

# **Challenging Case Studies: Percutaneous Coronary Interventions and Post-discharge Antithrombotic Management**



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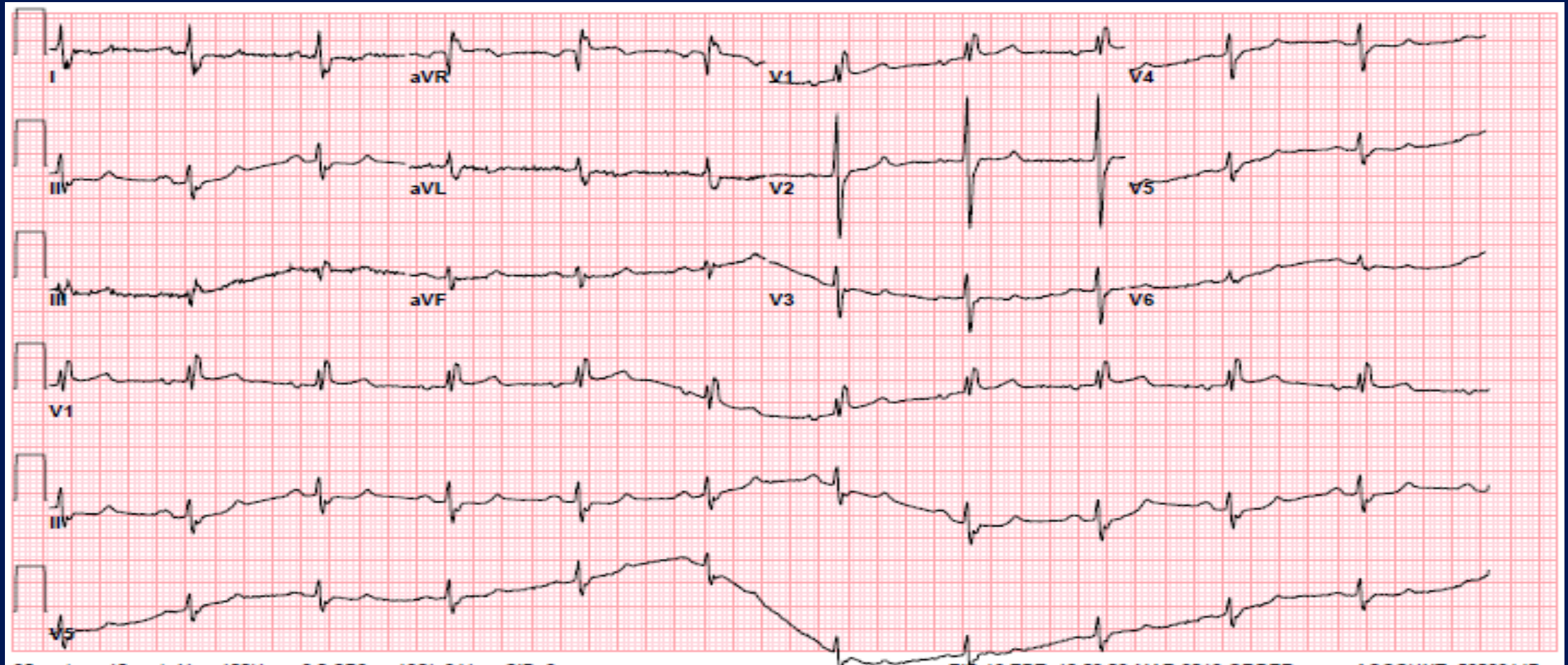
# Clinical presentation

- 72y, M
- CVRF: DM, HTN, HLP, former smoker
- H/o multiple PCI and known RCA CTO
- Chronic Afib
- CCS III (chest pain on low level exertion since few weeks), NYHA II
- Troponin I neg.
- Current medication:
  - Apixaban 2.5mg BID
  - ASA 81 mg
  - Glipizide XL
  - Losartan
  - Isosorbide
  - Nebivolol
  - Ranolazine
  - Rosuvastatin

# Laboratory results

- Cardiac biomarker:
  - Troponin I: negative
  - CK-MB: negative
- Hb/HtK: 13.3/39.7, PLT 166
- Coagulation markers:
  - INR 1.2
- Renal:
  - sCrea 1.8 mg/dl

# ECG



# Catheterization findings

## CATHETERIZATION

### Coronary Angiography

Dominance: Left

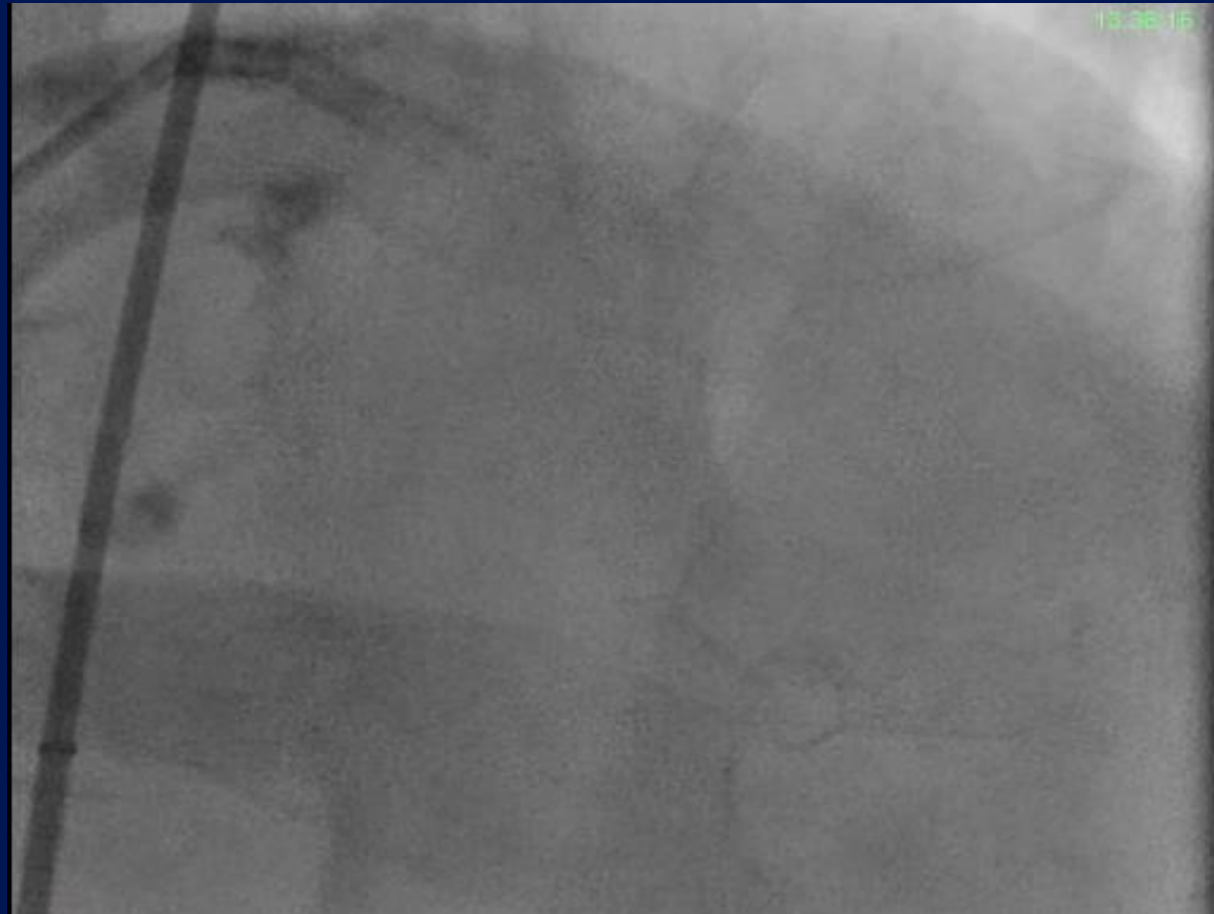
Spasm: No

Anomalies: None

<i>Vessel</i>	<i>Segment</i>	<i>Occlusion</i>	<i>Morphology</i>	<i>Distal Vessel</i>
RCA	Proximal	Total Occlusion		Moderate size, mild disease, -fills via collaterals from LCx
Left Main		No Obstruction		
LAD	Proximal	< 30%	Patent Intervention Site	Large size, mild disease
	D1	< 30%		Moderate size, mild disease
LCx	Proximal	< 30%	Patent Intervention Site	
	Distal	80 - 90%	Eccentric, Segmental	Large size, mild disease
	OM1	Total Occlusion	In-Stent restenosis: Unknown; # of prior stent: 1	Moderate size, severe disease, -incompletely visualized, -fills via collaterals from LCx
	OM2	30 - 50%	Bifurcation	Large size, mild disease
	LPL1	30 - 50%		Moderate size, mild disease

