

# **Cut-off Coronary Wire Trapped after High Speed Rotational Atherectomy**

**Dong Hyun Lee<sup>1</sup>, Moo Hyun Kim<sup>1,2</sup>, Long Zhe Guo<sup>2</sup>, Jae-Hyuk Choi<sup>1</sup>**

**<sup>1</sup>Department of Cardiology, Dong-A University Hospital, Busan, South Korea**

**<sup>2</sup>Clinical Trial Center, Dong-A University Hospital, Busan, South Korea**

# Case Presentation

---

- M/66
- Chief complaint
  - Chest pain on exertion
    - for 3 months
  - Refractory to medical treatment
  - Hx. of incomplete PCI for LAD

# Case Presentation

---

- Past History

- Hypertension for 25 years
- Chronic kidney disease grade 2
  
- Recent PCI at local hospital
  - AMI (July, 2013):
    - Culprit: RCA
  - Stable angina (July & November, 2013)
    - Incomplete PCI for LAD

# July, 2013 (Local Hospital)

---

- Chief complaint
  - Chest pain
  
- Present illness
  - Acute onset chest pain
  - ST segment elevation in II, III, aVF

# CAG at July, 2013 (Local Hospital)



LCA

# CAG at July, 2013 (Local Hospital)



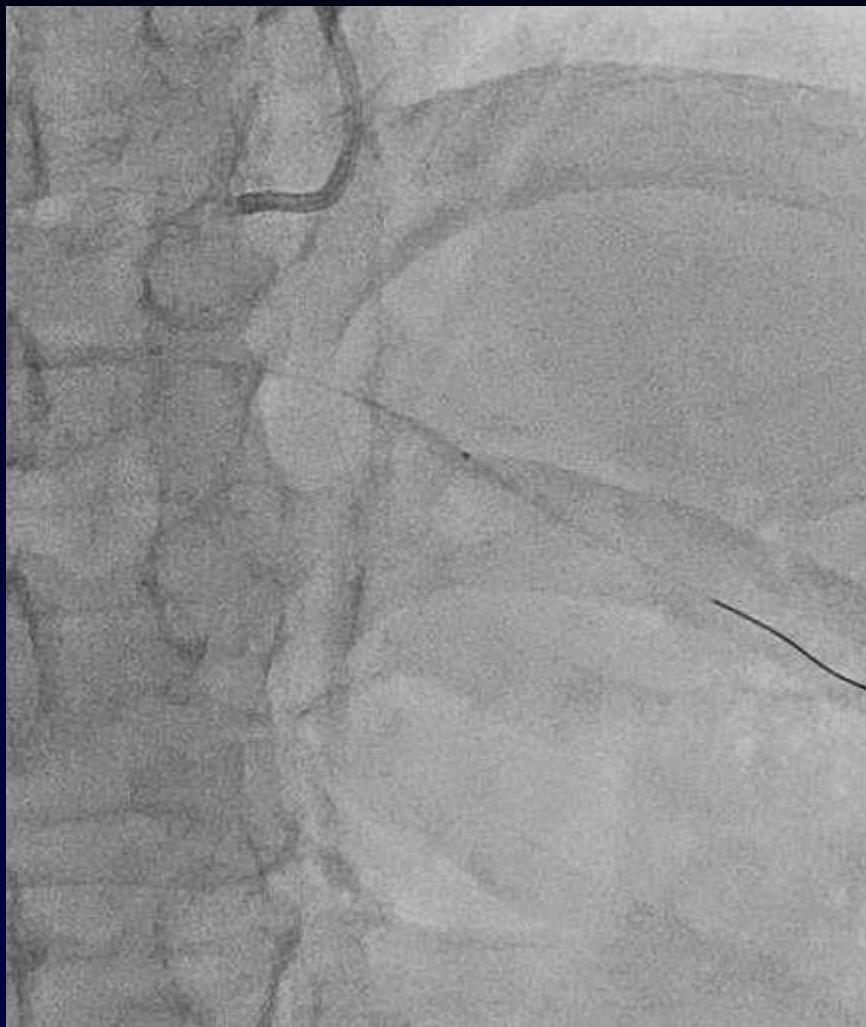
LCA

# CAG at July, 2013 (Local Hospital)



RCA

# PCI at July, 2013 (Local Hospital)



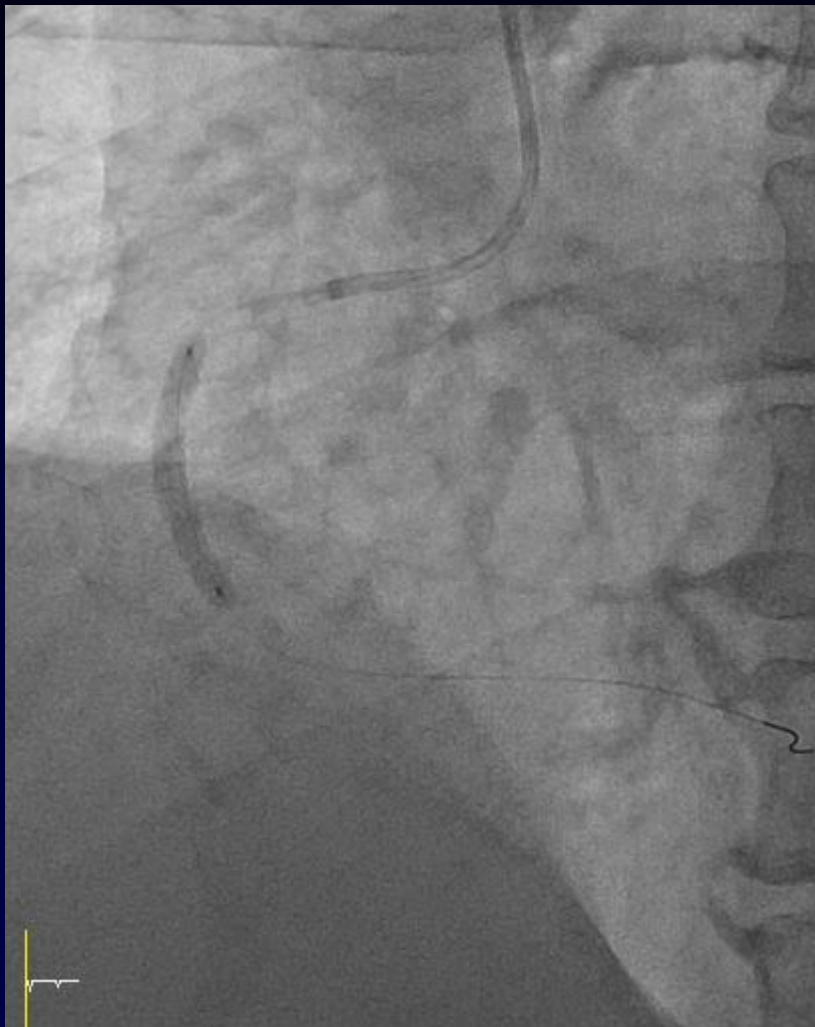
