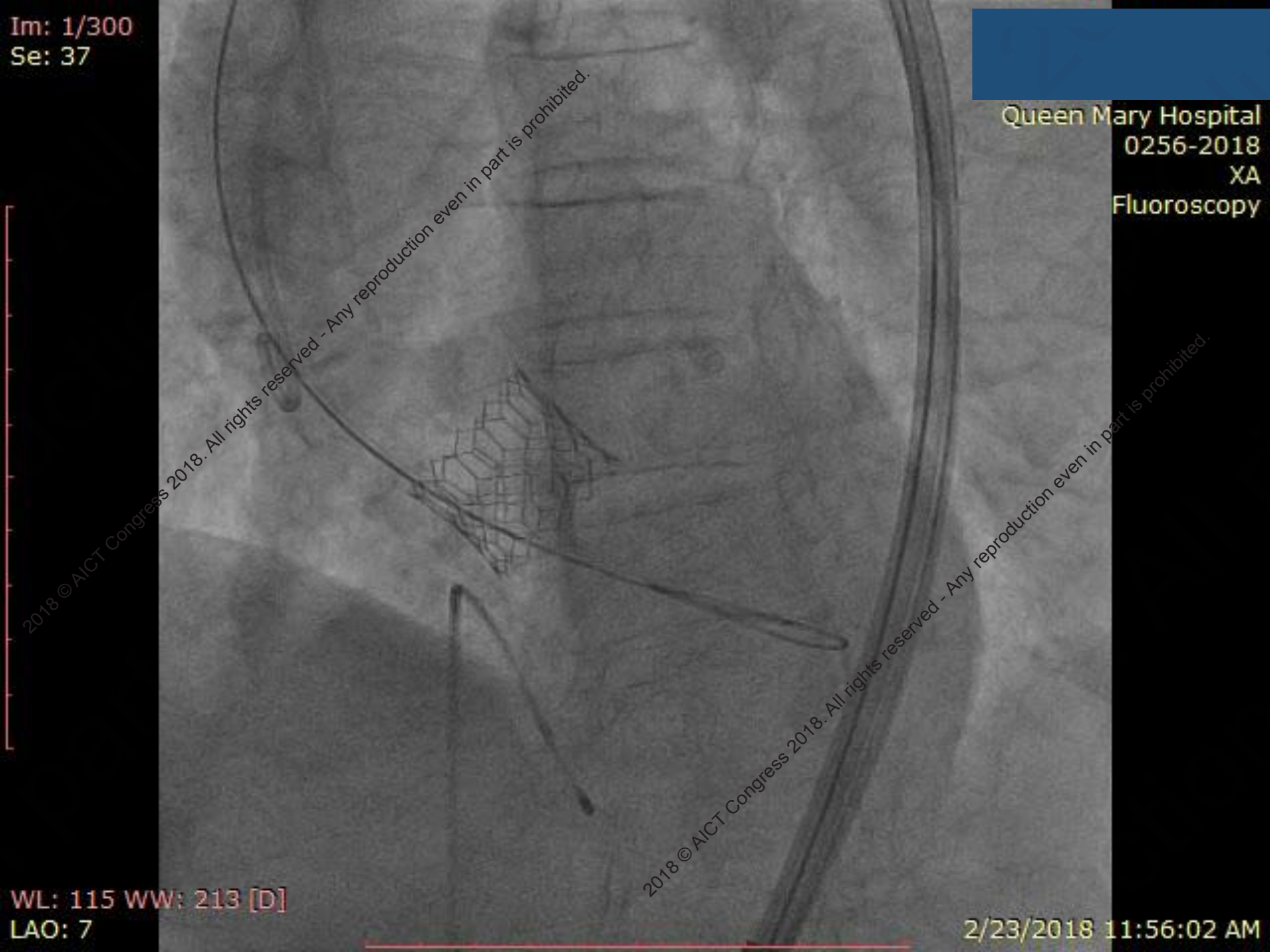


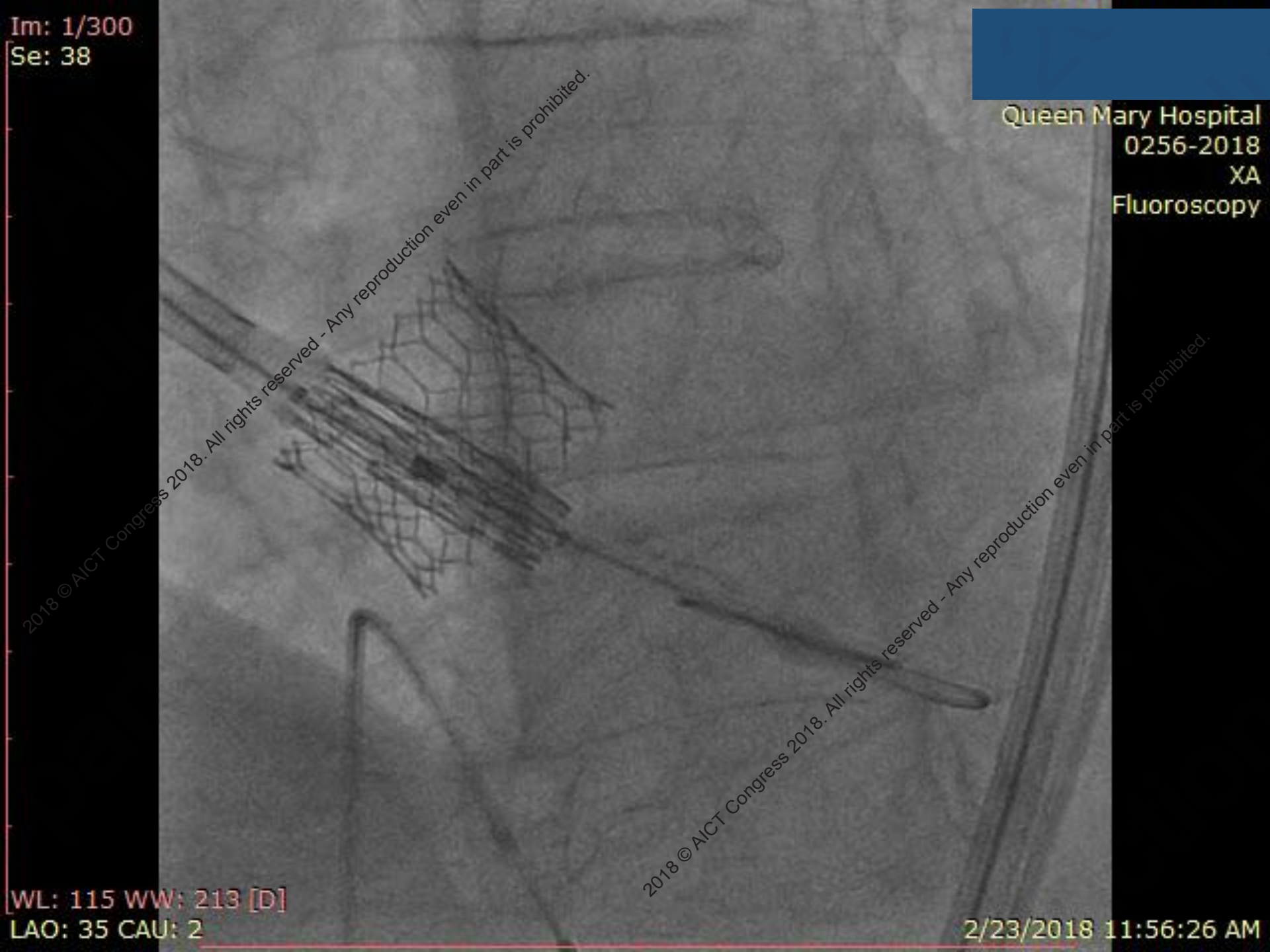
Deployment of Edwards SAPIEN 3 #23mm (plus 1ml extra







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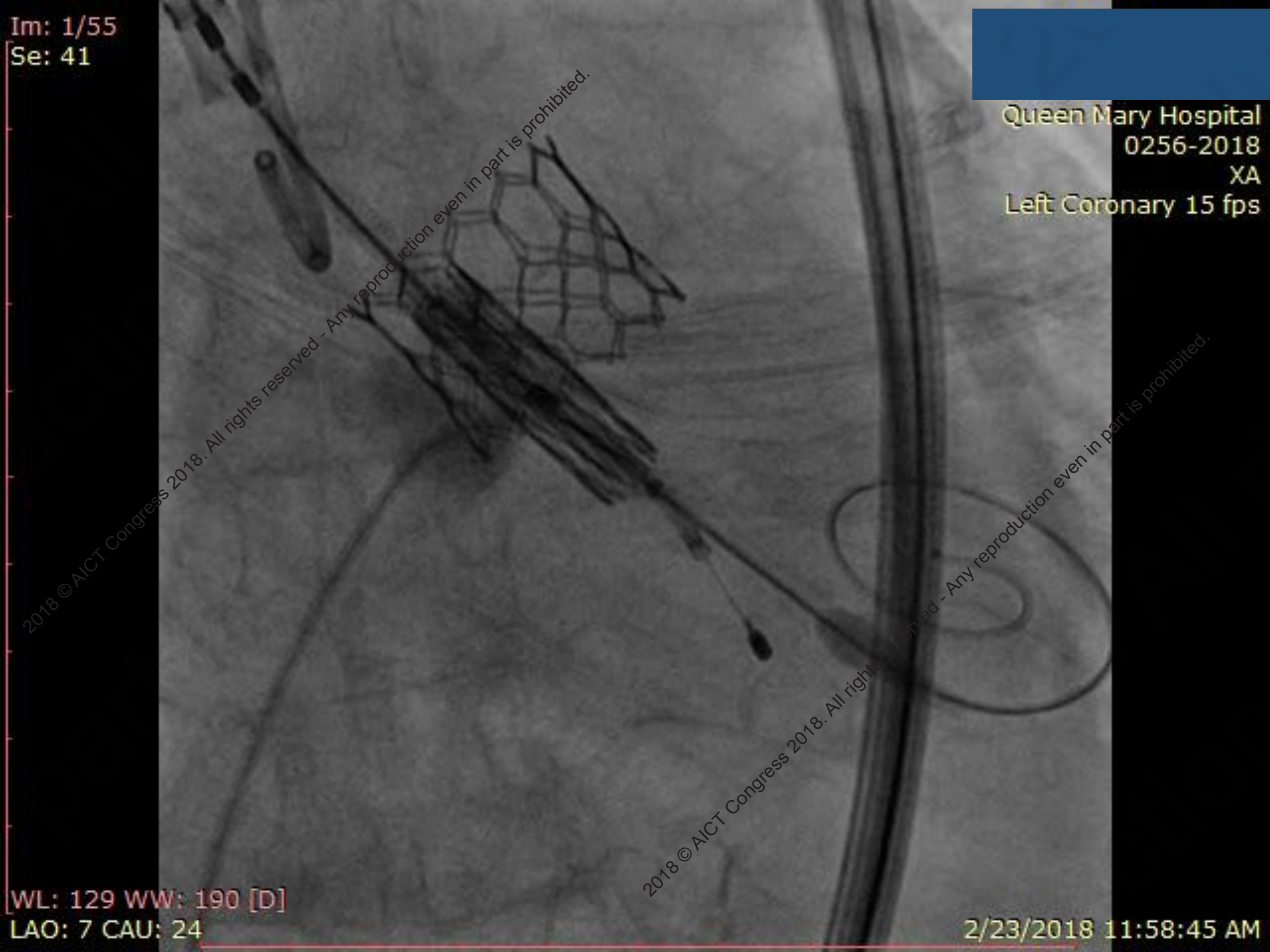