LCA

# Angiogram



CBA (Wolverine 2.75/6)

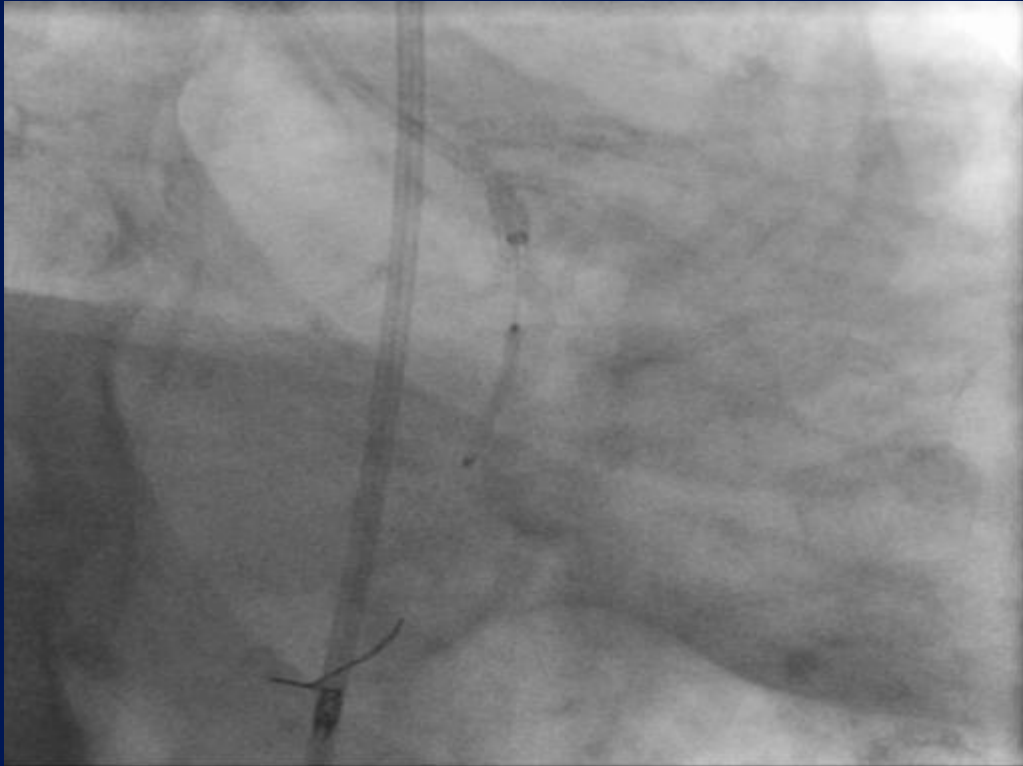
# Intervention



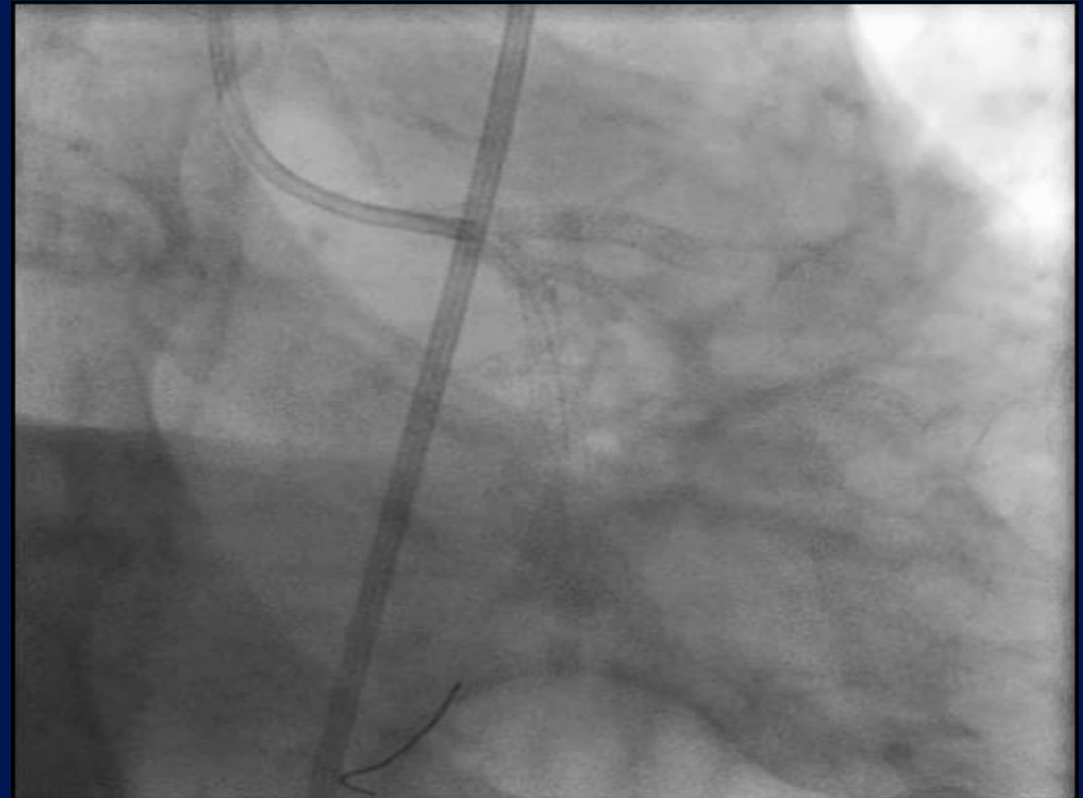


# Stenting

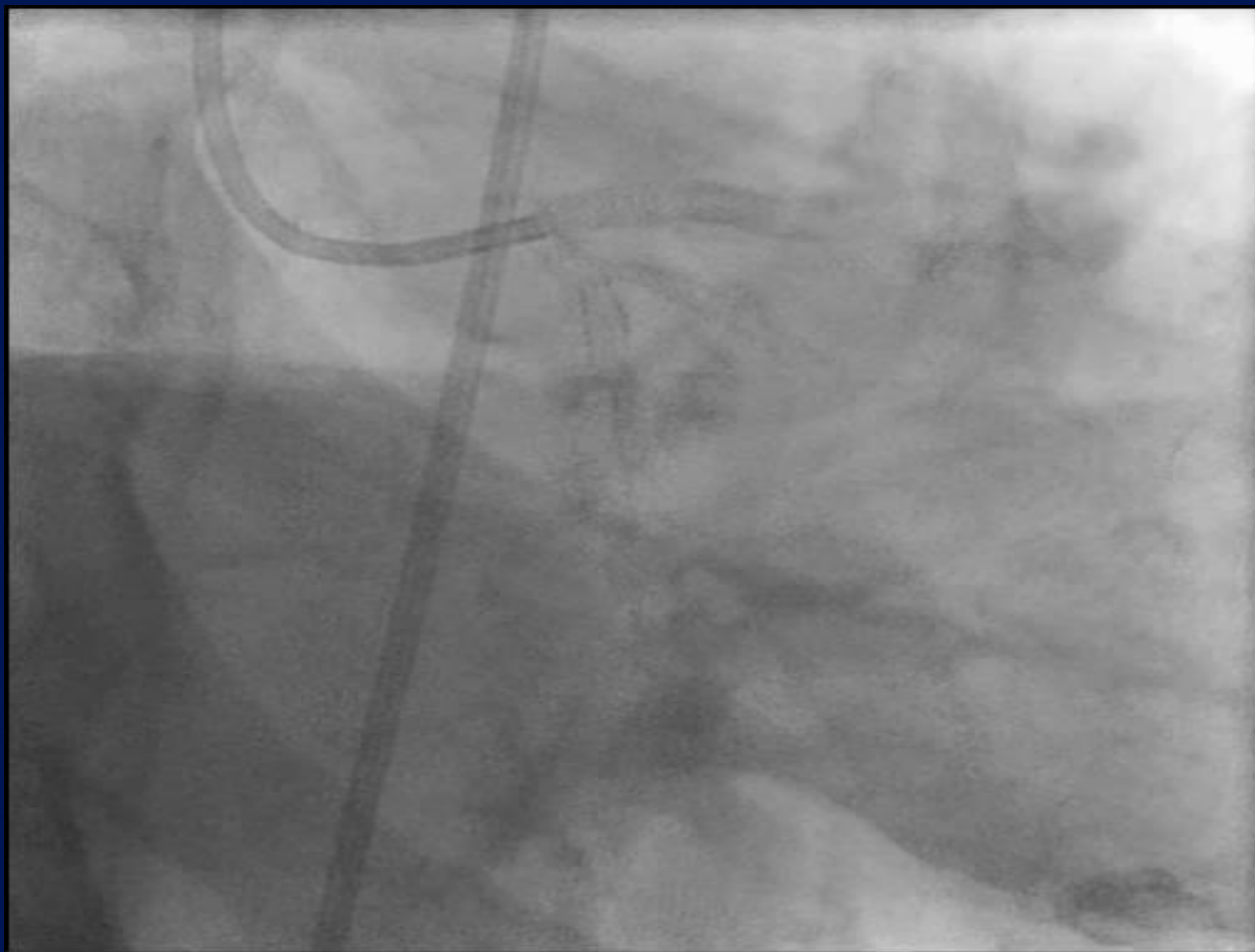
Guidezilla 6Fr facilitated stent (Xience Alpine 3.25/18 and 3/12) delivery