Sprinter Legend® 1.5 x 20, Medtronic



Trek® 2.5 x 20, Abbott



# PCI at July, 2013 (Local Hospital)



Biomatrix® 3.5 x 28, Biosensors



Biomatrix® 3.5 x 24, Biosensors

# PCI at July, 2013 (Local Hospital)



RCA, final

# PCI at July, 2013 (Local Hospital)



Trek ® 2.0 x 20, Abbott

Biomatrix ® 2.75 x 18, Biosensors

# PCI at July, 2013 (Local Hospital)



# PCI at July, 2013 (Local Hospital)

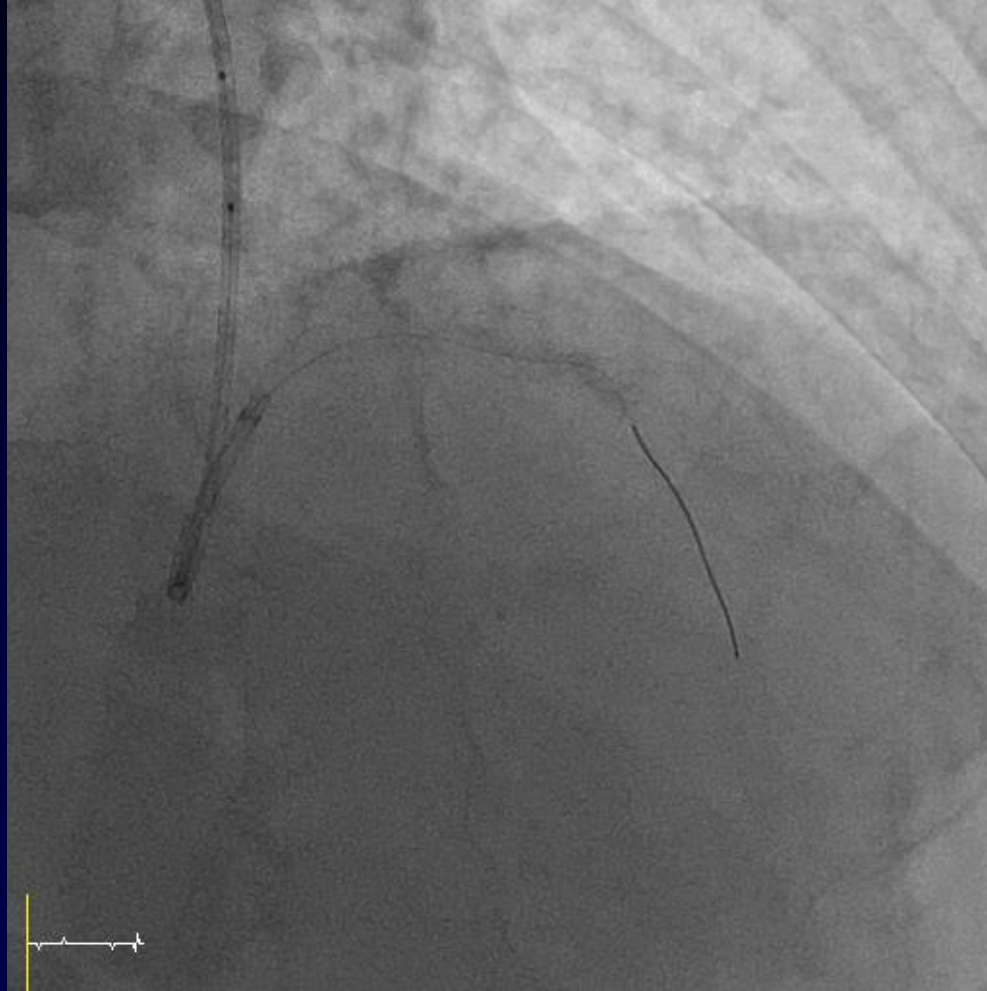


Sprinter Legend NC® 2.75 x 12, Medtronic

Upto 22 atm



# PCI at July, 2013 (Local Hospital)



Final angiogram

# Persistent Ischemic Chest Pain

---

- Chest pain on exertion
- Refractory to medical treatment

Repeat coronary angiography at November, 2013

# PCI at November, 2013 (Local Hospital)





# PCI at November, 2013 (Local Hospital)

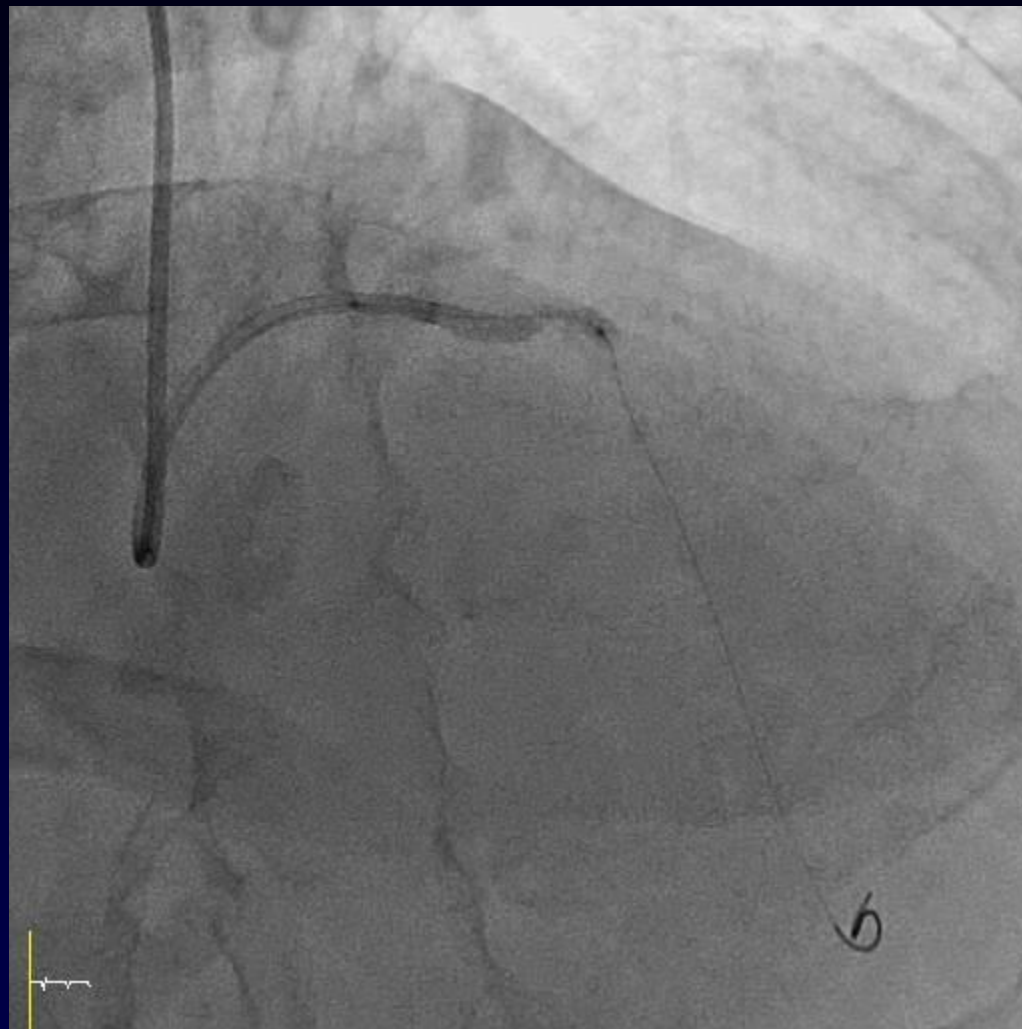


# PCI at November, 2013 (Local Hospital)



Trek® 2.5 x 20, Abbott

# PCI at November, 2013 (Local Hospital)



SeQuant® Please 2.75 x 26, B.Braun

# PCI at November, 2013 (Local Hospital)



**Final angiogram**

# Persistent Angina

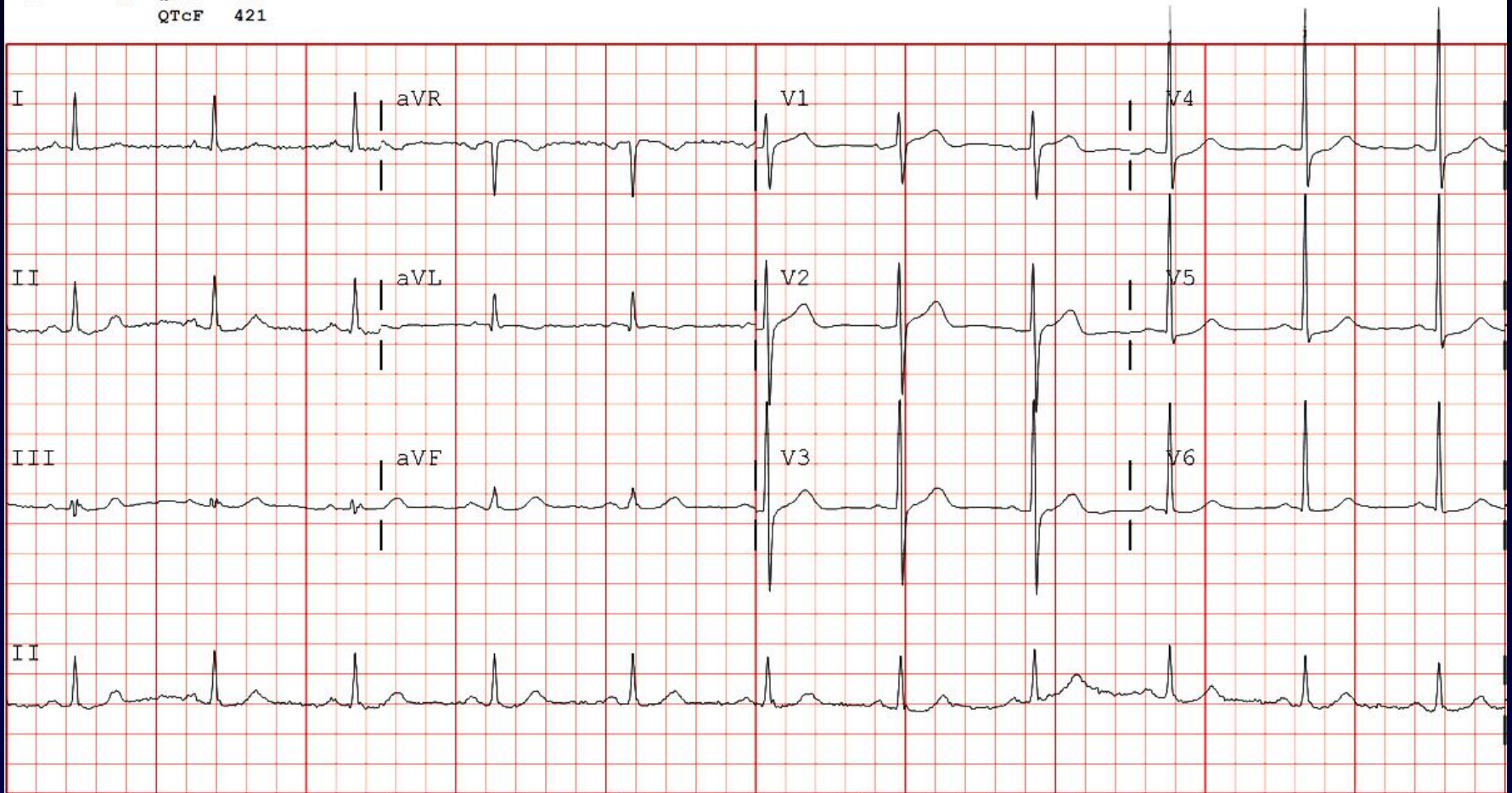
---

- Chief complaint
  - Chest pain on exertion
  - Refractory to medical treatment
  - Referred



