The first experiences of antegrade re-entry dissection system @ Severance Hospital

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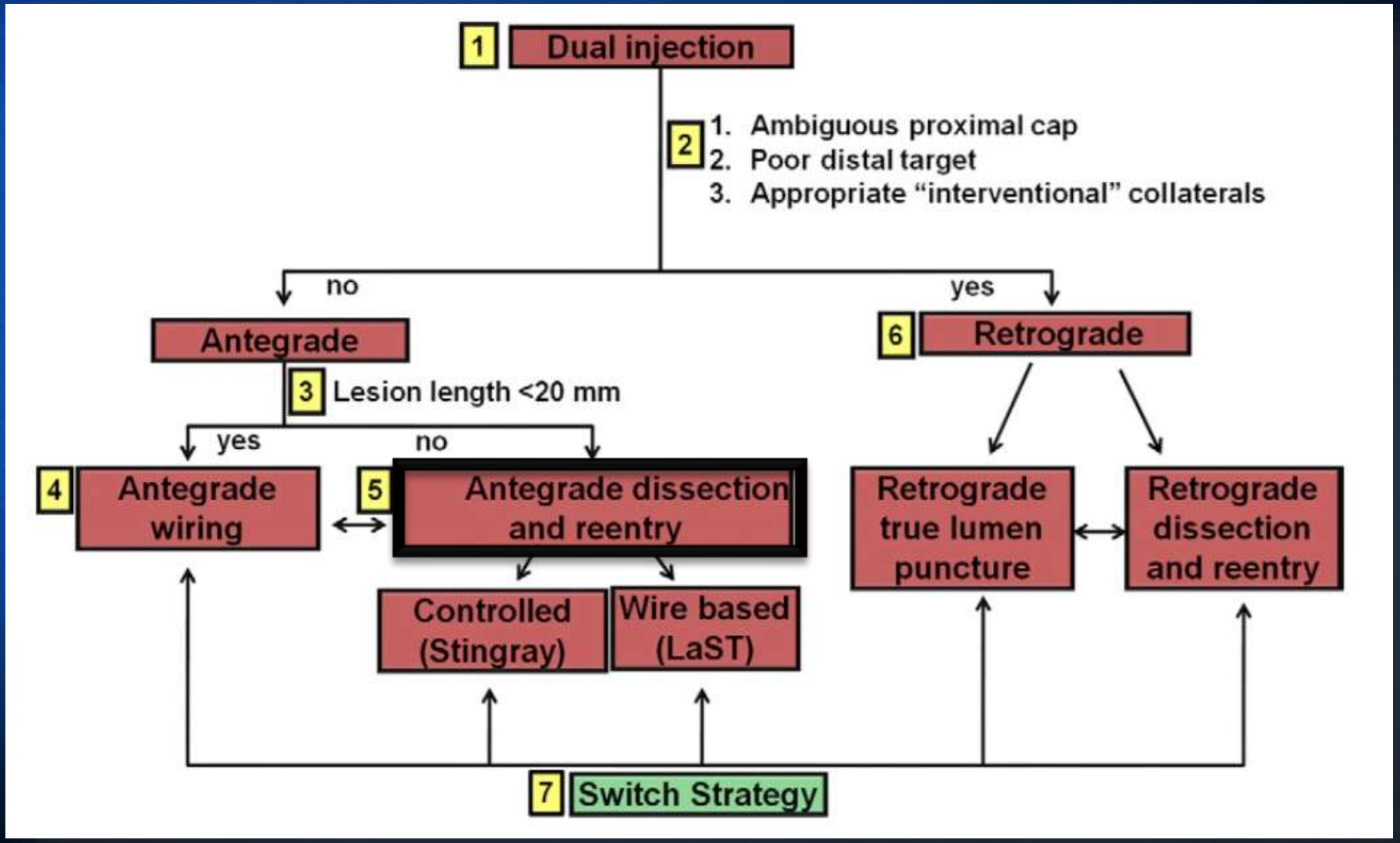
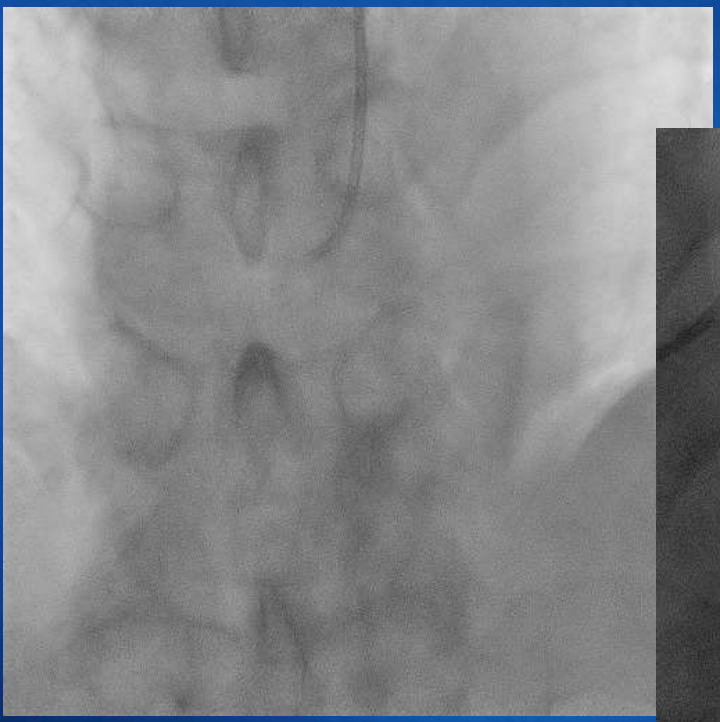
Algorithm for Crossing CTOs



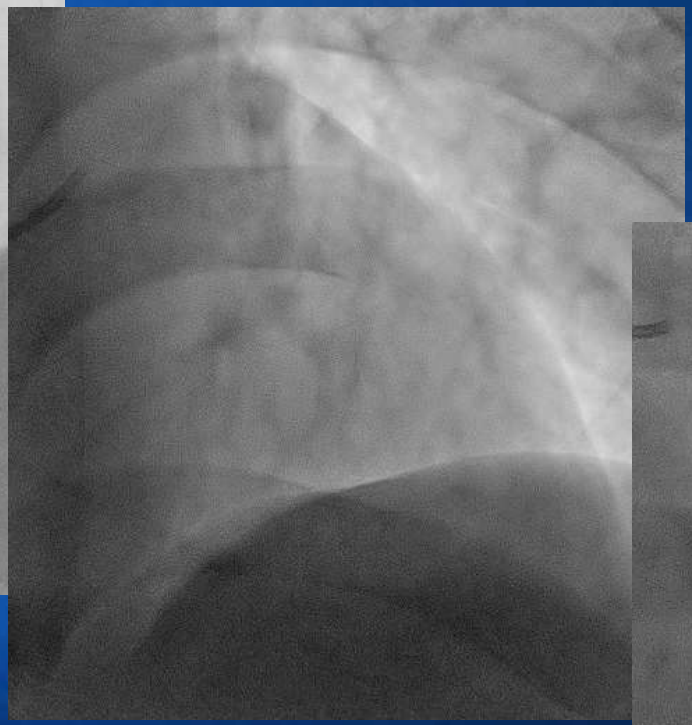
Brilakis ES, et.al., JACC Cardiovasc Interv 2012 Apr, 5(4): 357-79

CASE 1. 52 / M, Stable angina (CCS II)

- Hx: Failed LAD-CTO PCI at other hospital
- Risk factors: Hypertension, dyslipidemia
- Exercise ECG test: Positive // TTE: No RWMA, EF 56%

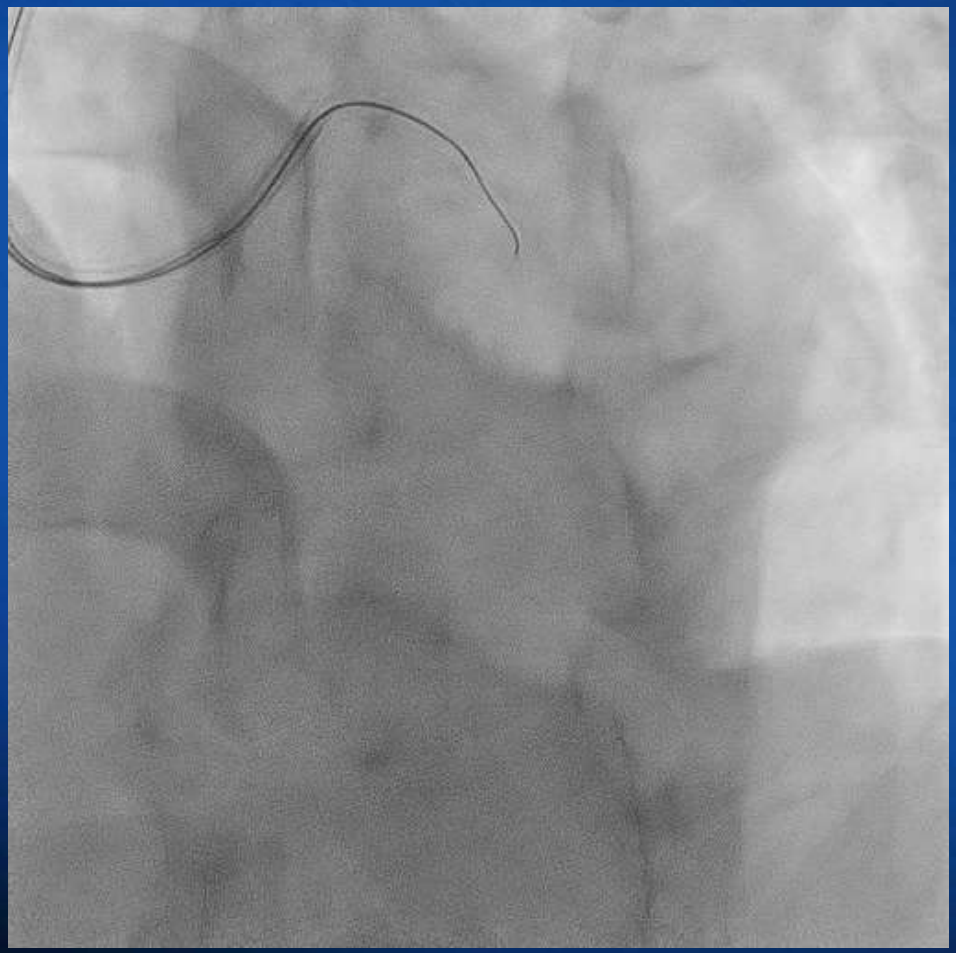


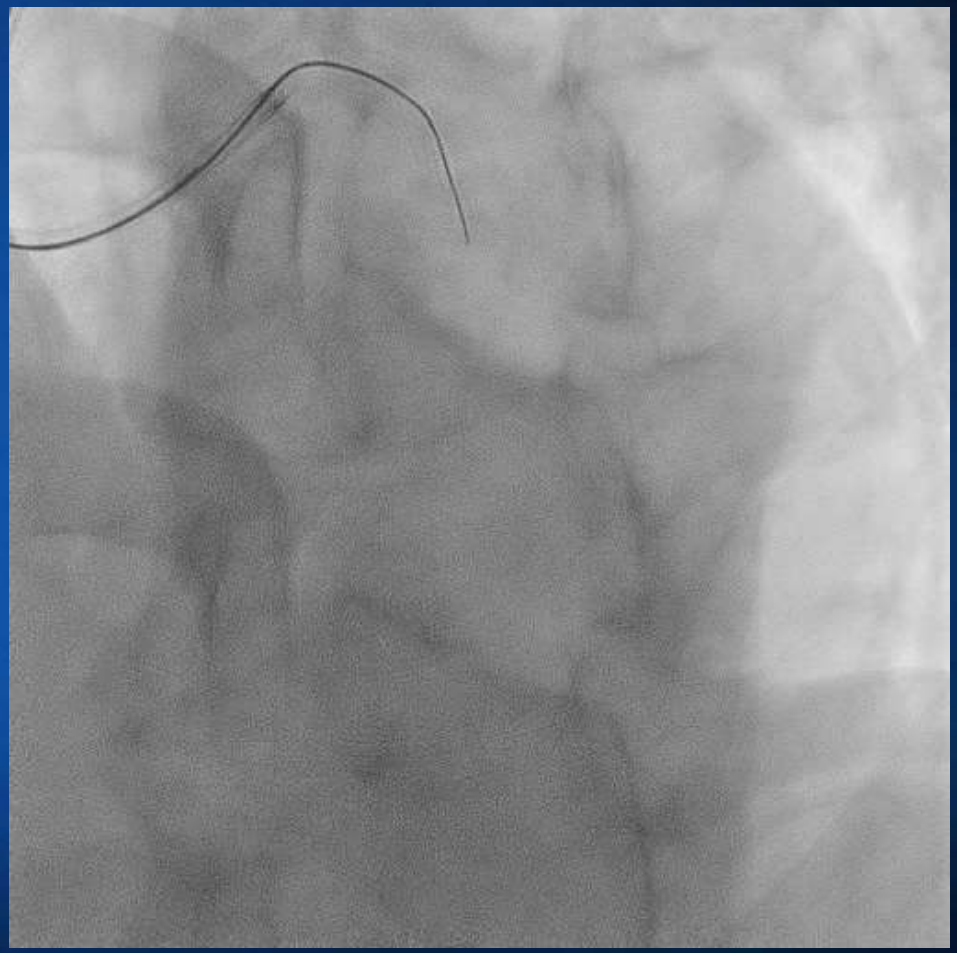
- No interventional collateral from RCA to LAD