Post-PCI result



# Final result



# Discharge medication

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- Apixaban 2.5 mg BID
- Ticagrelor 90 mg BID
- Glipizide XL
- Losartan
- Isosorbide
- Nebivolol
- Ranolazine
- Rosuvastatin

# Results of PIONEER & ReDual PCI

	Treatment n/N (%)	Control n/N (%)	RR (95% CI)
<b>PIONEER AF-PCI (Riva combined) <sup>1</sup></b>	<b>127/1398 (9.08)</b>	<b>64/695 (9.21)</b>	<b>0.99 (0.74–1.31)</b>
Rivaroxaban 15 mg QD + P2Y <sub>12</sub> inhibitor	63/694 (9.08)	64/695 (9.21)	0.99 (0.71–1.37)
Rivaroxaban 2.5 mg BID + P2Y <sub>12</sub> inhibitor + ASA	64/704 (9.09)	64/695 (9.21)	0.99 (0.71–1.37)
<b>RE-DUAL PCI (Dabi combined) <sup>2</sup></b>	<b>239/1744 (13.70)</b>	<b>131/981 (13.35)</b>	<b>1.03 (0.84–1.25)</b>
Dabigatran 110 mg BID + P2Y <sub>12</sub> inhibitor	149/981 (15.19)	131/981 (13.35)	1.14 (0.92–1.41)
Dabigatran 150 mg BID + P2Y <sub>12</sub> inhibitor	90/763 (11.80)	98/764 (12.83)	0.92 (0.70–1.20)

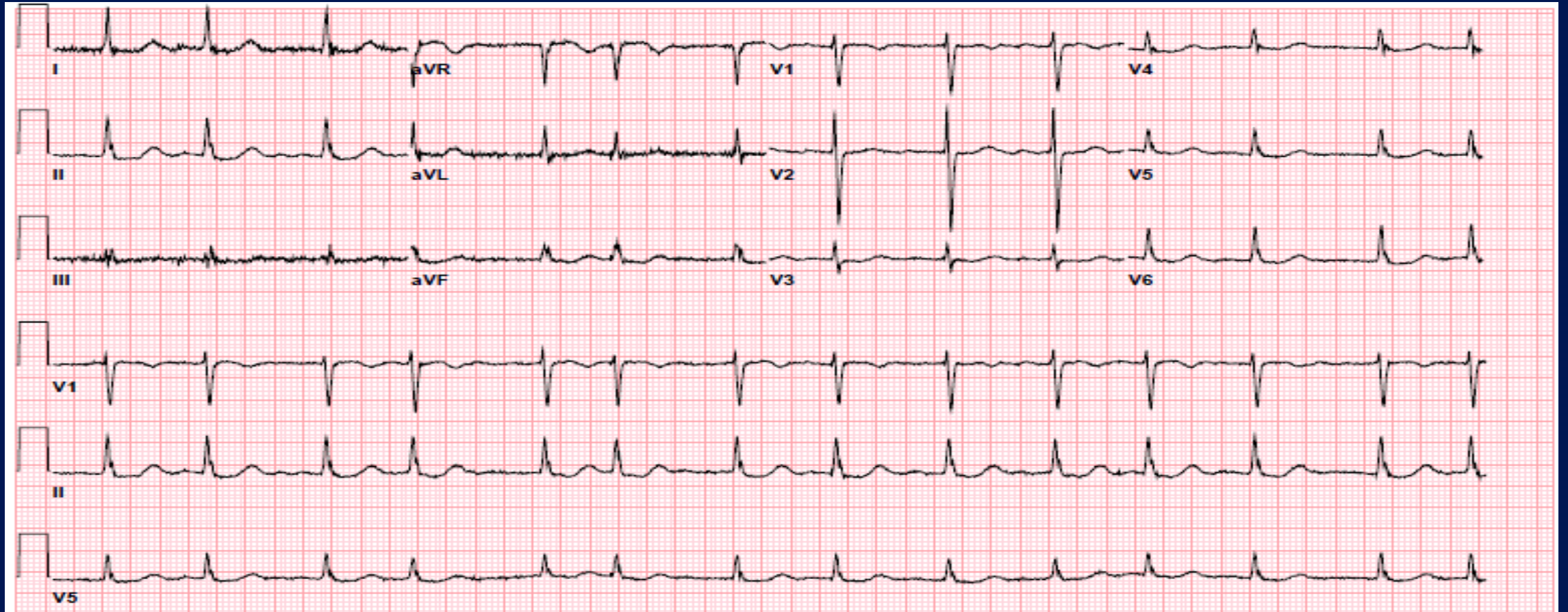
# Case 2

- 85y, F (CCS III, angina since 2 days)
- CVRF: DM, HTN, HLP
- H/o GIB
- Chronic Afib
- H/o multiple PCI (DES to pRCA and pLCx 2015)
- Medication on admission:
  - Diltiazem
  - Propanolol
  - Sertraline
  - Glipizide
  - Furosemid
  - Rosuvastatin
  - Rivaroxaban (last dose on the morning of admission)

