

Coronary Perforation : When A Covered Stent Does Not Work

Partnership Session : ISICAM (Indonesia) & Malaysia
LIVE & CIAT (Thailand) @ TCTAP2019

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Malaysia

CVS
CARDIAC VASCULAR SENTRAL
Kuala Lumpur

27th. April, 2019

Background

70 year old gentleman, Mr. H

1. Acute Aortic Dissection Type B – 6.8.2018

Valiant TEVAR 13.8.2018

2. Abdominal Aortic Aneurysm – AAA 8.10.2018

3. Hypertension – Resistant

4. Initially Advanced CKD – became End-stage RF after Aortic Dissection event
- on Haemodialysis since then

4. Coronary artery disease – CCS 2 – Angina-equivalent symptom.

CT Thorax / Aorta – coronary calcifications

CCTA 20.12.2018- 2-vessel CAD.

- Proximal RCA and mid-LAD stenoses

5. COPD -Chronic smoker – 2 packs/day for 50 years

Medications :

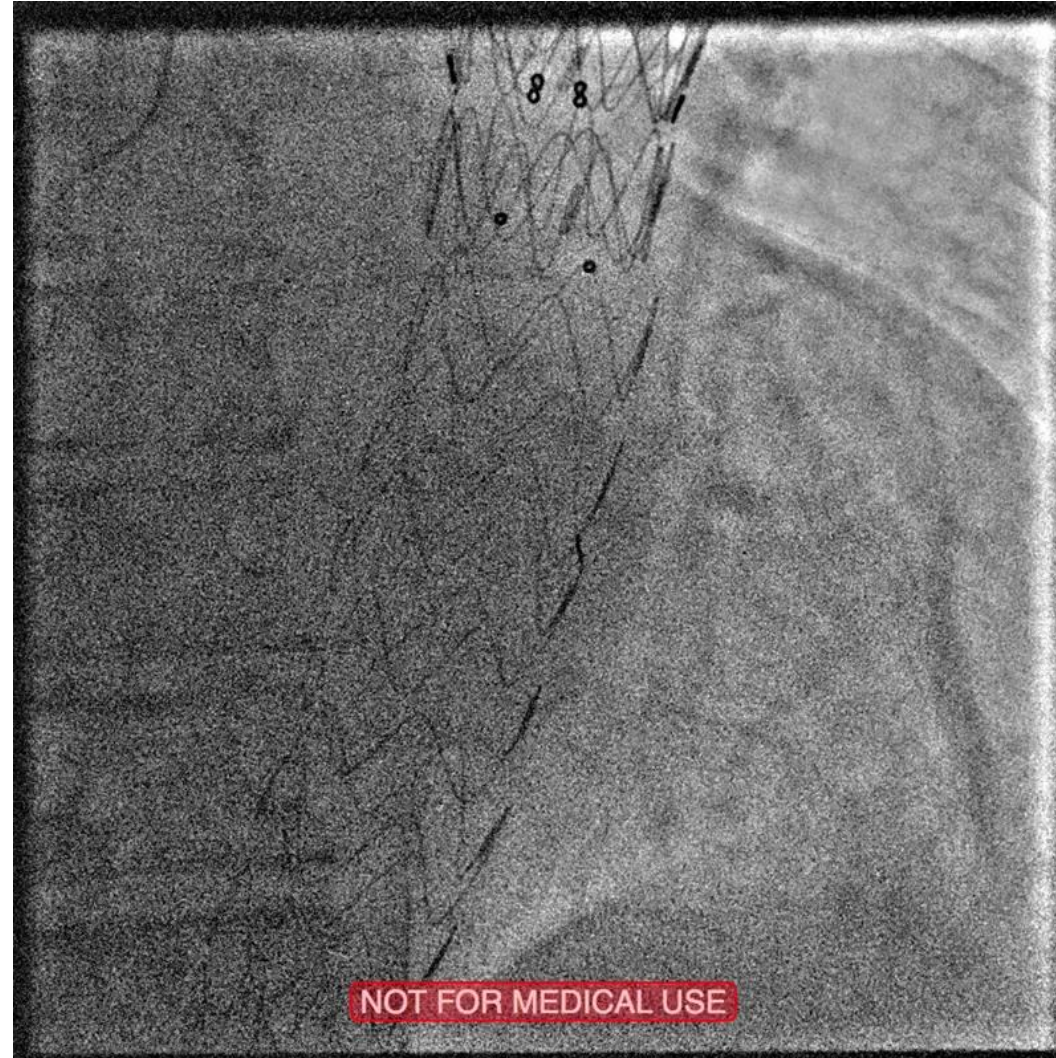
- Nifedipine LA 60mg om 30mg pm
- Valsartan 160mg
- Bisoprolol 1.25mg pm
- Pantoprazole 40mg od
- Atozet (Ezetimide/Atorvastatin) 10/40mg od
- Aspirin 100mg od
- Clopidogrel 75mg od
- Frusemide 80mg tds
- Sangobion (Haematinics) 1 od

Coronary Angiography 28.2.2019

TEVAR : 2 overlapping
VALIANT Stents

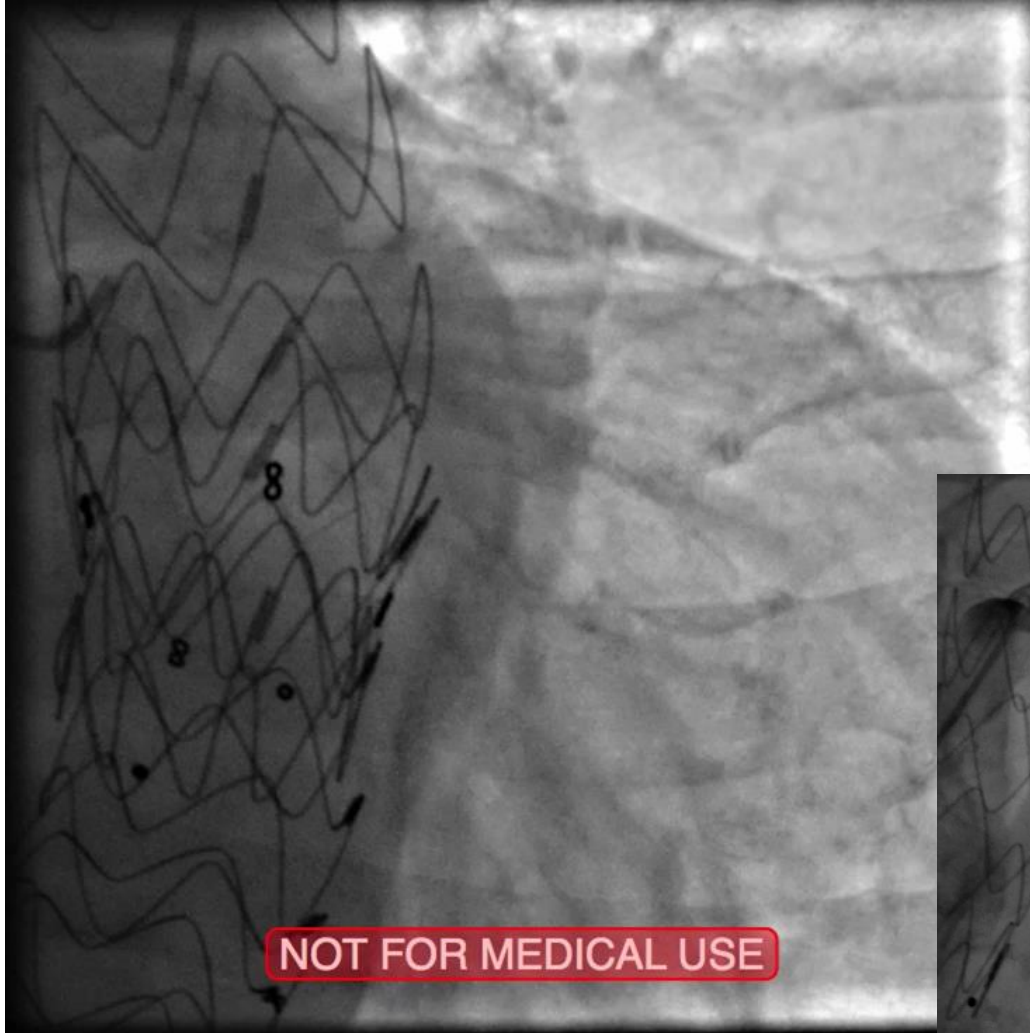
Infra-renal AAA : Endovascular
Graft

Baseline BP : 170/70mmHg
HR 68 bpm

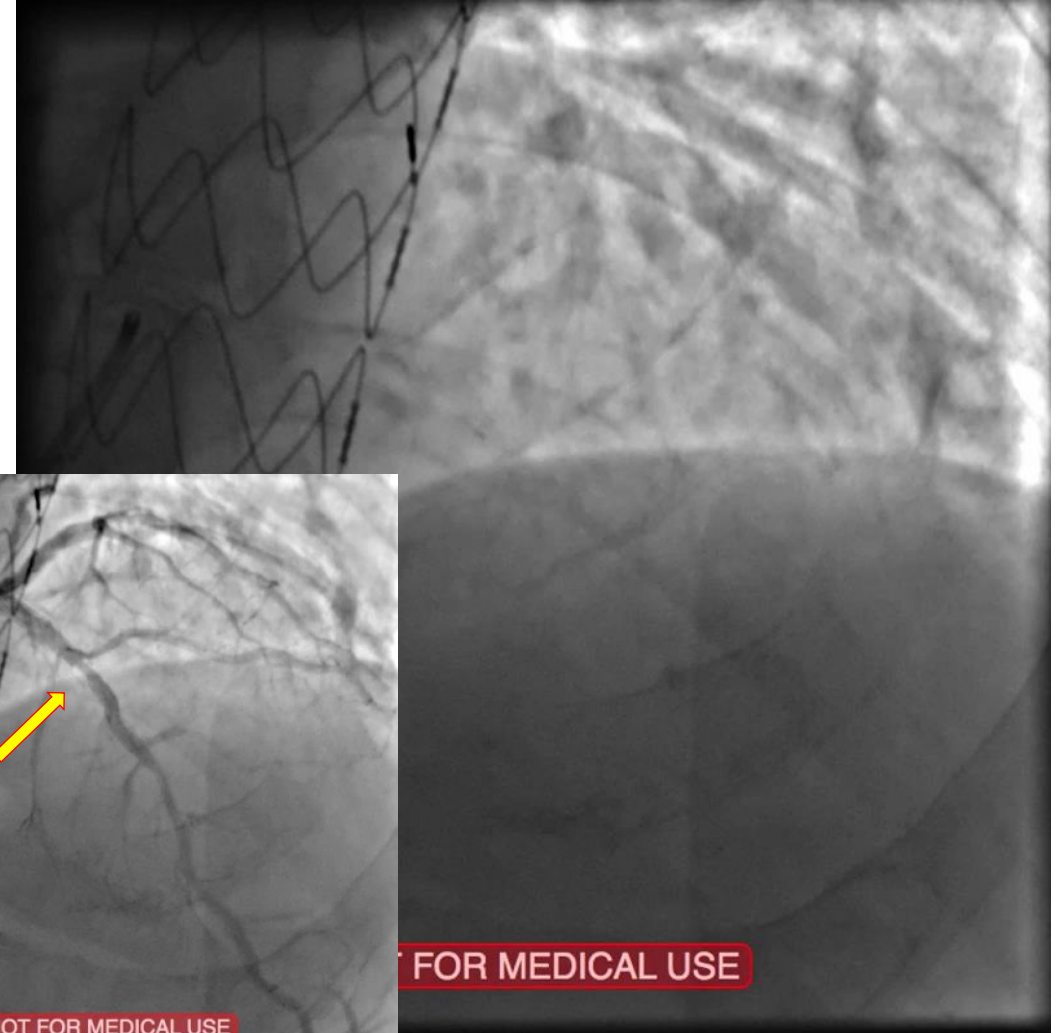


Diagnostic LCA :