# ECG

-- AXIS -- PR 176  
P 56 QRSD 88  
QRS 40 QT 408  
T 74 QTcB 428  
QTcF 421

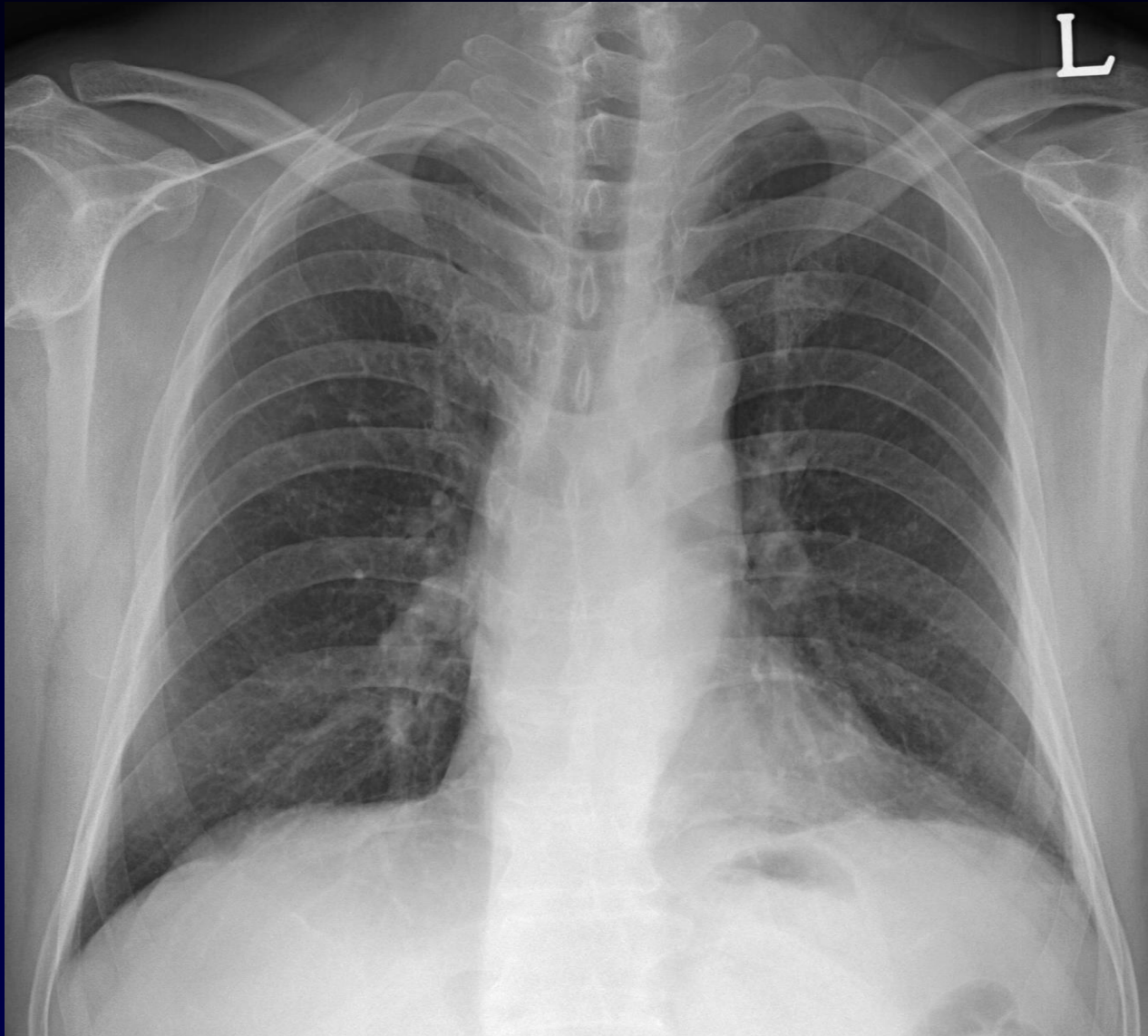


Speed: 25 mm/sec

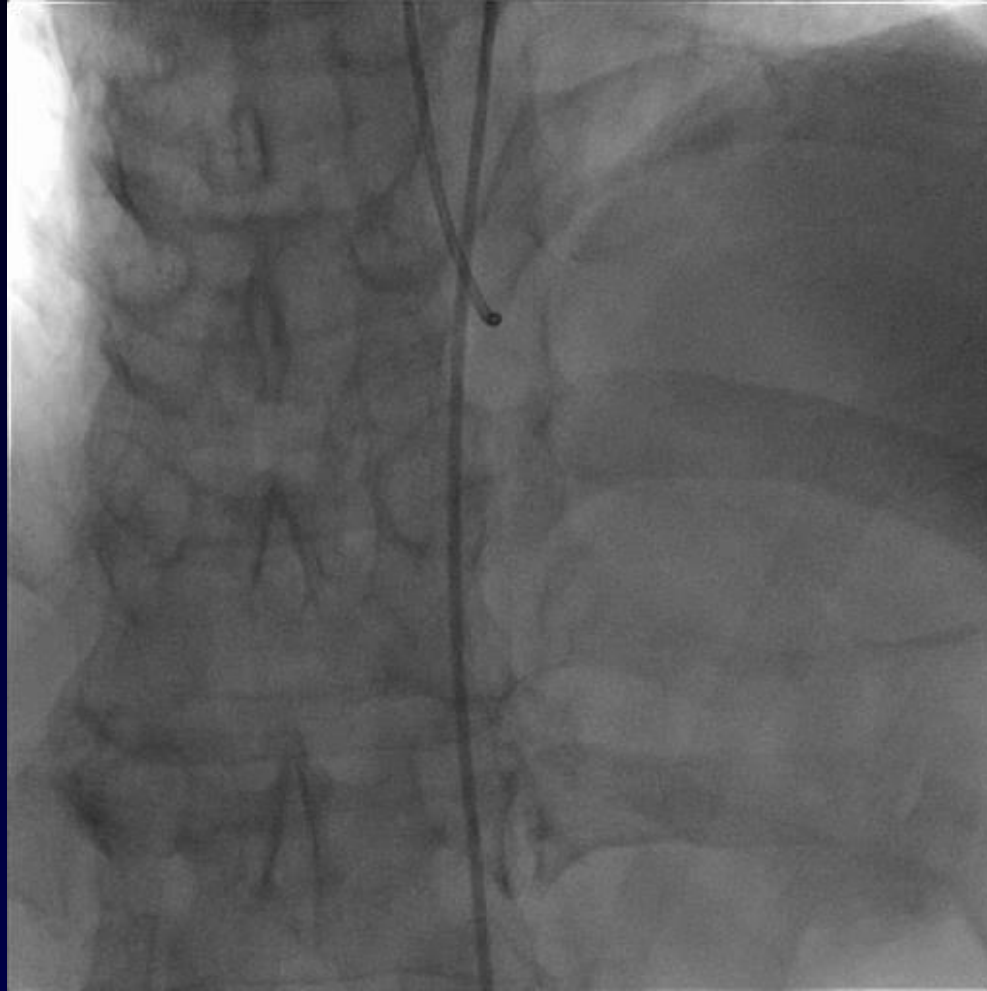
Limb: 10 mm/mV