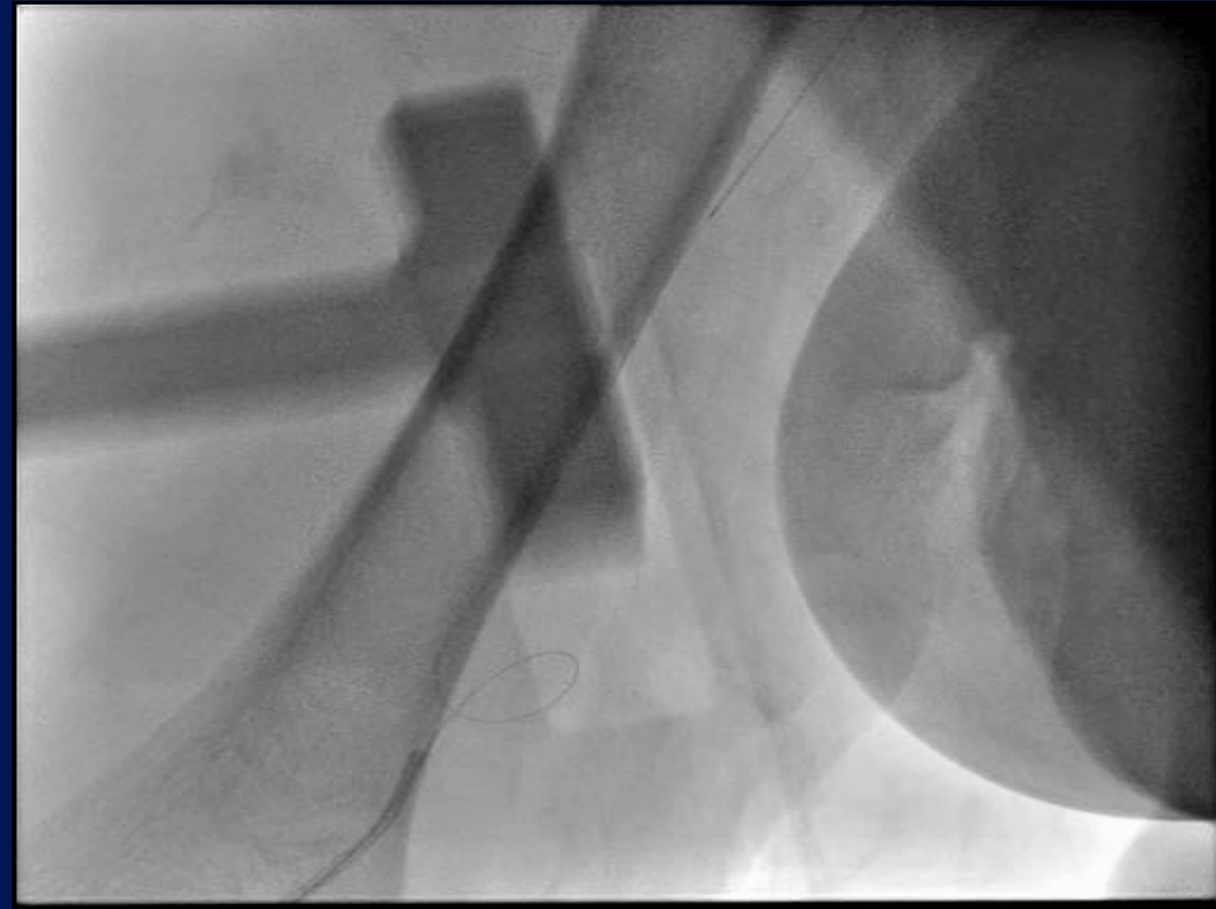
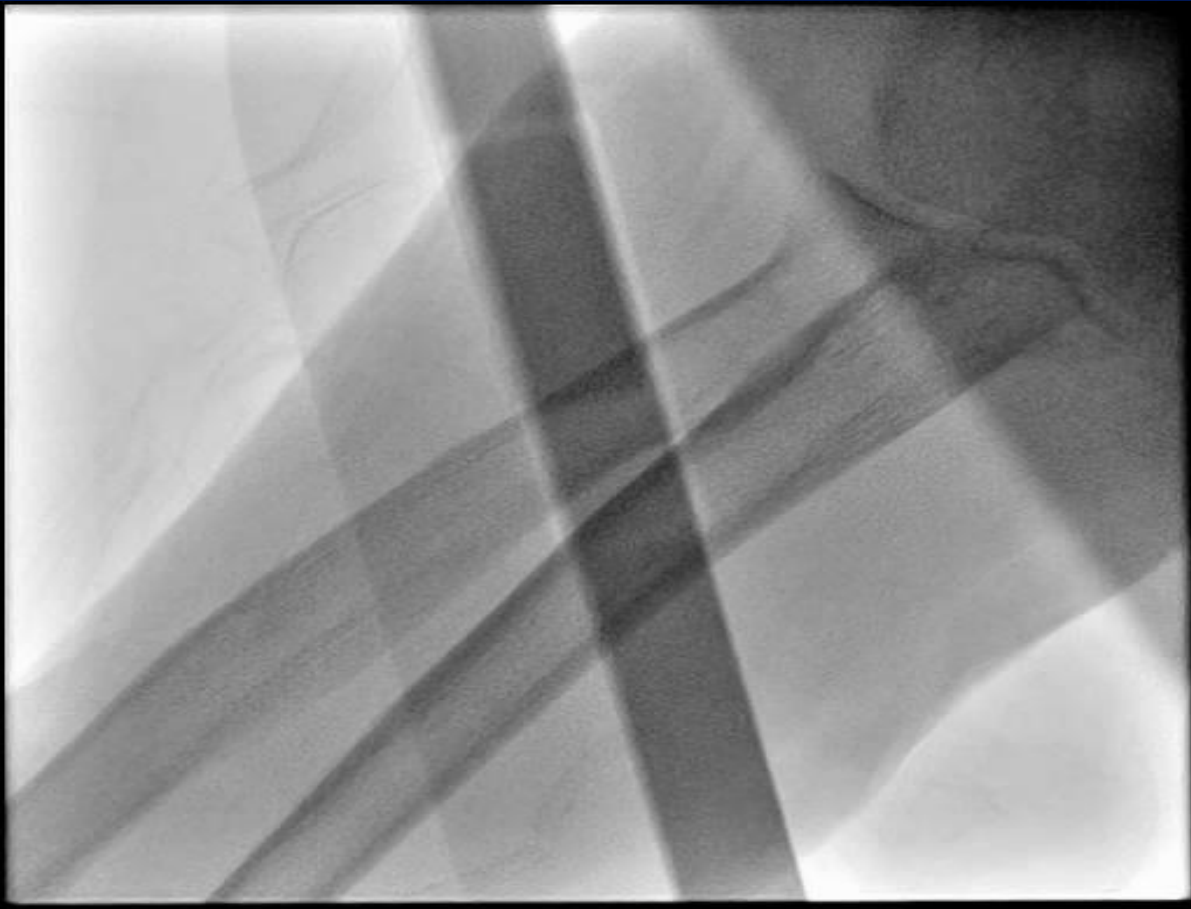
# Laboratory results

- Cardiac biomarker:
  - Troponin I: initially 0.89 ng/ml and max. 1.06 ng/ml
  - CK-MB negative
- Hb/HtK: 13/39.3, PLT 234
- Coagulation markers:
  - INR 1.4, PTT 32.9 sec
- Renal:
  - sCrea 1.0 mg/dl and eGFR >60 ml/min