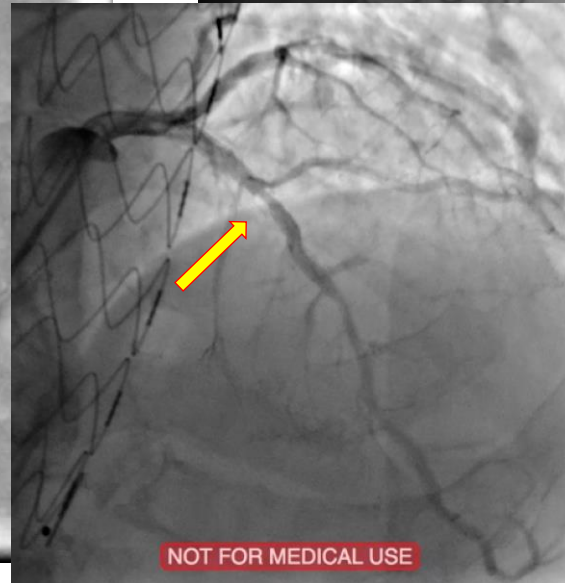
6Fr TRA; Optitorque 5Fr Diagnostic catheter



AP Caudal



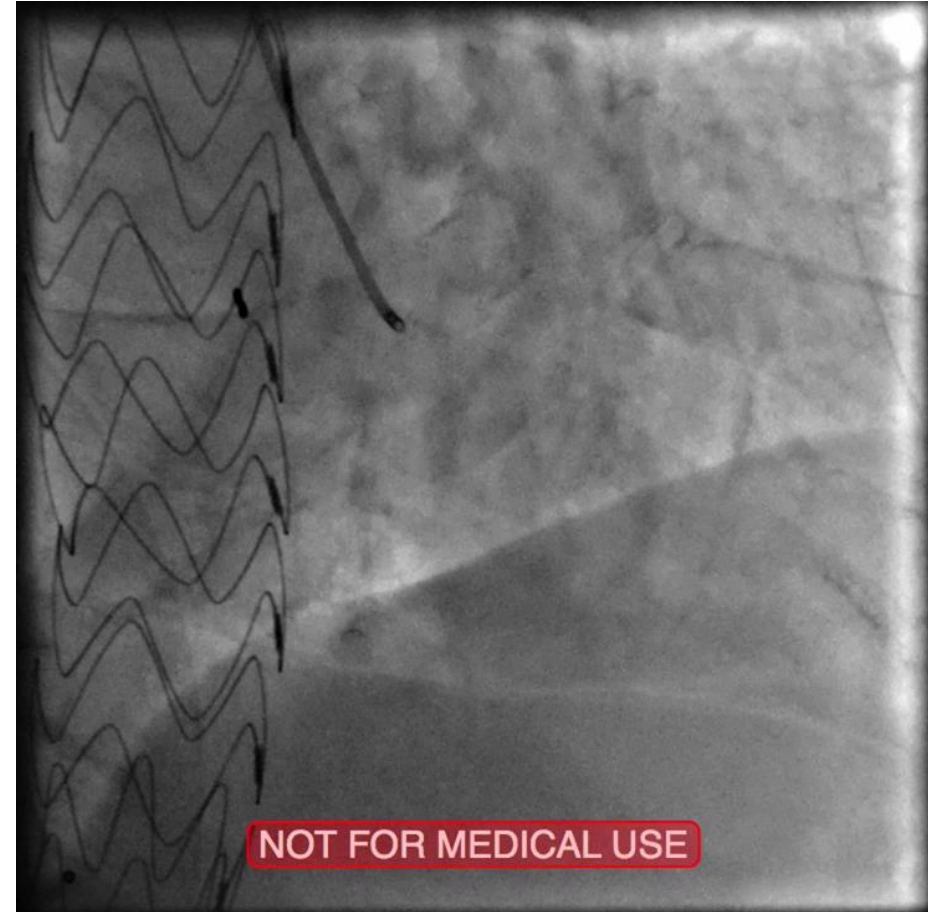
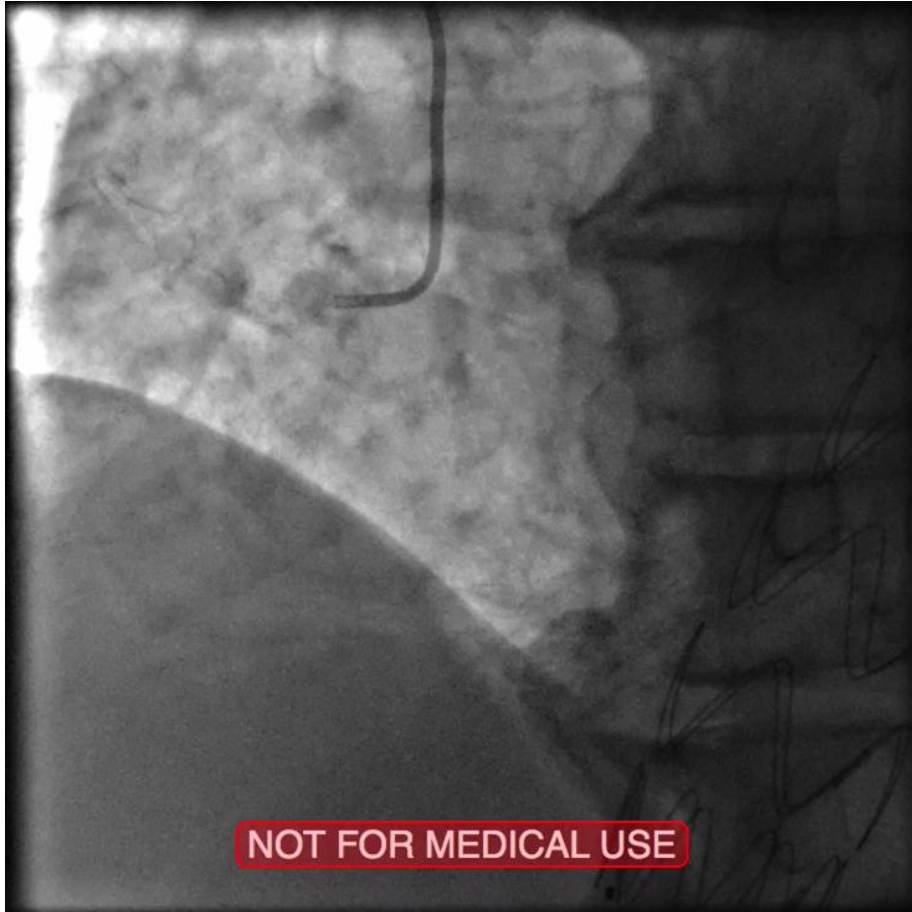
AP Cranial



Mid-LAD : Focal 70% stenosis

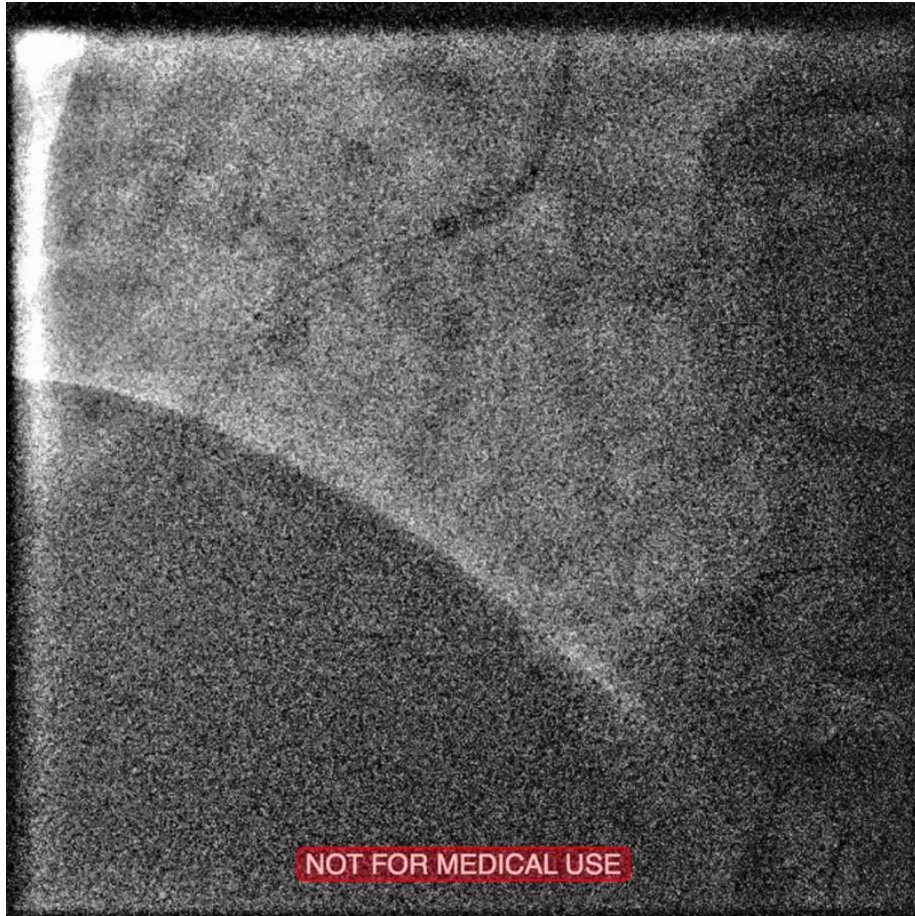
Diagnostic RCA

5Fr Optitorque Diagnostic Catheter

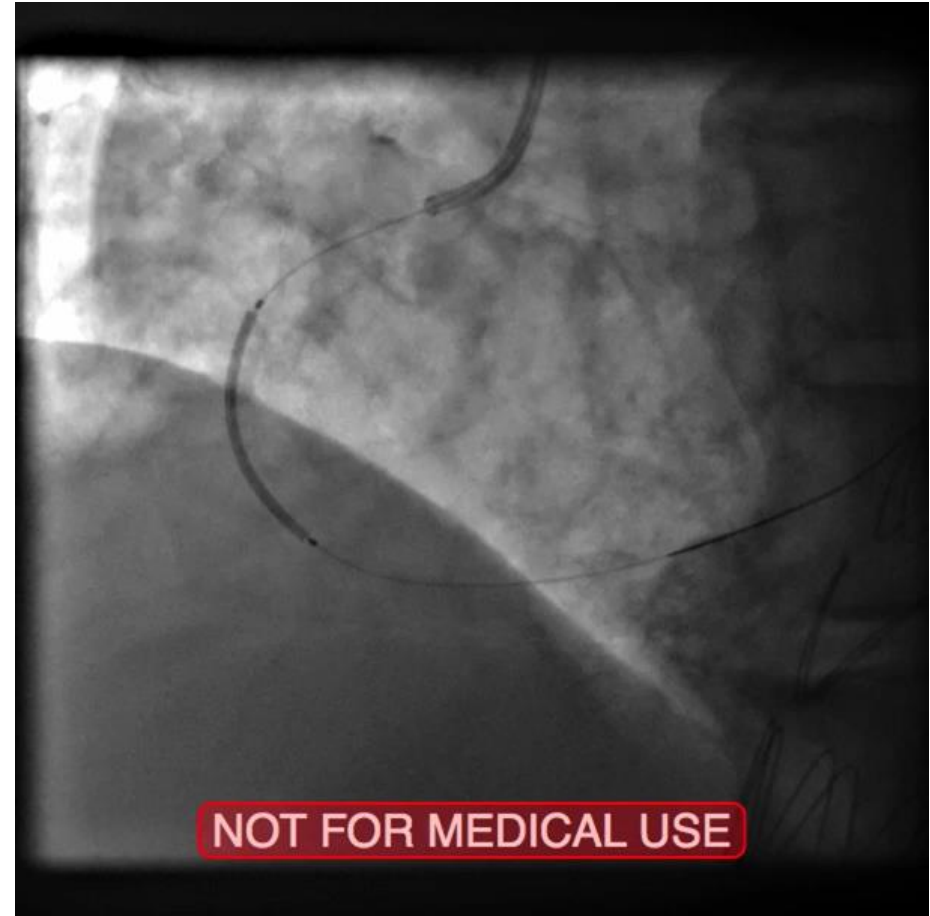


PCI to RCA :