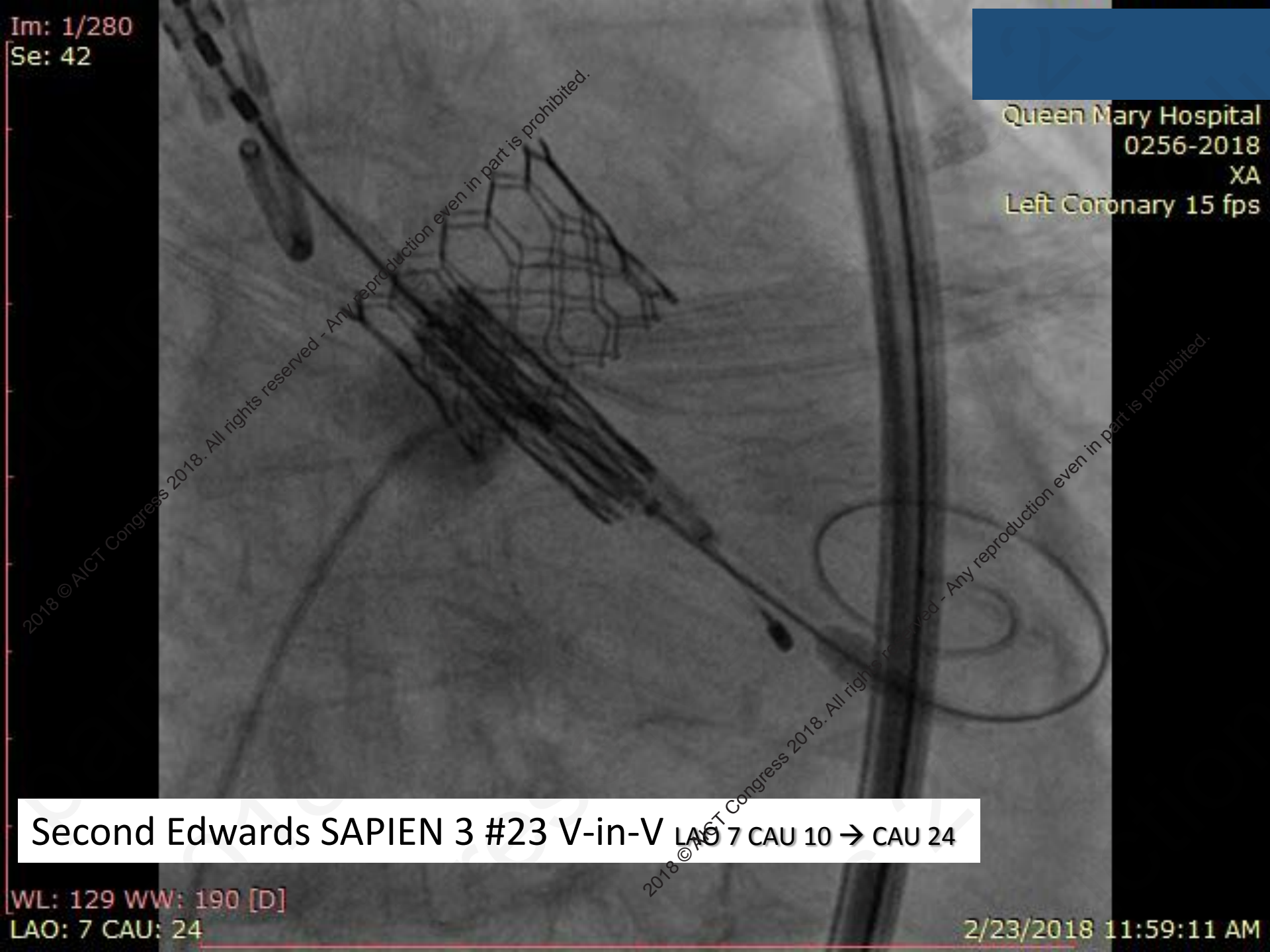
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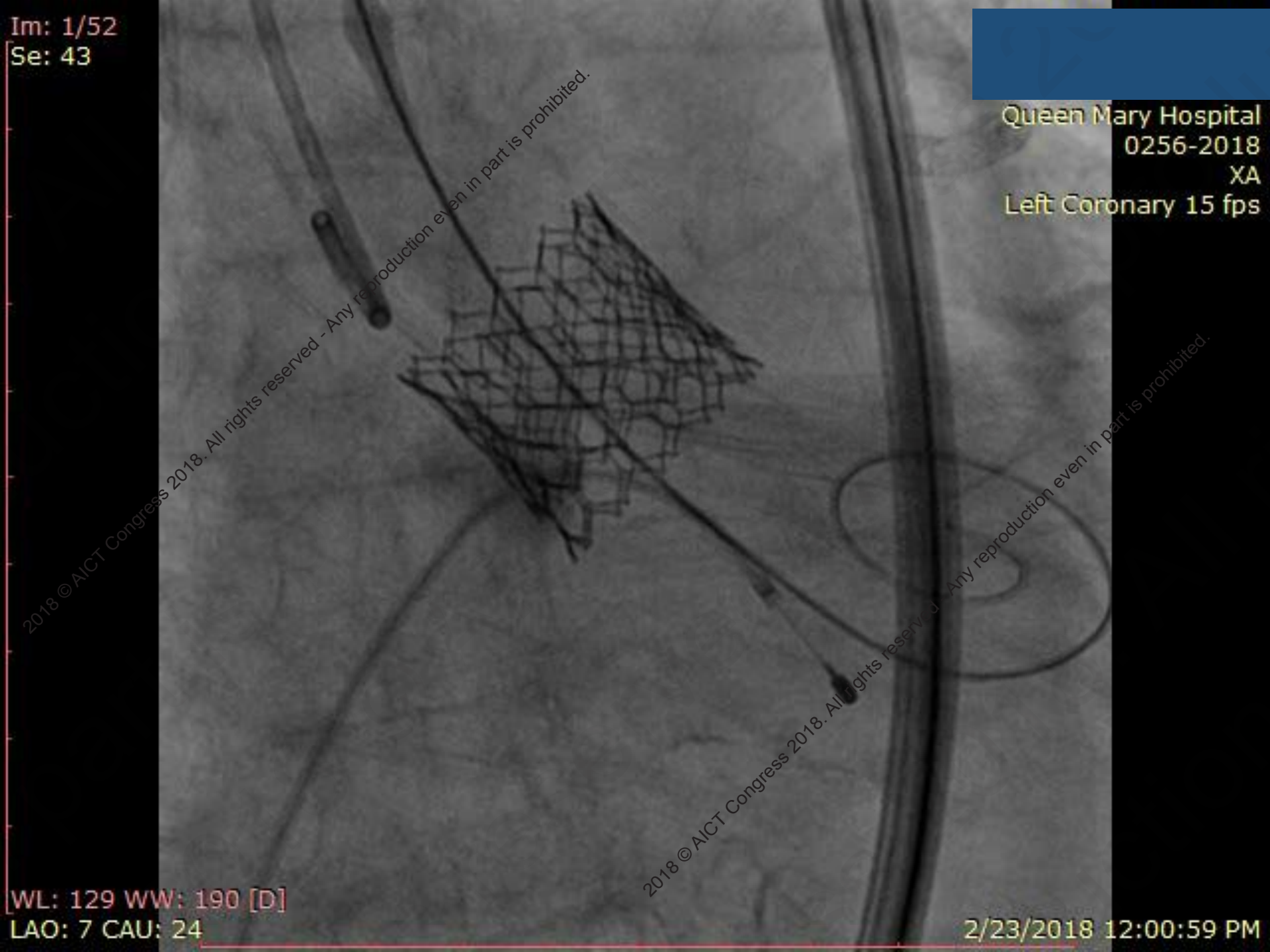