# ECG

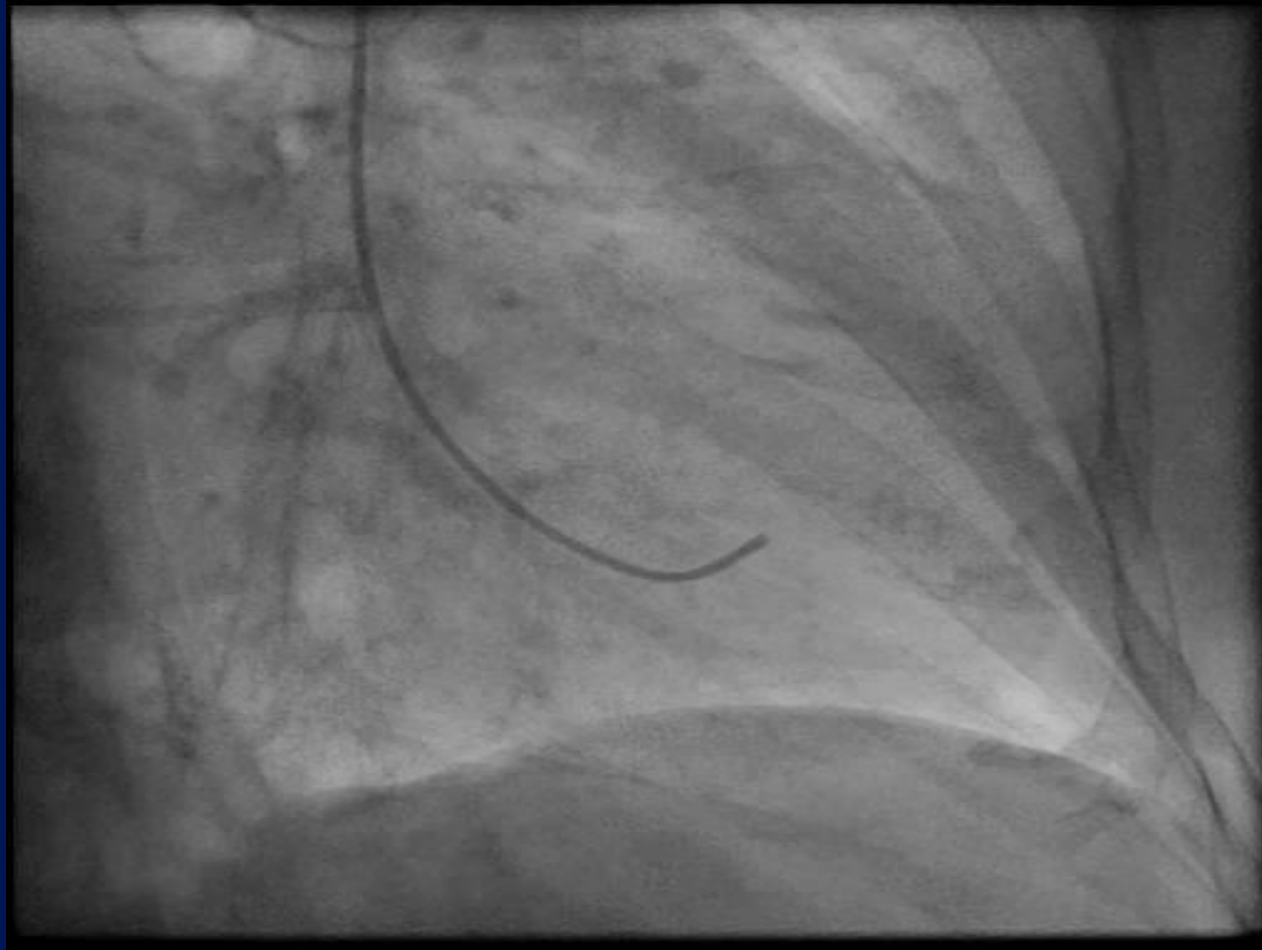


# Radial access

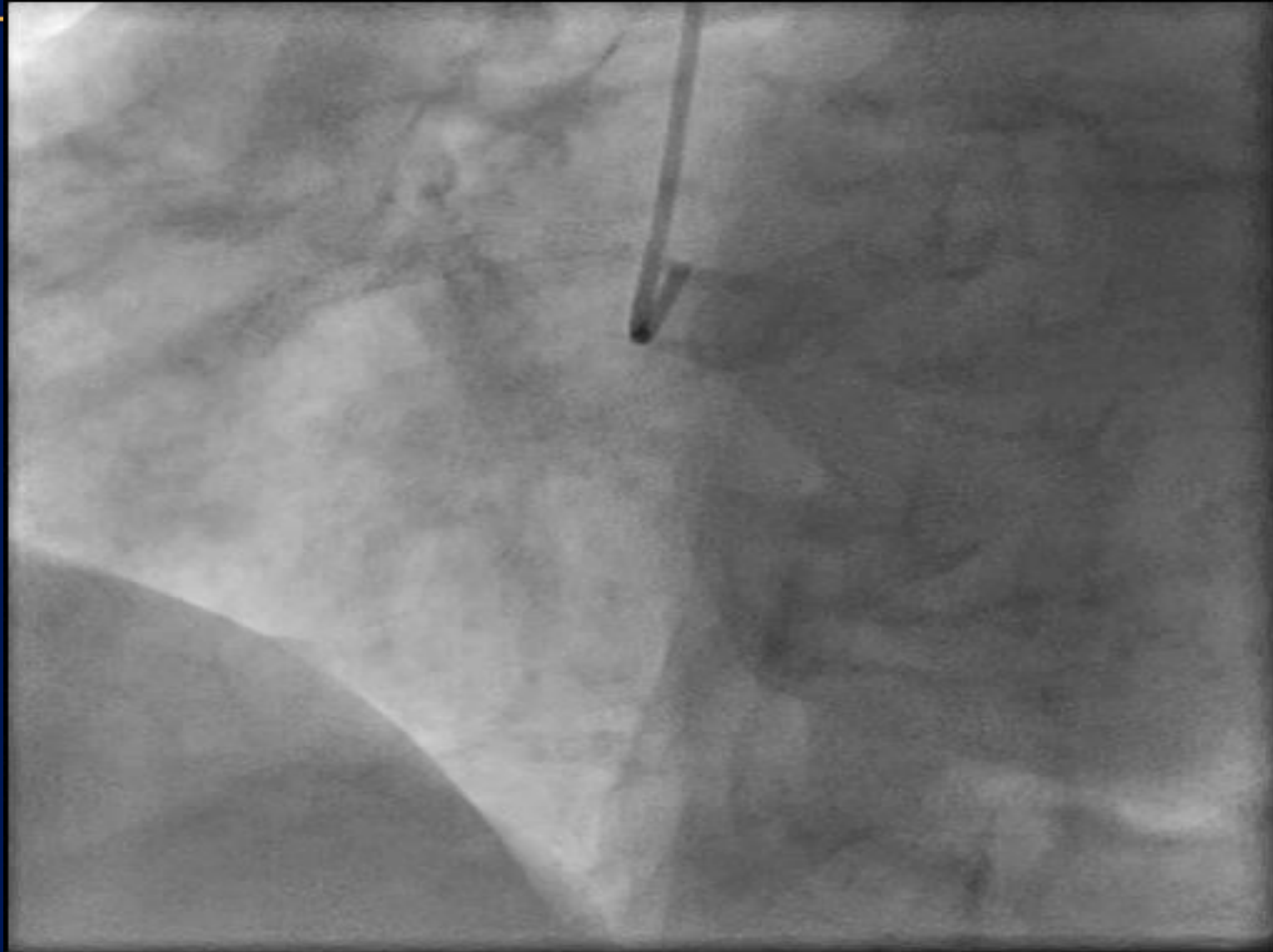




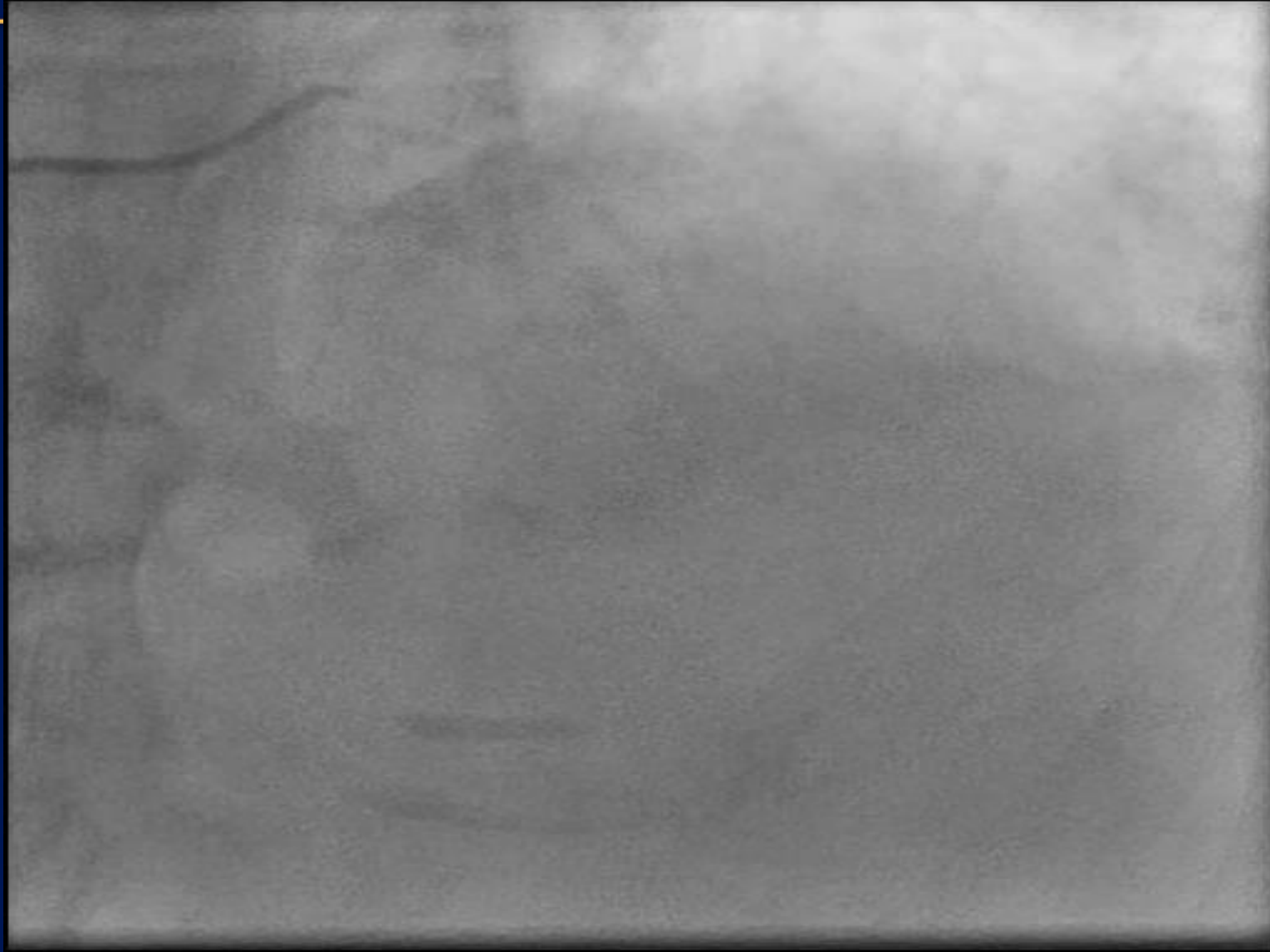
# LV-gram



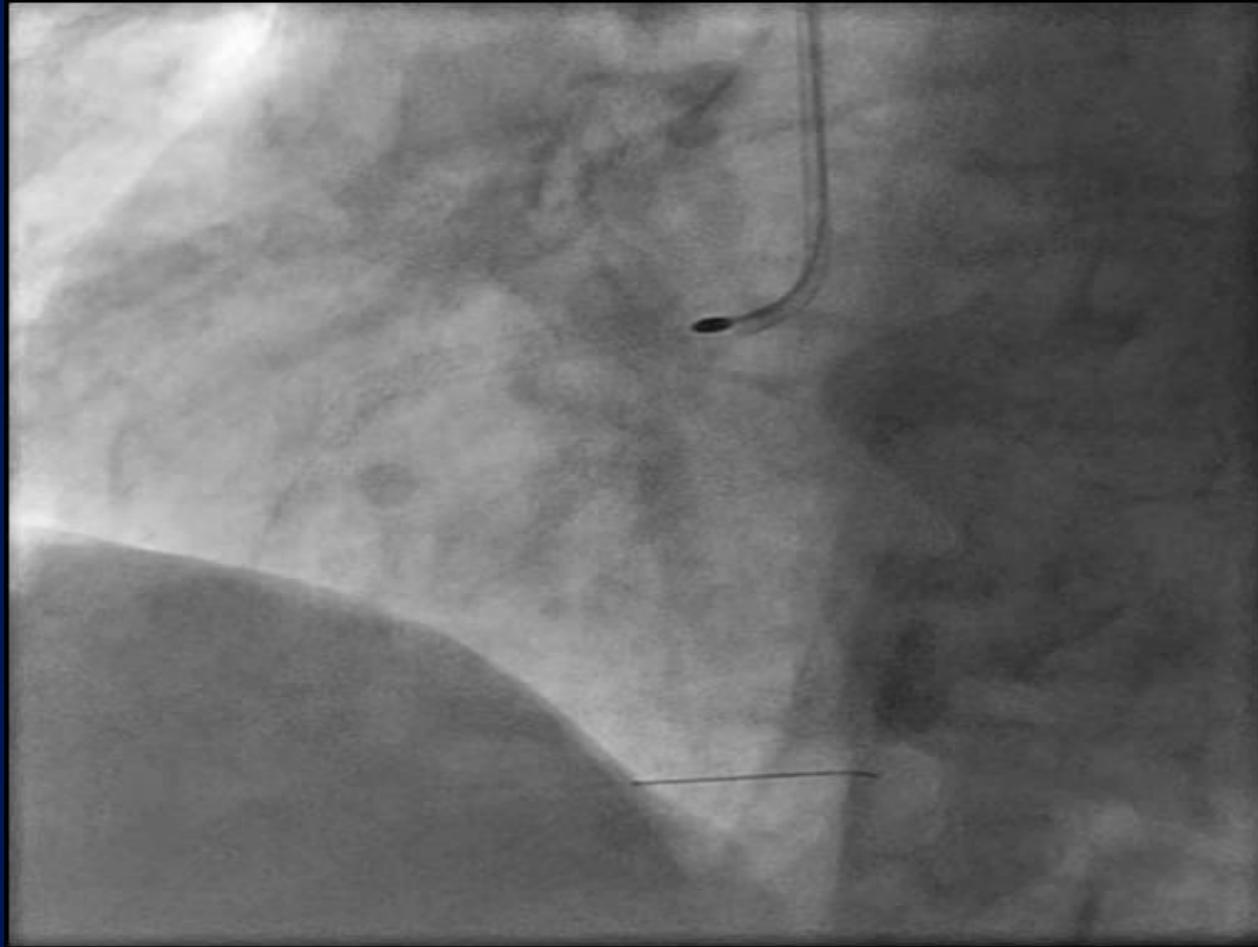
RCA



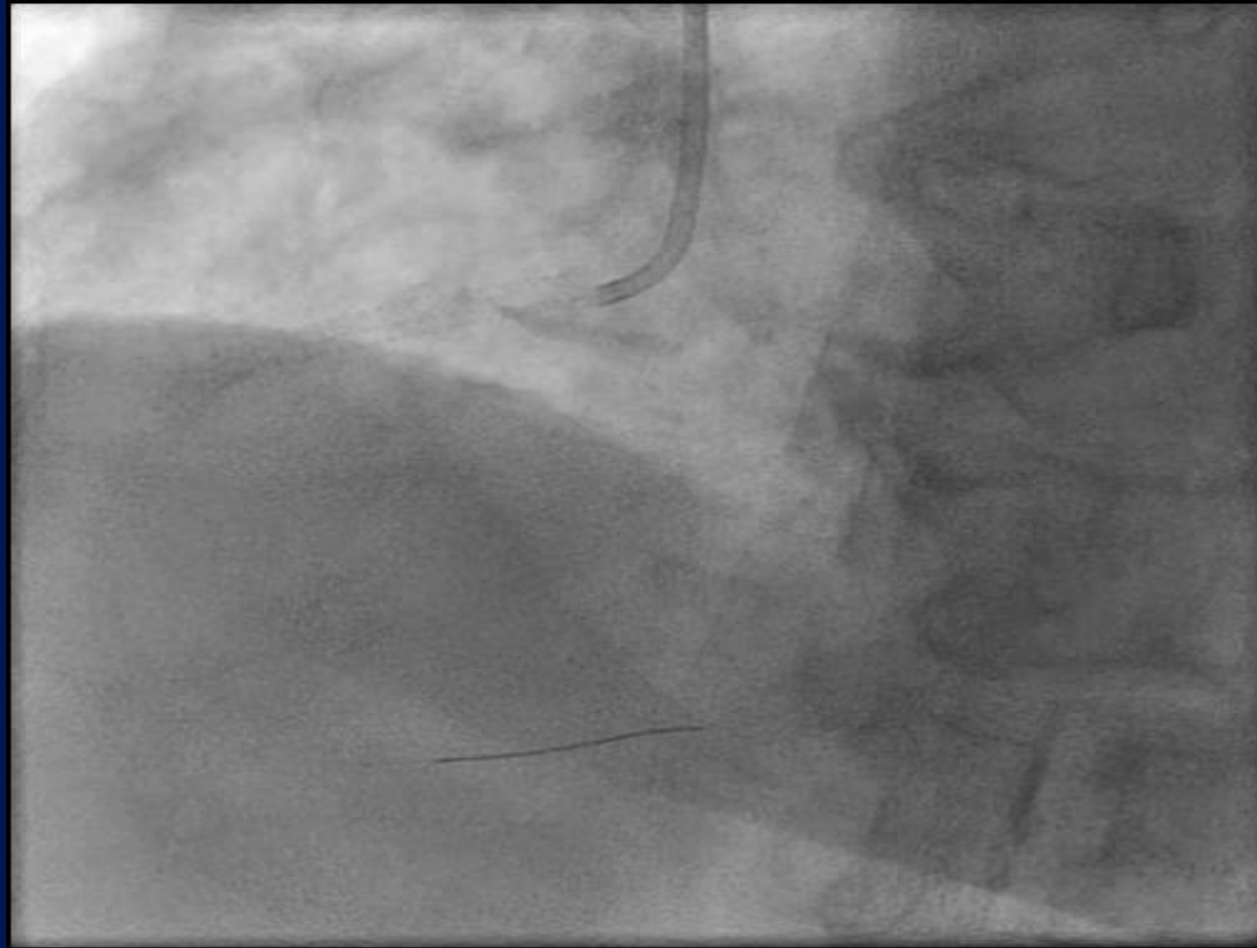
LCA