Ikari L 3.5 6Fr Guiding Catheter



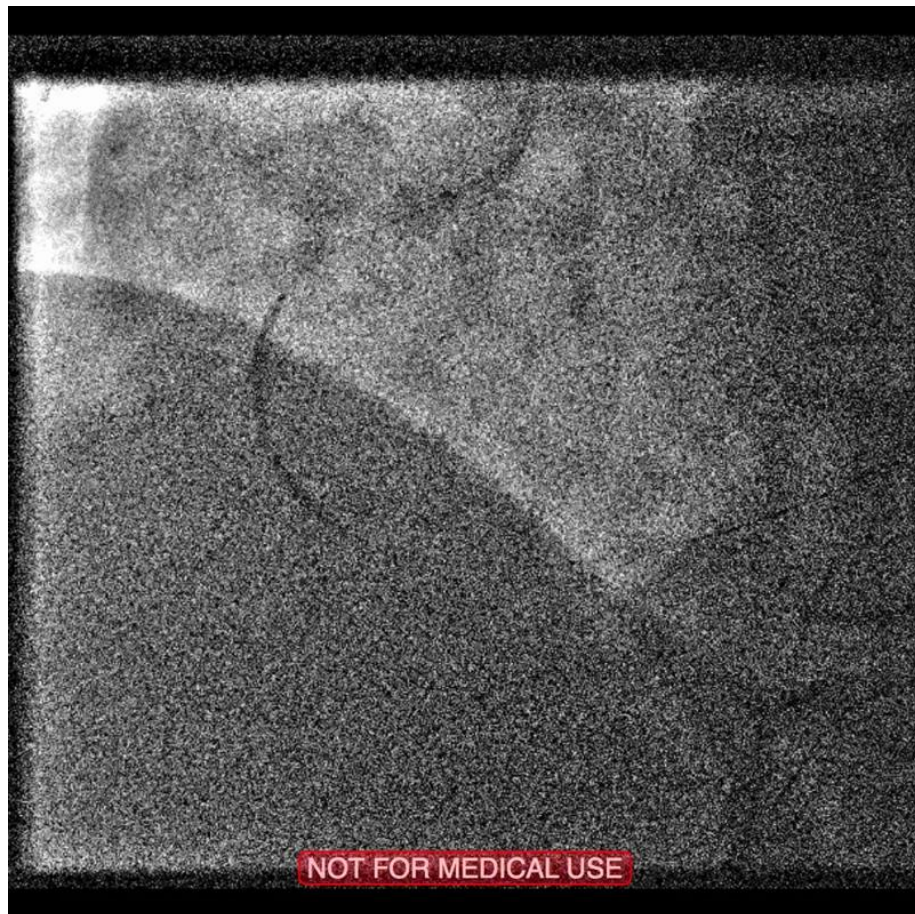
Pre-dilatation : 3.0mm NC Euphora balloon



Positioning stent : Resolute Onyx 4.5 x 30mm

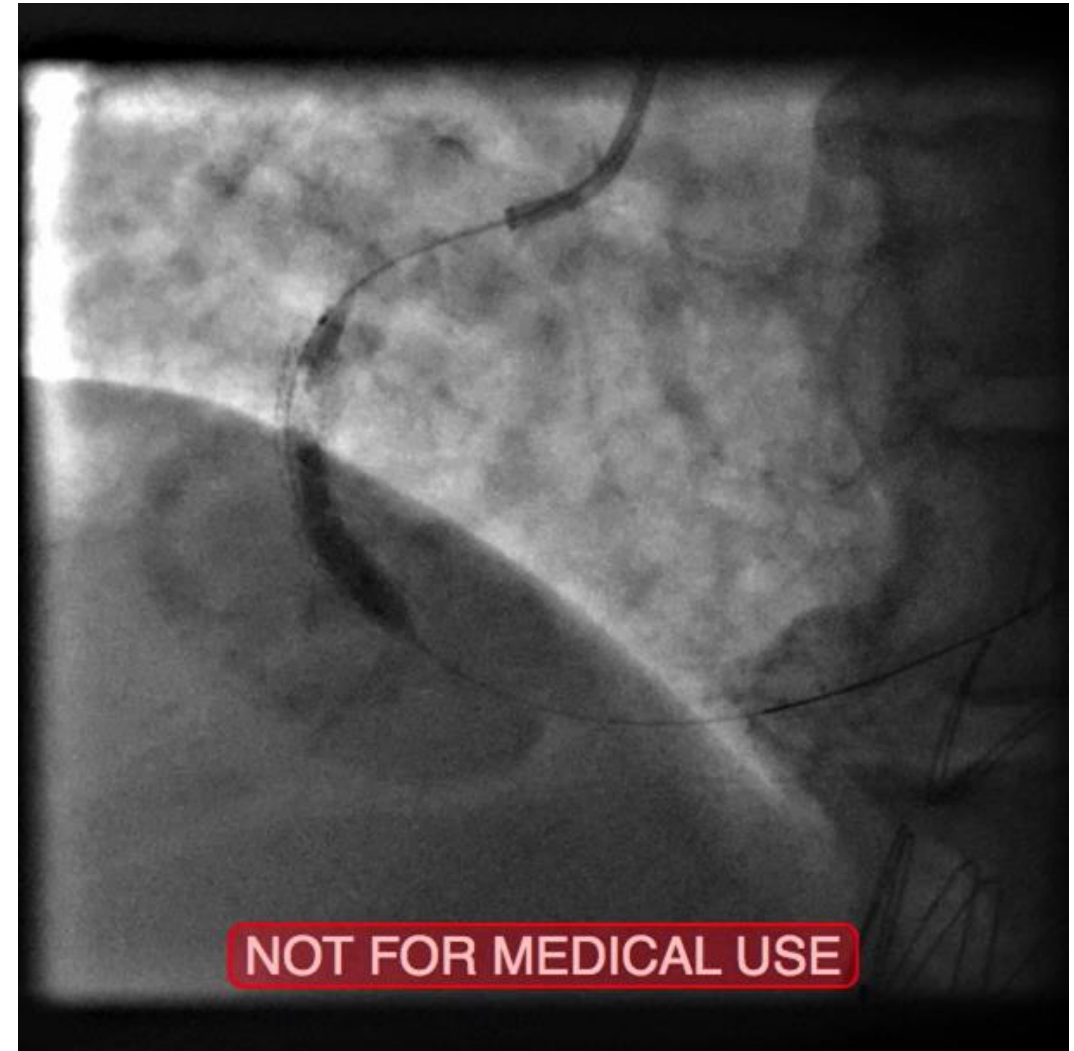
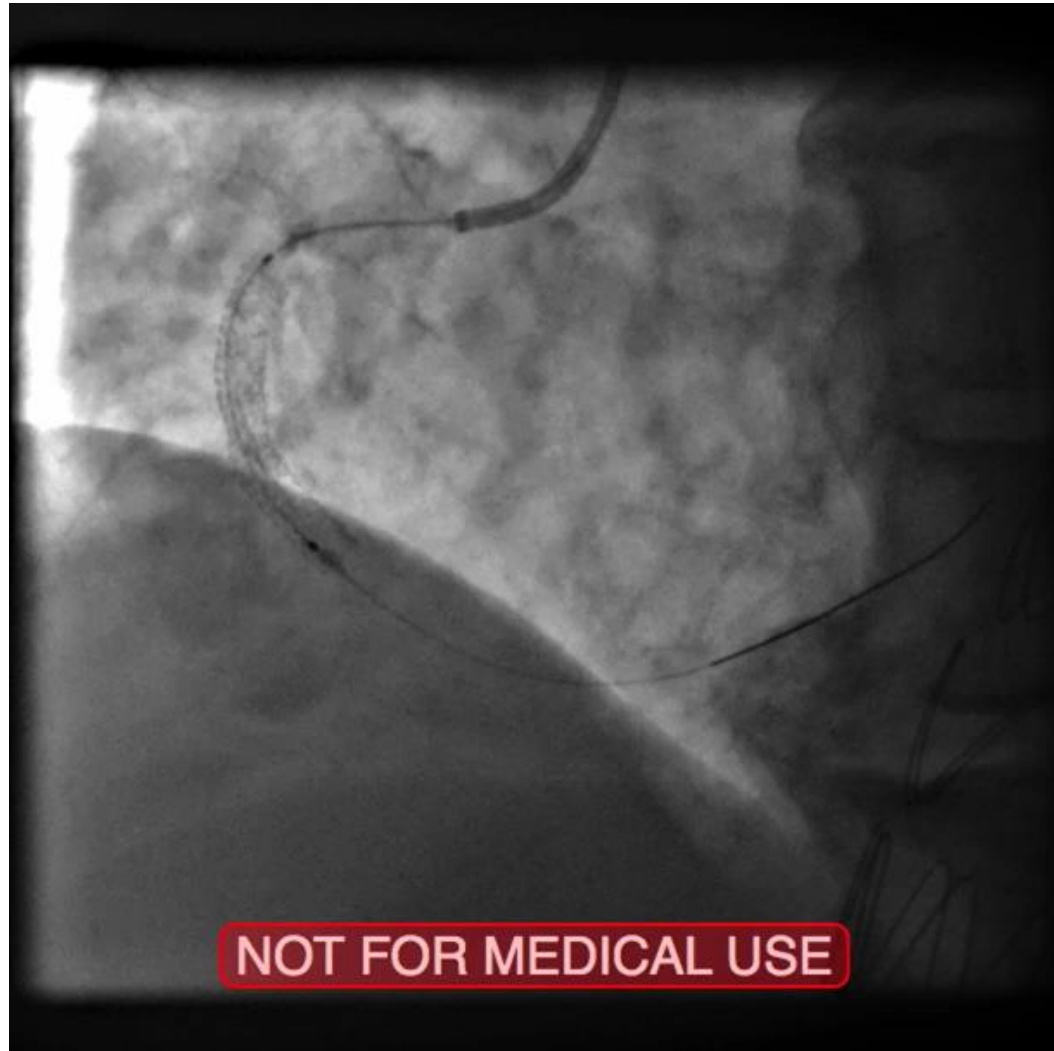
Deploying stent : Resolute Onyx 4.5 x 30mm