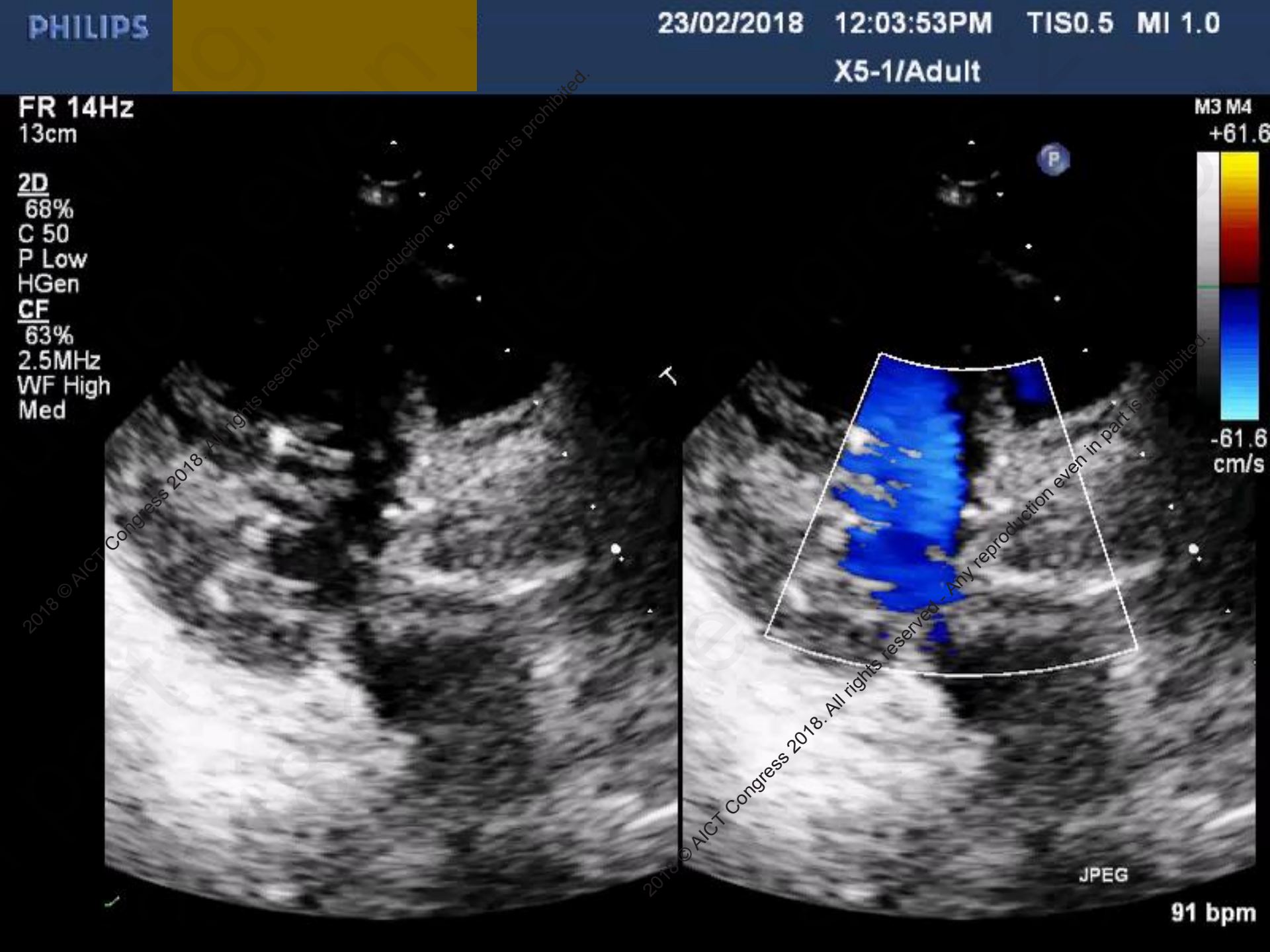
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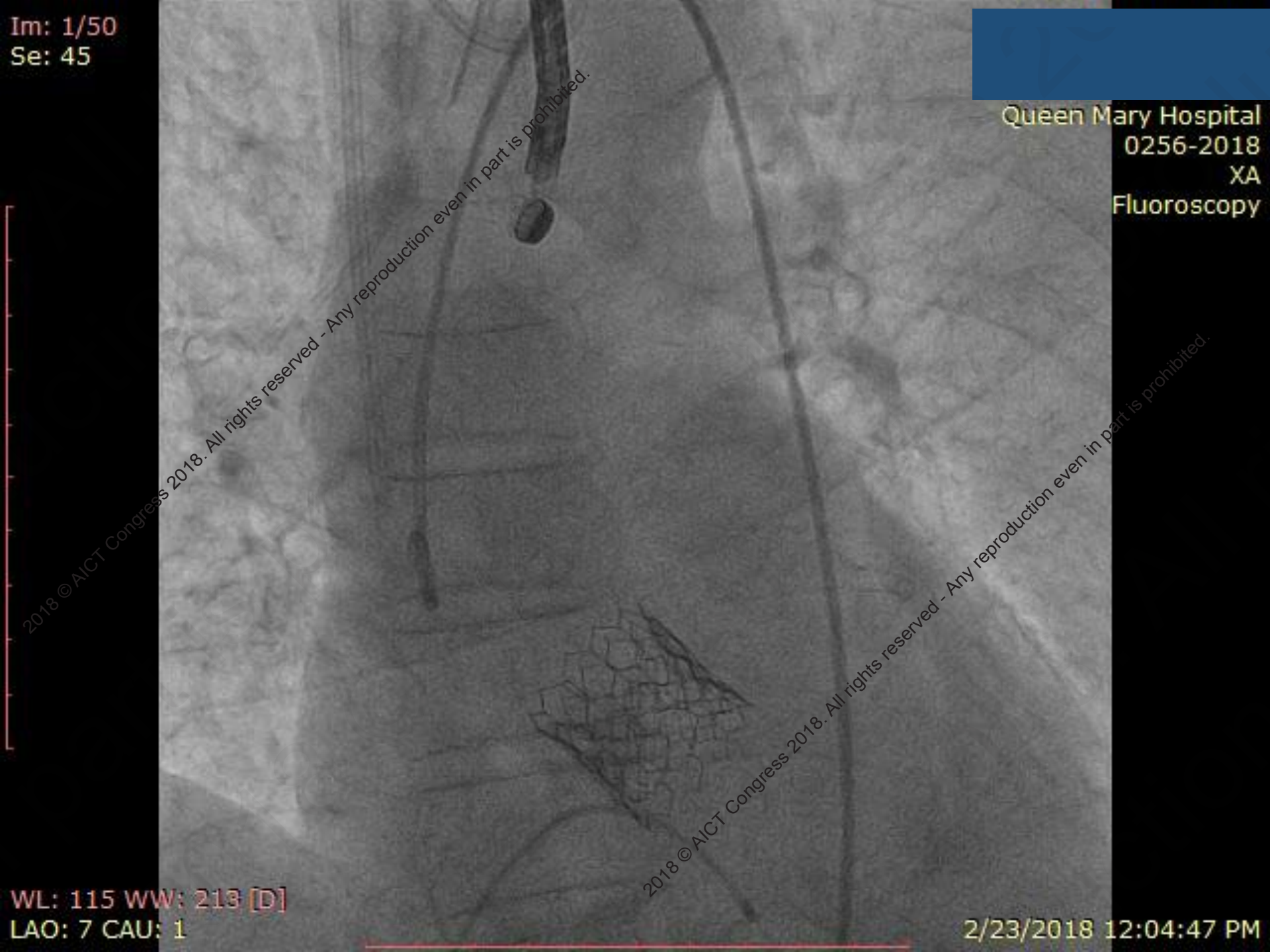
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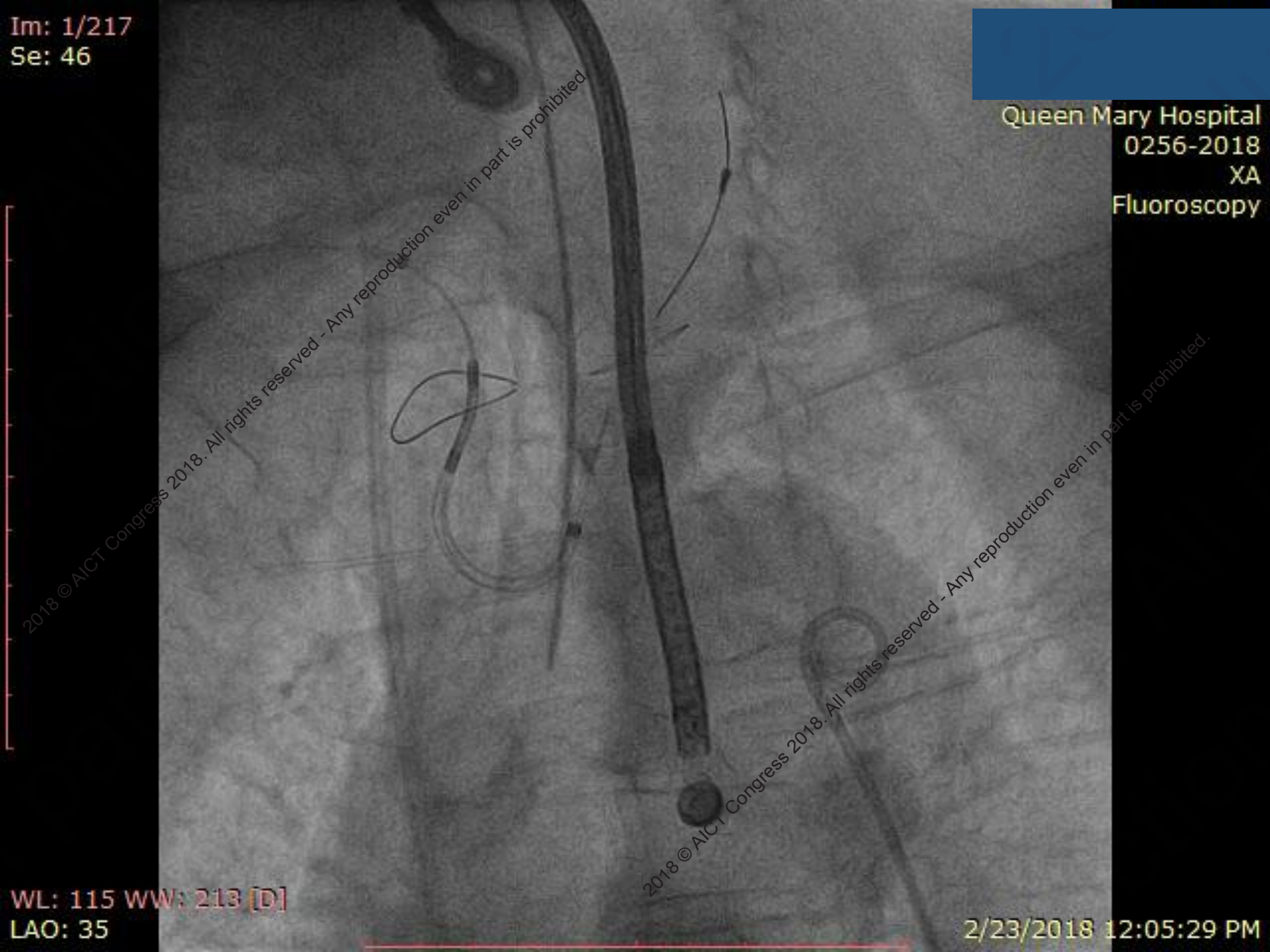