- LAD CTO

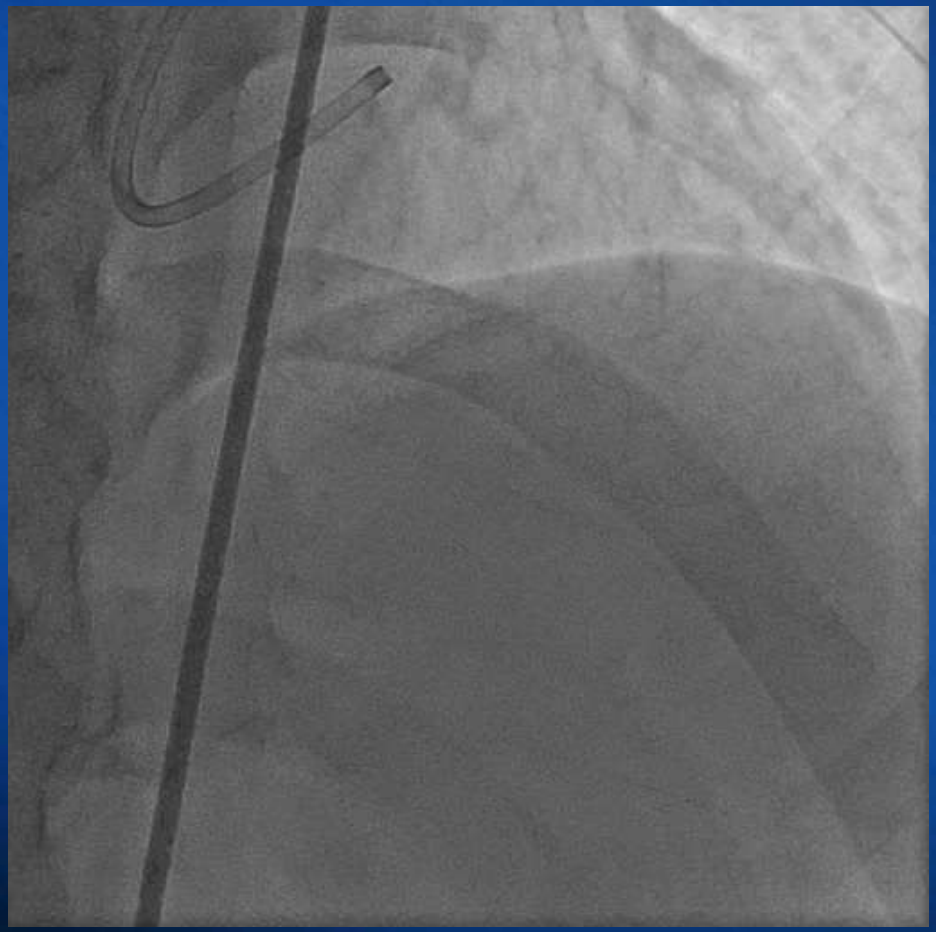
Start antegrade CTO PCI → Failed





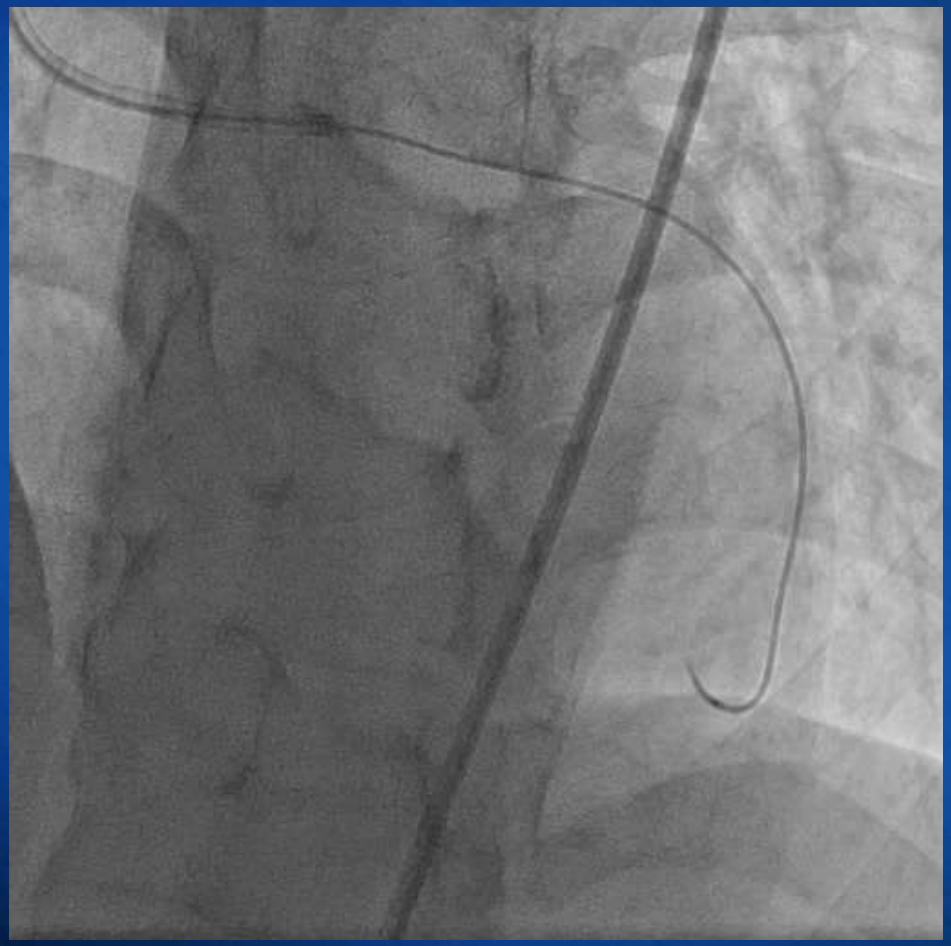
1-M later, re-try CTO PCI

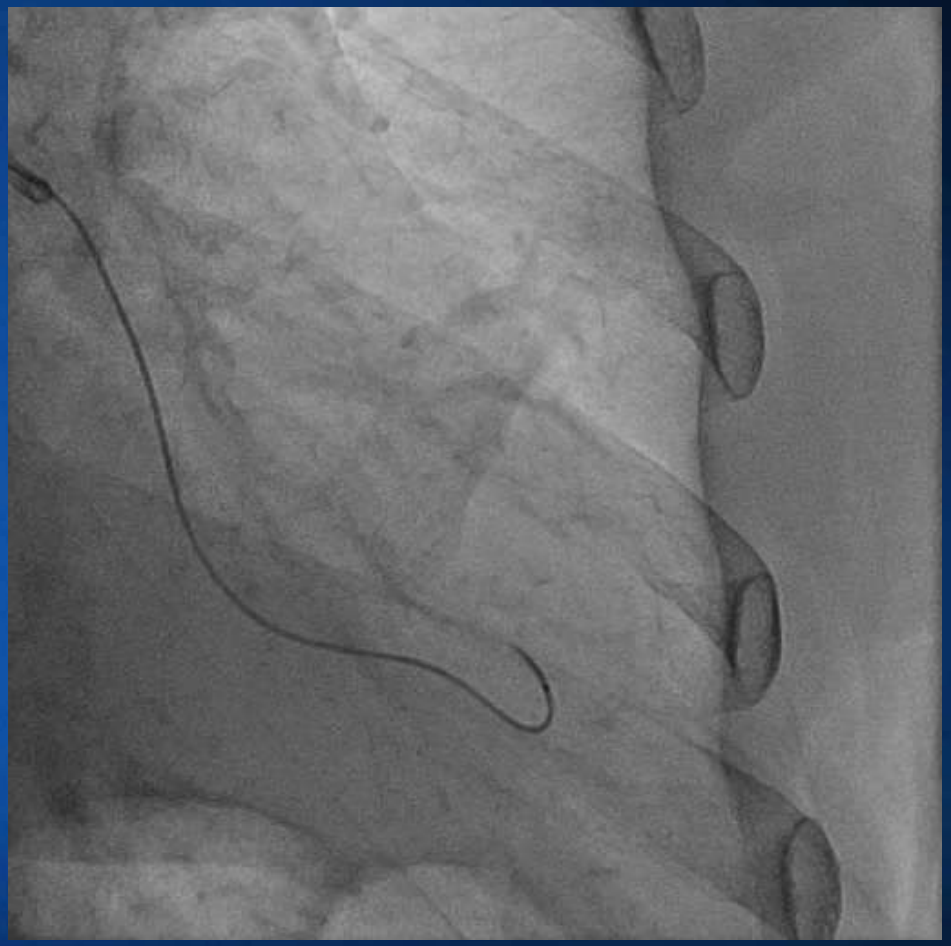
@ Severance Hospital



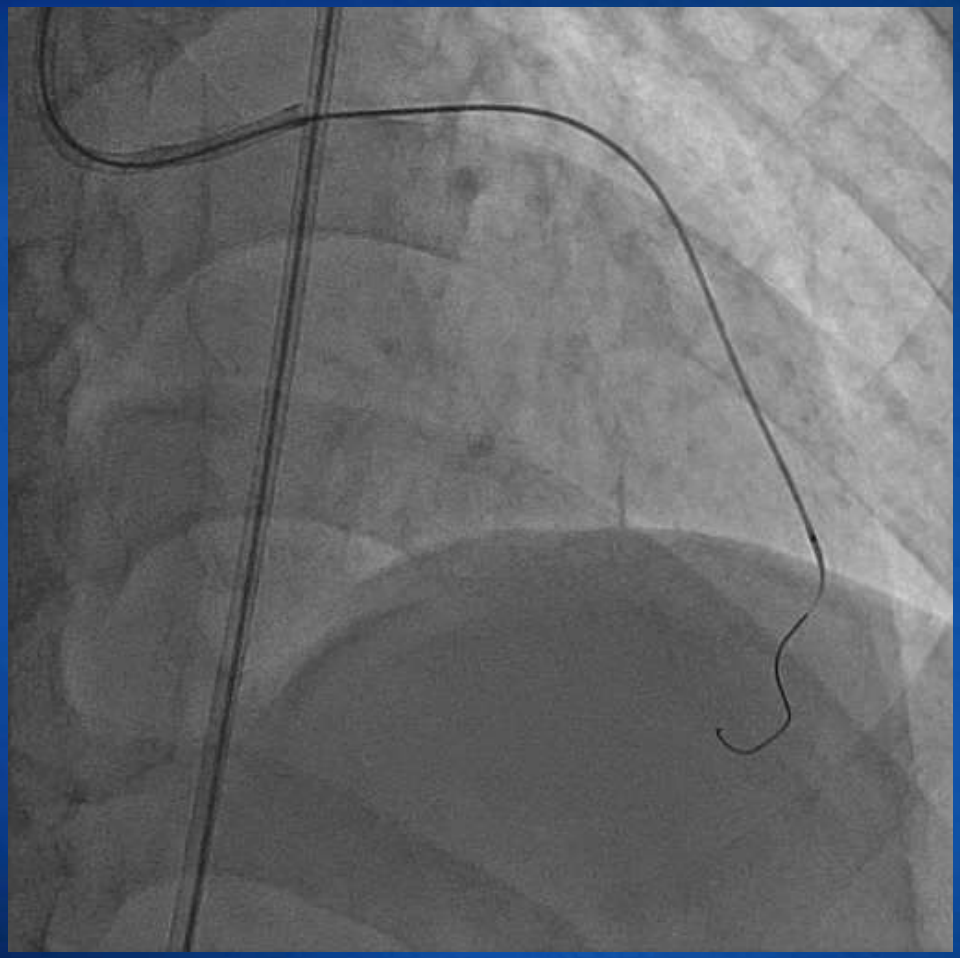
Rt CFA: XB 8 Fr -3.5 (SH)

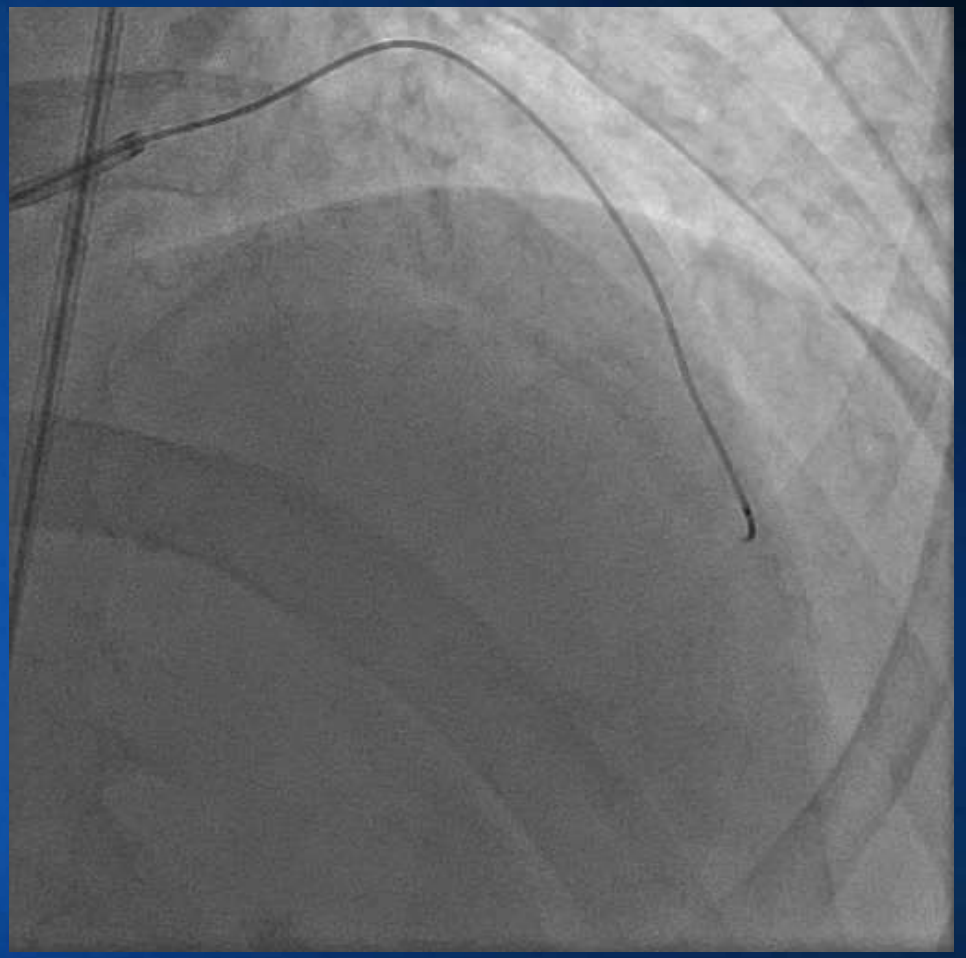
. To find interventional collateral from Dx or LCx





Corsair + 014" G/W : → SUOH 03

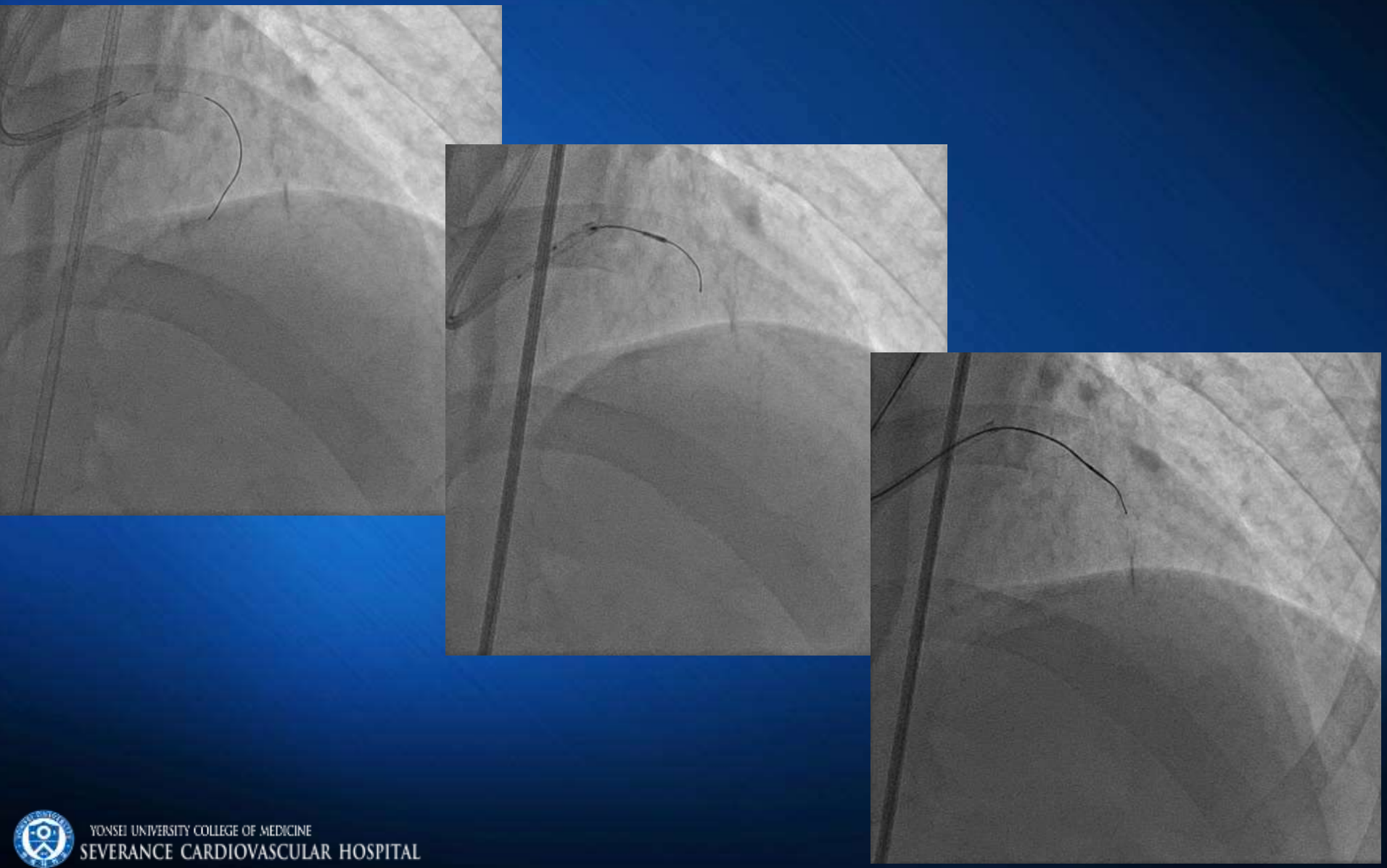




Collateral channel tracking … **Failed …**

Re-try of antegrade CTO-PCI using IVUS guidance

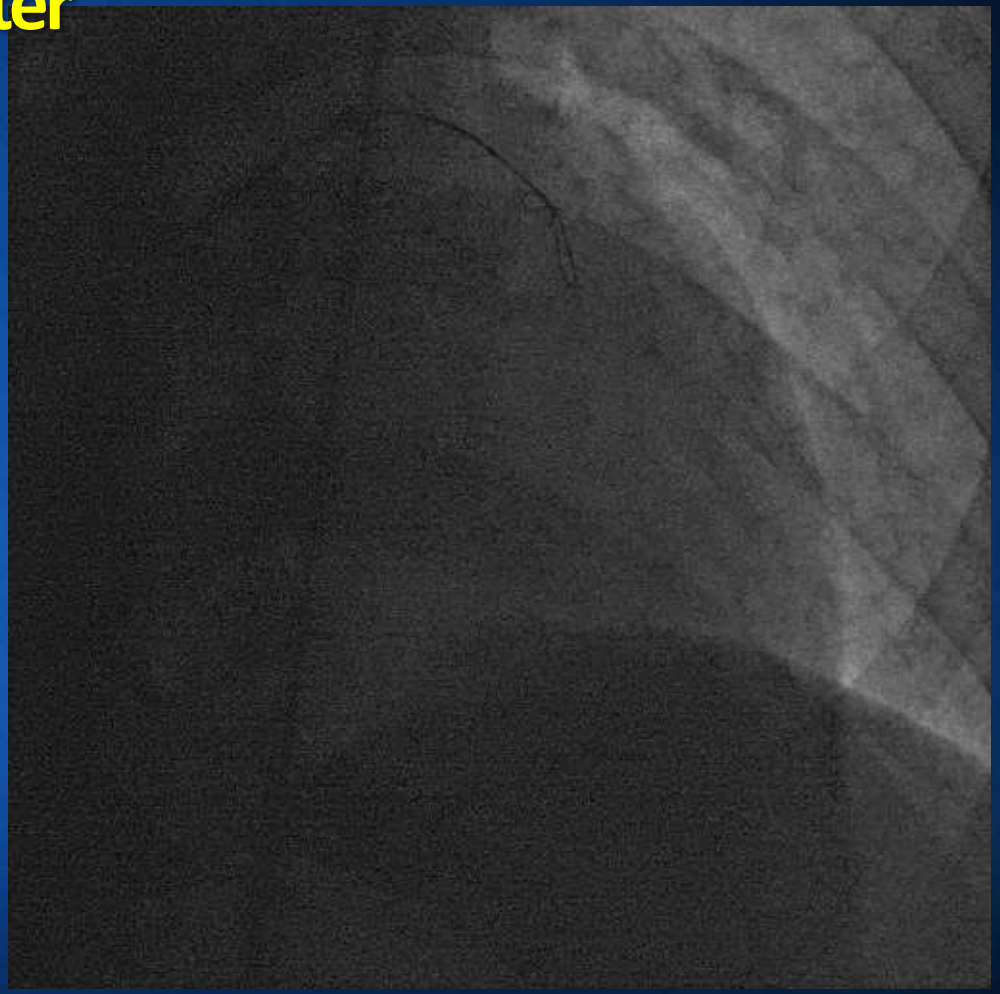
IVUS guided LAD wiring :Corsair with Gaia 1st → Gaia 3rd → XTR