Chest: 10 mm/mV

# CXR



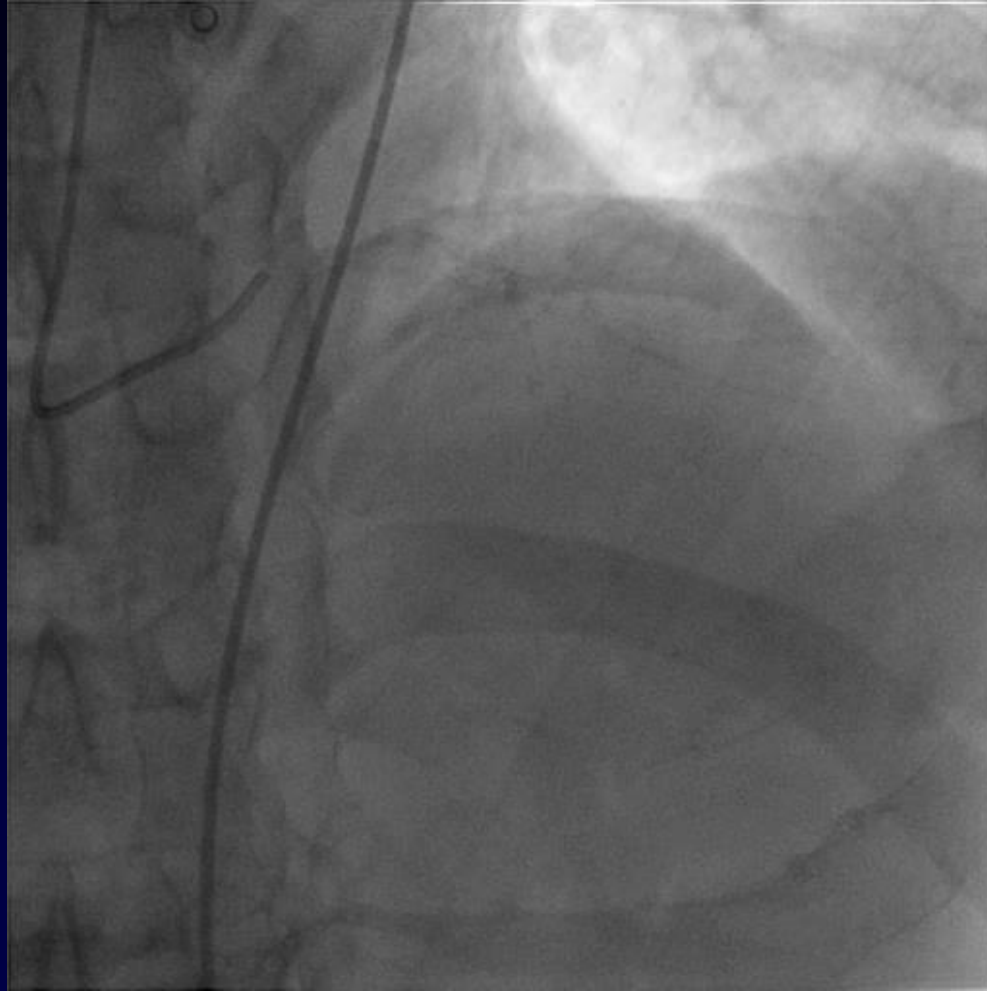
# PCI (December 4<sup>th</sup>, 2013)



Rt. Femoral, 5 Fr JR 4.0



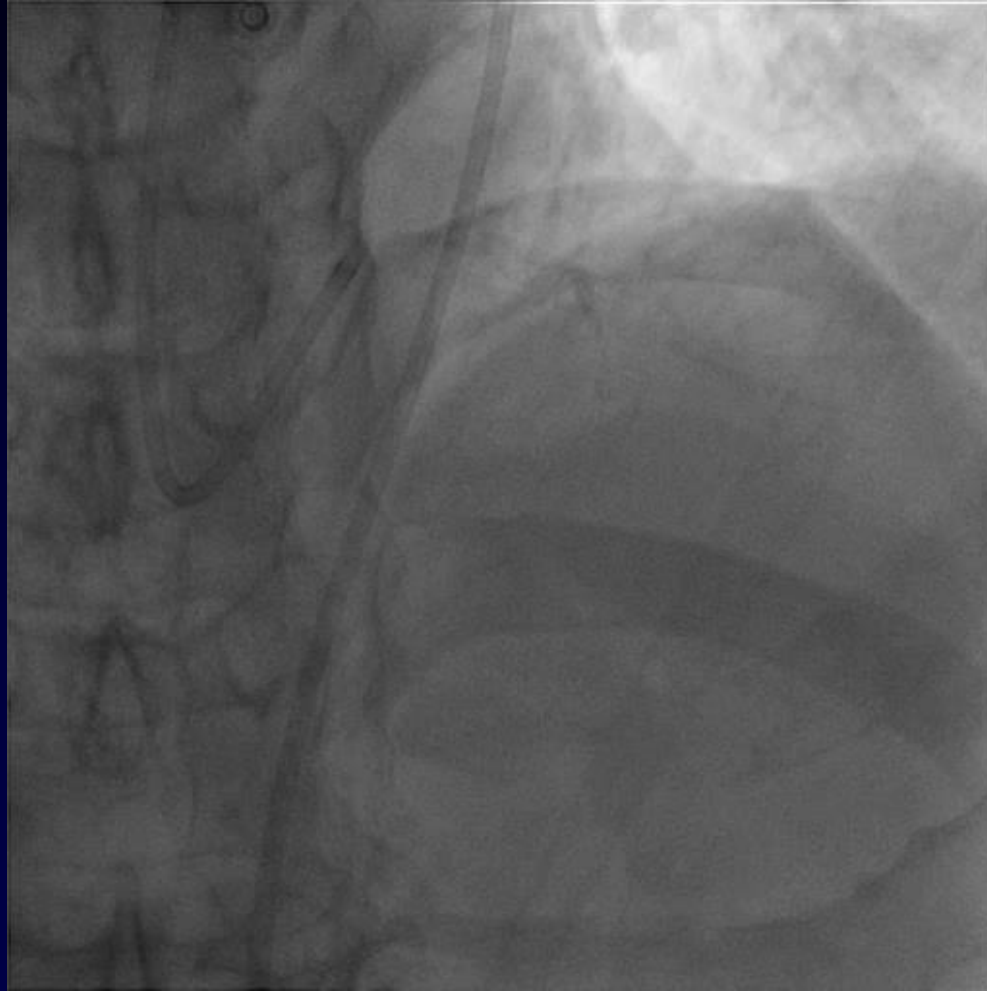
# PCI (December 4<sup>th</sup>, 2013)