Clinical Progress

- Post operative management in CCU
- Intentionally keep the central line (off after 10 days) and peripheral lines, A-lines for close monitoring
- Dopamine weaned off after 3 weeks
- Reassessment TTE
  - LVEF improved from 30 to 50%, SAPIEN 3 in excellent position, nil AR

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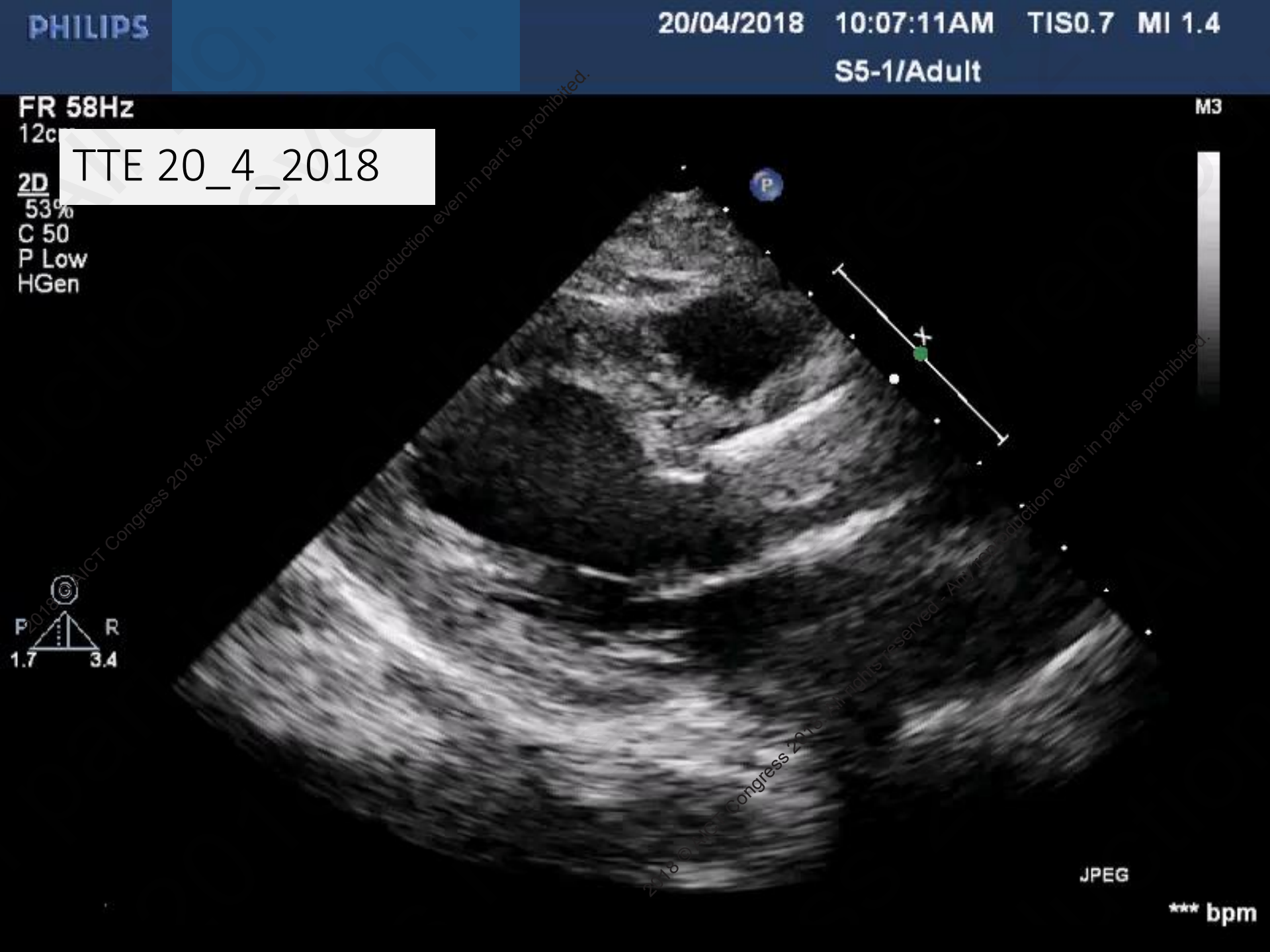
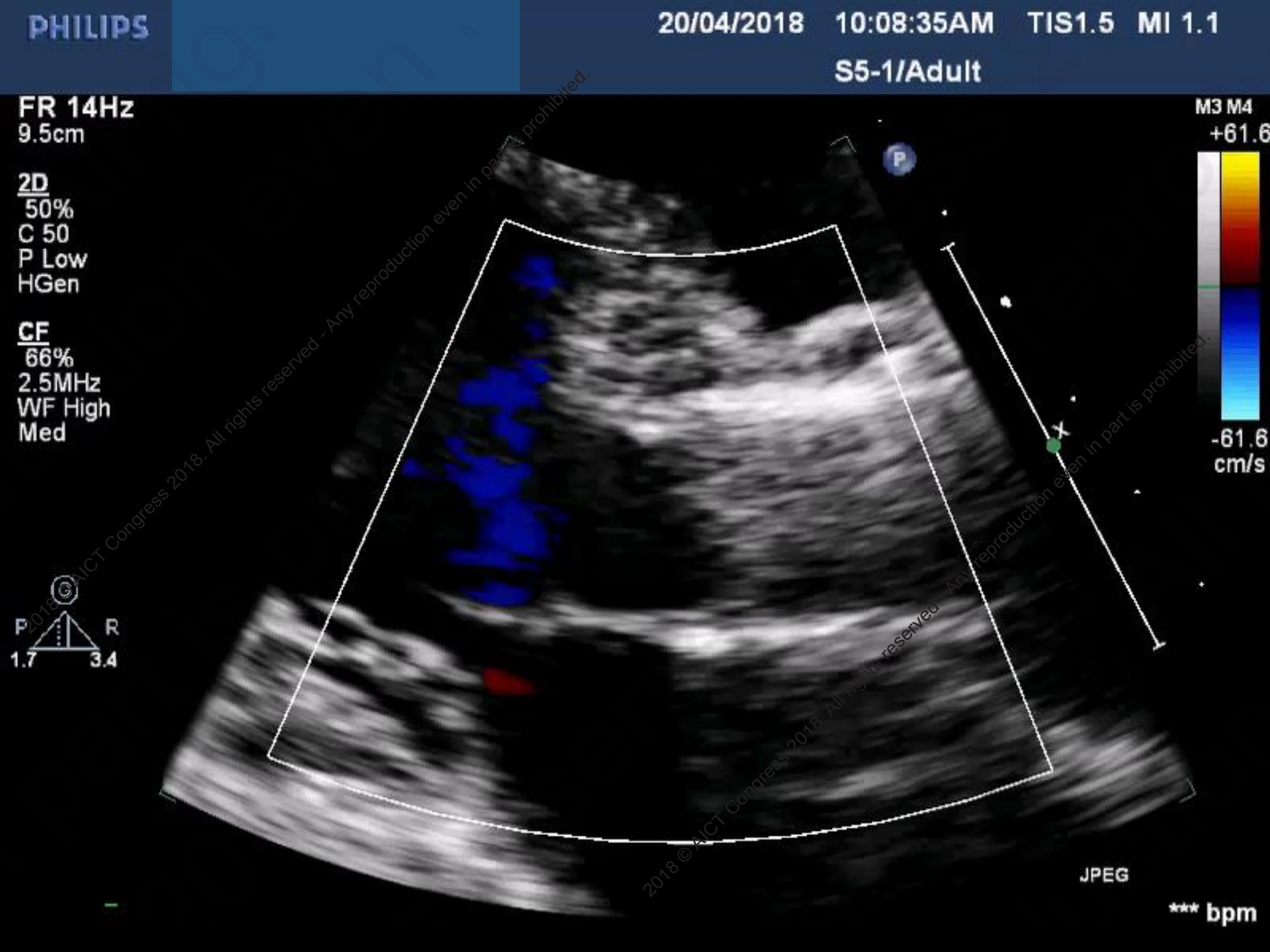
- Planned for extended period of rehabilitation
- Fever 2 months after TAVI
  - Blood C/ST
    - Corynebacterium striatum
  - Microbiology – lines/poor skin condition/to r/o SBE
  - Started on Meropenem/Vancomycin