# Intervention



# Post-rotational atherectomy



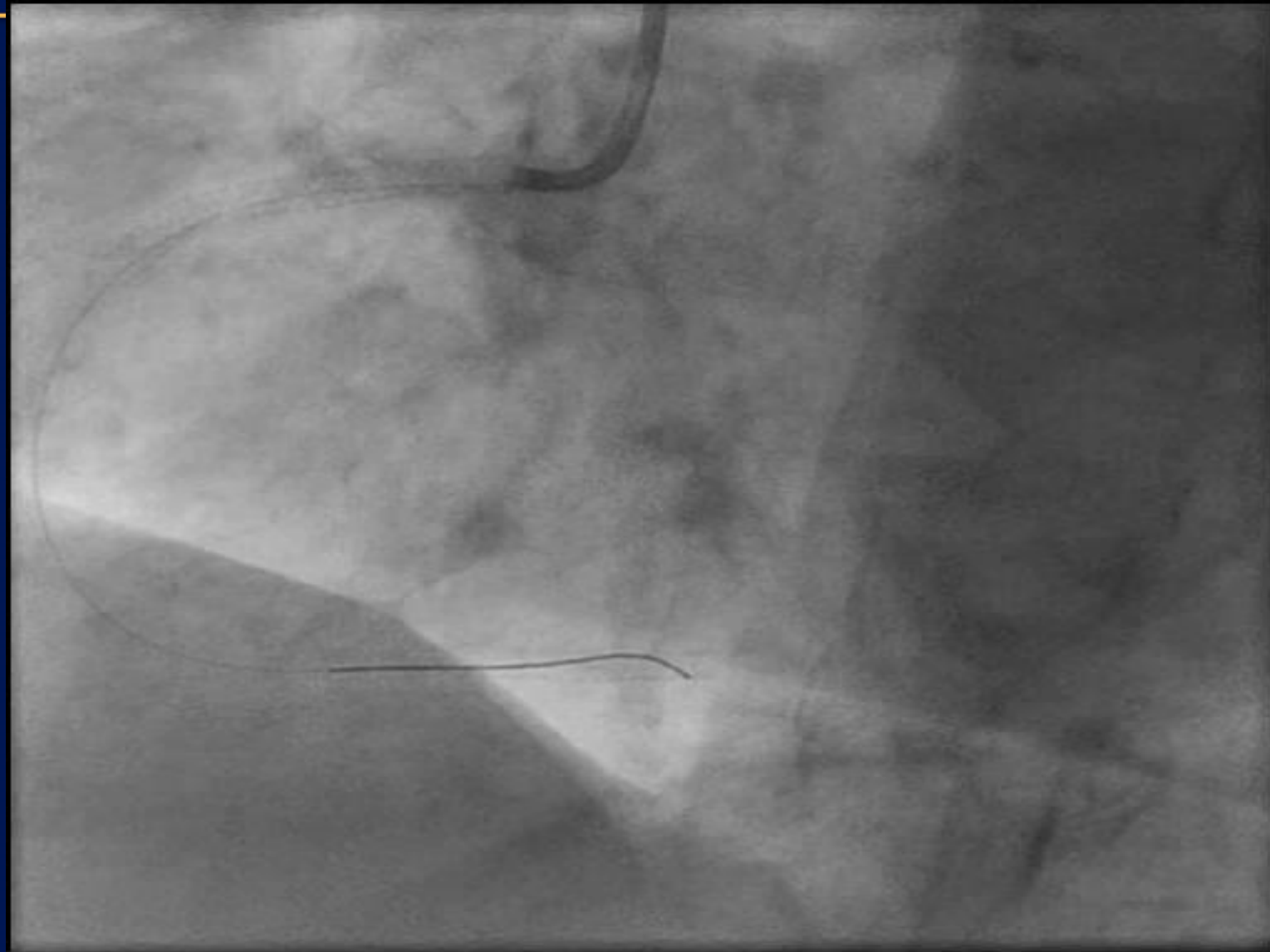
BA of proximal lesion  
3/12

DES of distal lesion Xience  
alpine 3/23





# Final angiogram



# Discharge medication

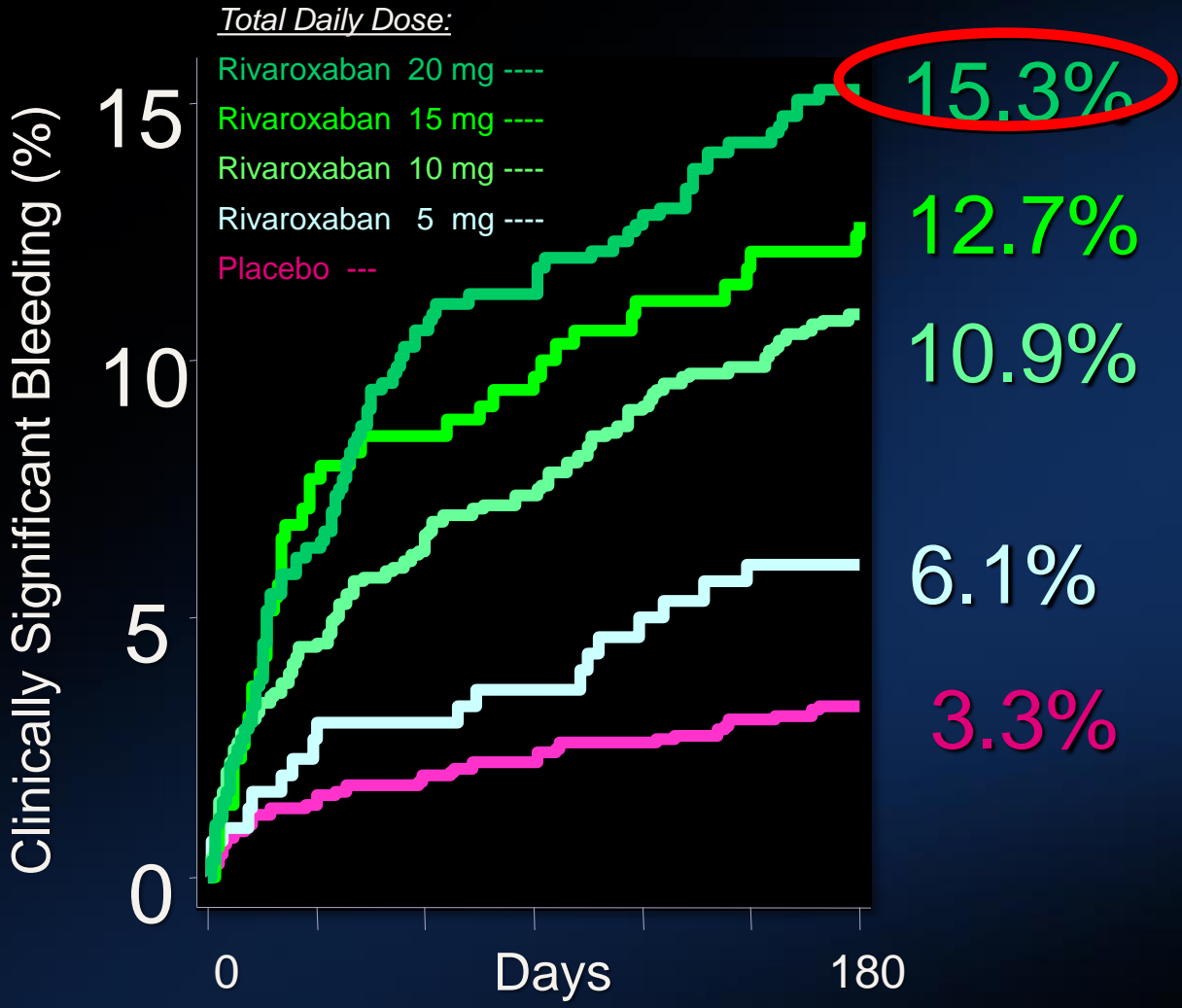
- Rivaroxaban 20 mg