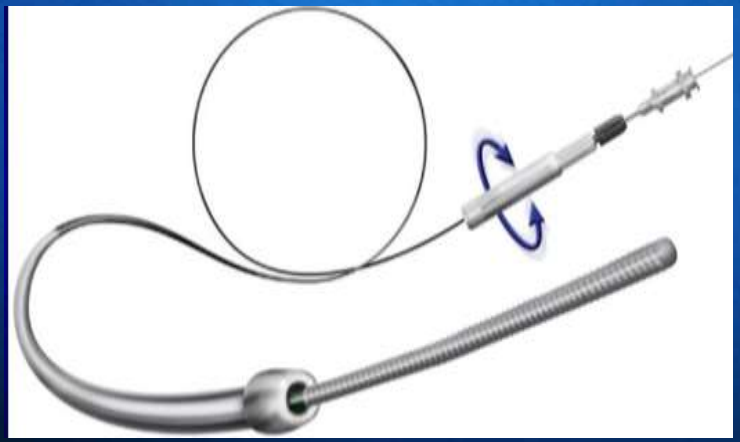


Antegrade re-entry dissection (ADR)

GW Advancement by Knuckle wiring c XT-R

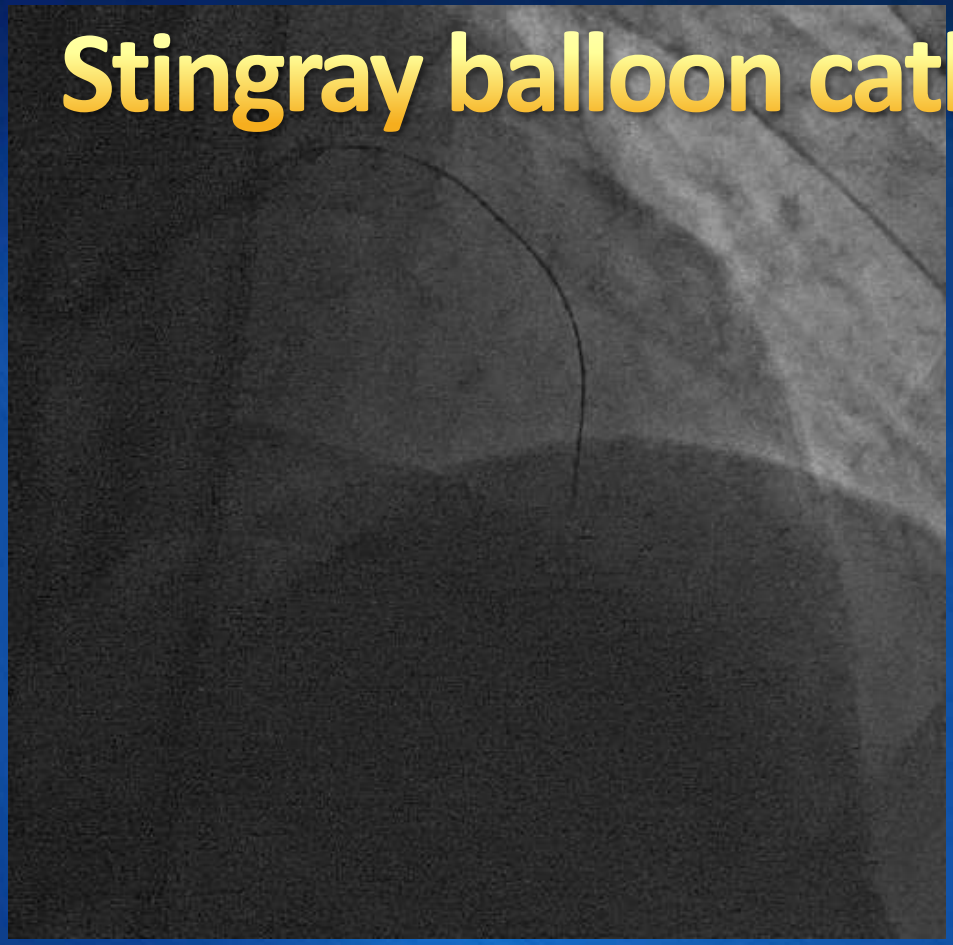
→ CrossBoss Crossing Catheter

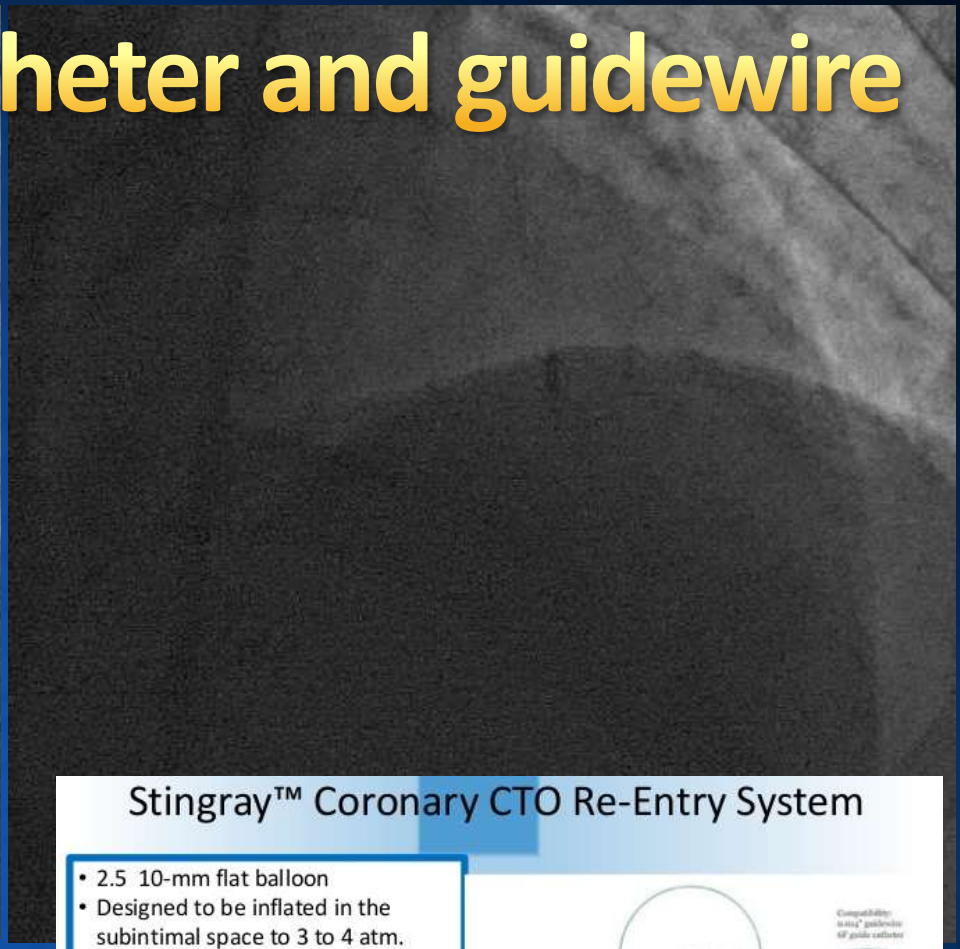




CrossBoss Crossing Catheter

Stingray balloon catheter and guidewire



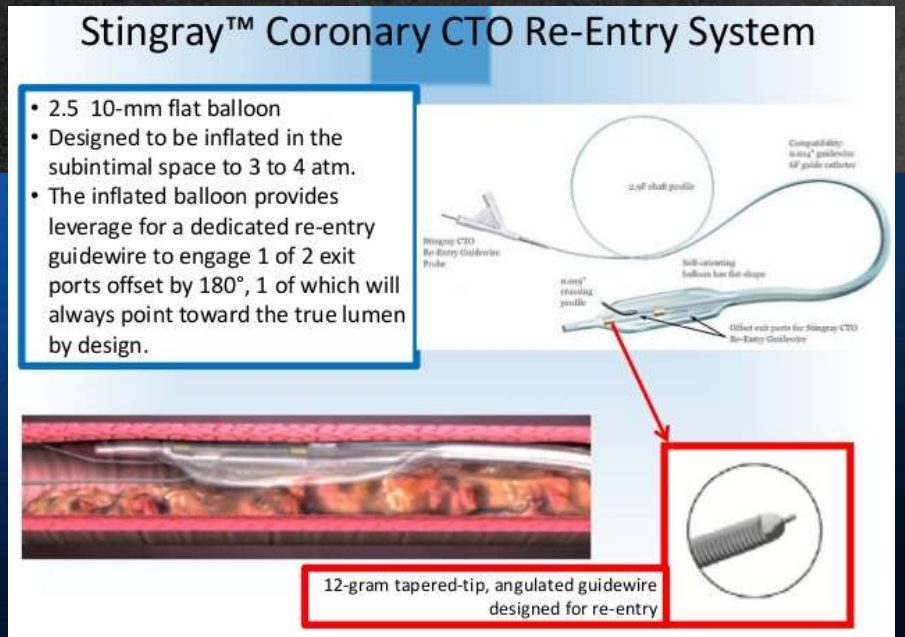


- Miracle 12

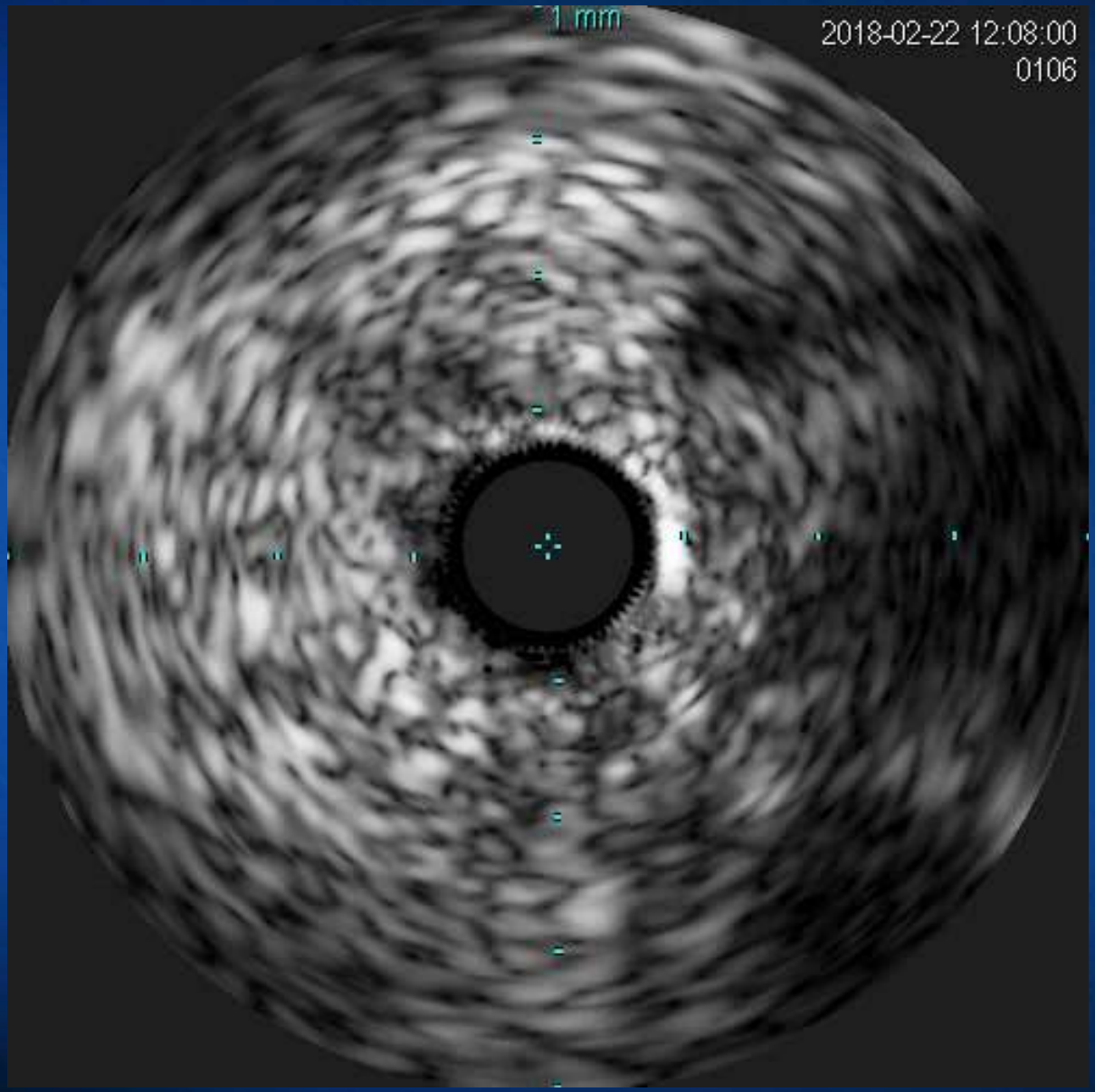
→ Stingray cath

→ Remove wire & deflation of Stingray cath to reduce subintimal space

→ Inflation of Stingray cath



Stick-and-swap re-entry; Stingray wire → Pilot 200 → Pilot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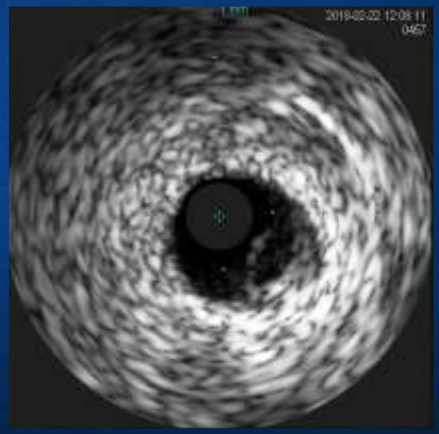
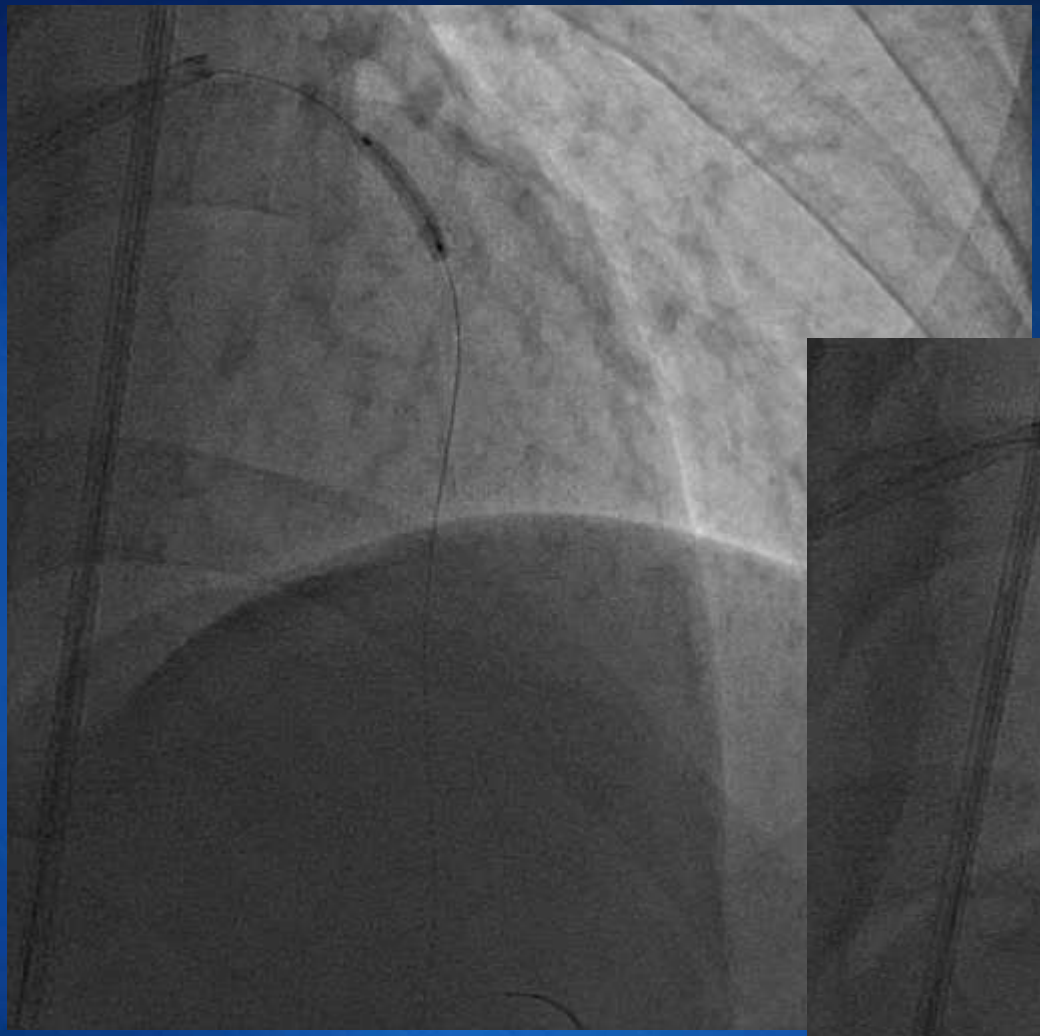
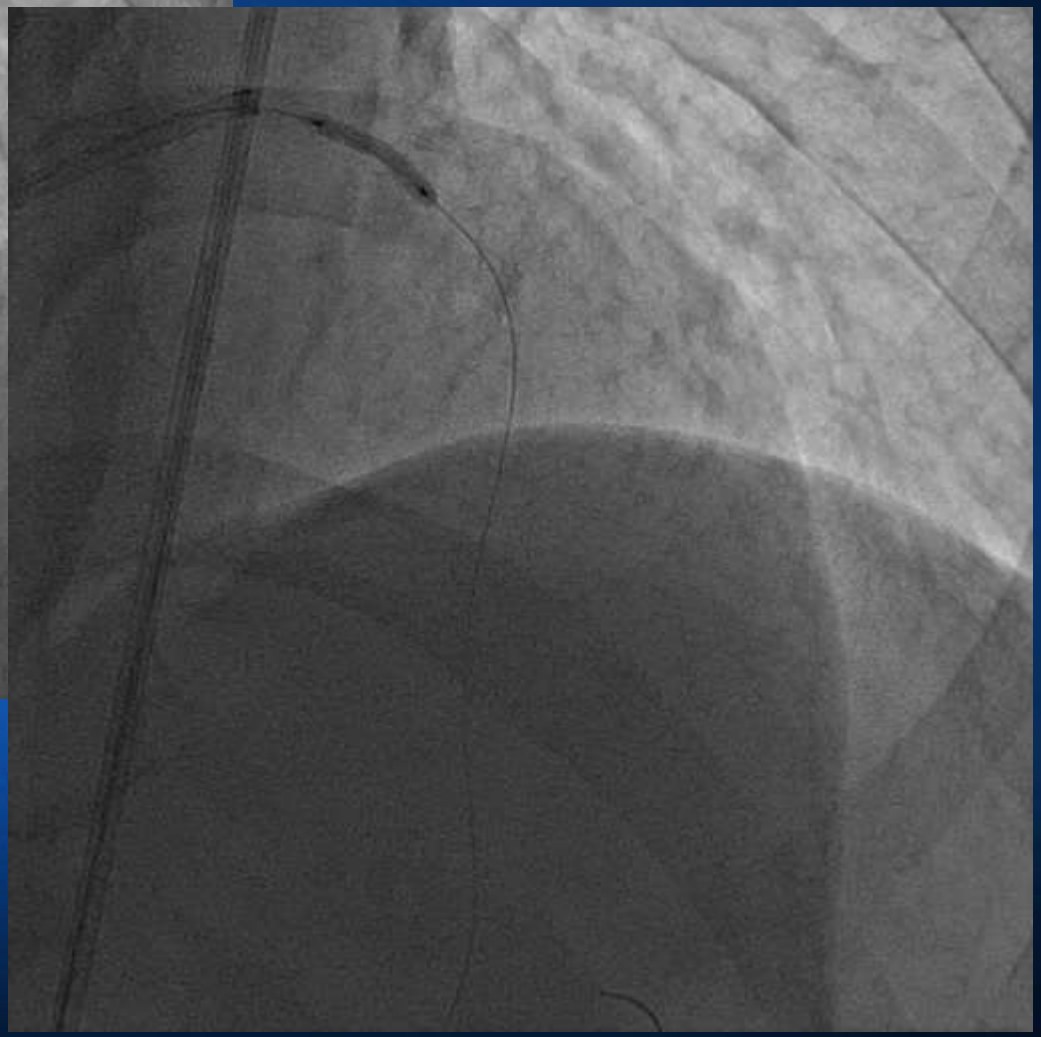
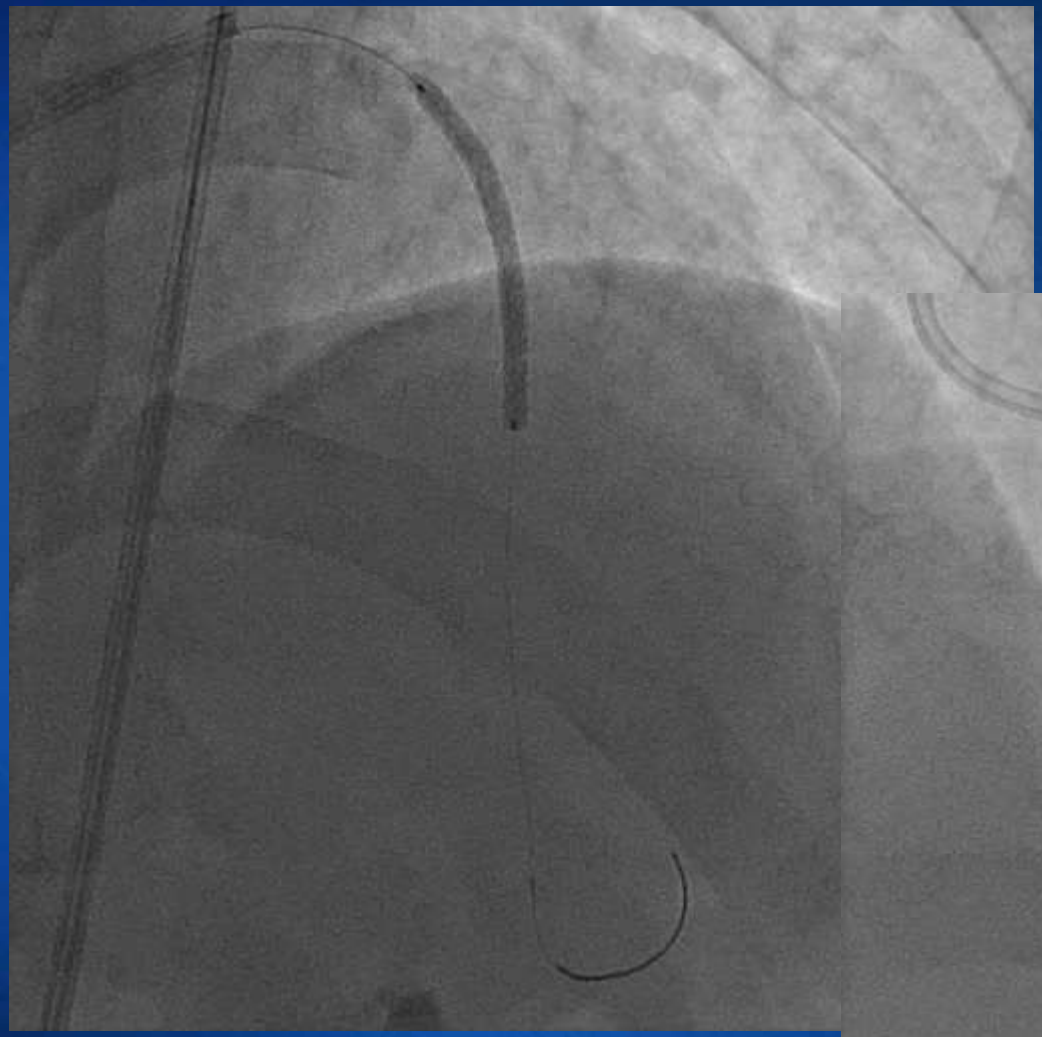