Rt. Femoral, 5 Fr JL 3.5

# PCI (December 4<sup>th</sup>, 2013)

---



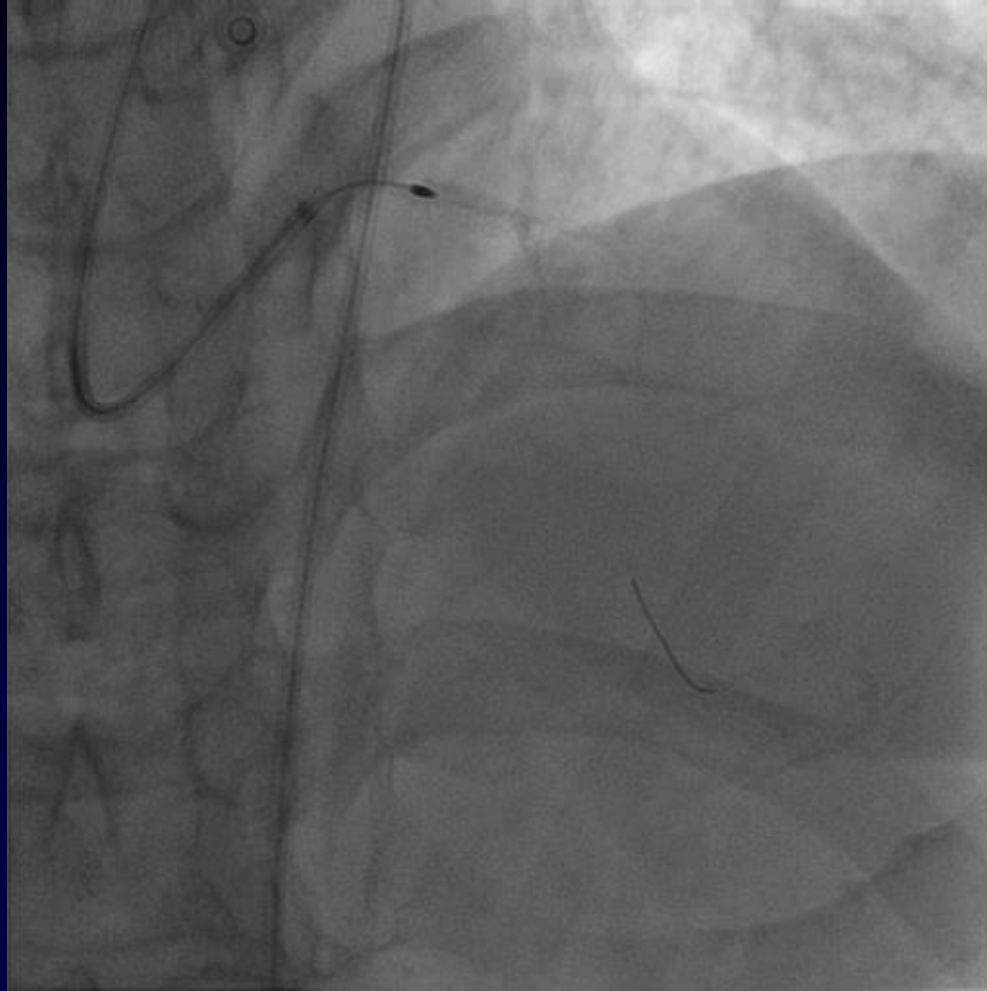
Rt. Femoral, 7 Fr EBU 3.0

# Strategy?

---

- Incompletely dilated coronary lesion with two implanted DES.
  - ① Repeat balloon angioplasty
  - ② Rotational atherectomy
  - ③ Medical
  - ④ Surgery (CABG)

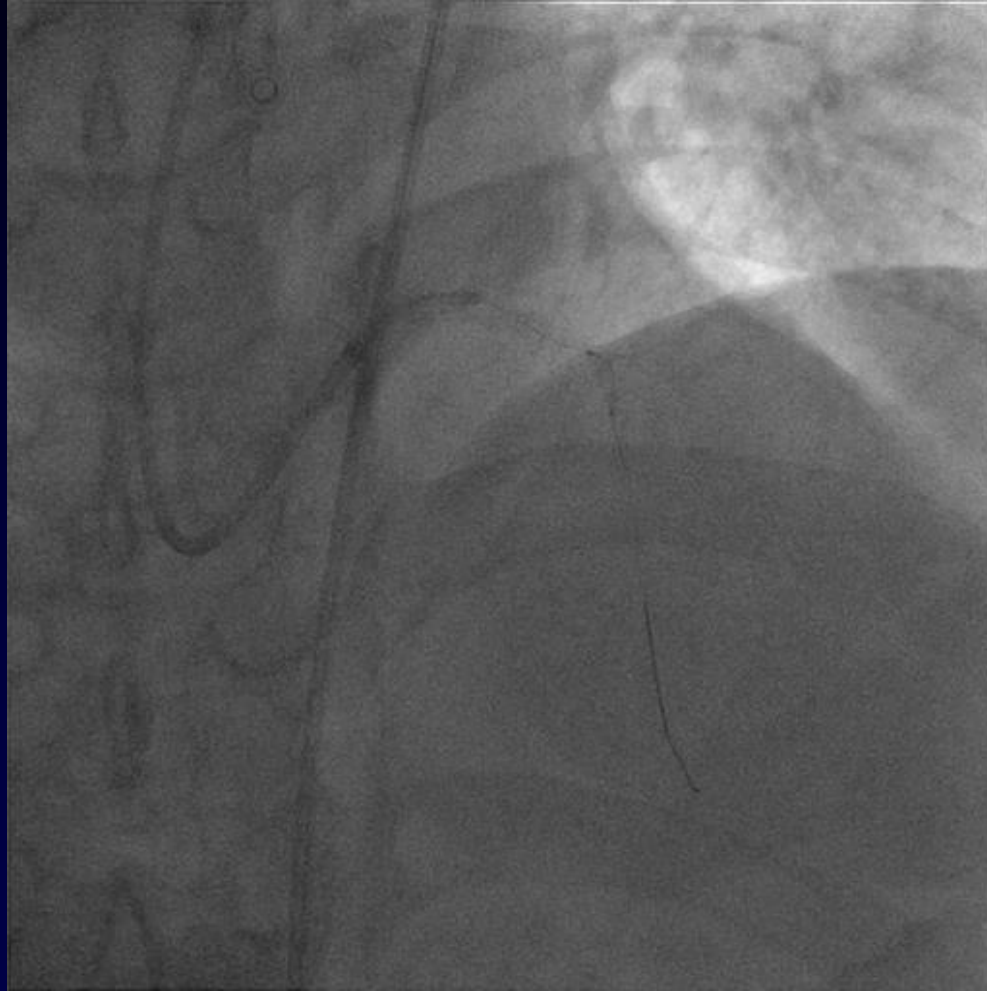
# PCI (December 4<sup>th</sup>, 2013)



Rotablator® 1.5 mm Burr, Boston Scientific

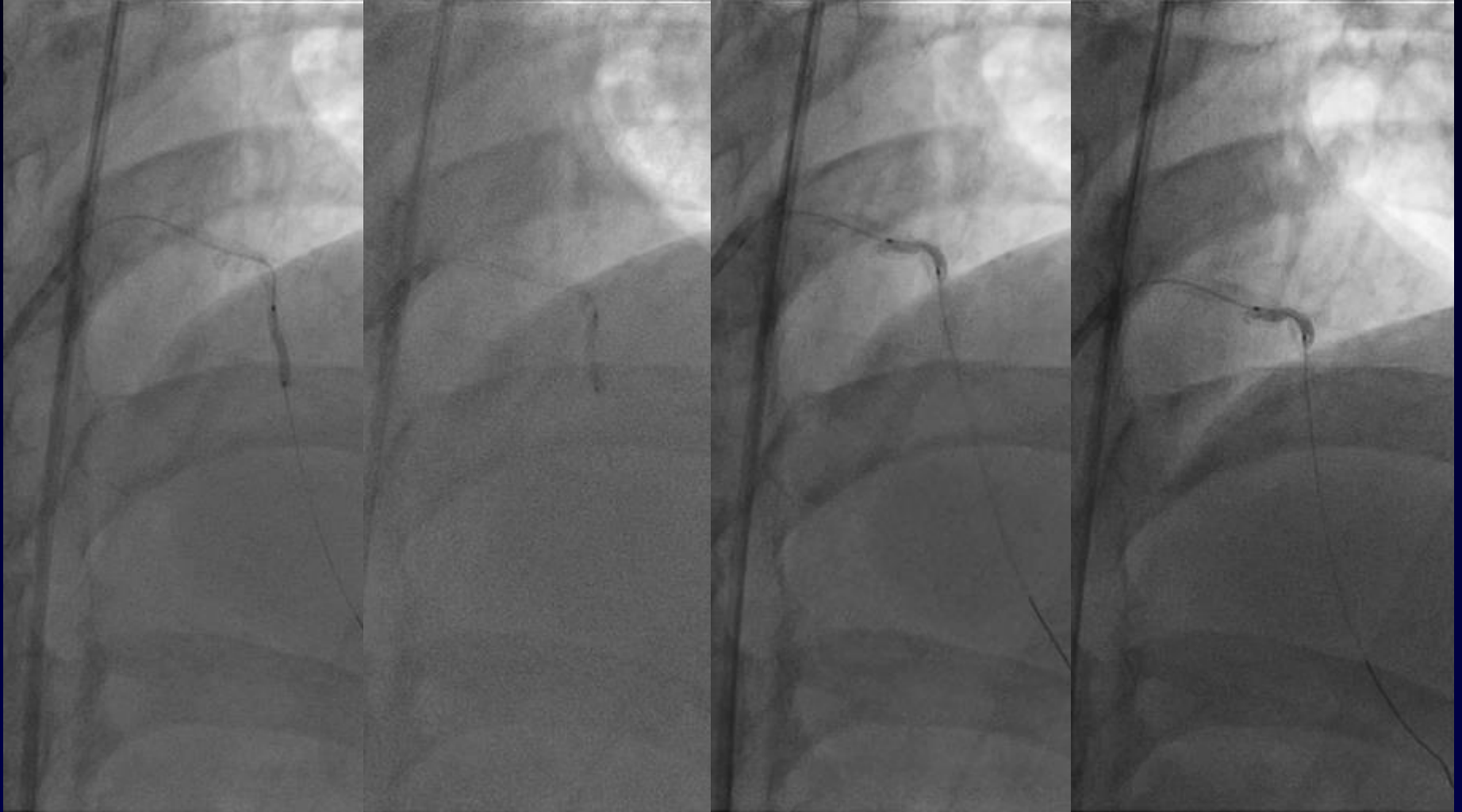
# PCI (December 4<sup>th</sup>, 2013)