- Clopidogrel 75 mg for 1 year
- Diltiazem 180 mg
- Propranolol 160
- Sertraline 50 mg
- Glimepiride 2 mg
- Furosemide 20 mg
- Rosuvastatin 20 mg





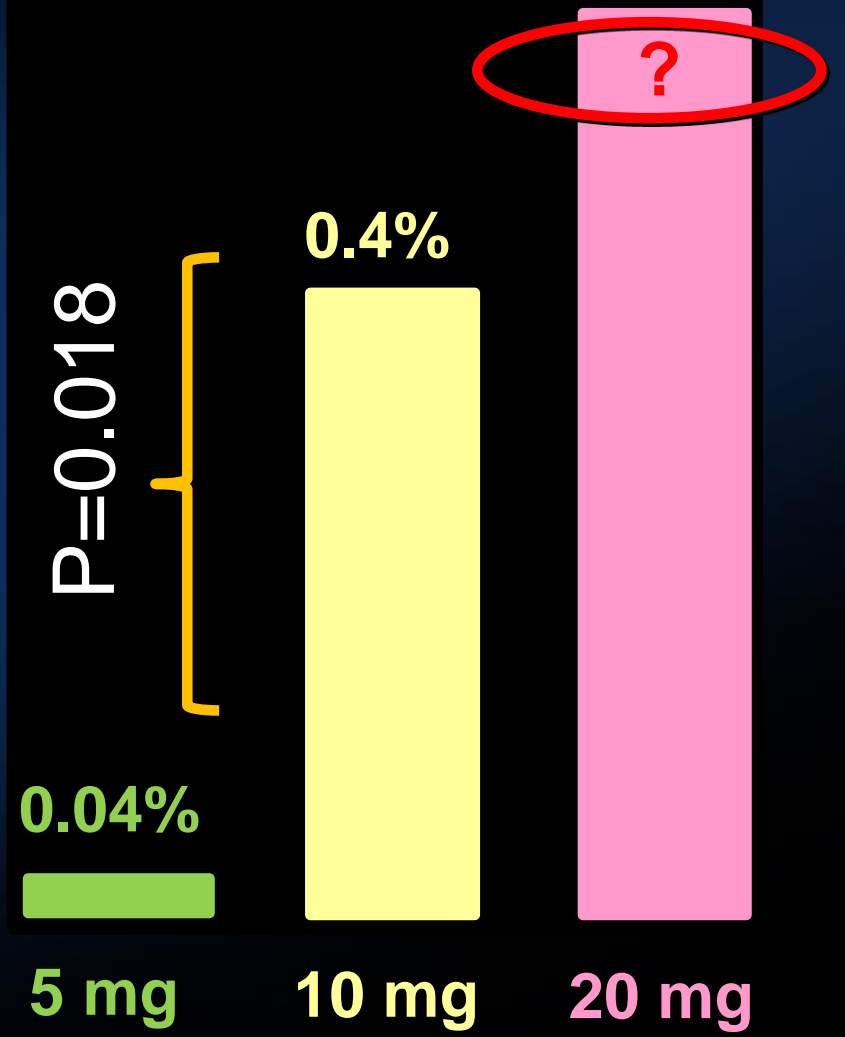
# Rivaroxaban + DAPT Bleeding

TIMI Major, TIMI Minor, Bleed Req. Med. Attn.