“ The Rest is History “



12 atm

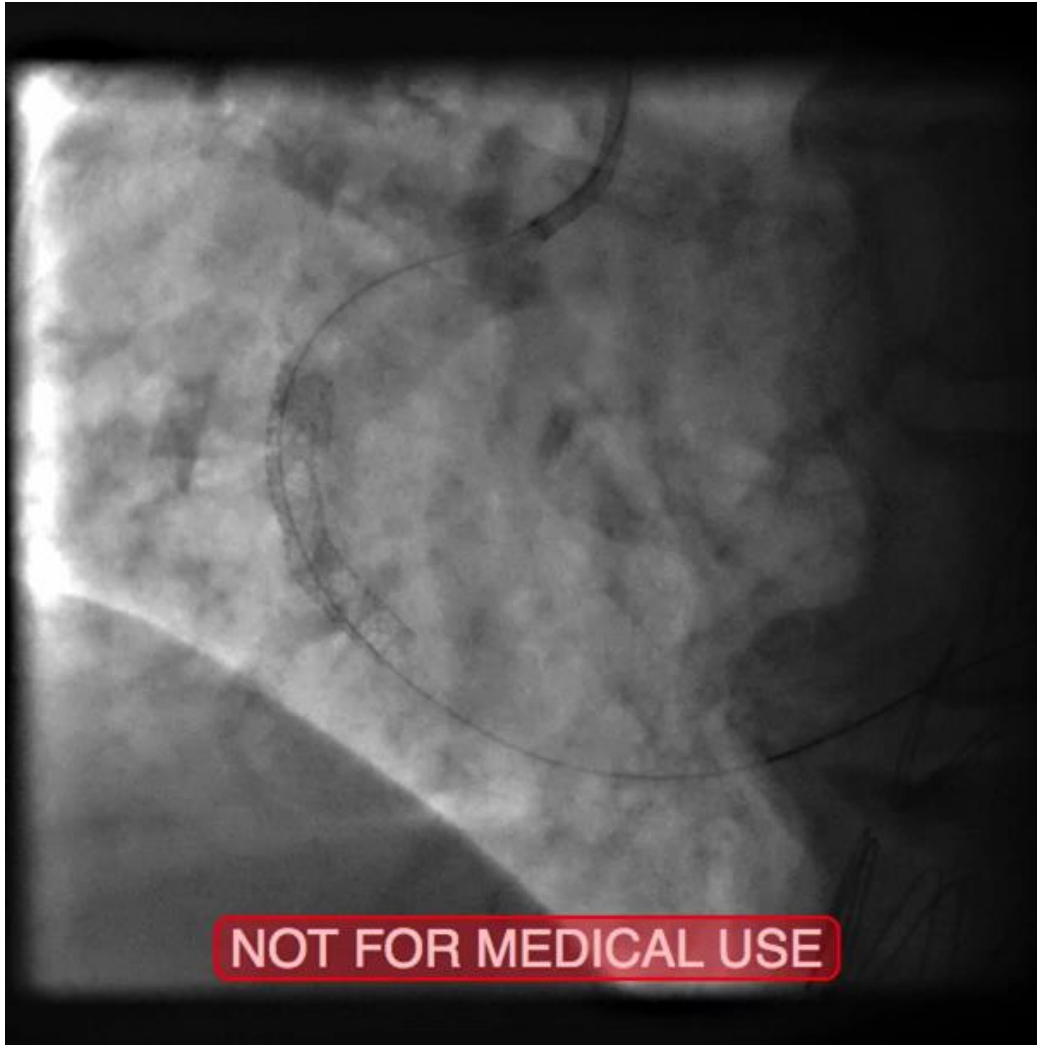
The 'Wow!' Moment : Type III Ellis perforation



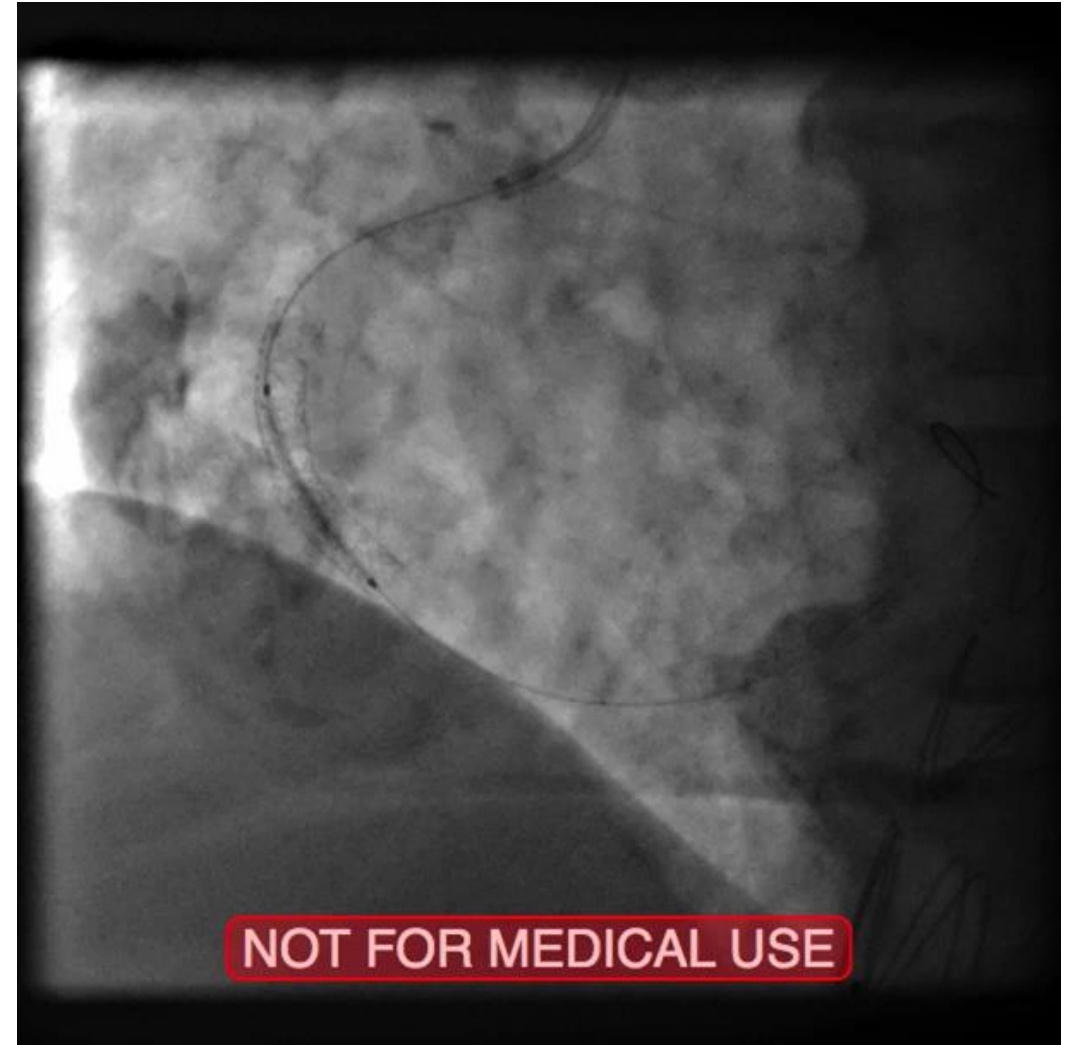
Stent balloon tamponade

Haemostasis with Covered Stent

SBP 140-150mmHg



Persistent Large Leak

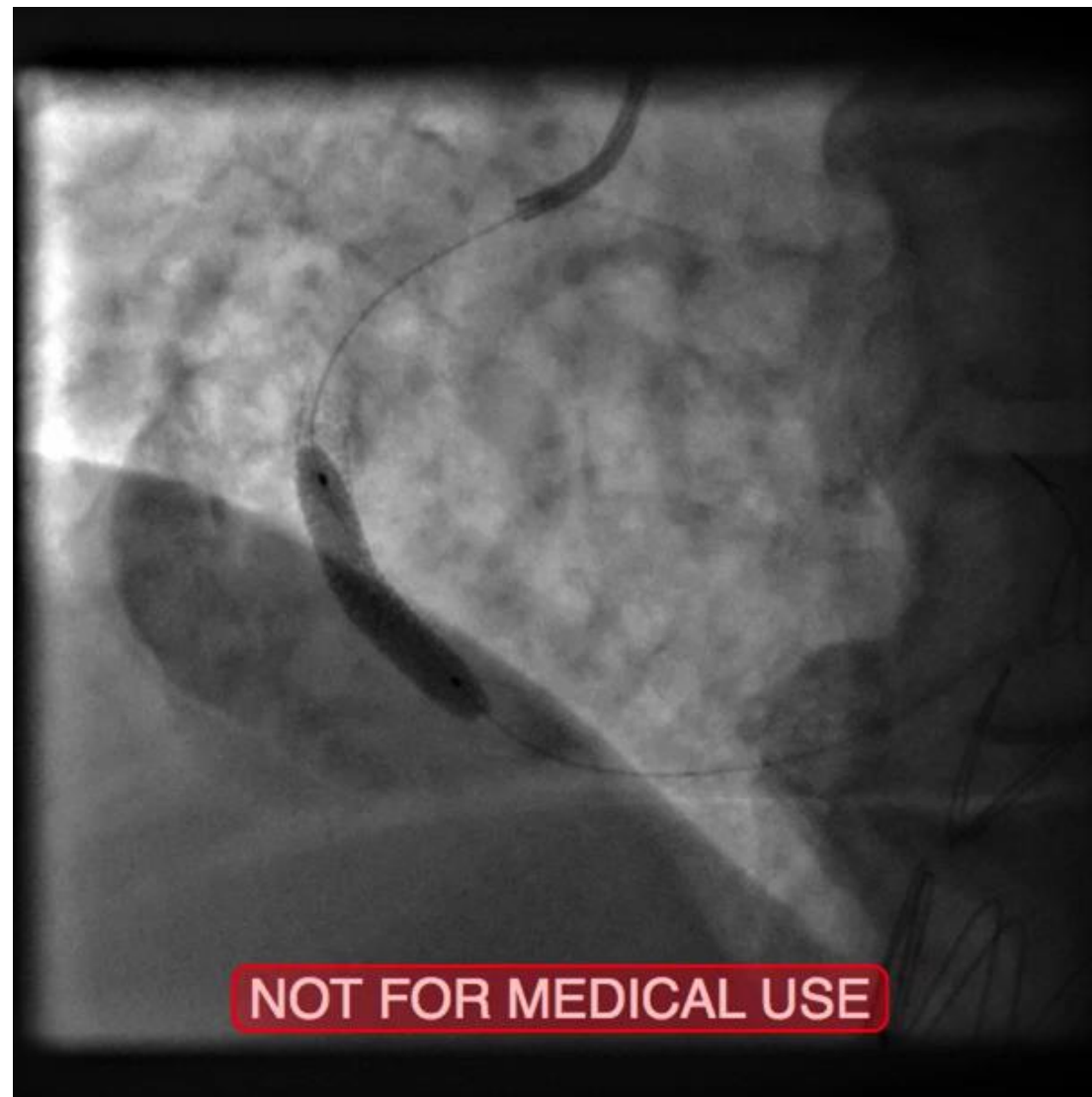


Positioning PK Papyrus 3.5 x 20mm

Deploying Covered Stent : PK Papyrus

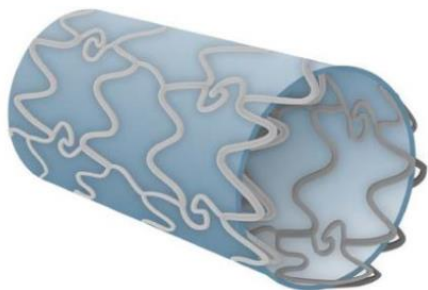


Deploying at 20 atm



Continued Inflation

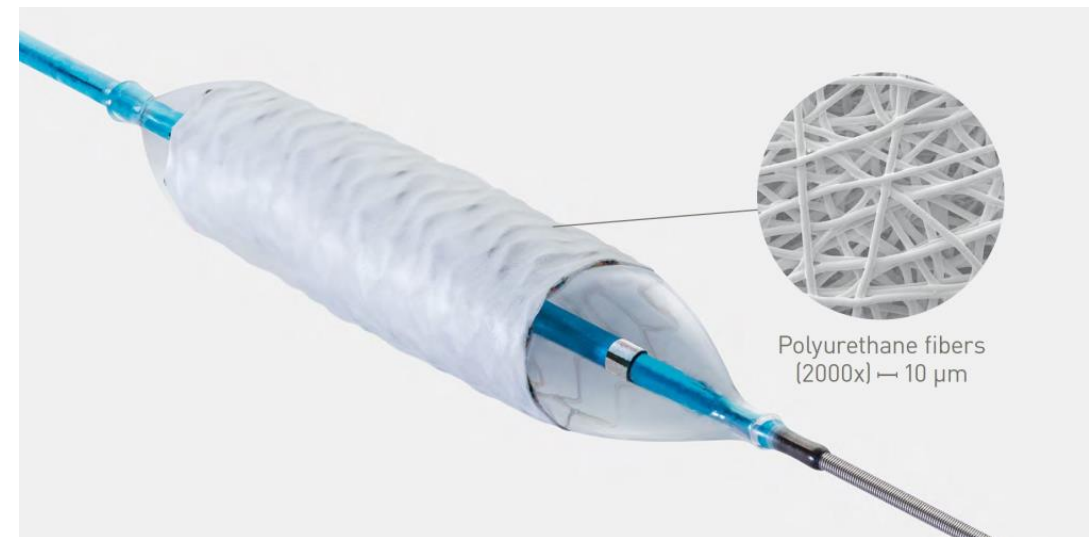
PK Papyrus Covered Stent :