---



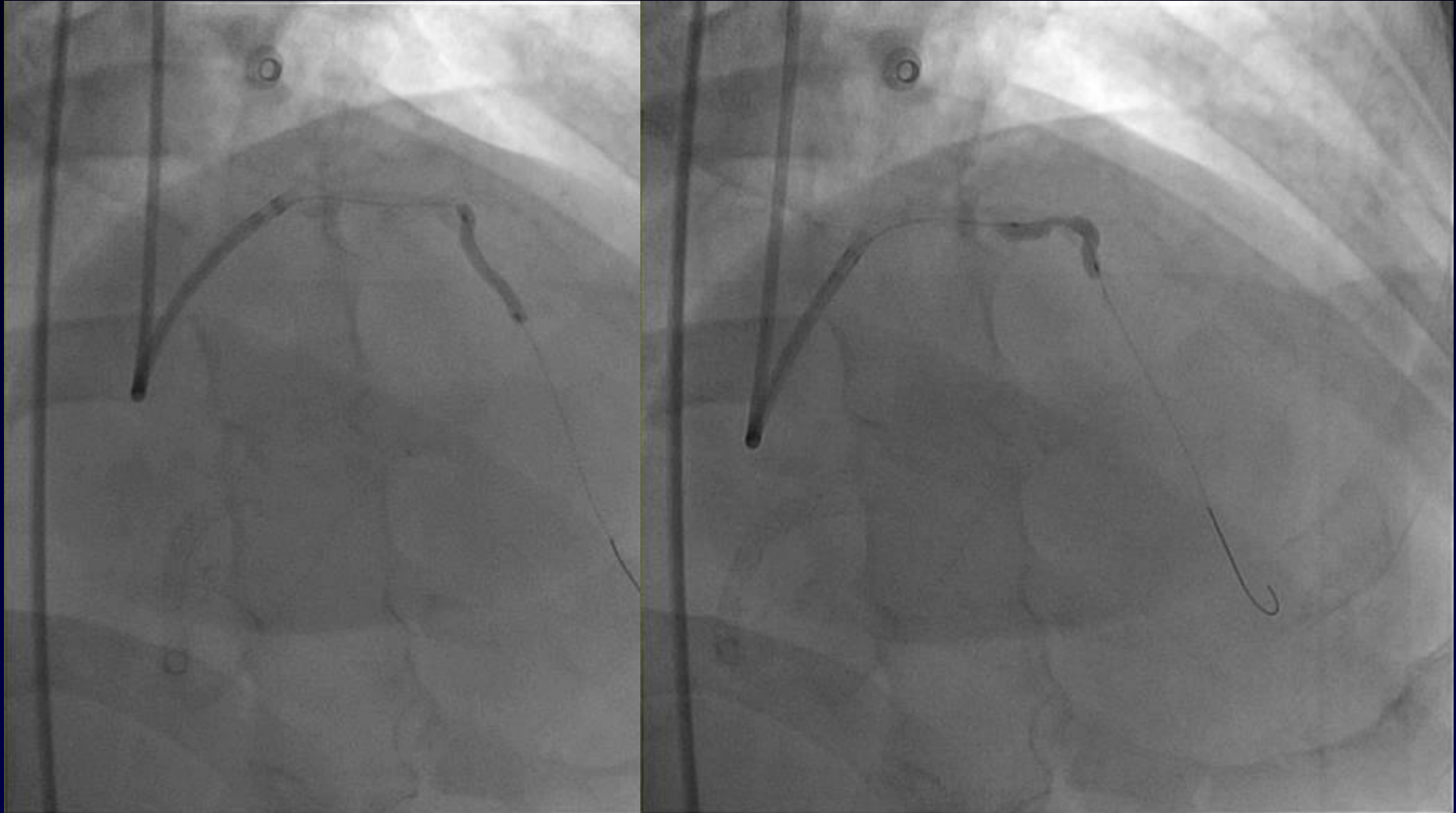
Maverick® 2.5 x 20, Boston Scientific

# PCI (December 4<sup>th</sup>, 2013)



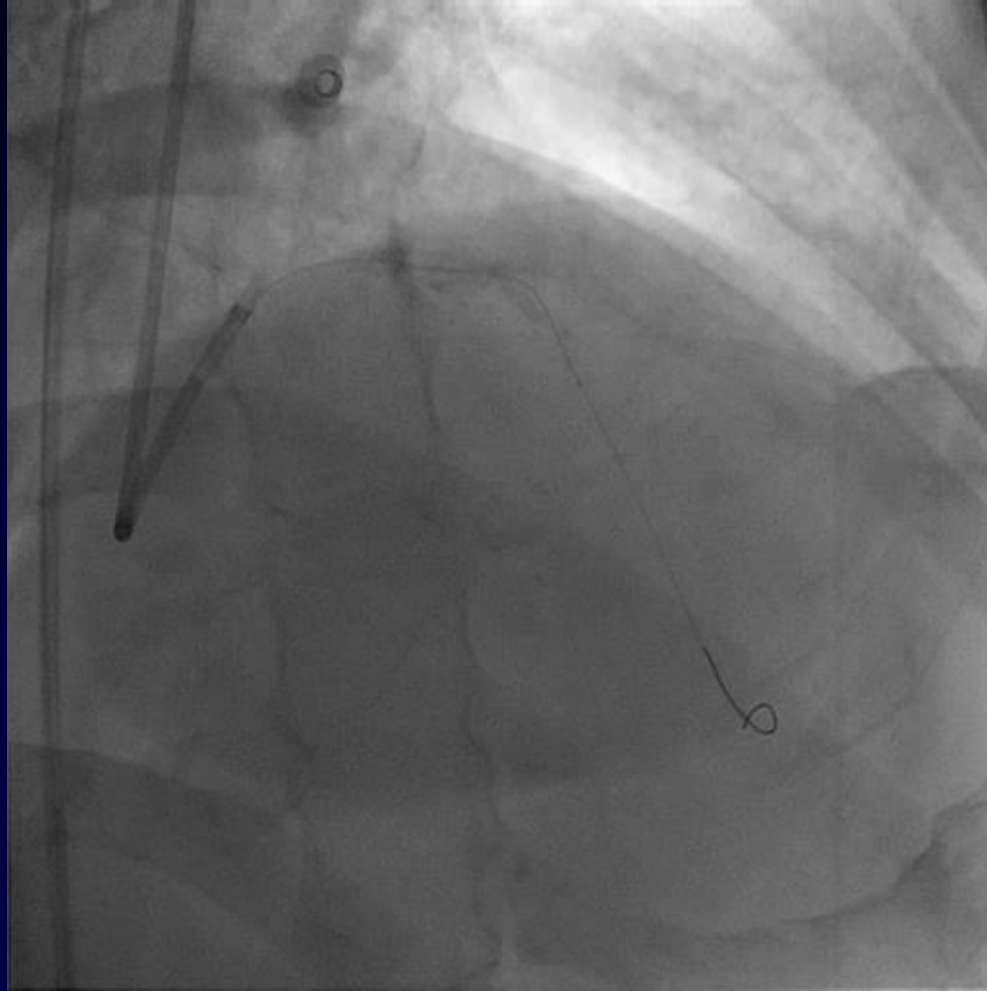
Maverick® 2.5 x 20, Boston Scientific

# PCI (December 4<sup>th</sup>, 2013)



Maverick® 2.5 x 20, Boston Scientific

# PCI (December 4<sup>th</sup>, 2013)

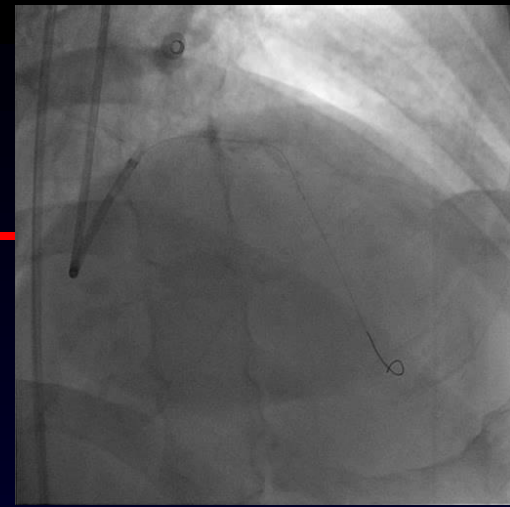




# Next Strategy?

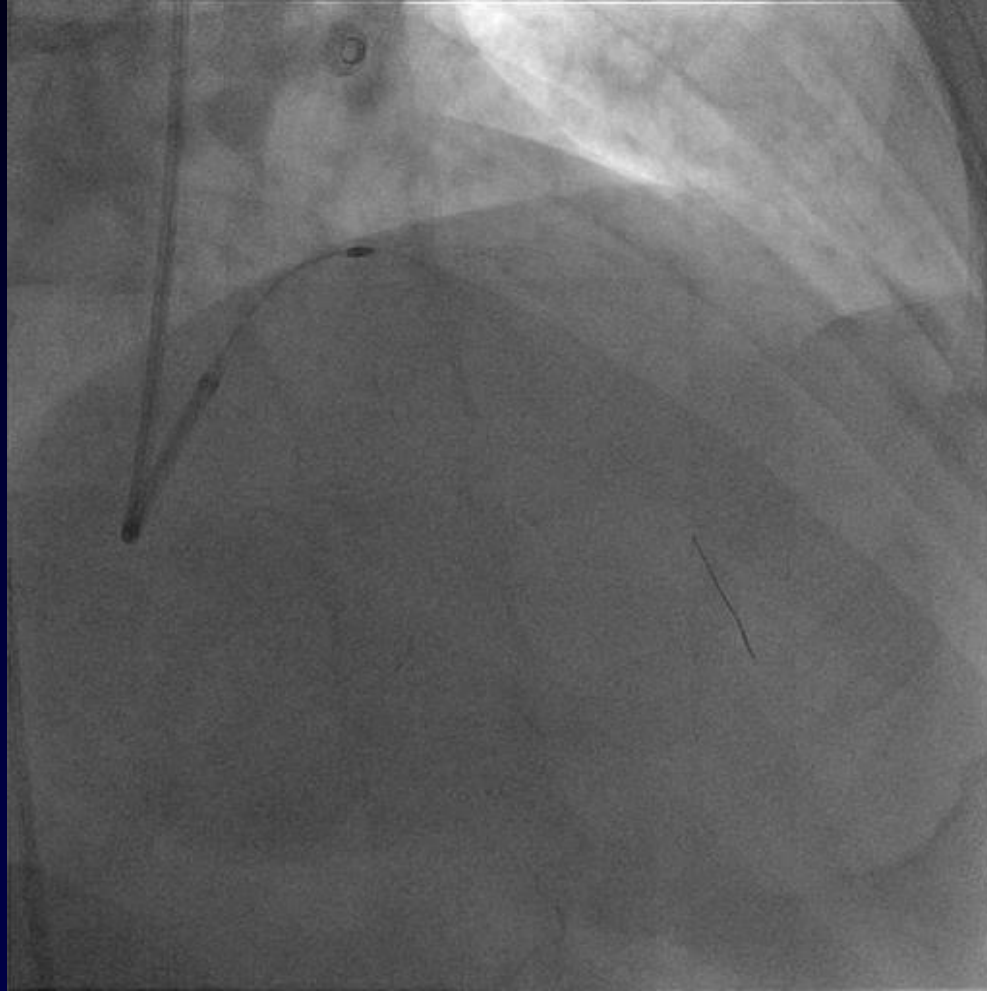