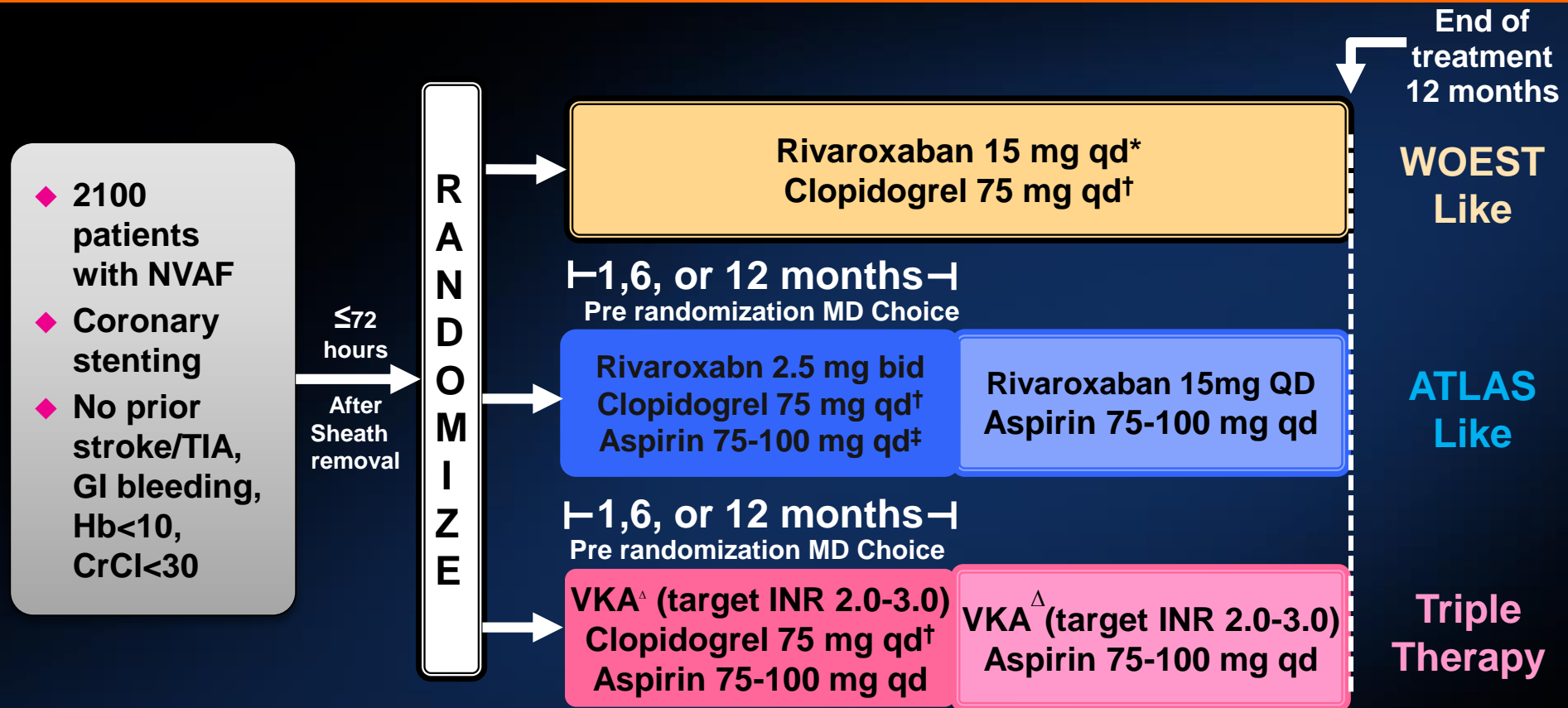
Gibson CM, AHA 2008

## Fatal Bleeding



Gibson CM, AHA 2011  
STEMI cohort, p=0.044 in all ACS

# Patients With Atrial Fibrillation Undergoing Coronary Stent Placement: PIONEER AF-PCI



- **Primary endpoint: TIMI major + minor + bleeding requiring medical attention**
- **Secondary endpoint: CV death, MI, and stroke (Ischemic, Hemorrhagic, or Uncertain Origin)**

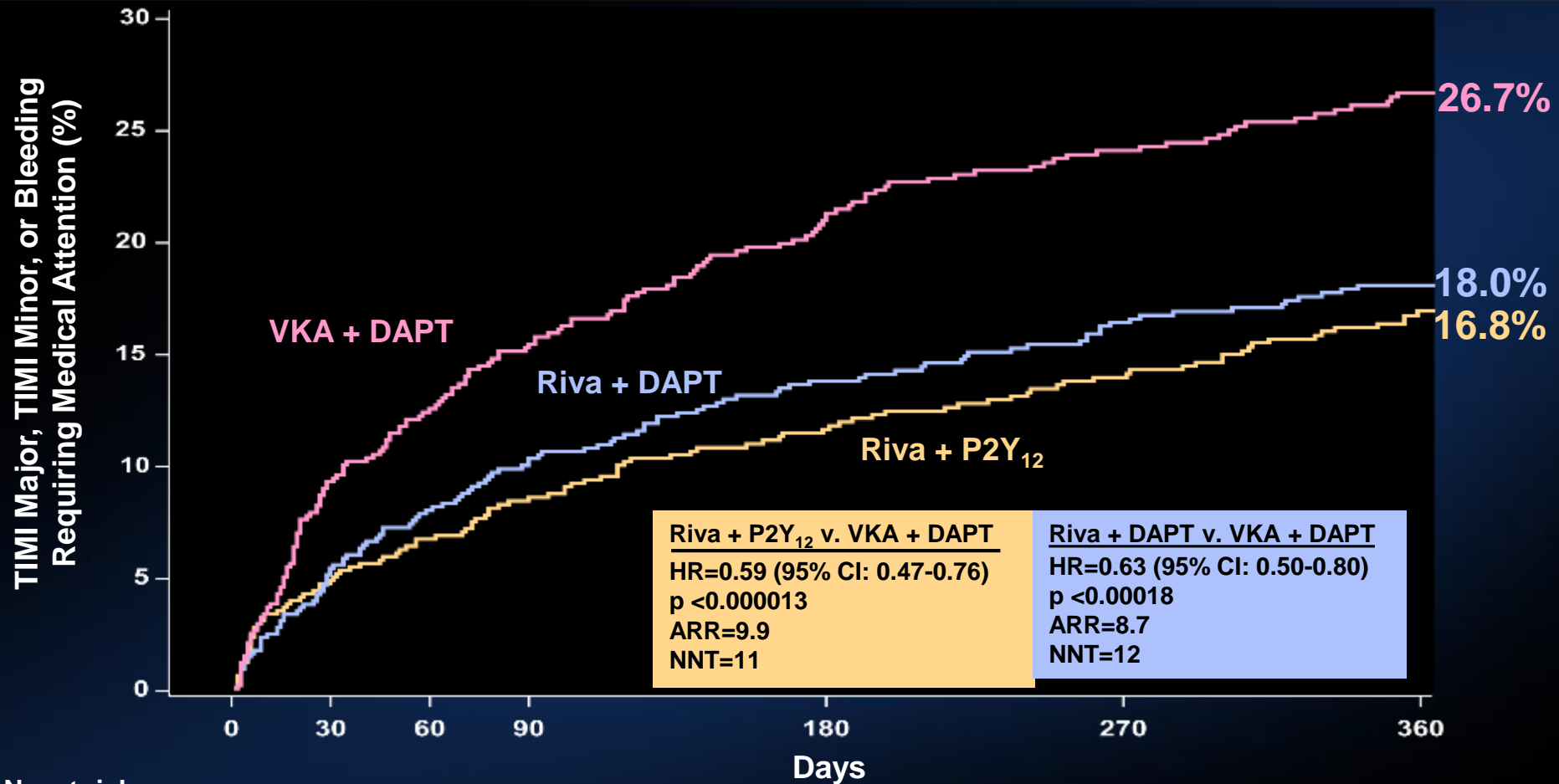
\*Rivaroxaban dosed at 10 mg once daily in patients with CrCl of 30 to <50 mL/min.

†Alternative P2Y<sub>12</sub> inhibitors: 10 mg once-daily prasugrel or 90 mg twice-daily ticagrelor.

‡Low-dose aspirin (75-100 mg/d). Δ Open label VKA



# Kaplan-Meier Estimates of First Occurrence of Clinically Significant Bleeding Events



No. at risk

	0	30	60	90	180	270	360
Riva + P2Y <sub>12</sub>	696	628	606	585	543	510	383
Riva + DAPT	706	636	600	579	543	509	409
VKA + DAPT	697	593	555	521	461	426	329

Gibson et al. AHA 2016

Treatment-emergent period: period starting after the first study drug administration following randomization and ending 2 days after stop of study drug.

Clinically significant bleeding is the composite of TIMI major, TIMI minor, and BRMA. Hazard ratios as compared to the VKA group are based on the (stratified, only for Overall, 2.5 mg BID/15 mg QD comparing VKA) Cox proportional hazards model. Log-Rank P-values as compared to VKA group are based on the (stratified, only for Overall, 2.5 mg BID/15 mg QD comparing VKA) two-sided log rank test.

# Discharge medication

- Rivaroxaban 20 mg
- Clopidogrel 75 mg for 1 year
- Diltiazem 180 mg
- Propranolol 160
- Sertraline 50 mg
- Glimepiride 2 mg
- Furosemide 20 mg
- Rosuvastatin 20 mg