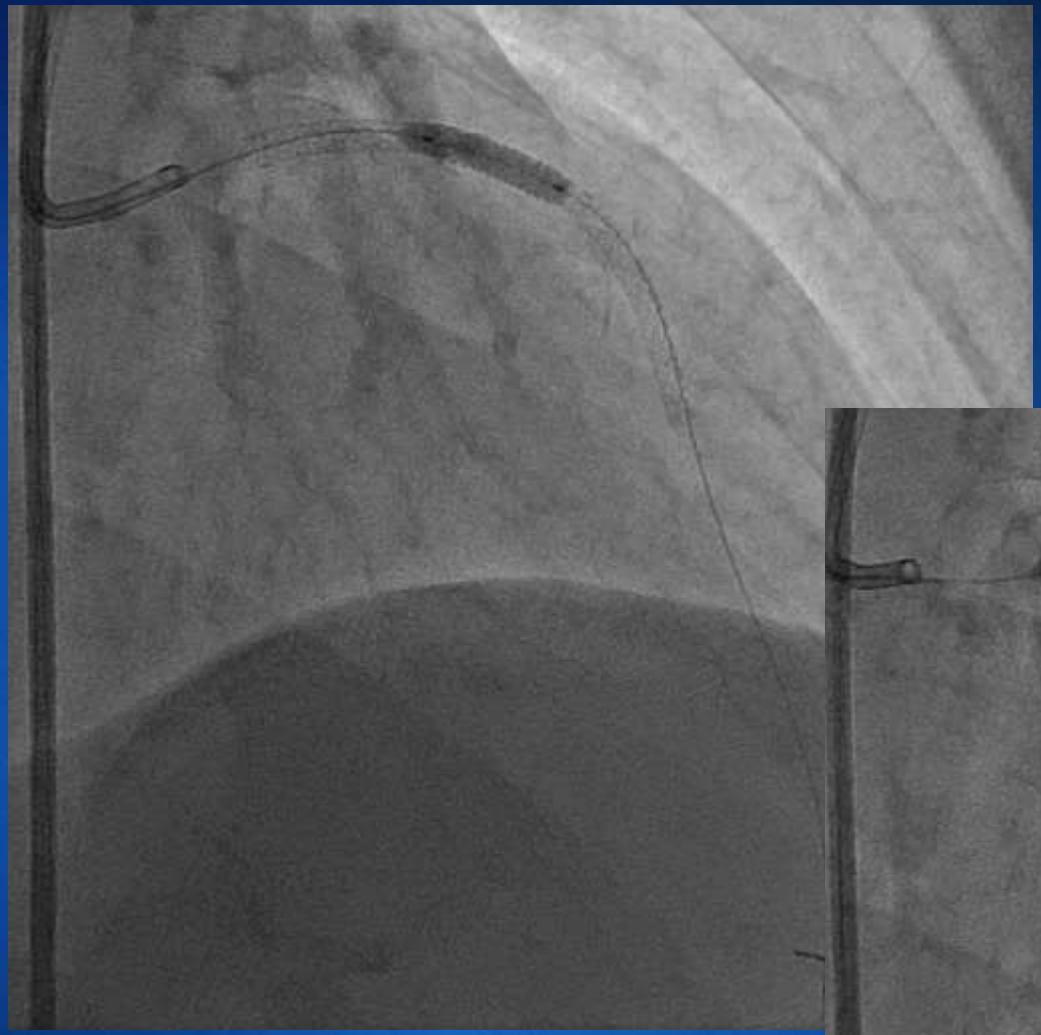


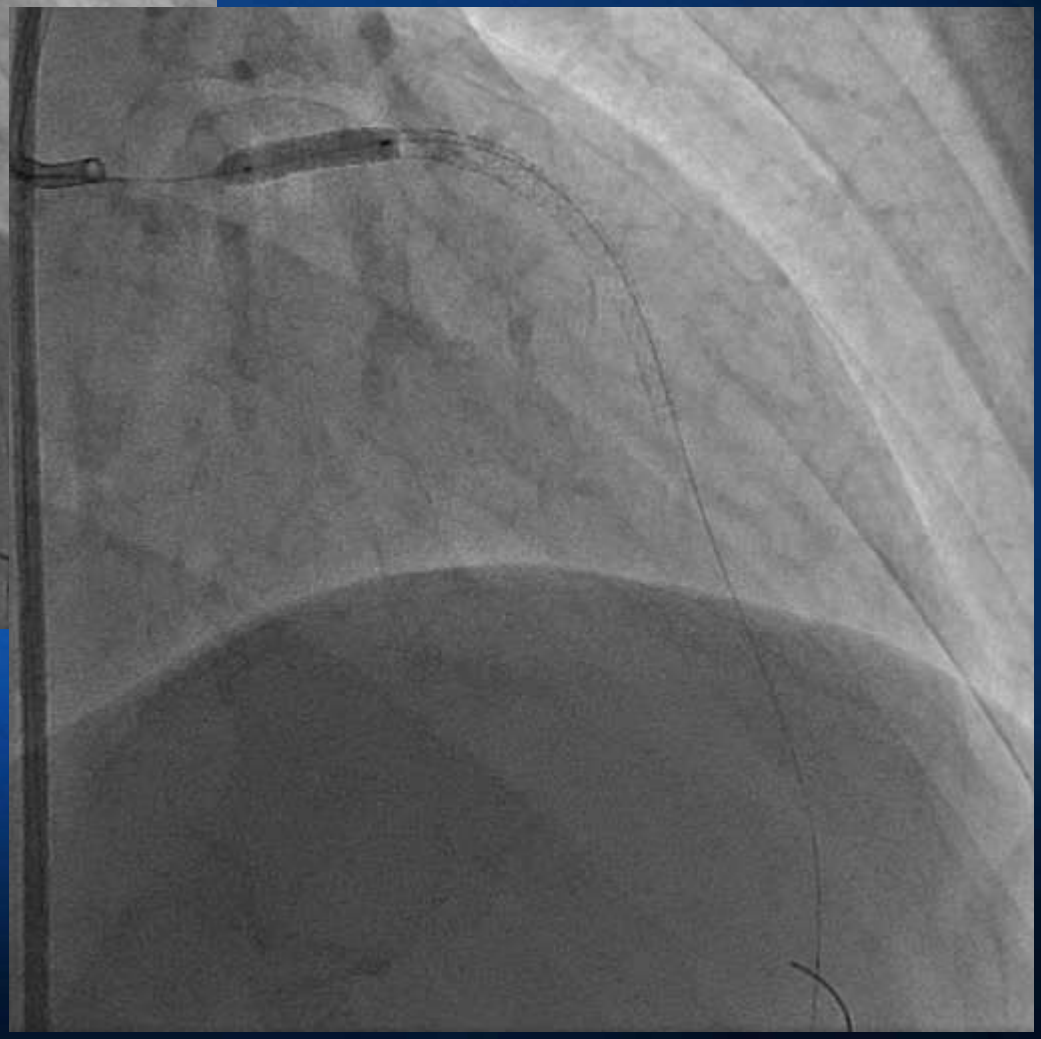
Pre-dilation; balloon 2.5*15



Resolute Onyx

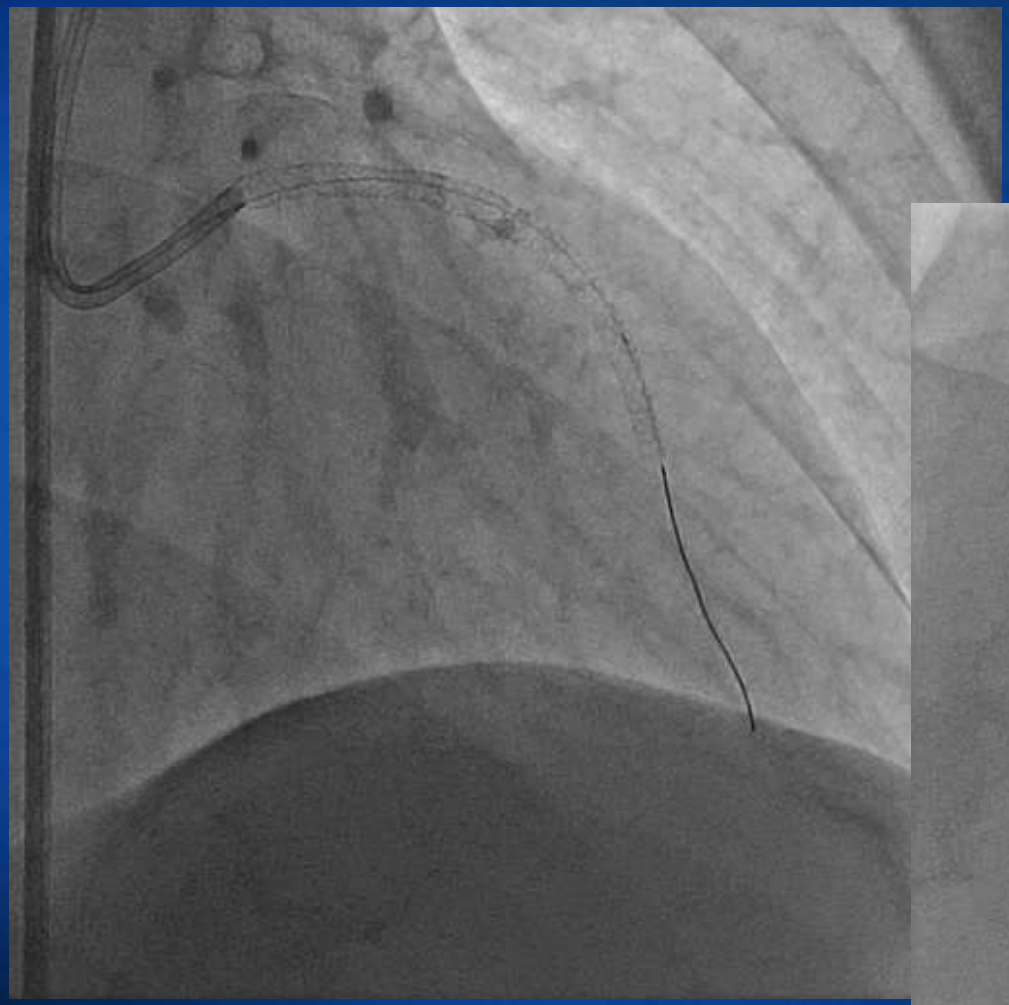
2.5x38 + 3.5x22 + 3.5x12





Post-dilation; NC balloon 3.5*15

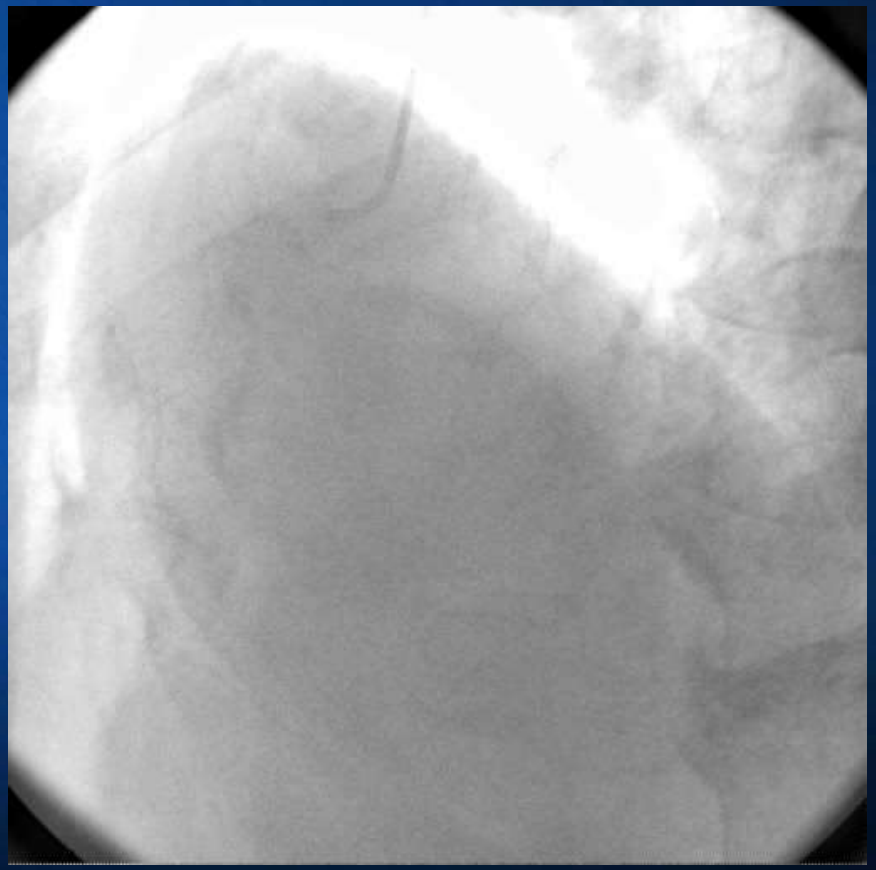
Final CAG



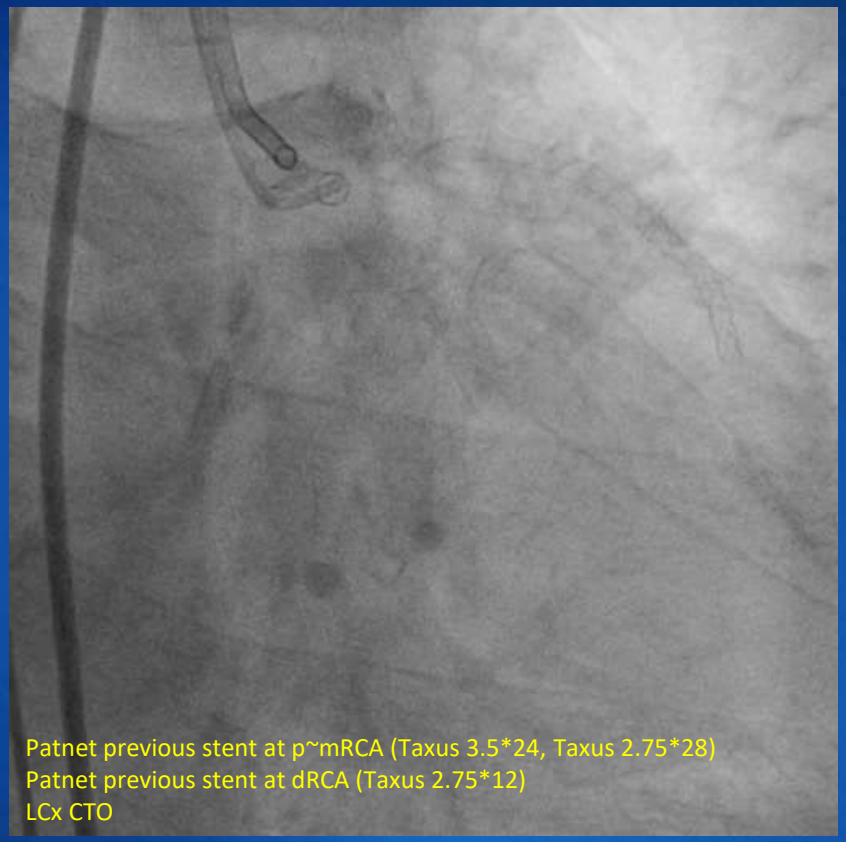
CASE 2: M / 68. Stable angina, CTO at pLCX // HTN, DM

- PHx: s/p PTCA c stent at mLAD (taxus 2.75x32, 2.75x28) (2004.10)
  s/p PTCA c stent at p-dRCA (taxus 3.5x24, 2.75x28, 2.75x12) (2005.3)
- Echocardiography: No RWMA, LVEF = 68%