PHILIPS
20/04/2018 10:07:11AM TIS0.7 MI 1.4
S5-1/Adult
FR 58Hz
12cm
TTE 20_4_2018
2D
53%
C 50
P Low
HGen
M3
P
R
1.7
3.4
JPEG
*** bpm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S5-1/Adult
FR 14Hz
9.5cm
2D
50%
C 50
P Low
HGen
CF
66%
2.5MHz
WF High
Med
M3 M4
+61.6
-61.6
cm/s
P
R
1.7
3.4
JPEG
*** bpm
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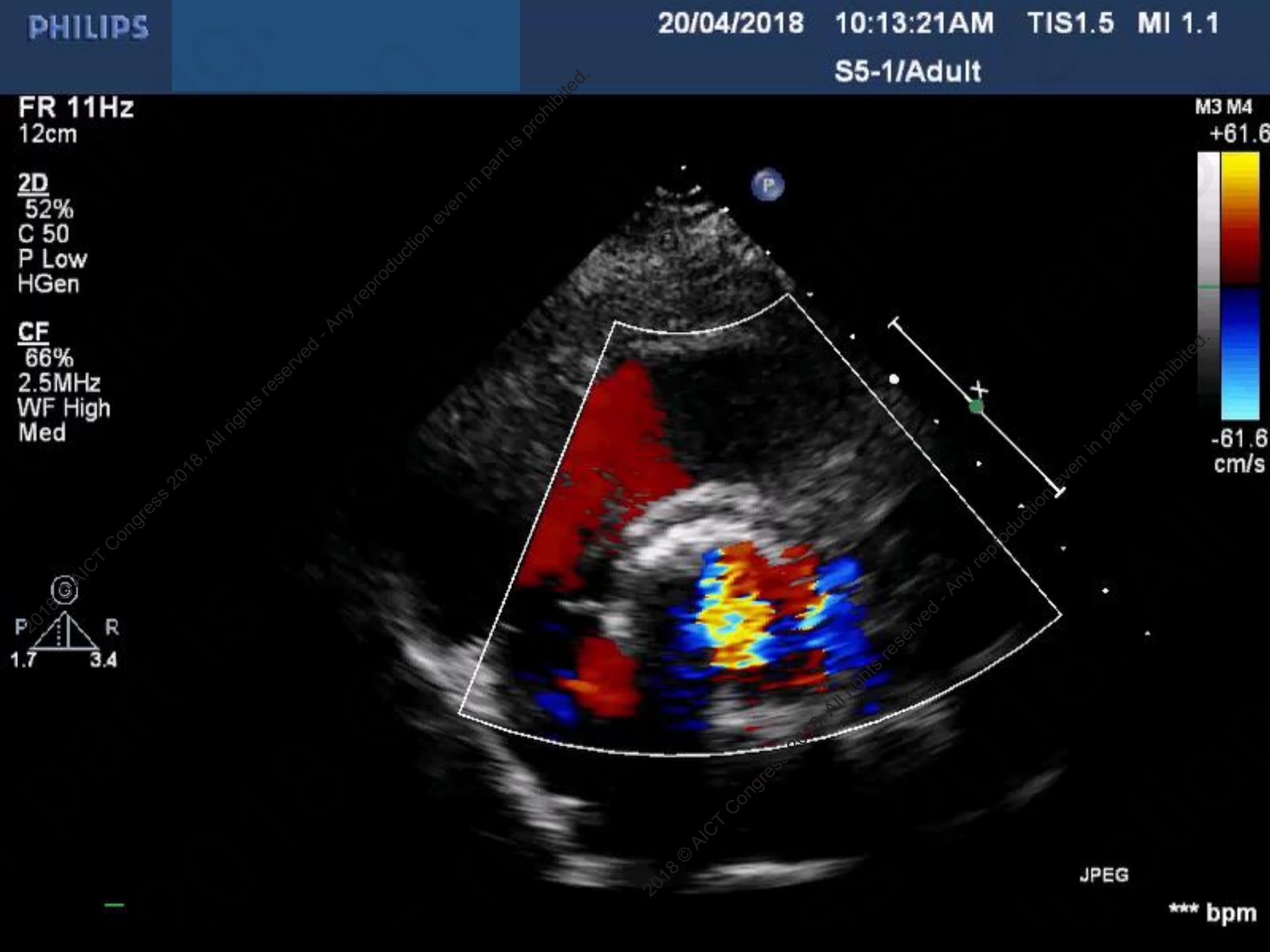
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S5-1/Adult
FR 11Hz
12cm
2D
52%
C 50
P Low
HGen
CF
66%
2.5MHz
WF High
Med
M3 M4
+61.6
-61.6
cm/s
P
R
1.7
3.4
JPEG
*** bpm
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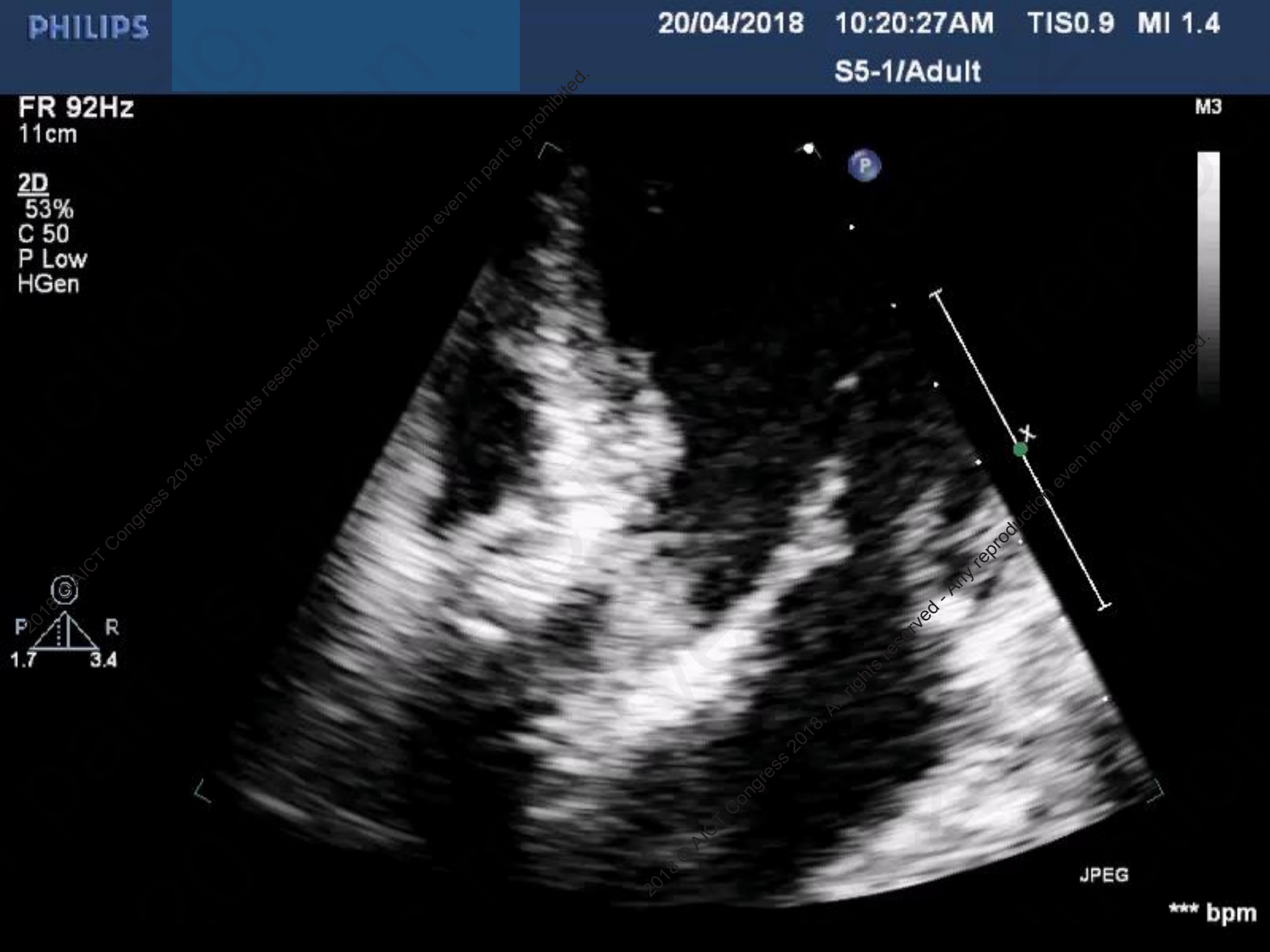