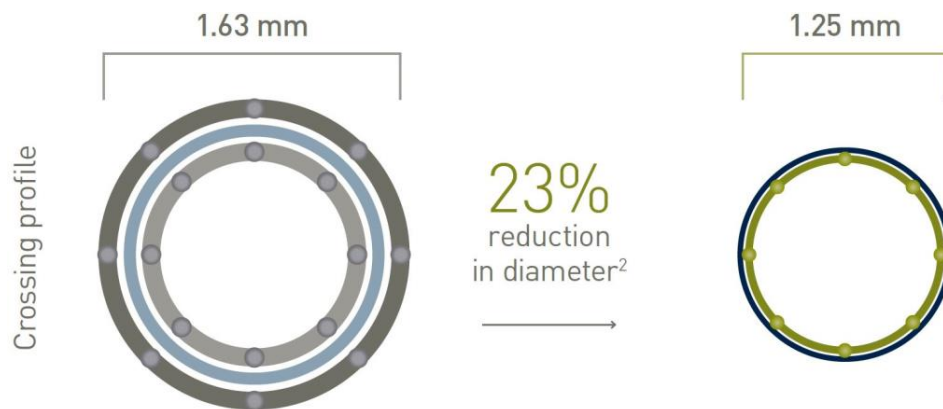
Traditional sandwich design stent¹



PK Papyrus Covered single stent design



58% greater flexibility



Crossing profile

Traditional sandwich design stent²

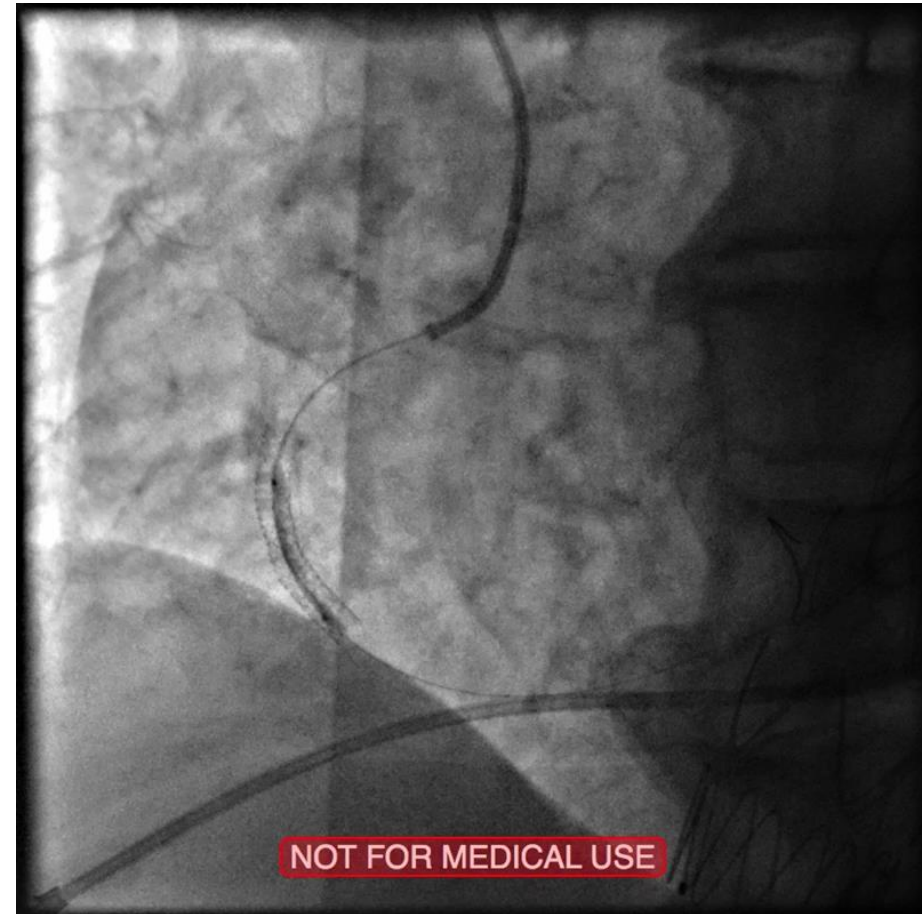
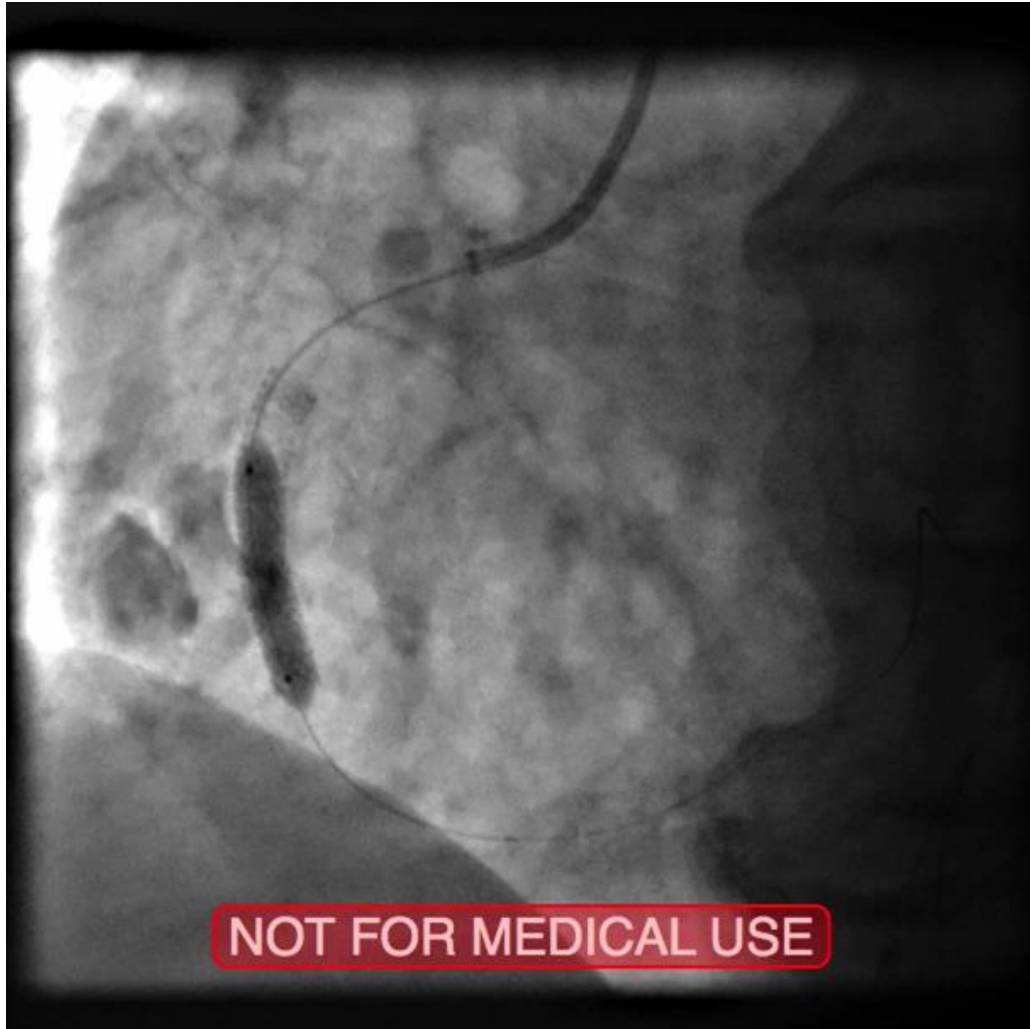
PK Papyrus 3.0/15

Max Stent Expansion

2.5 - 3.0 mm:	3.50 mm
3.5 - 4.0 mm:	4.65 mm
4.5 - 5.0 mm:	5.63 mm

Post-dilatation : 4.0mm NC balloon

Patient became unconscious
BP 60-70/30mmHg



20 atm : Still leaking

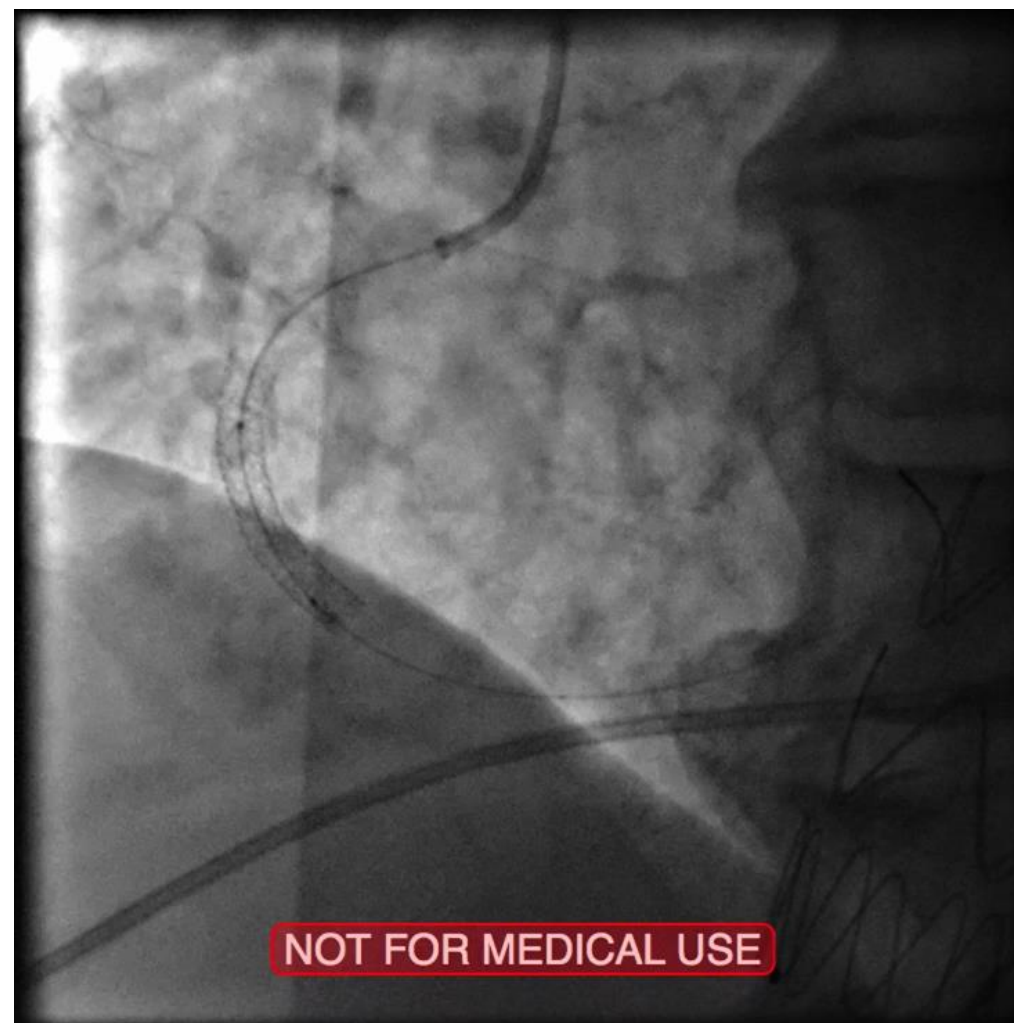
Pericardial Drain Inserted
4.5 mm NC Balloon in-situ