- MIBI: Mild degree, small sized, reversible photon defect in the lateral wall
- TMT: Positive

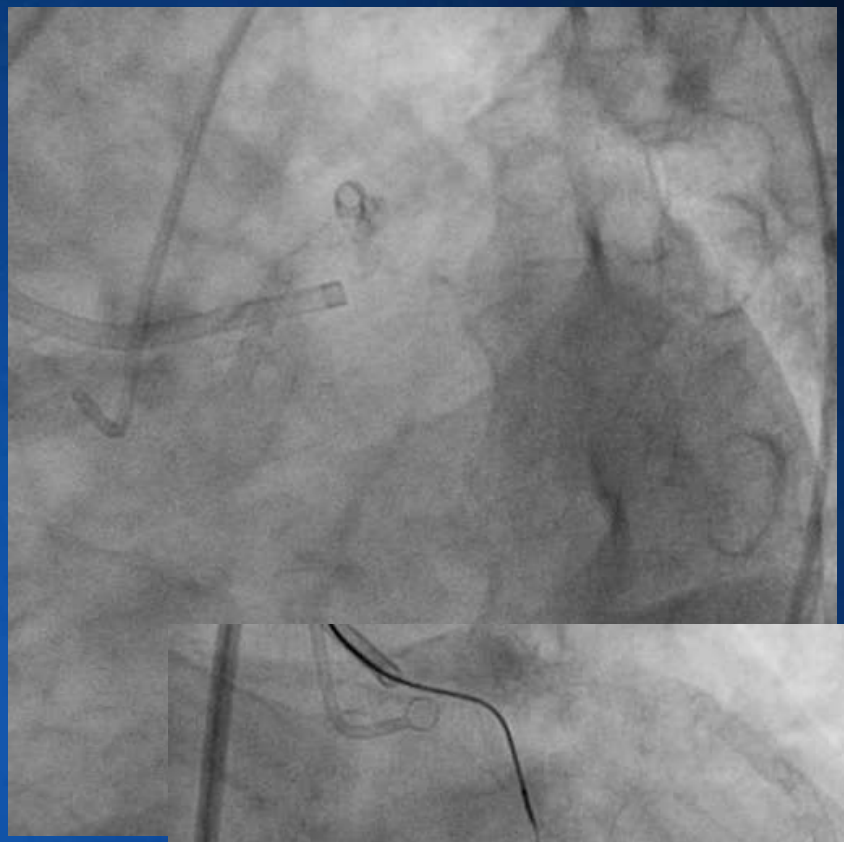
Coronary angiography (2005.12.19)

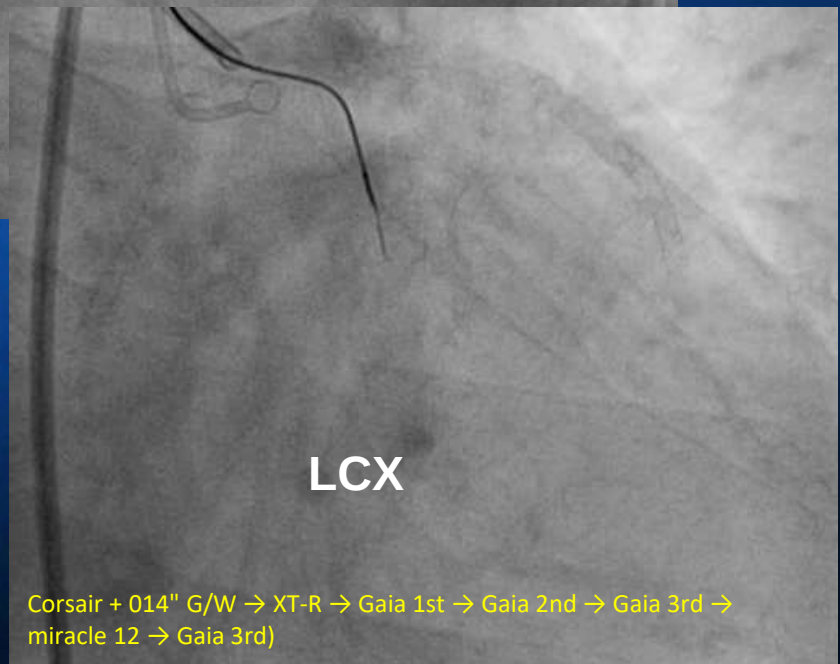


CAG & LCx PCI (2018.02.22)



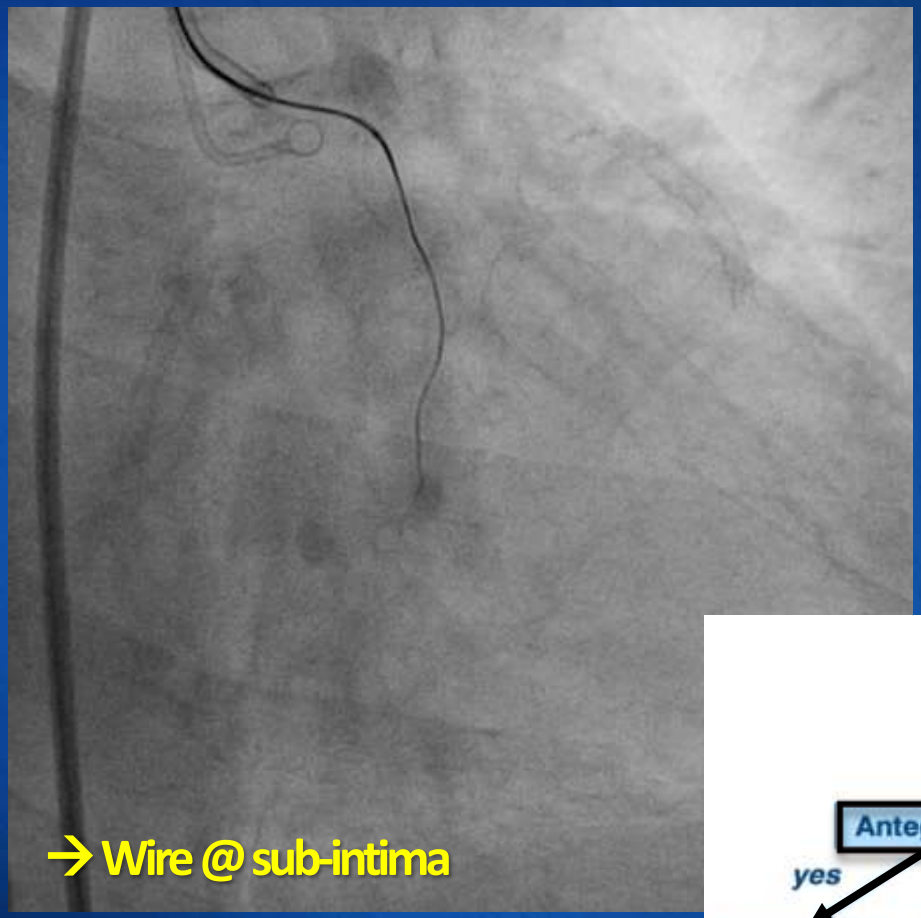
Patnet previous stent at p~mRCA (Taxus 3.5*24, Taxus 2.75*28)
Patnet previous stent at dRCA (Taxus 2.75*12)
LCx CTO

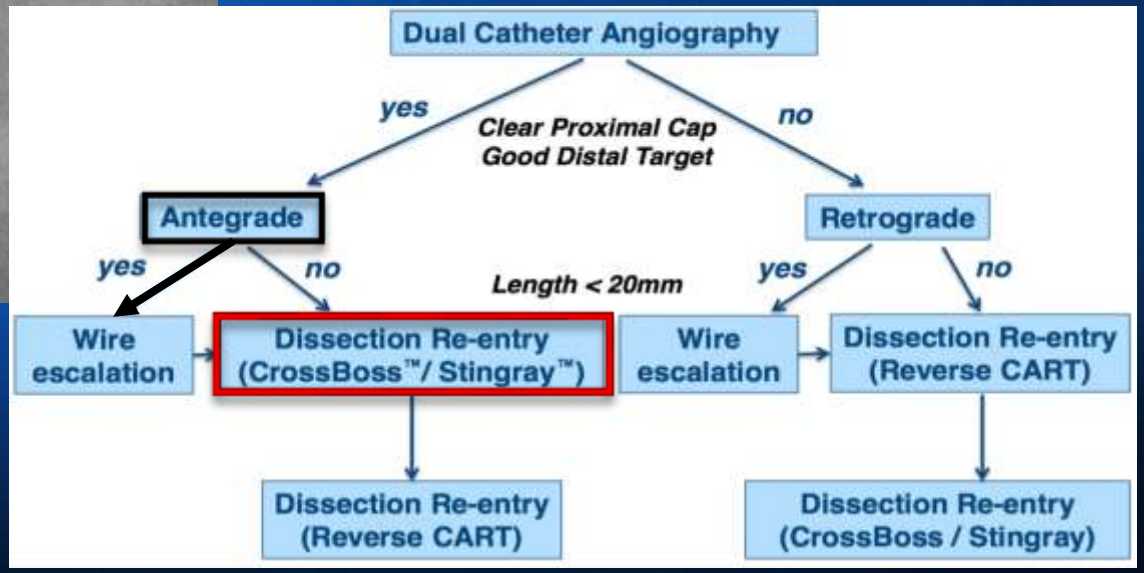




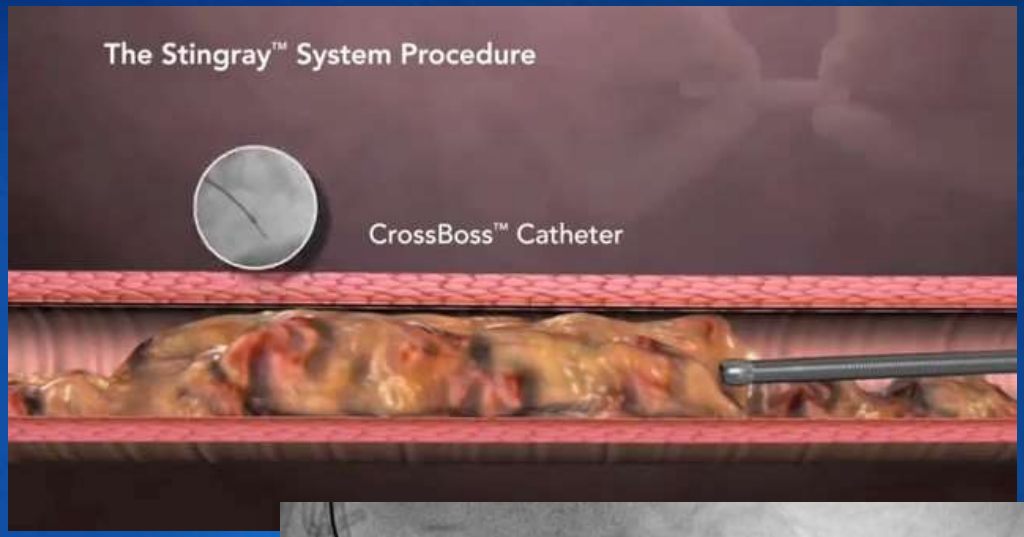
Corsair + 014" G/W → XT-R → Gaia 1st → Gaia 2nd → Gaia 3rd → miracle 12 → Gaia 3rd)