---

- Incomplete ablation atherectomy for previously stent implanted lesion.



- ① Repeat ablation atherectomy with same Burr
- ② Ablation atherectomy with Burr  $\geq 2.0$  mm
- ③ Ablation atherectomy with Burr  $\leq 1.25$  mm
- ④ Implant DES
- ⑤ Abandon

# PCI (December 4<sup>th</sup>, 2013)



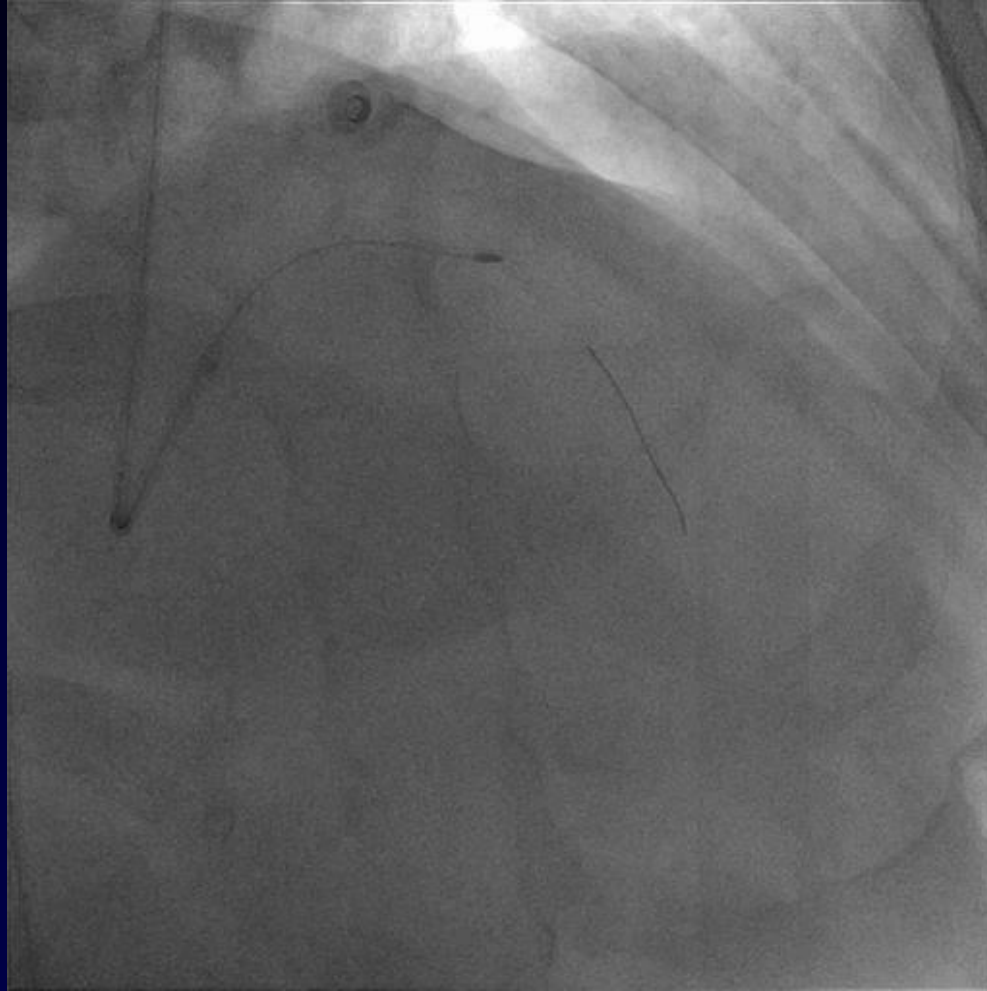
Rotablator® 1.5 mm Burr, Boston Scientific