Post-dilatation 4.5mm NC balloon

NB: BP Dropped (SBP 80-90mmHg) with ST-segment elevation with every balloon inflation

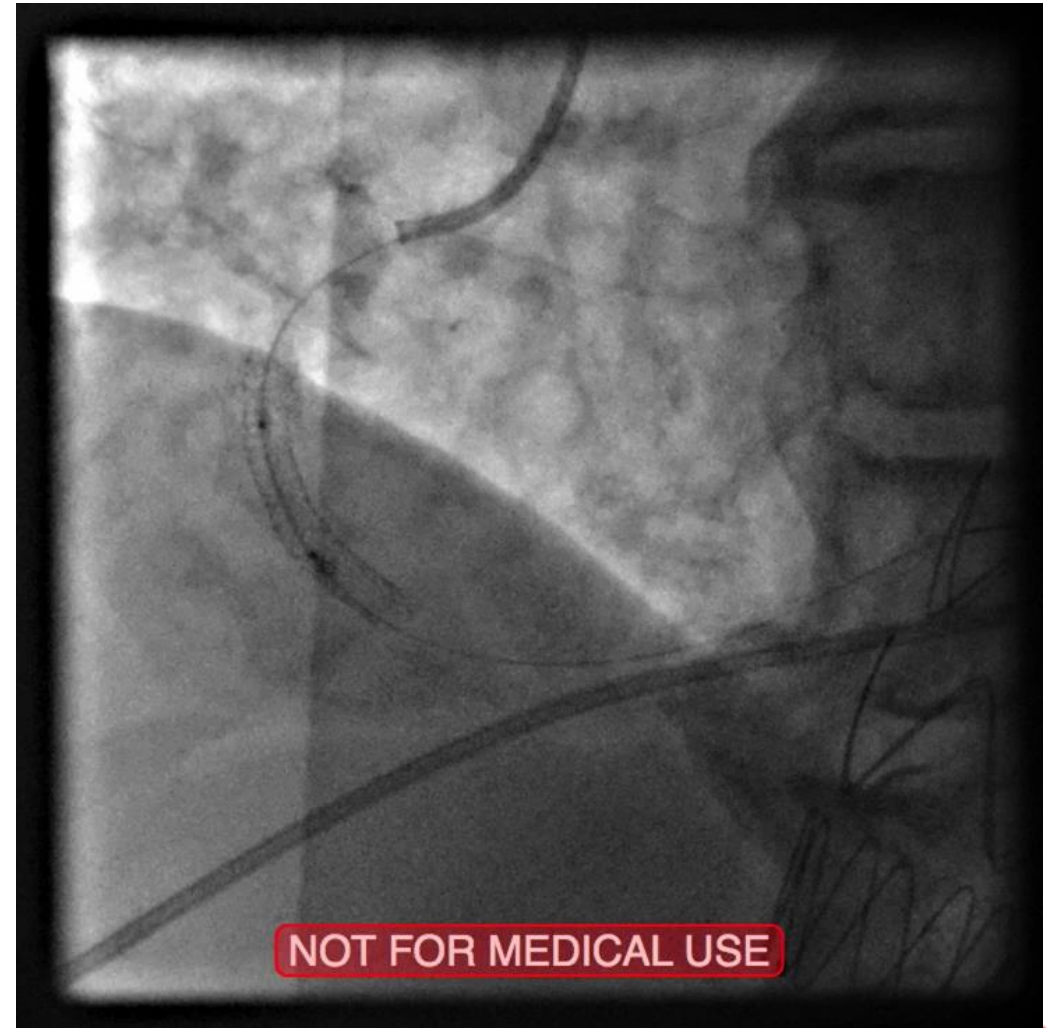
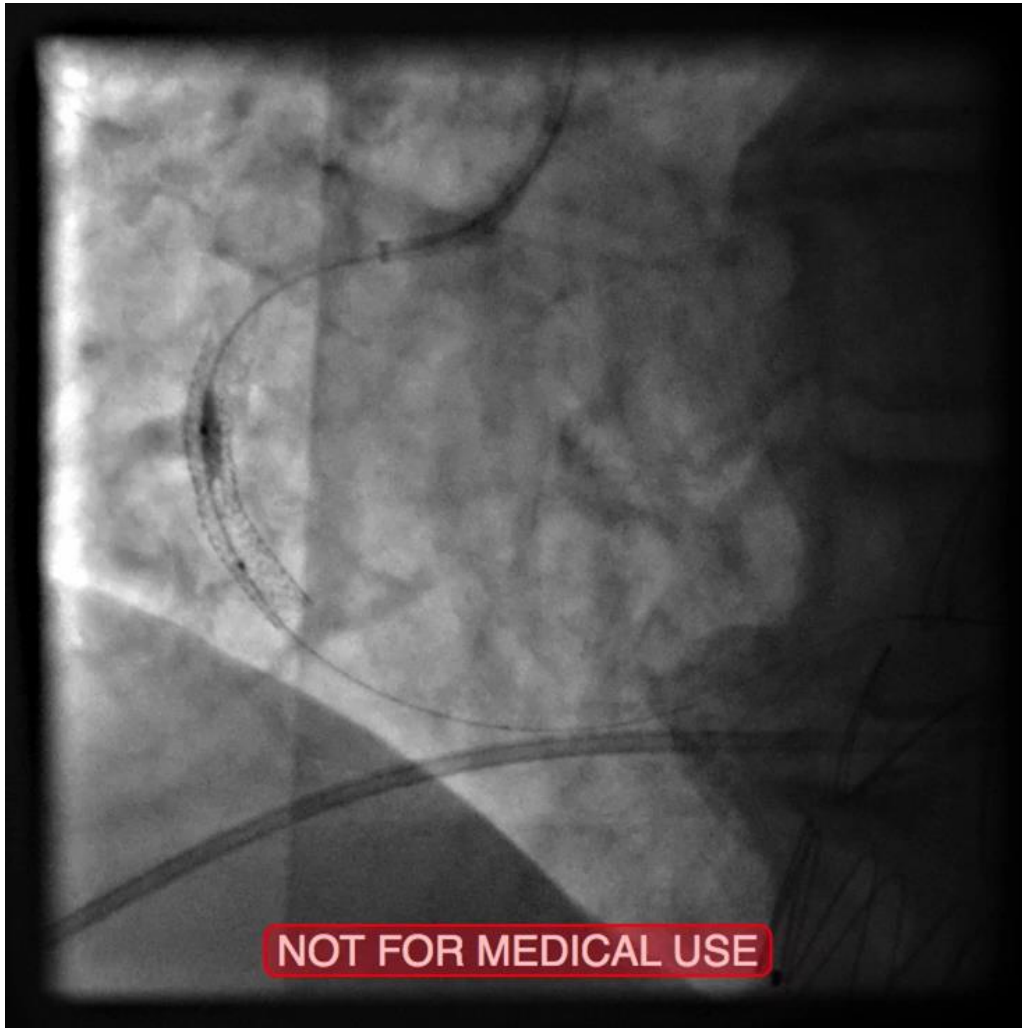


After 5 minutes – repeated balloon
Inflations/ deflations



Still leaking
Auto transfusion – 500cc blood

After another 5 minutes of repeated balloon inflation/deflations

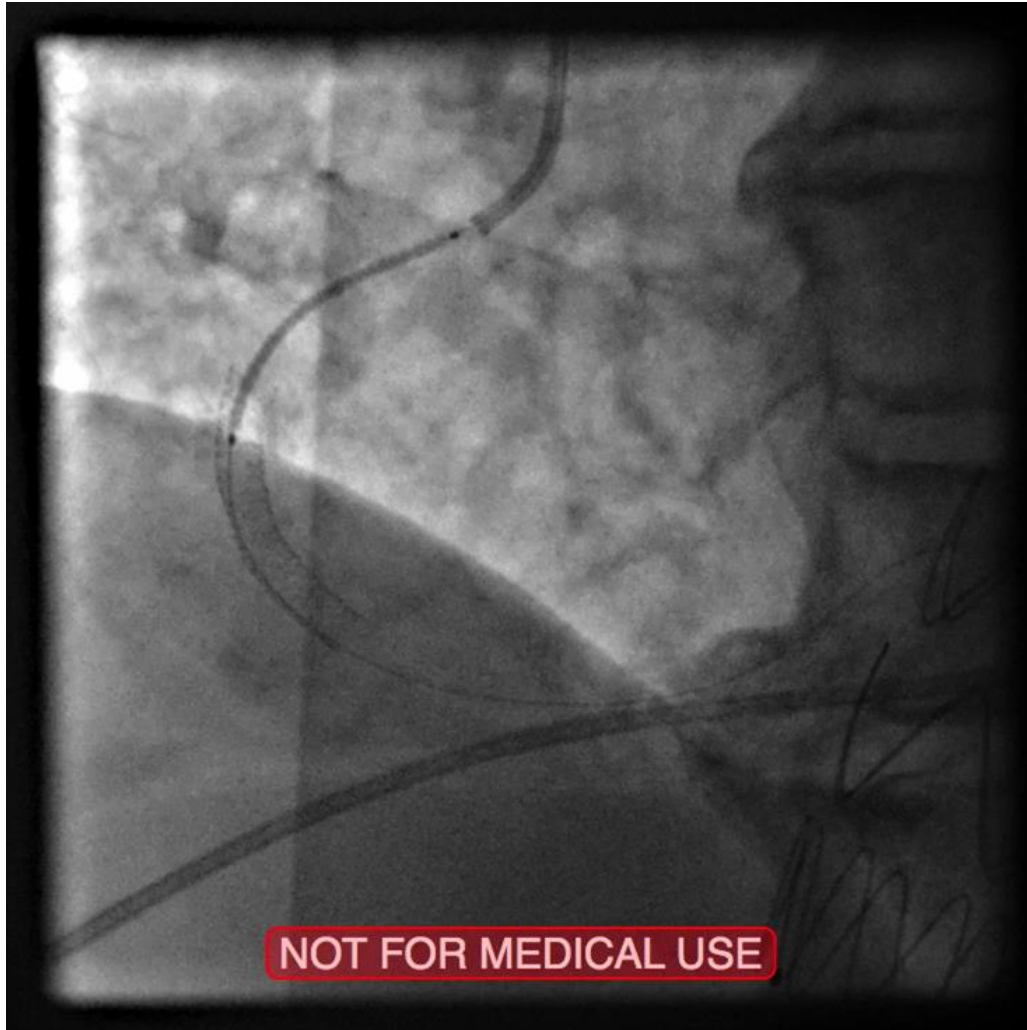


Check Angio – SEALED !