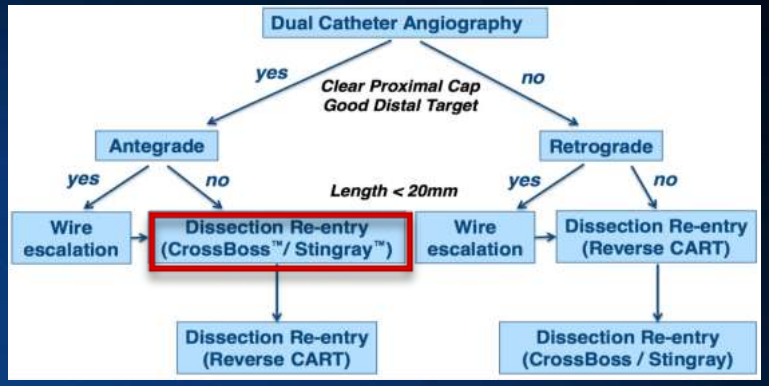
Antegrade CTO PCI with wire escalation

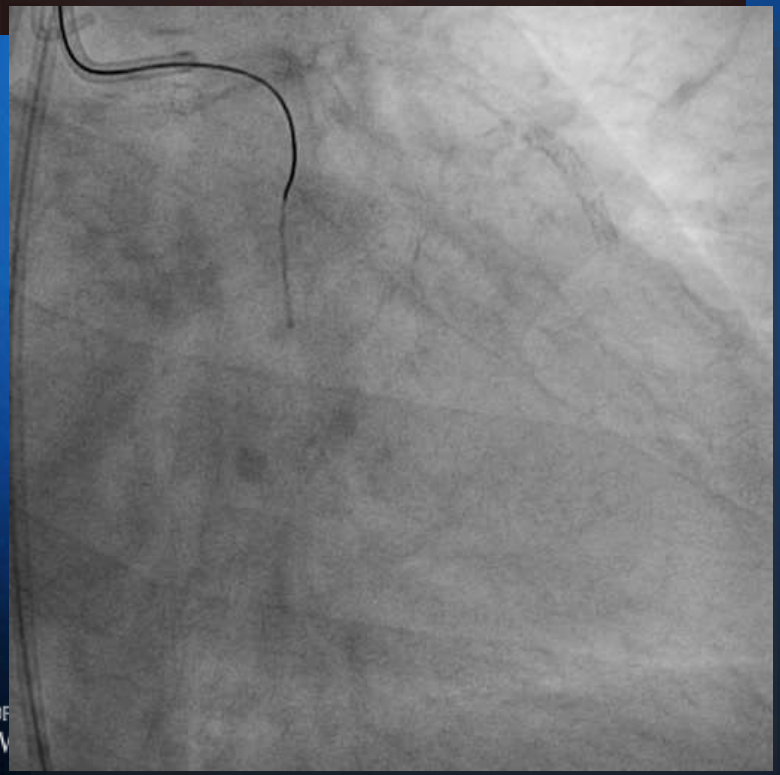


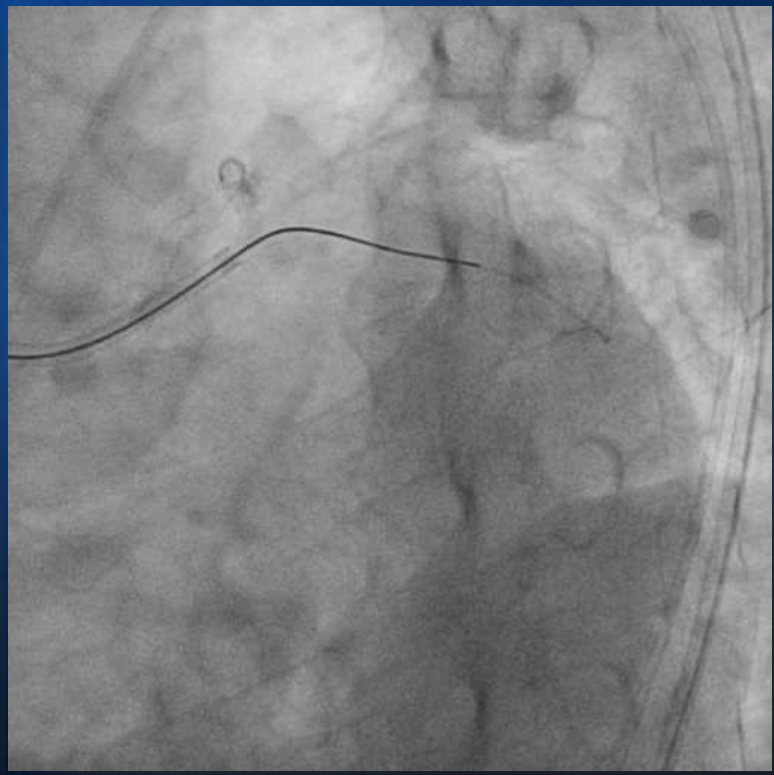


Change into ADR !!!



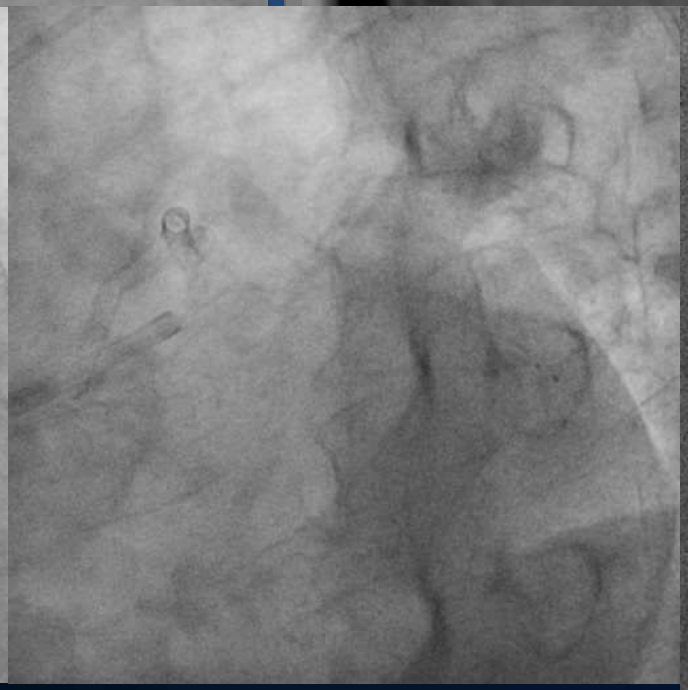


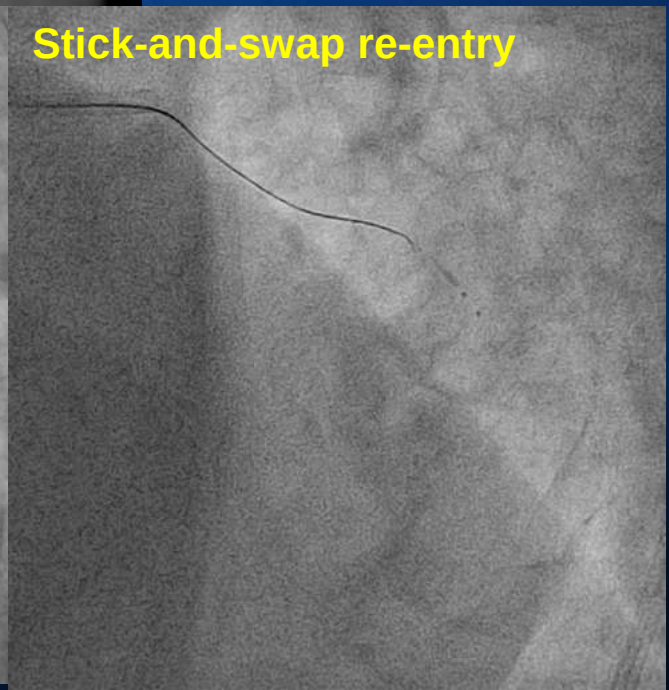




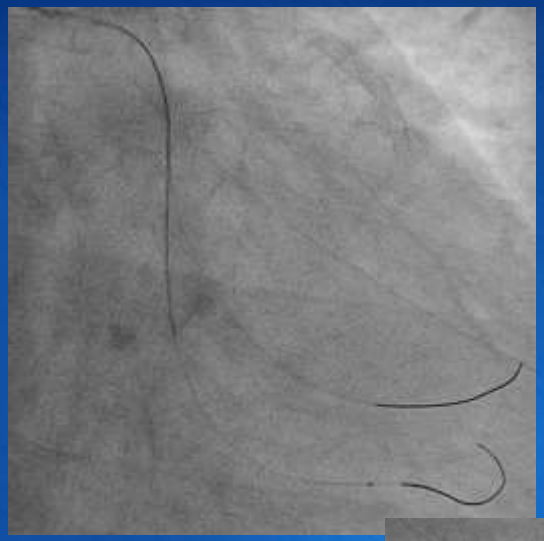
Stingray procedure

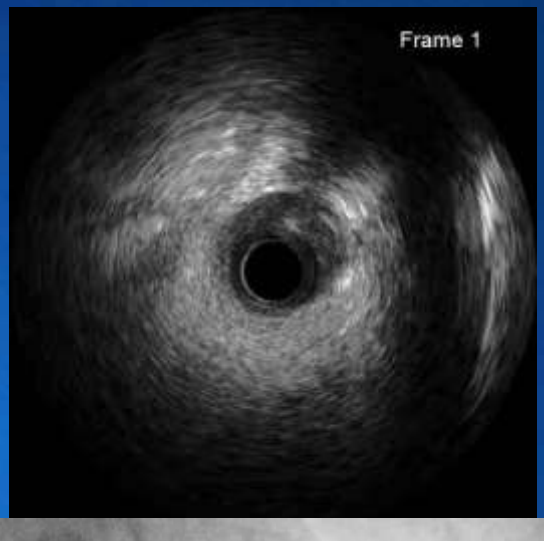
- Considering calcification and diseases status, LCx to 3rd OM (before calcification) would be the best spot.

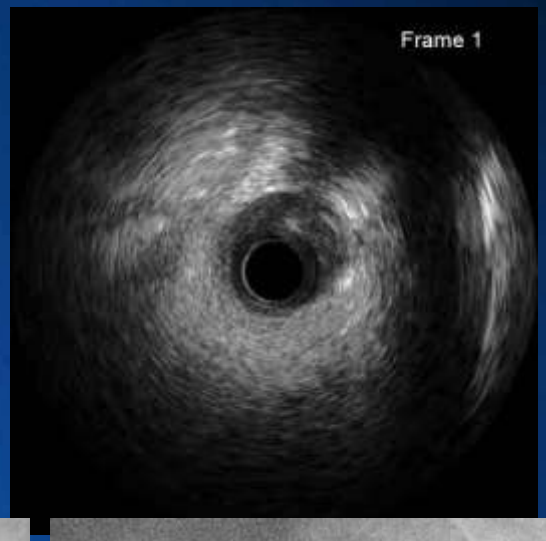


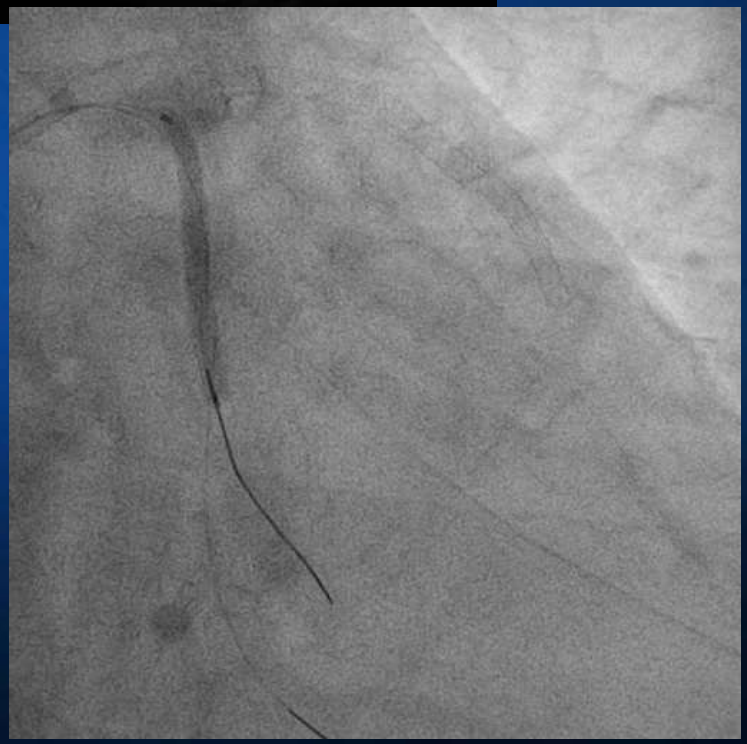


IVUS & Stenting



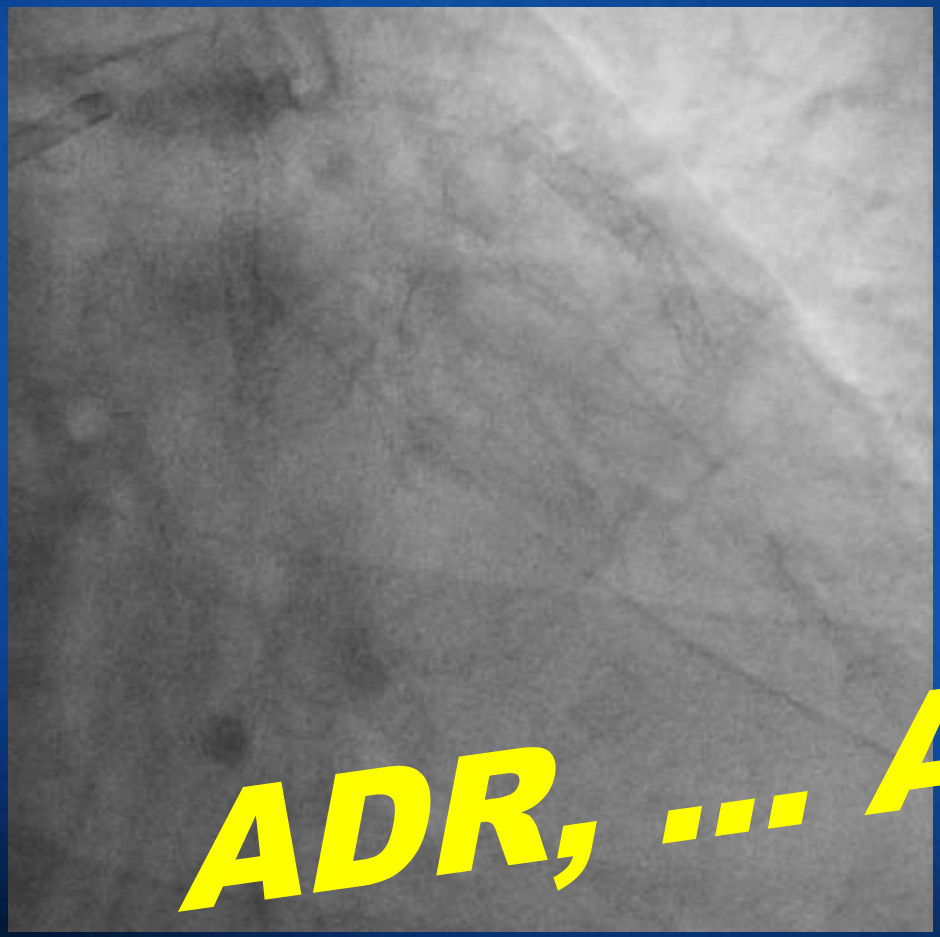






Xience alpine 3.0*38(10atm) at pLCx(Xience alpine 3.0*38)