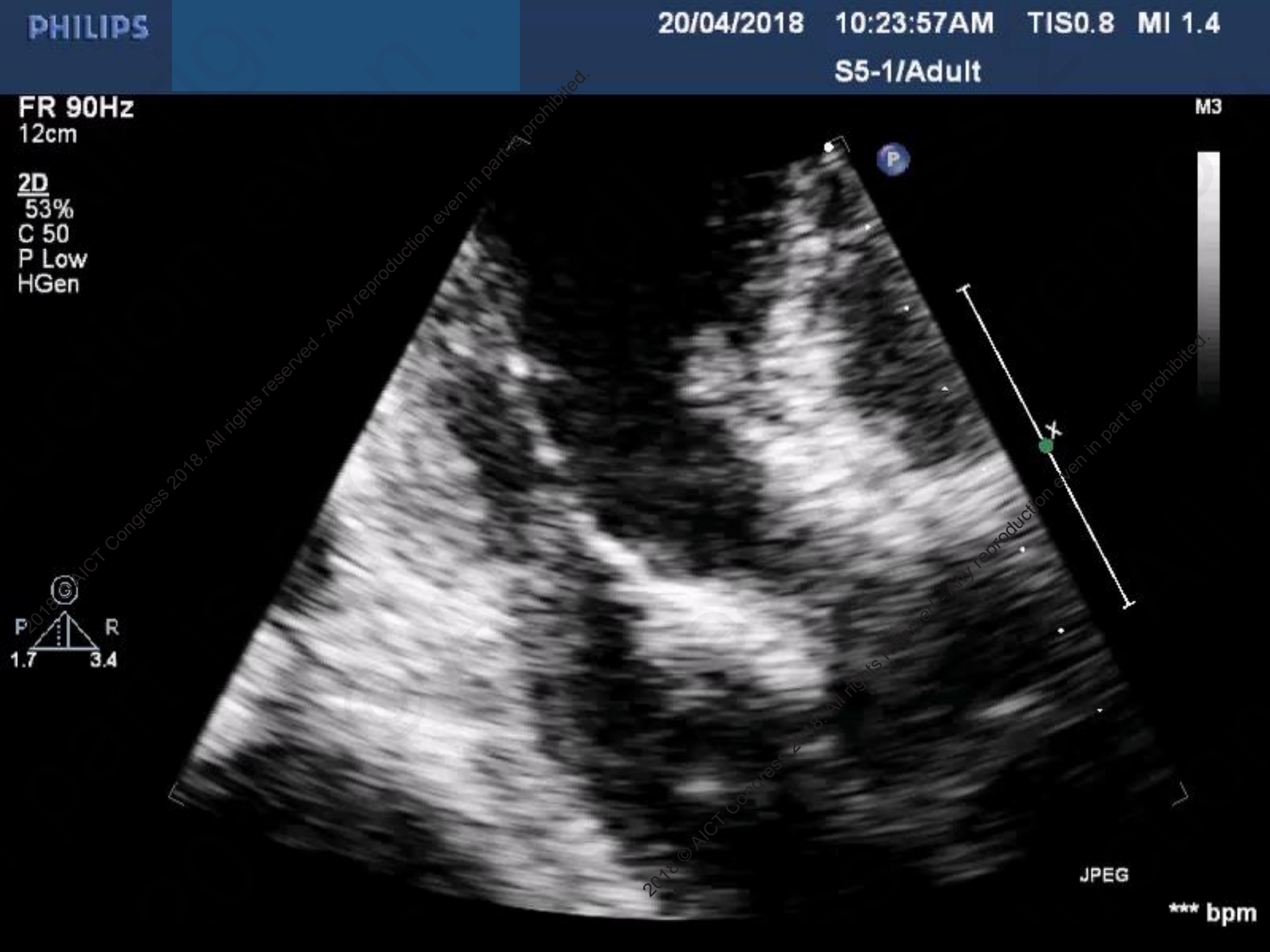

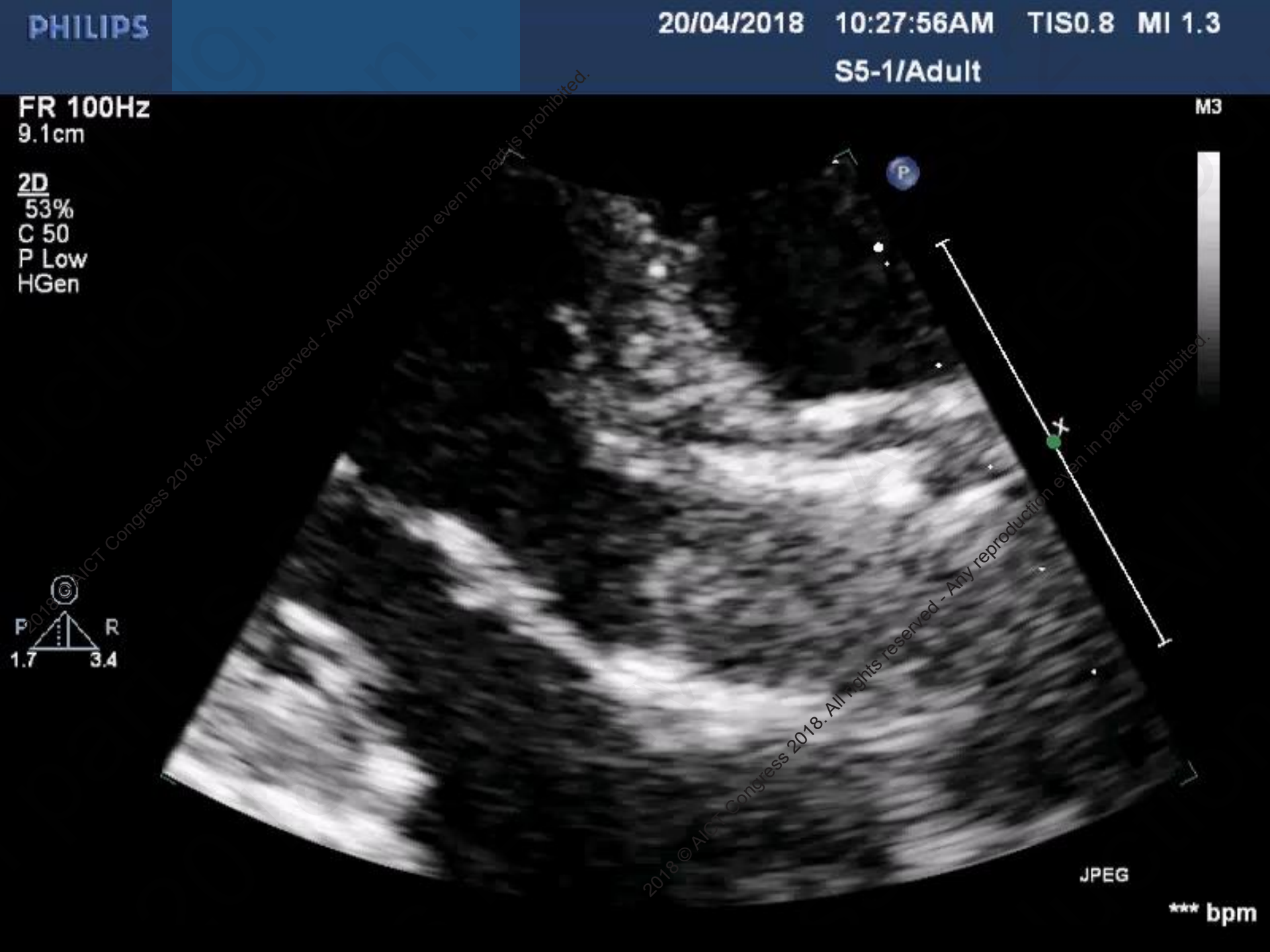
PHILIPS
20/04/2018 10:27:56AM TIS0.8 MI 1.3
S5-1/Adult
FR 100Hz
9.1cm
2D
53%
C 50
P Low
HGen
M3
P
R
1.7
3.4
JPEG
*** bpm
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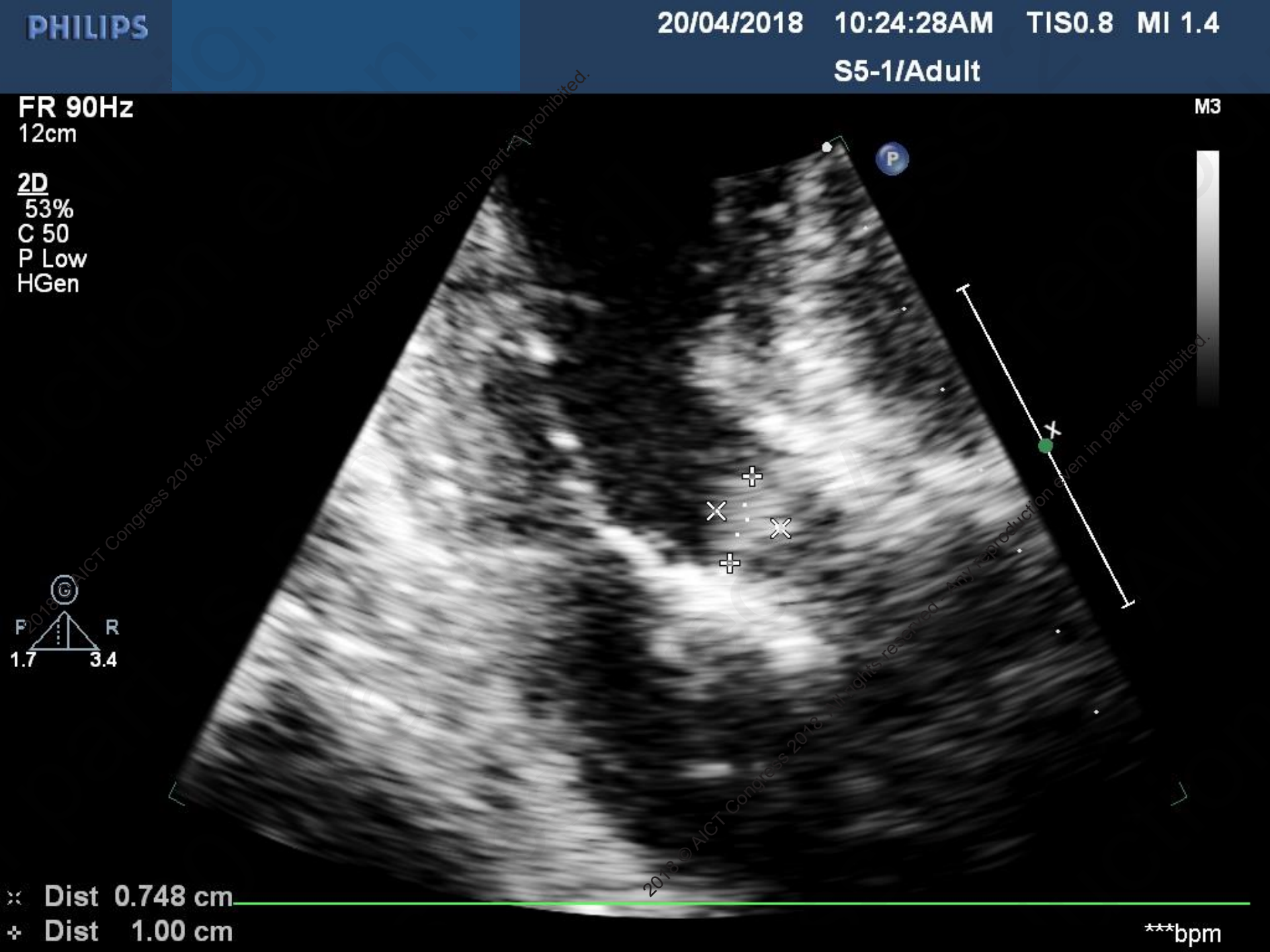
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S5-1/Adult
FR 90Hz
12cm
2D
53%
C 50
P Low
HGen
M3
P
F
R
1.7
3.4
Dist 0.748 cm
Dist 1.00 cm
***bpm
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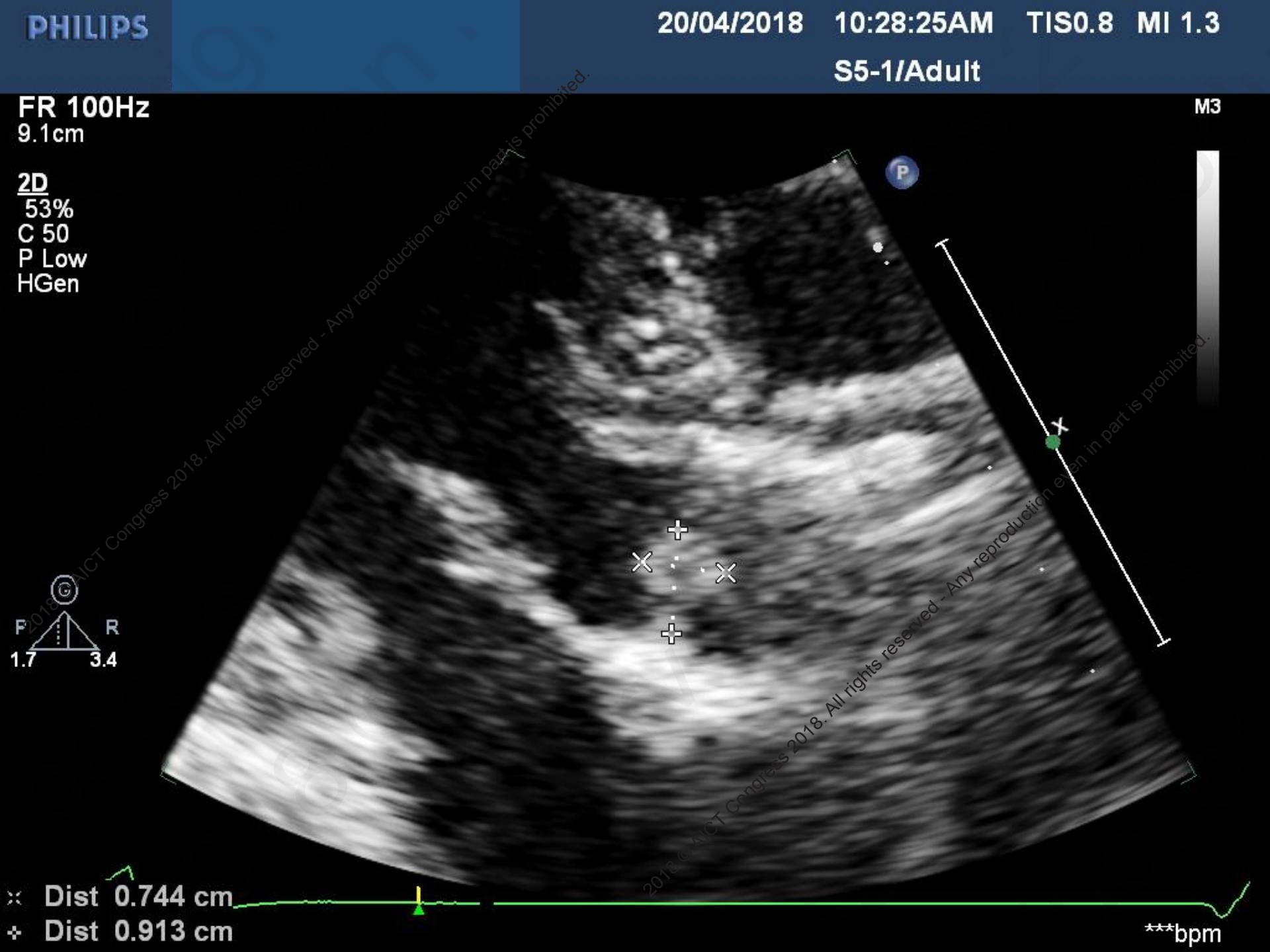
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20/04/2018 10:28:25AM TIS0.8 MI 1.3
S5-1/Adult
FR 100Hz
9.1cm
2D
53%
C 50
P Low
HGen
M3
P
F
R
1.7
3.4
Dist 0.744 cm
Dist 0.913 cm
***bpm
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SBE in TAVI valve