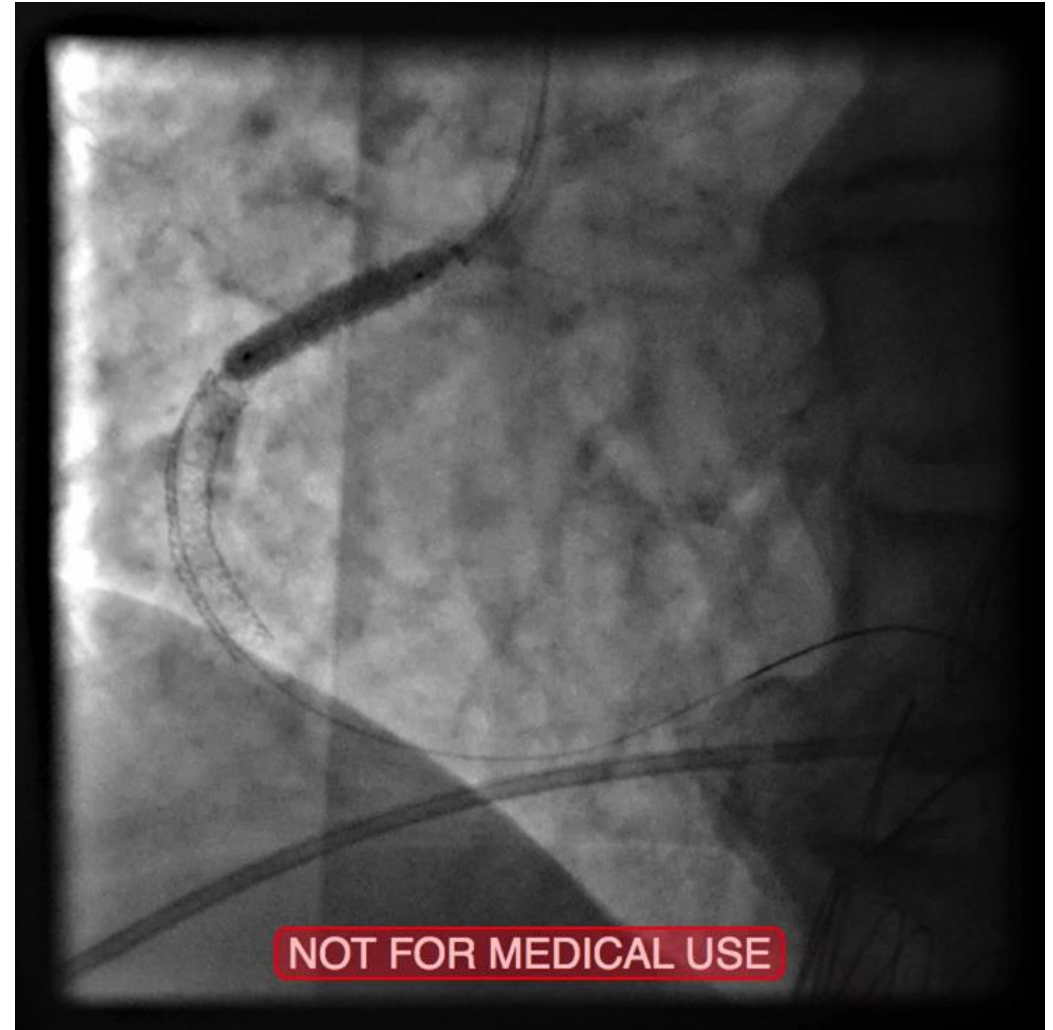
**Small Reason to Celebrate !
And Time to Carry On with the Job !**



Proximal RCA PCI : Synergy 4.0 x 32 mm stent



Stent Positioning

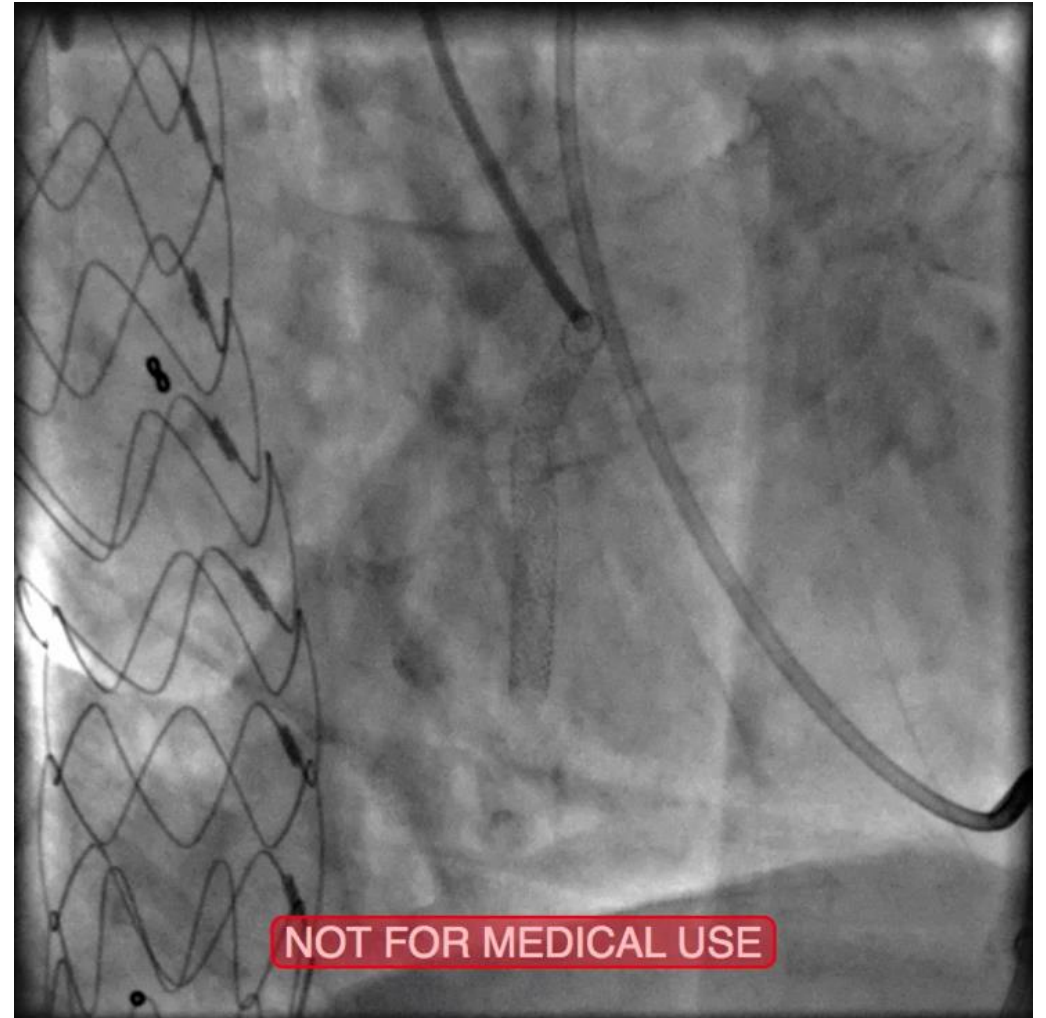


4.0mm NC Balloon Post-dilatation

Final Results : RCA



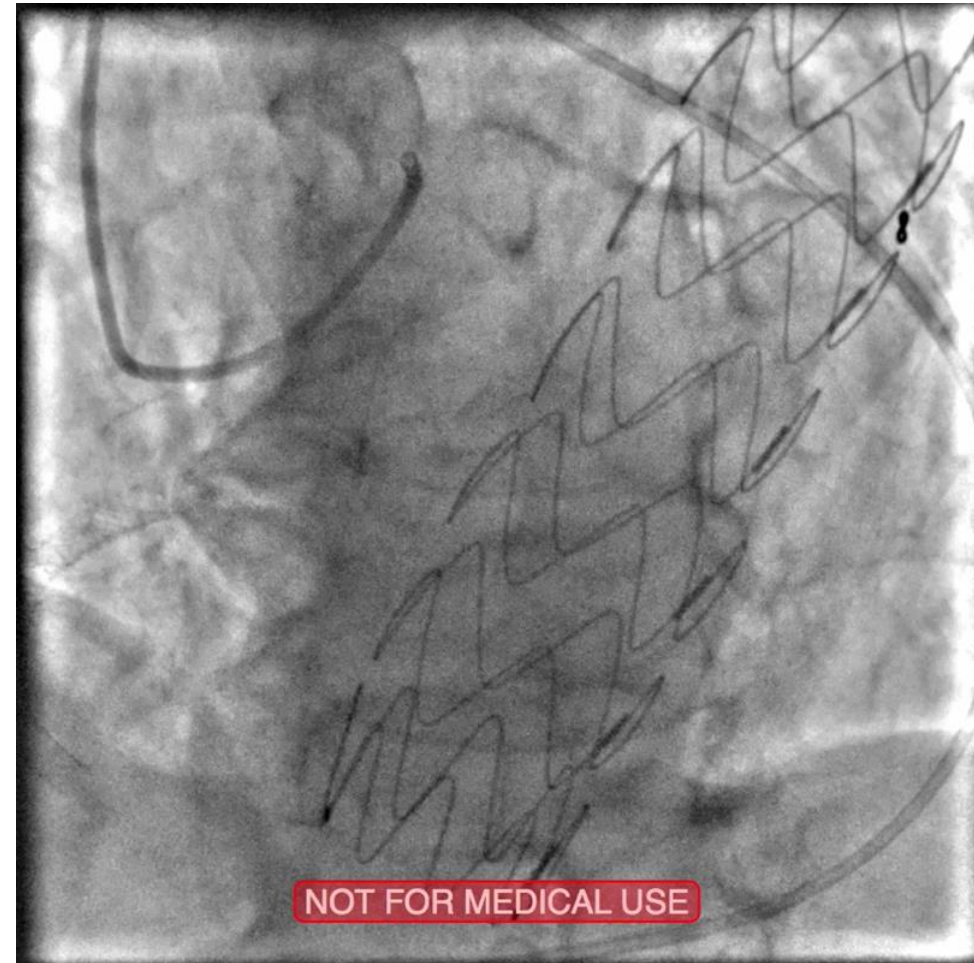
LAO



RAO

LAD PCI :