Final CAG after post-dilation & IVUS

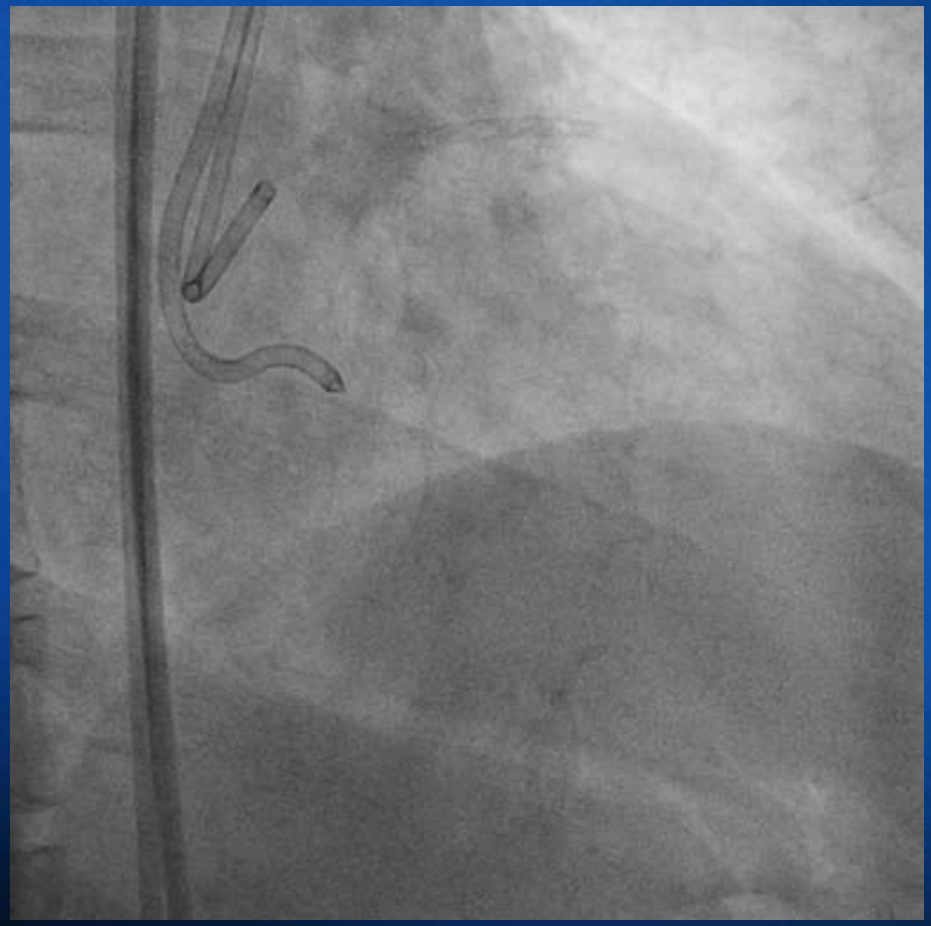


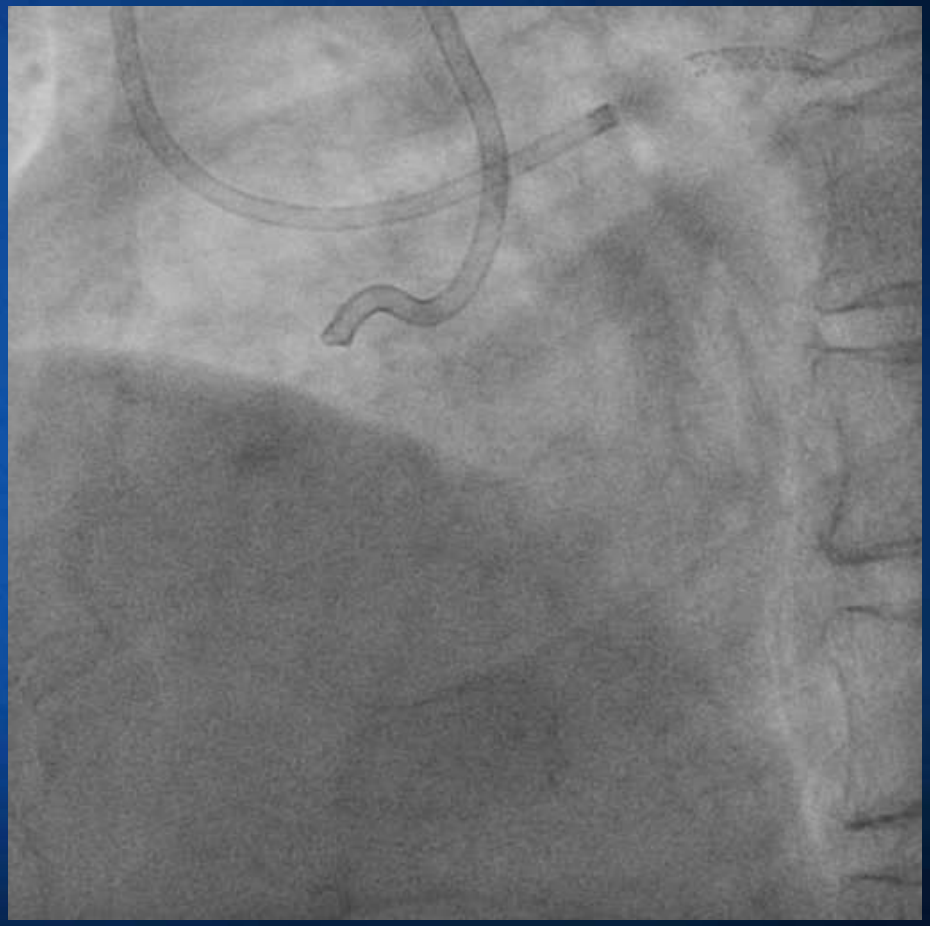
ADR, ... Almighty?

Case 3. RCA CTO

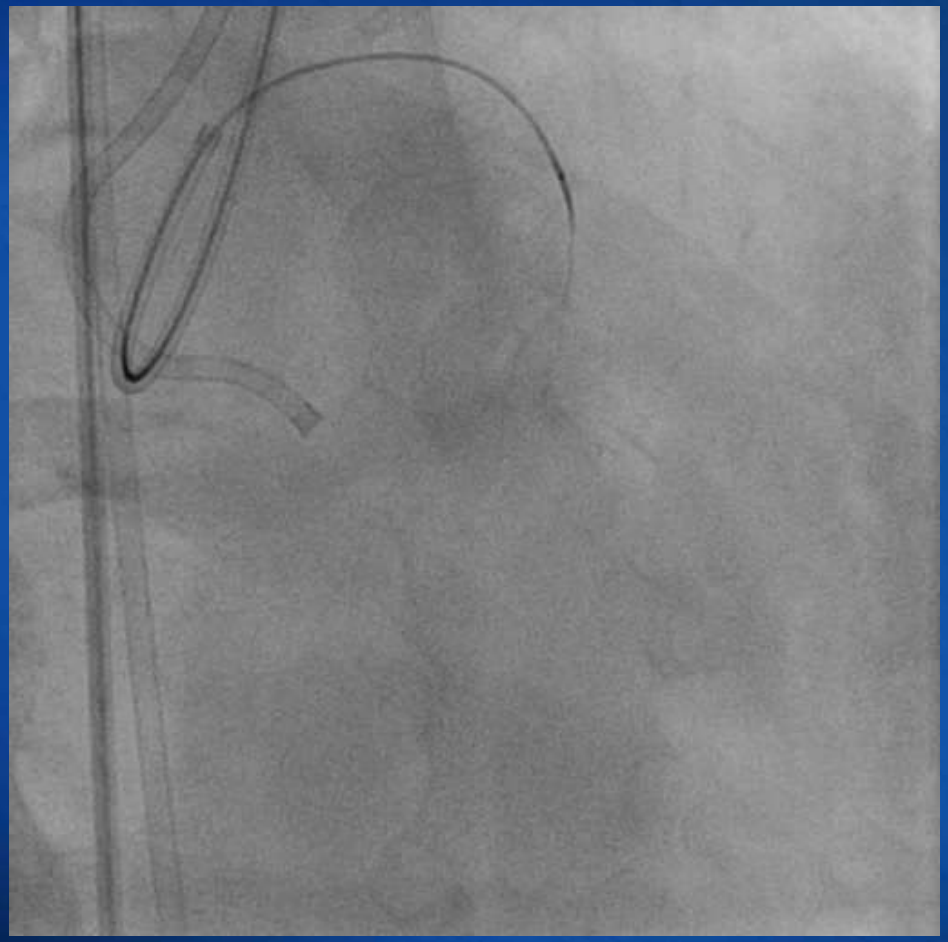
- M/67
- PHx: CAOD 3VD s/p PCI at OM (Biomime 2.75x24)
- Echo: no RWMA, EF 77%

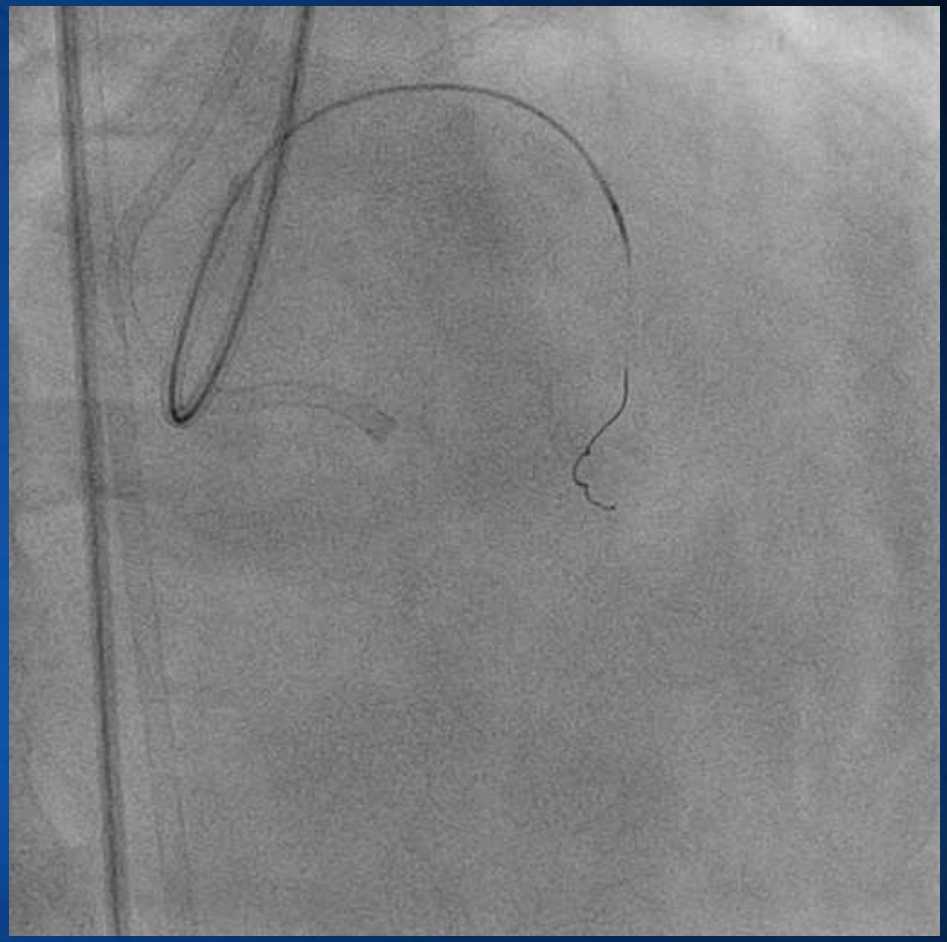
- Rt – AL-1 8Fr
- Lt – XB 7Fr





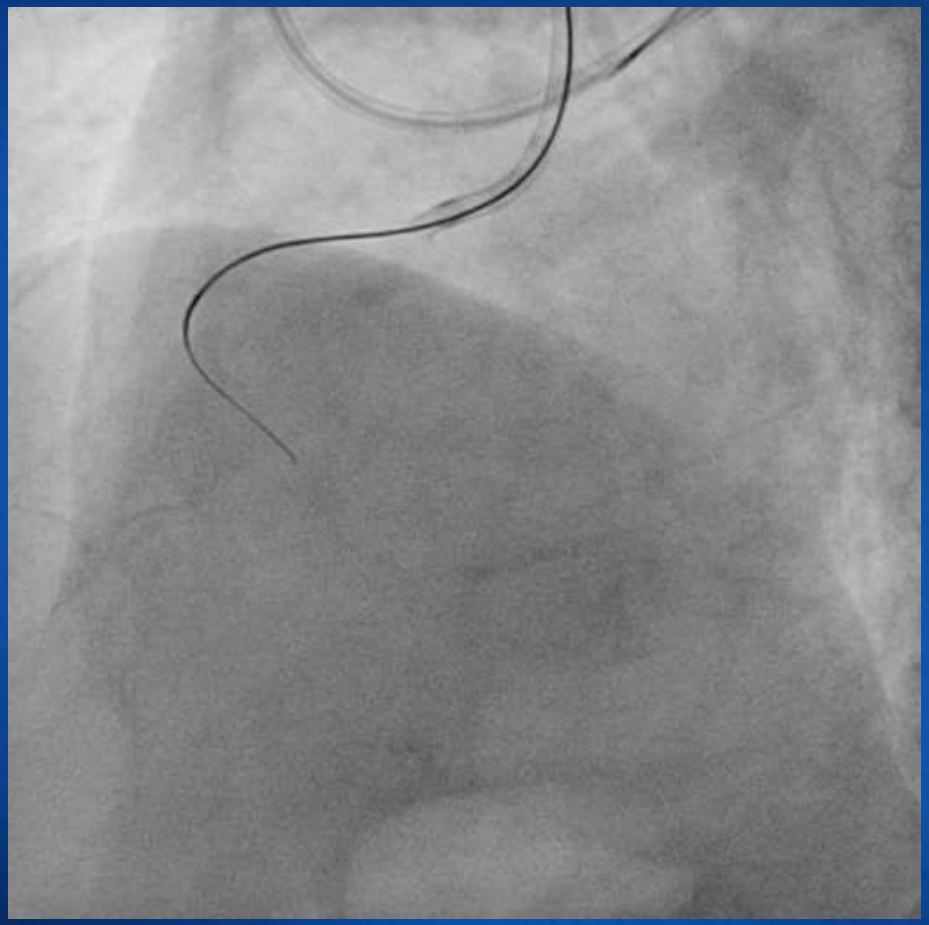
Septal channel tracking for Retrograde approach

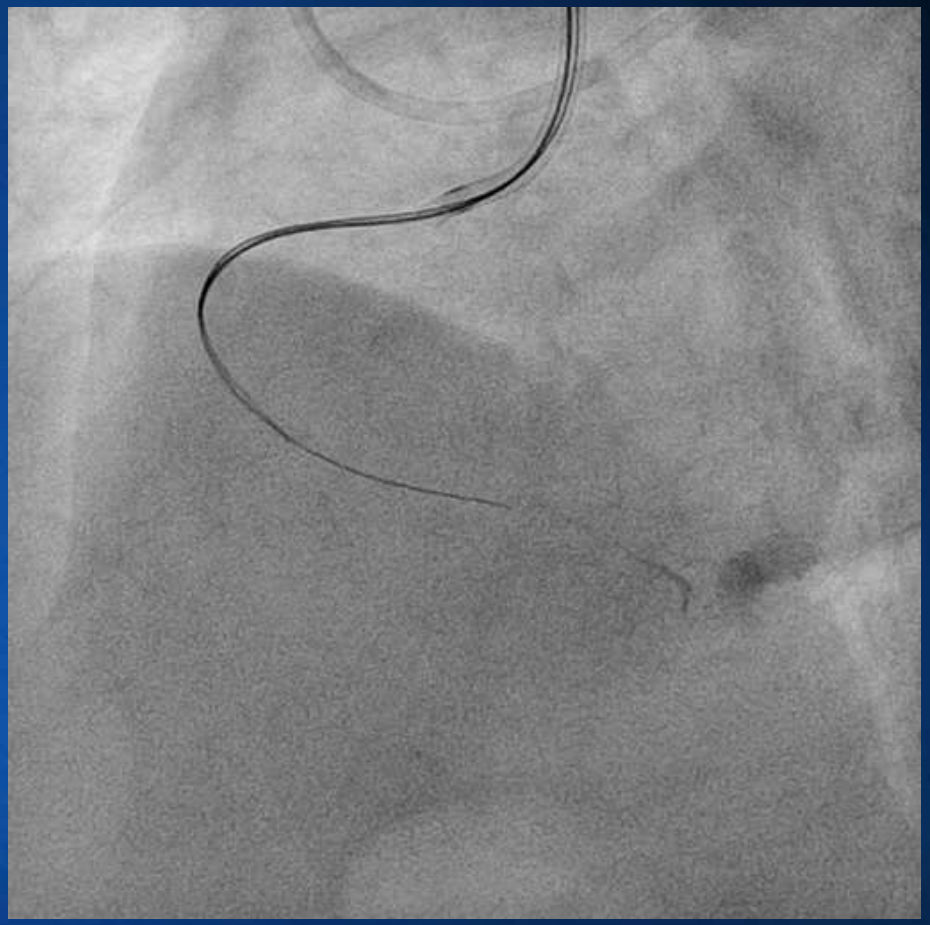




- Corsair with 014" G/W (Runthrough → Suho03) → Fail to negotiate

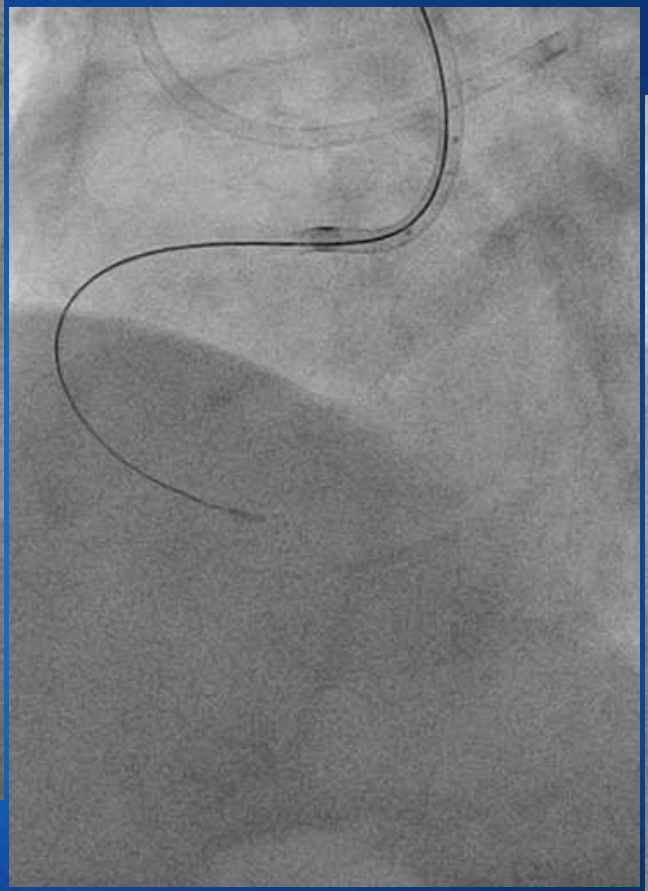
Antegrade approach

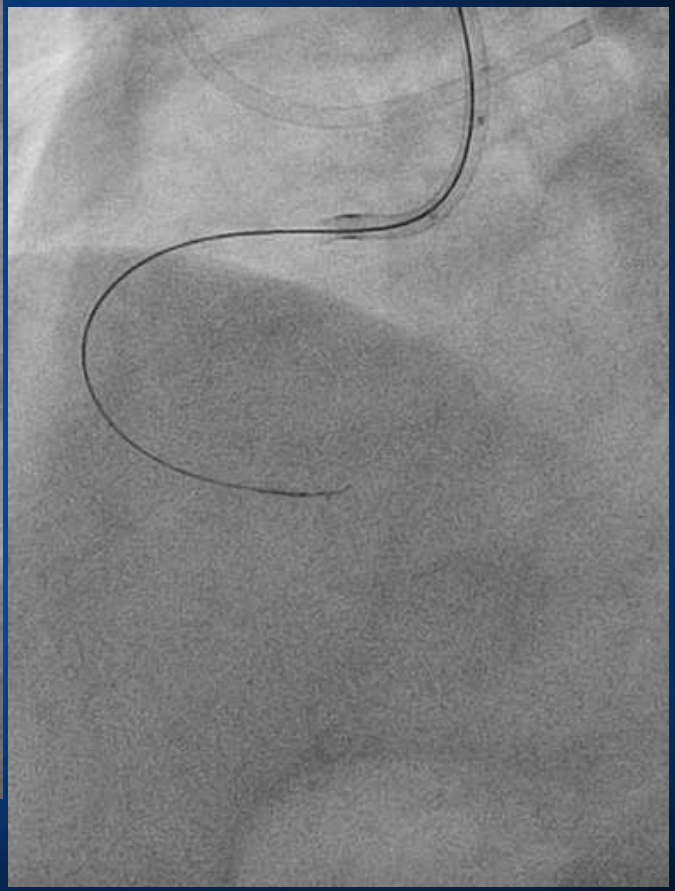




- Corsair with 014" G/W (→ XTA → Gaia 1)
- Parallel wire technique: Gaia1 & Gaia1 → Gaia2 → miracle 12 → Failed