- 0.3 to 1.2% per year
- Most common organism
  - coagulase-negative staphylococci (24.5%),
  - staphylococcus aureus (21%)
  - enterococci (21%)

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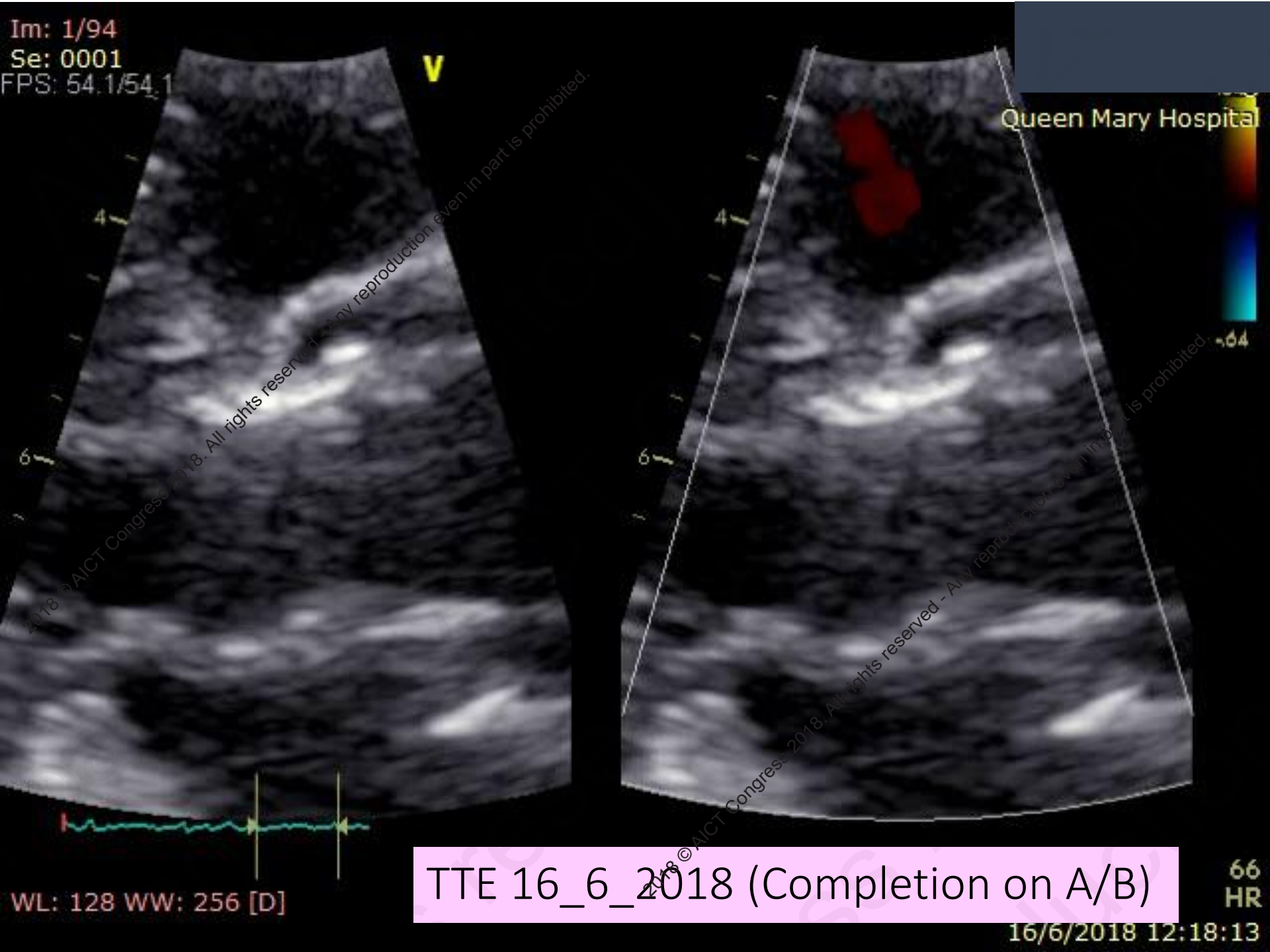
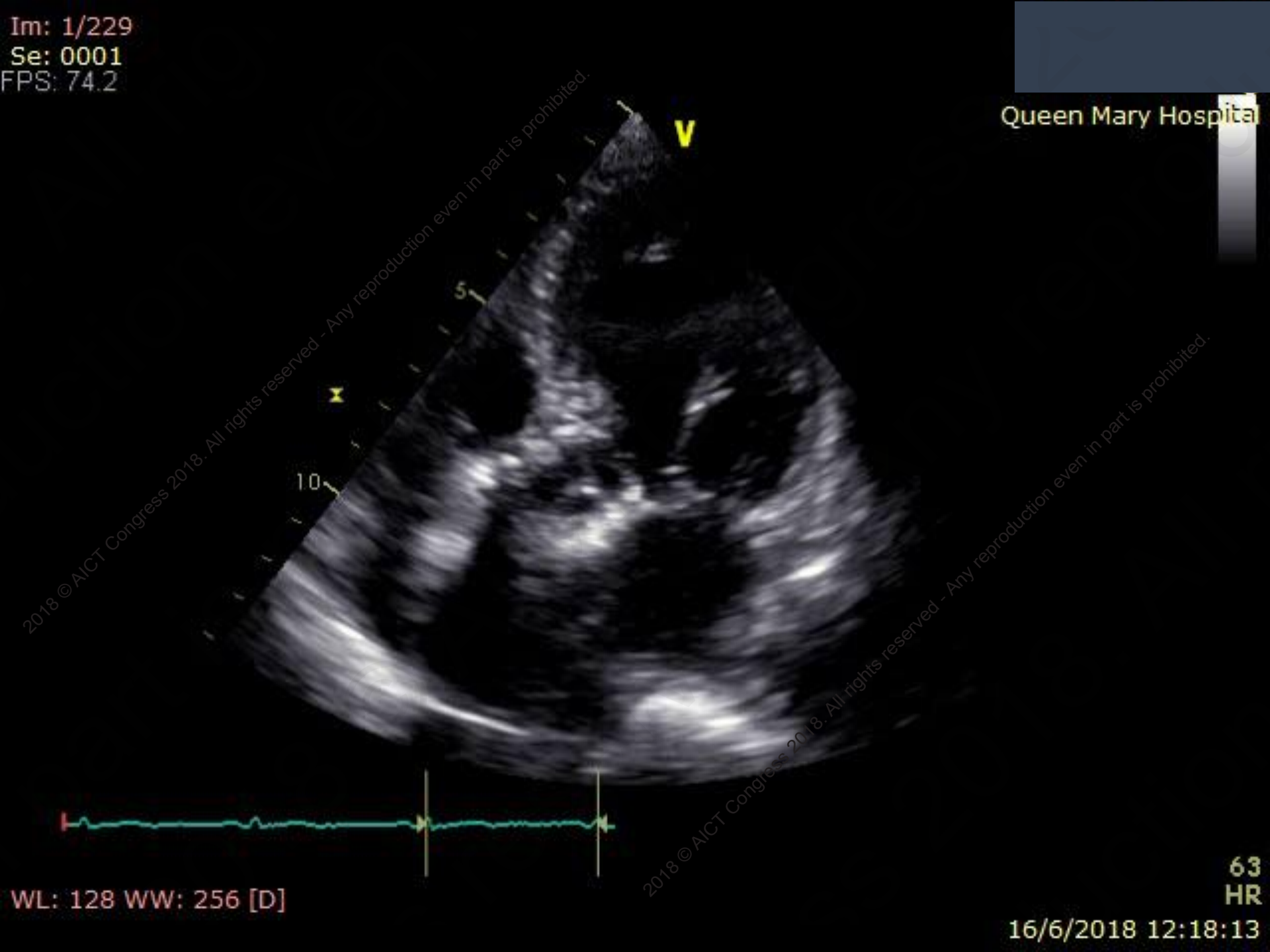
Potential predisposing factors for TAVI IE