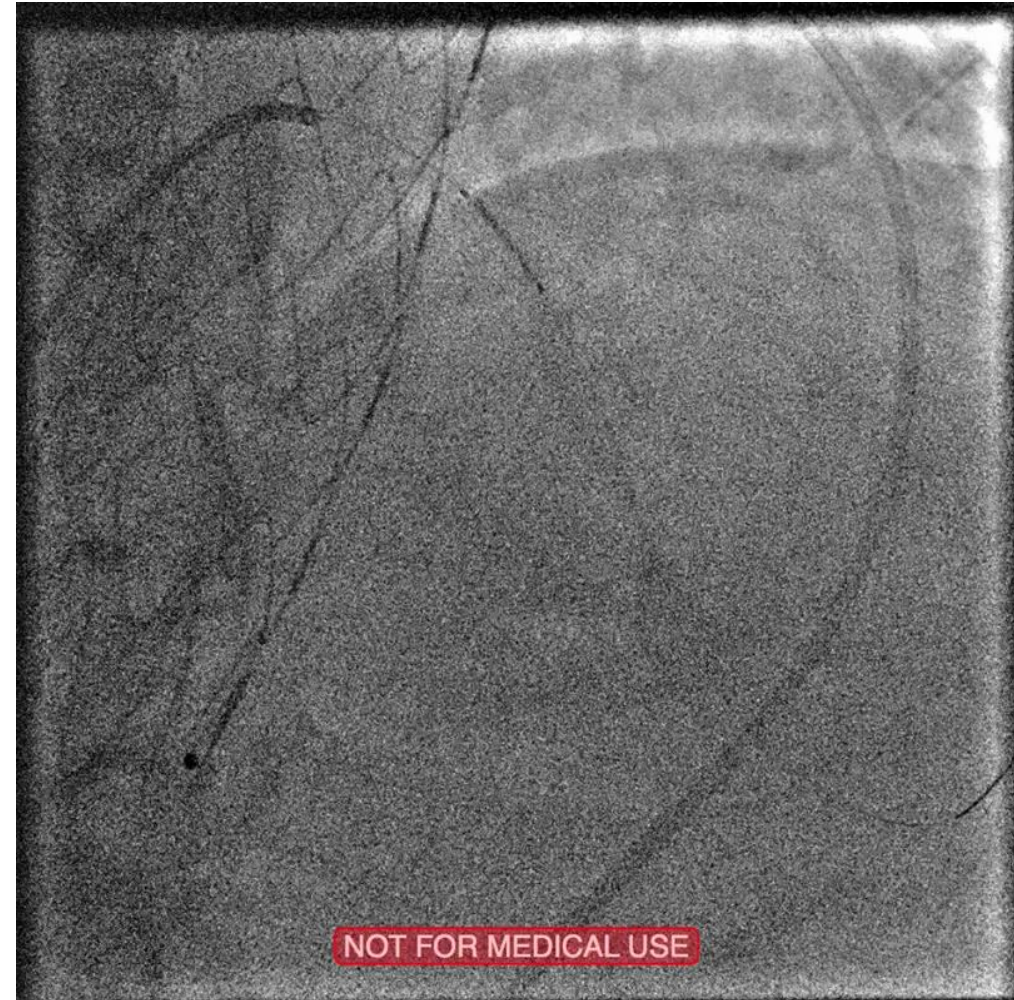
Diagnostic shot with Ikari L 3.5 GC



Direct Stenting mid-LAD : Resolute Onyx 3.0 x 12mm

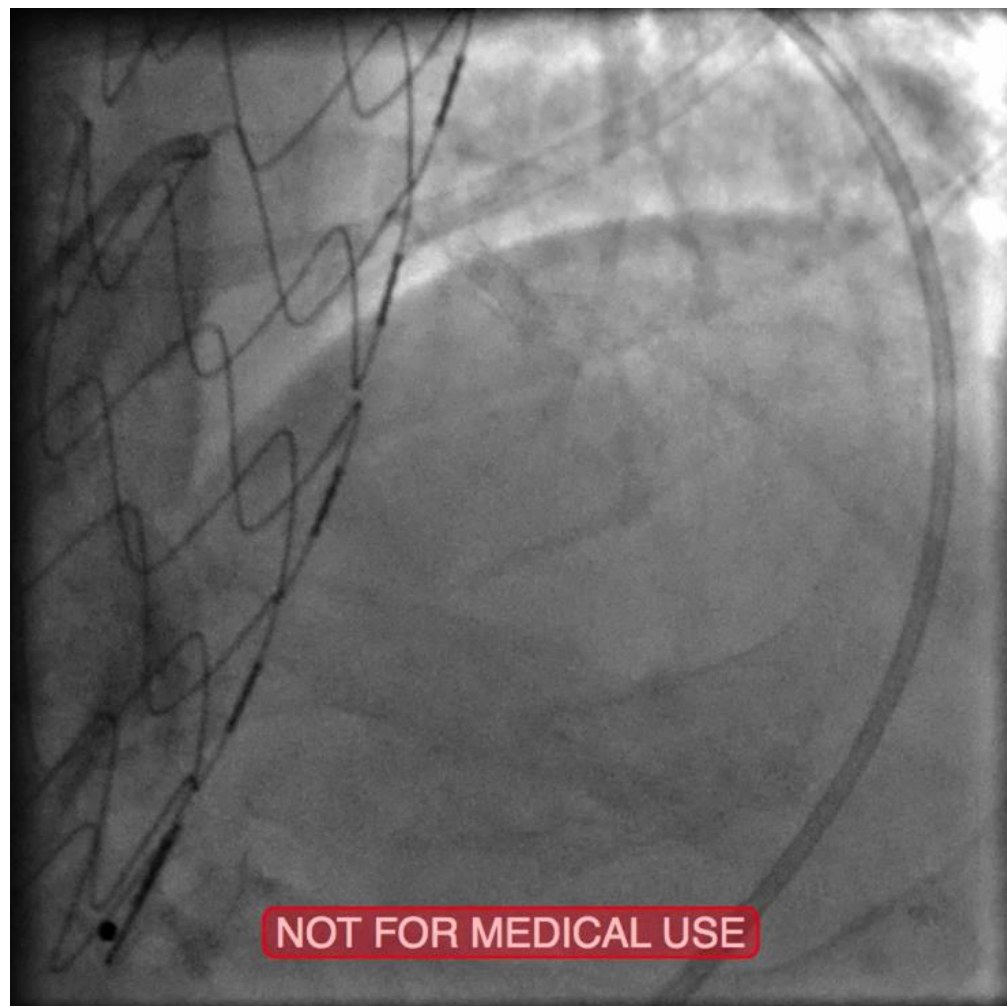


Stent Positioning

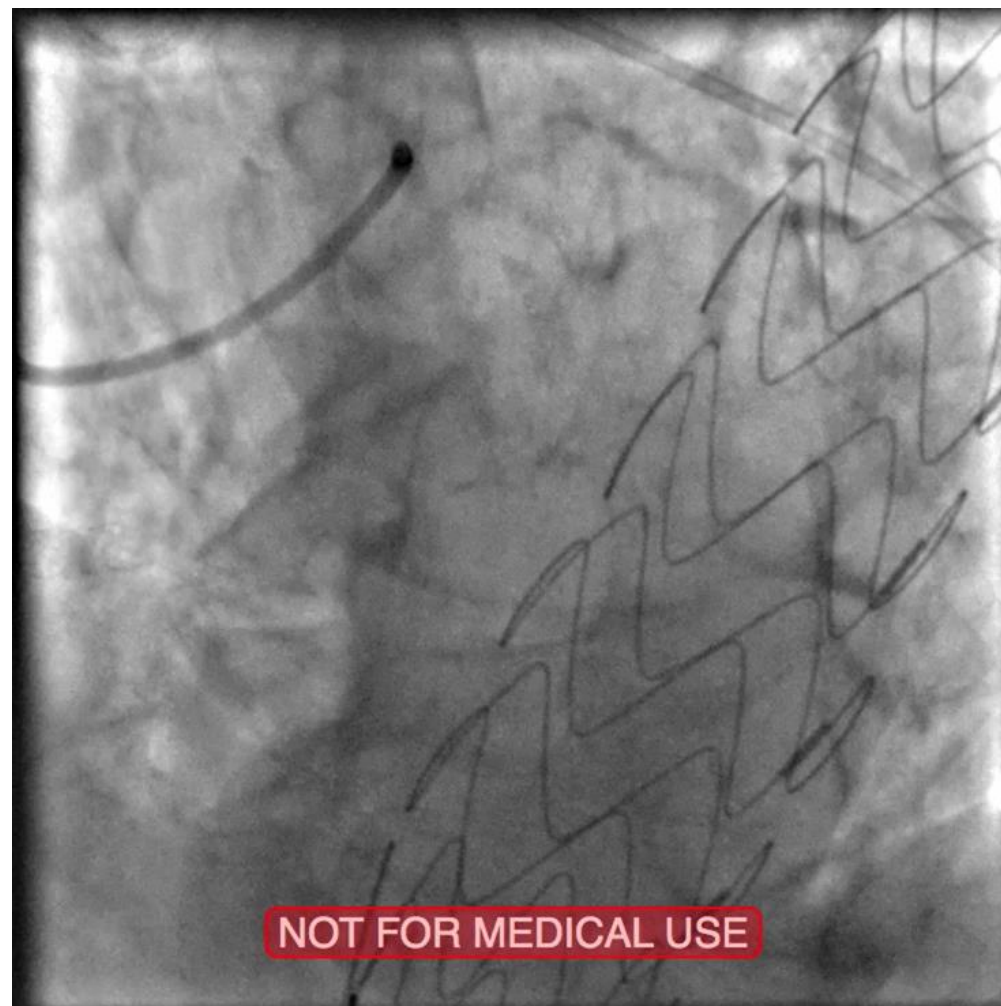


Stent Deployment

Final Results LAD



AP Cranial



LAO Cranial

Post-Procedure :

- Mr. H moved to ICU for monitoring
- Next Case Prepared in the Cath Lab !

- BP Dropped again to 70/40mmHg.

Bedside 2D-Echo :



After pericardiocentesis & auto-transfusion 400cc blood



BP 130/70mmHg
HR 72 bpm

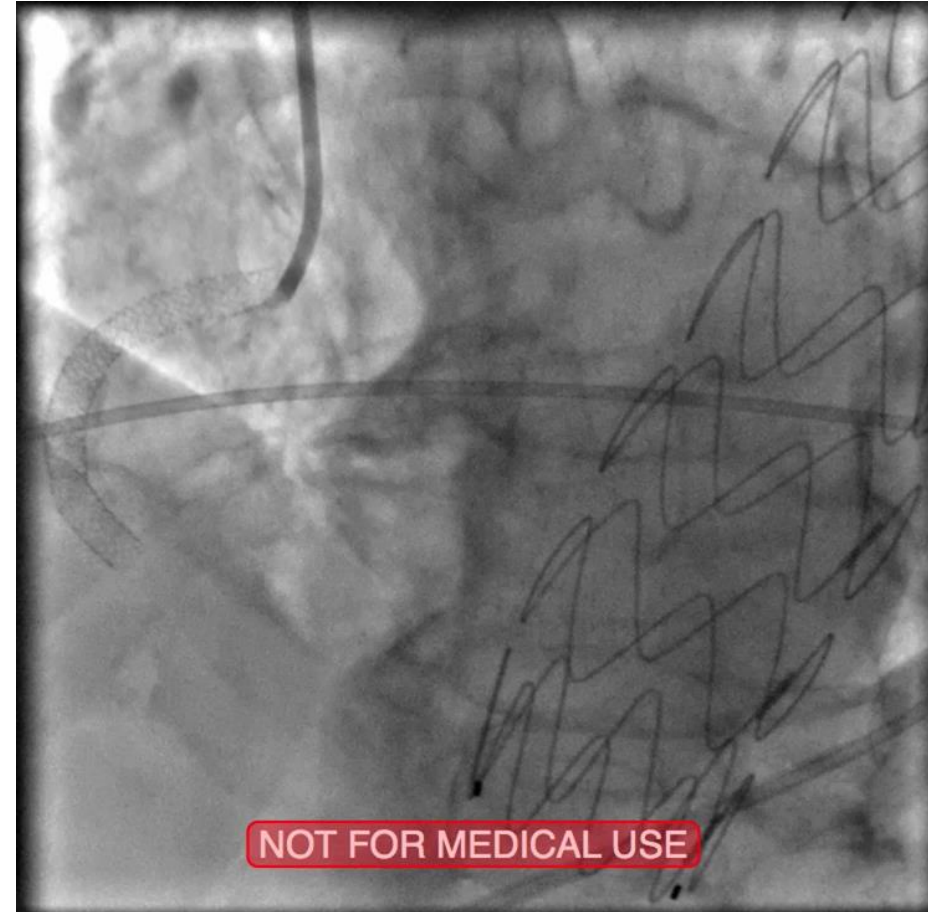


1 Hour Later :

- BP dropped again
- Another 400cc drained and auto-transfused
- Mr. H headed back into Cath Lab

Diagnostic Shot : ? Leaking again

JR 4 6Fr (TRA)



“What the!” Why ? Why ? Why ?



Help ! How do I manage the persistent leak ?

- Pray very Hard !
- Just perform pericardiocentesis and auto-transfuse until it stops spontaneously
- Reverse heparin
- Let's go in and inflate again
- I need another Covered stent ?
- Time to call my 'friendly' Surgeon?



Thank You !

감사합니다 !