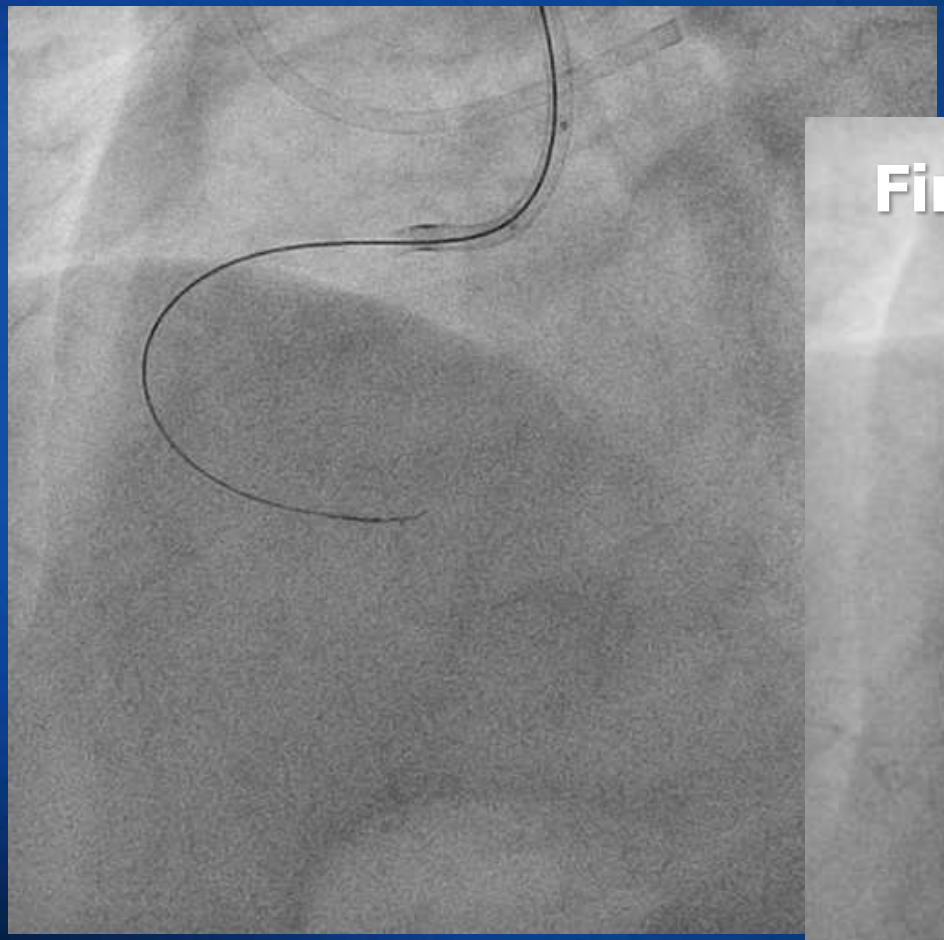
Antegrade Dissection Reentry

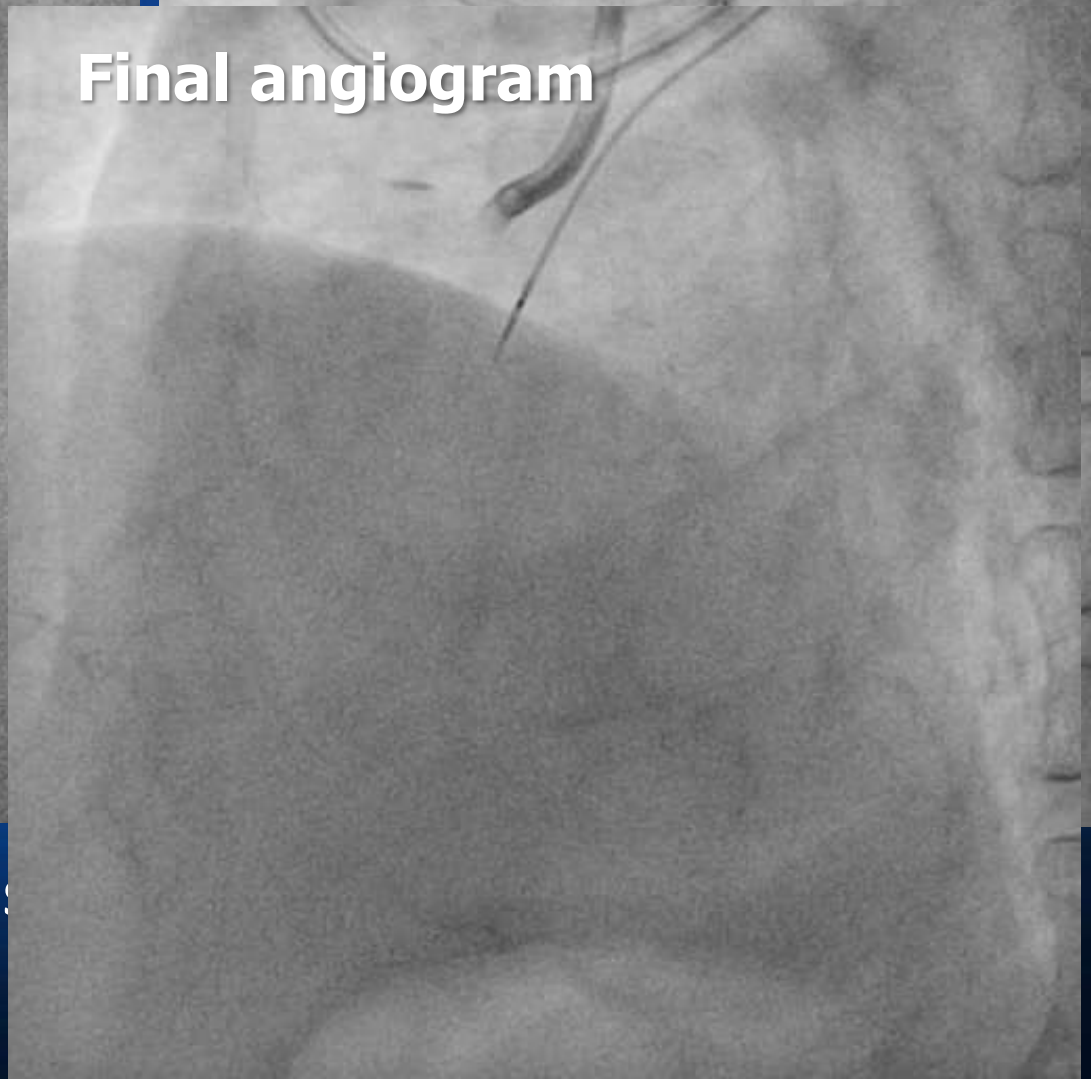




- ADR with Stingray balloon & Stingray wire
- **Stick-and-swap** re-entry; Stingray wire → Pilot 200T

Repeat Stick-and-Swap





- Repeat Stick-and-swap re-entry;
  → Failed reentry

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CORONARY

Randomized Comparison of a CrossBoss First Versus Standard Wire Escalation Strategy for Crossing Coronary Chronic Total Occlusions

The CrossBoss First Trial

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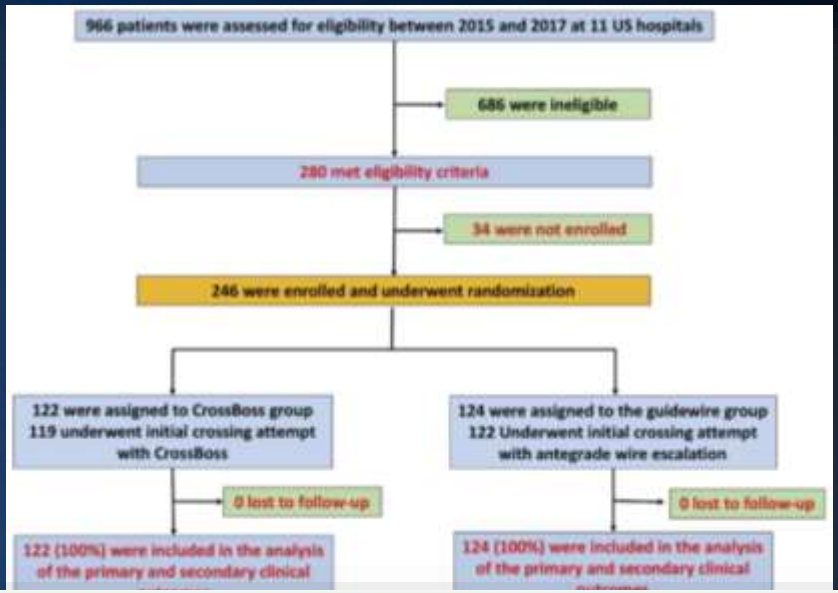
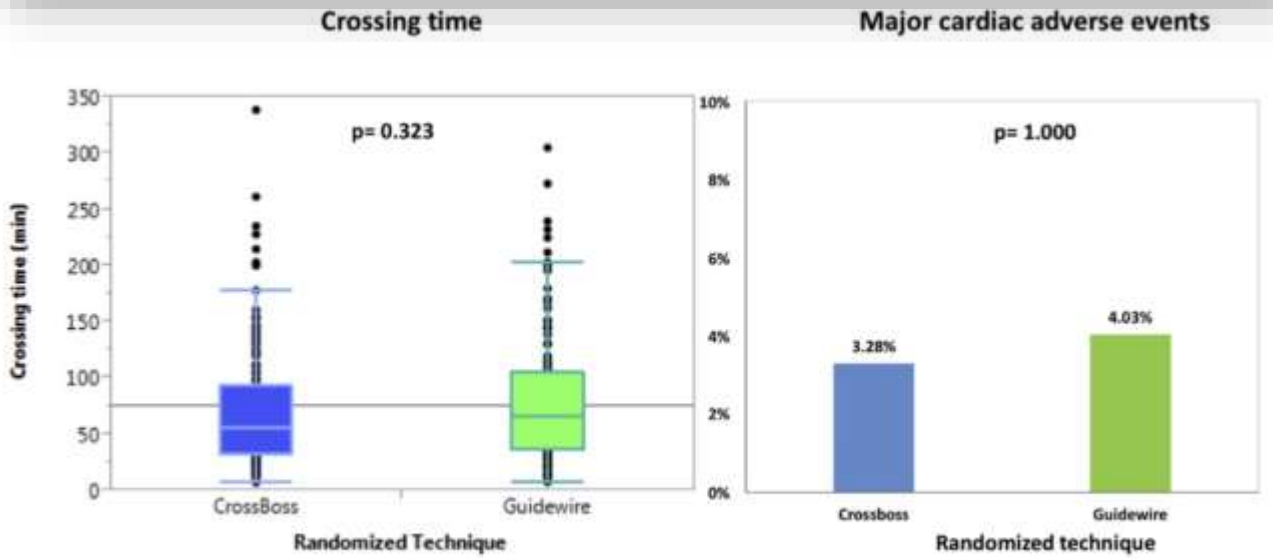
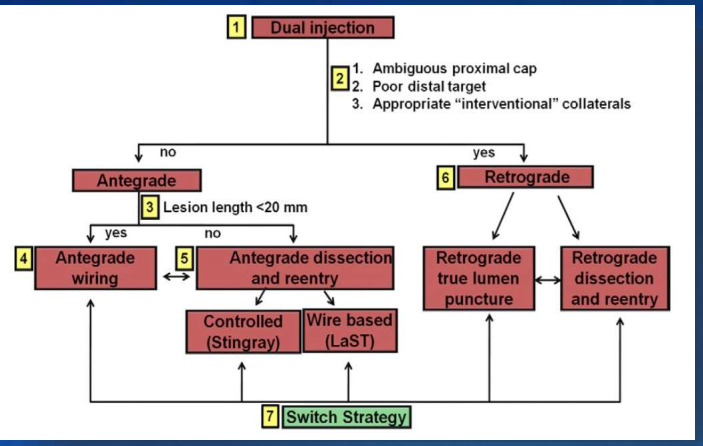


Technical success	108 (88.5)	108 (87.1)	0.846
Procedural success	104 (85.3)	103 (83.1)	0.728

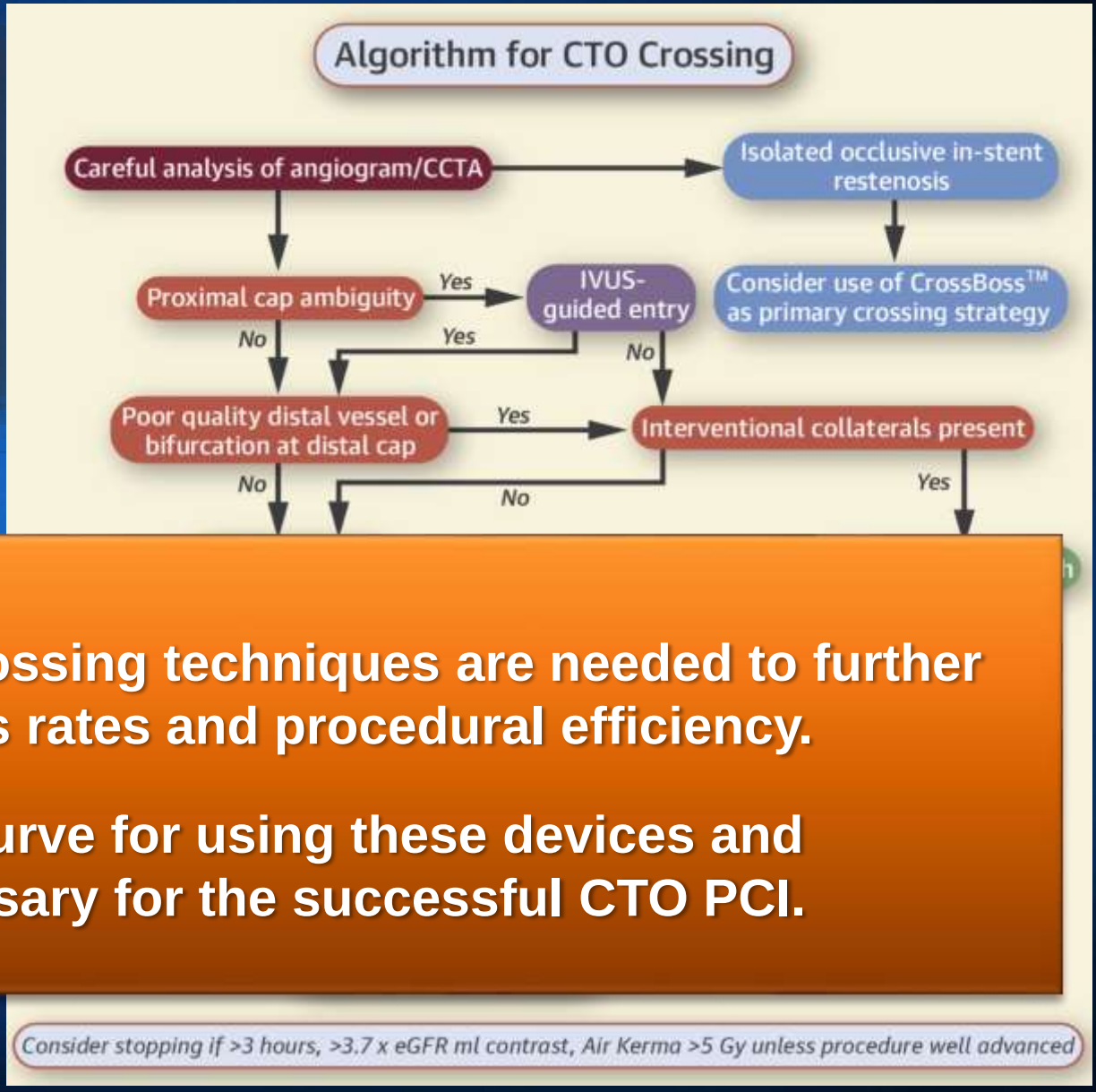


Time to cross the chronic total occlusion or abort the procedure (primary efficacy endpoint) and incidence of procedural major adverse cardiovascular events (primary safety endpoint).

A good time to choose ADR ?



Brilakis ES, et.al., JACC Interv 2012;5(4): 357-79



Conclusions

- **New devices and crossing techniques are needed to further improve the success rates and procedural efficiency.**
- **However, learning curve for using these devices and techniques is necessary for the successful CTO PCI.**

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Thank you for your attention