1. The non-sterile environment in the majority of cardiac catheterization laboratories.
2. The high-risk profile of TAVI patients such as diabetes, immunosuppression (i.e., steroids, myelodysplastic syndromes), and renal failure.
3. Technical issues, as the frequent requirement to remove and re-implant a malpositioned THV (as leaflet and endothelial injury caused by manipulation) could increase the risk of PVE.
4. Patient education, especially regarding the importance of post-implantation antibiotic prophylaxis.
5. Adequate endothelialization of the bioprosthetic valve may require a dual antiplatelet therapy (aspirin and clopidogrel).
6. Coincident infections.
7. Low position of aortic THV being in direct contact with the mitral apparatus.
8. Leaflet compression during transcatheter valve preparation and loading resulting in a degree of leaflet damage.
9. Higher pre-procedural transaortic gradients in the PVE cases.
10. Paravalvular leakage as it may be a possible 'local' risk factor for endocarditis.
11. Male sex (2/3 of endocarditis patients) partially explained by the estrogen endothelial protection.
12. Residual aortic regurgitation may induce endothelial damage ("jet lesions") serving as a nidus during episodes of transient bacteremia.
13. Bioprosthesis and the native aortic valve cusp space might be a suitable nidus for pathogen accumulation during transient bacteremia.
14. Orotracheal intubation and the use of a self-expandable valve system were associated with IE post-TAVI
15. TAVI in native valve
16. Vascular complication

- Potential factors in the case
  - Prolonged hospitalization, lines, immobility, bedsores, stably-ill clinical state, delayed endothelialization



TTE 16_6_2018 (Completion on A/B)



Progress

- Completed 8 weeks antibiotics
- Blood culture showed clearance of bacteraemia
- Repeated TEE in 6/2018 showed no vegetations with good prosthesis function, LVEF 50%
- Completed course of rehabilitation
- Gradual clinical improvement and clinically stable upon last FU
- Now in Nursing Home, outpatient rehabilization

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2017

admission

11

S	M	T	W	T	F	S
			1 十三	2 十四	3 十五	4 十六
5 十七	6 十八	7 立冬	8 二十	9 廿一	10 廿二	11 廿三
12 廿四	13 廿五	14 廿六	15 廿七	16 廿八	17 廿九	18 十月
19 初二	20 初三	21 初四	22 小雪	23 初六	24 初七	25 初八
26 初九	27 初十	28 十一	29 十二	30 十三		

12

S	M	T	W	T	F	S
					1 十四	2 十五
3 十六	4 十七	5 十八	6 十九	7 大雪	8 廿一	9 廿二
10 廿三	11 廿四	12 廿五	13 廿六	14 廿七	15 廿八	16 廿九
17 三十	18 十一月	19 初二	20 初三	21 初四	22 冬至	23 初六
24 初七	25 初八	26 初九	27 初十	28 十一	29 十二	30 十三
31 十四						

2018

PCI to LAD

TF TAVI

Discharge

一月 JANUARY

星期一 MON	星期二 TUE	星期三 WED	星期四 THU	星期五 FRI	星期六 SAT	星期日 SUN
1 十五	2 十六	3 十七	4 十八	5 小寒	6 二十	7 廿一
8 廿二	9 廿三	10 廿四	11 廿五	12 廿六	13 廿七	14 廿八
15 廿九	16 三十	17 十二月	18 初二	19 初三	20 大寒	21 初五
22 初六	23 初七	24 初八	25 初九	26 初十	27 十一	28 十二
29 十三	30 十四	31 十五				

二月 FEBRUARY

星期一 MON	星期二 TUE	星期三 WED	星期四 THU	星期五 FRI	星期六 SAT	星期日 SUN
			1 十六	2 十七	3 十八	4 立春
5 二十	6 廿一	7 廿二	8 廿三	9 廿四	10 廿五	11 廿六
12 廿七	13 廿八	14 廿九	15 三十	16 正月	17 初二	18 初三
19 雨水	20 初五	21 初六	22 初七	23 初八	24 初九	25 初十
26 十一	27 十二	28 十三				

三月 MARCH

星期一 MON	星期二 TUE	星期三 WED	星期四 THU	星期五 FRI	星期六 SAT	星期日 SUN
			1 十四	2 十五	3 十六	4 十七
5 驚蟄	6 十九	7 二十	8 廿一	9 廿二	10 廿三	11 廿四
12 廿五	13 廿六	14 廿七	15 廿八	16 廿九	17 二月	18 初二
19 初三	20 初四	21 春分	22 初六	23 初七	24 初八	25 初九
26 初十	27 十一	28 十二	29 十三	30 十四	31 十五	

四月 APRIL

星期一 MON	星期二 TUE	星期三 WED	星期四 THU	星期五 FRI	星期六 SAT	星期日 SUN
						1 十六
2 十七	3 十八	4 十九	5 清明	6 廿一	7 廿二	8 廿三
9 廿四	10 廿五	11 廿六	12 廿七	13 廿八	14 廿九	15 三十
16 三月	17 初二	18 初三	19 初四	20 穀雨	21 初六	22 初七
23 十五	24 初九	25 初十	26 十一	27 十二	28 十三	29 十四
30						

五月 MAY

星期一 MON	星期二 TUE	星期三 WED	星期四 THU	星期五 FRI	星期六 SAT	星期日 SUN
	1 十六	2 十七	3 十八	4 十九	5 立夏	6 廿一
7 廿二	8 廿三	9 廿四	10 廿五	11 廿六	12 廿七	13 廿八
14 廿九	15 四月	16 初二	17 初三	18 初四	19 初五	20 初六
21 小滿	22 初八	23 初九	24 初十	25 十一	26 十二	27 十三
28 十四	29 十五	30 十六	31 十七			

六月 JUNE

星期一 MON	星期二 TUE	星期三 WED	星期四 THU	星期五 FRI	星期六 SAT	星期日 SUN
				1 十八	2 十九	3 二十
4 廿一	5 廿二	6 芒種	7 廿四	8 廿五	9 廿六	10 廿七
11 廿八	12 廿九	13 三十	14 五月	15 初二	16 初三	17 初四
18 初五	19 初六	20 初七	21 夏至	22 初九	23 初十	24 十一
25 十二	26 十三	27 十四	28 十五	29 十六	30 十七	

七月 JULY

星期一 MON	星期二 TUE	星期三 WED	星期四 THU	星期五 FRI	星期六 SAT	星期日 SUN
						1 十八
2 十九	3 二十	4 廿一	5 廿二	6 廿三	7 小暑	8 廿五
9 廿六	10 廿七	11 廿八	12 廿九	13 六月	14 初二	15 初三
16 初四	17 初五	18 初六	19 初七	20 初八	21 初九	22 初十
23 大暑 十一	24 十二	25 十三	26 十四	27 十五	28 十六	29 十七
30 十九	31					

八月 AUGUST

星期一 MON	星期二 TUE	星期三 WED	星期四 THU	星期五 FRI	星期六 SAT	星期日 SUN
		1 二十	2 廿一	3 廿二	4 廿三	5 廿四
6 廿五	7 立秋	8 廿七	9 廿八	10 廿九	11 七月	12 初二
13 初三	14 初四	15 初五	16 初六	17 初七	18 初八	19 初九
20 初十	21 十一	22 十二	23 處暑	24 十四	25 十五	26 十六
27 十七	28 十八	29 十九	30 二十	31 廿一		

Conclusion

- Things have to manage timely
- Would it make a difference if we manage the situation with a difference timing?
- What if
  - PCI + BAV then TAVI early or PPCI with PTAVI
    - Would it affect the outcome
    - Would it do worse
- Timing is important but
  - No one knows what is best timing
  - Many uncontrollable factors affecting clinical decision
  - Patient and scenario-specific

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报名表格

2018年9月9日前, 可以免费注册

传真: 2818 6304　电子邮件: hkvalve@hku.hk　邮件: 香港玛丽医院K座1930室

个人资料 (请打勾)

专业: ☐ 心胸麻醉科医生 ☐ 麻醉科医生
☐ 心胸外科医生 ☐ 外科医生
☐ 心脏内科医生 ☐ 内科医生 ☐ 其他
☐ 护士及专职医疗人员 ☐ 学生(医科/护理)

称谓: ☐ 教授 ☐ 医生
☐ 先生 ☐ 女士

姓名: _____

机构/医院: _____

地址: _____

电子邮件: _____

联系电话: _____ 传真: _____

会议午餐 (免费): ☐ 第1天 ☐ 第2天

实践研讨会: ☐ 心脏内科医生 - 外科手术工作坊
☐ 心胸外科医生 - 导管手术工作坊
☐ 护士及专职医疗人员 - 微創心瓣装载工作坊

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Wechat: wxid_1bgmkfl9sish22

QMH HEART TEAM

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- Hands-on, didactic workshops
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  - Cardiac surgical basics for interventional cardiologists
  - Cardiothoracic anaesthesiology and TEE essentials for Hybrid Heart Valve Interventions
  - Transcatheter heart valve crimping and loading for nurses

Target Audience

- Cardiologists and Physicians
- Cardiothoracic Surgeons
- Cardiothoracic & General Anaesthetists
- Nurses & Allied Health

Conference Secretariat
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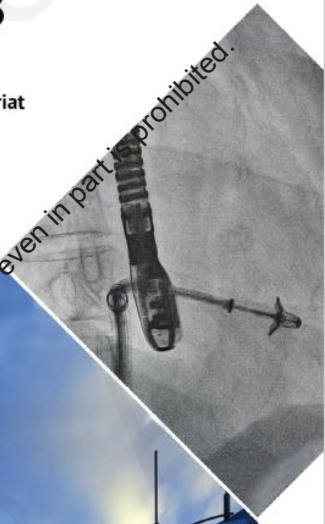
CME, CNE Accreditation



Thank you

14th

AiCT

ASIAN INTERVENTIONAL CARDIOVASCULAR THERAPEUTICS

THE OFFICIAL CONGRESS OF APSIC

7 - 9th September 2018

Hong Kong

Convention and Exhibition Centre (HKCEC)

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