# Fail !

---

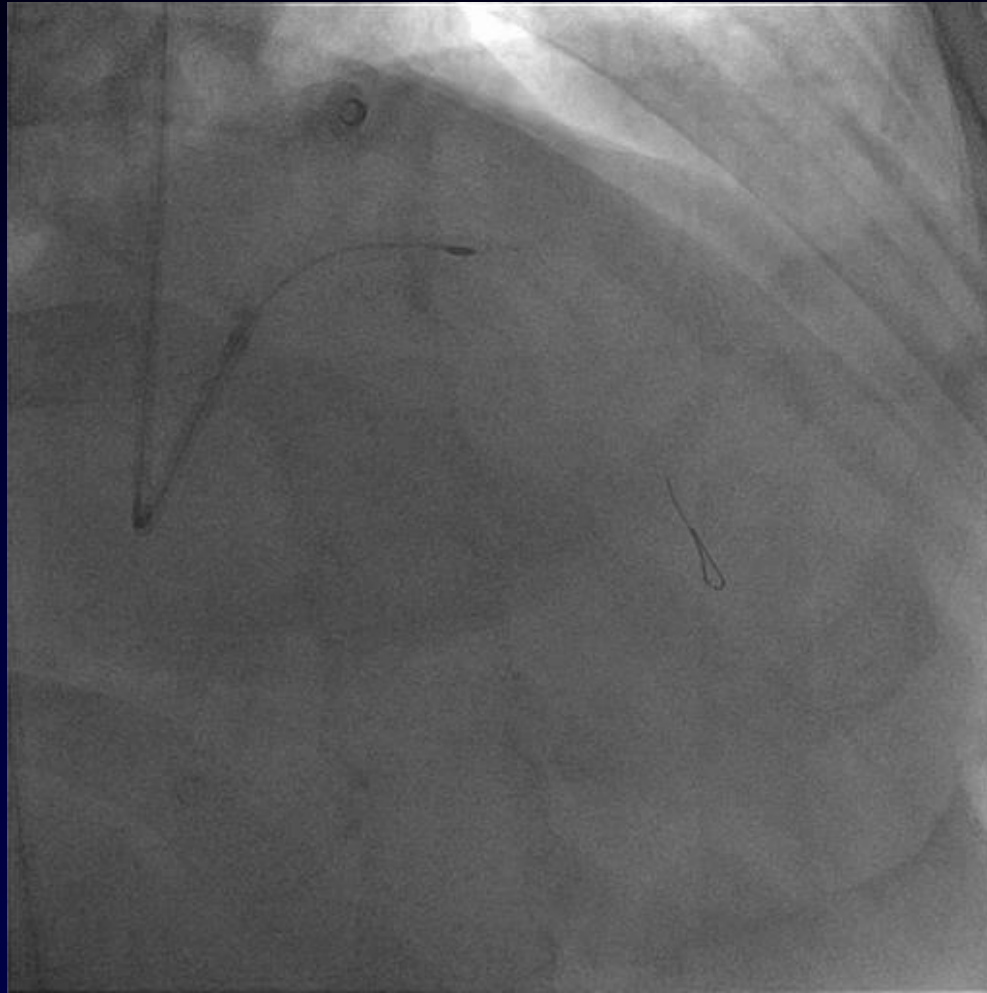
- Ablation atherectomy with 1.25 mm Burr

# PCI (December 4<sup>th</sup>, 2013)



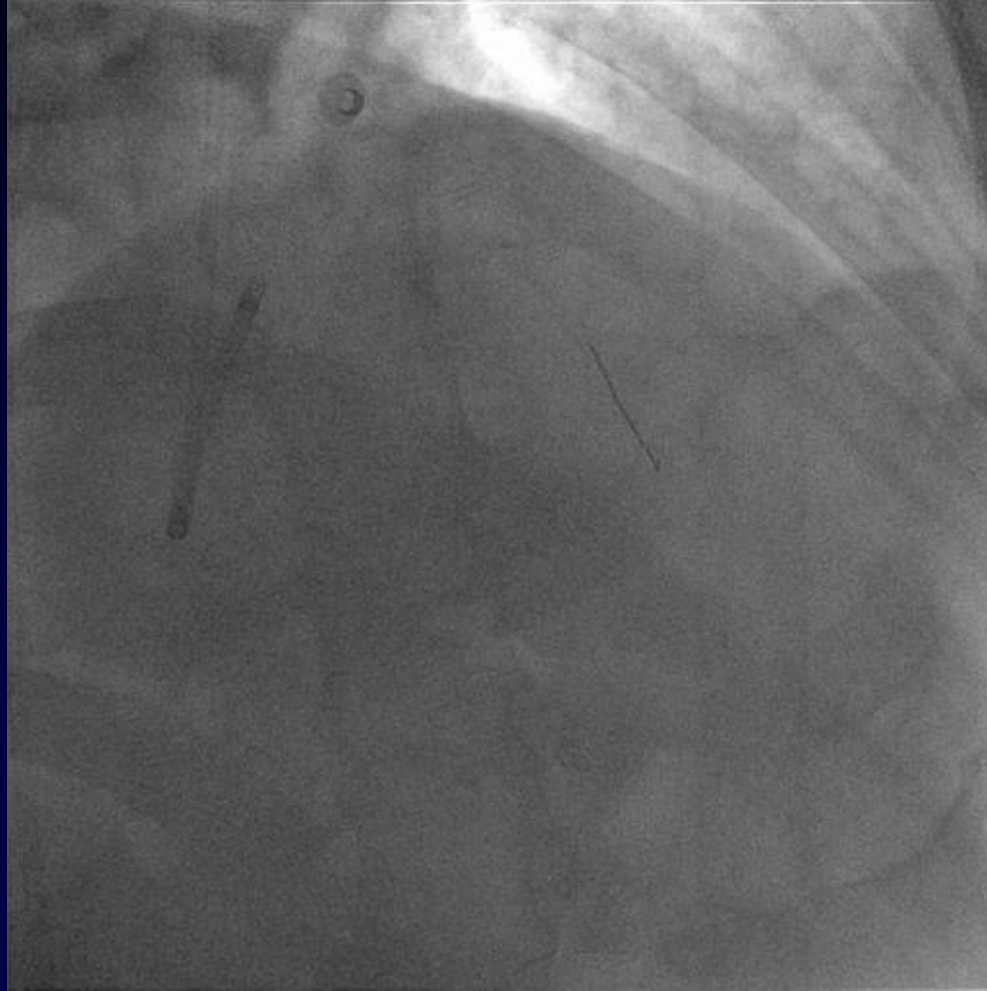
Rotablator® 1.25 mm Burr, Boston Scientific

# PCI (December 4<sup>th</sup>, 2013)



Rotablator® 1.25 mm Burr, Boston Scientific

# PCI (December 4<sup>th</sup>, 2013)



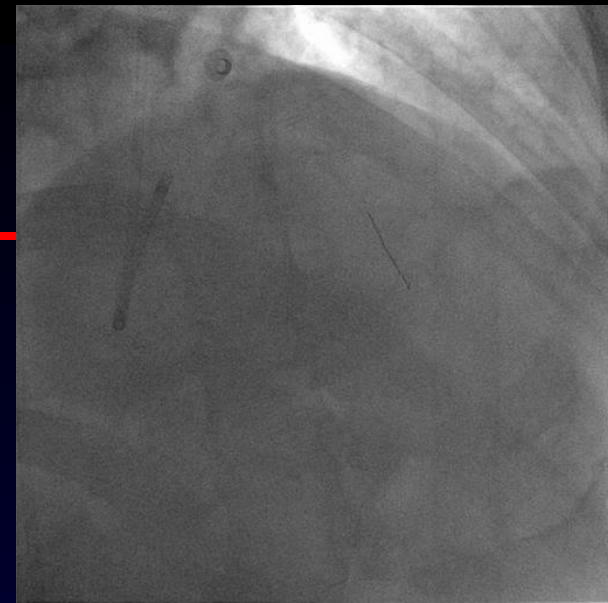
Cut-off coronary guide wire tip, trapped in LAD

# Strategy?

---

- Cut-off coronary guide wire trapped in LAD

- ① Snare
- ② Forceps
- ③ Two wire twisting technique
- ④ Implant coronary stent & crush to wall
- ⑤ Surgery
- ⑥ Let it be



# PCI (December 4<sup>th</sup>, 2013)

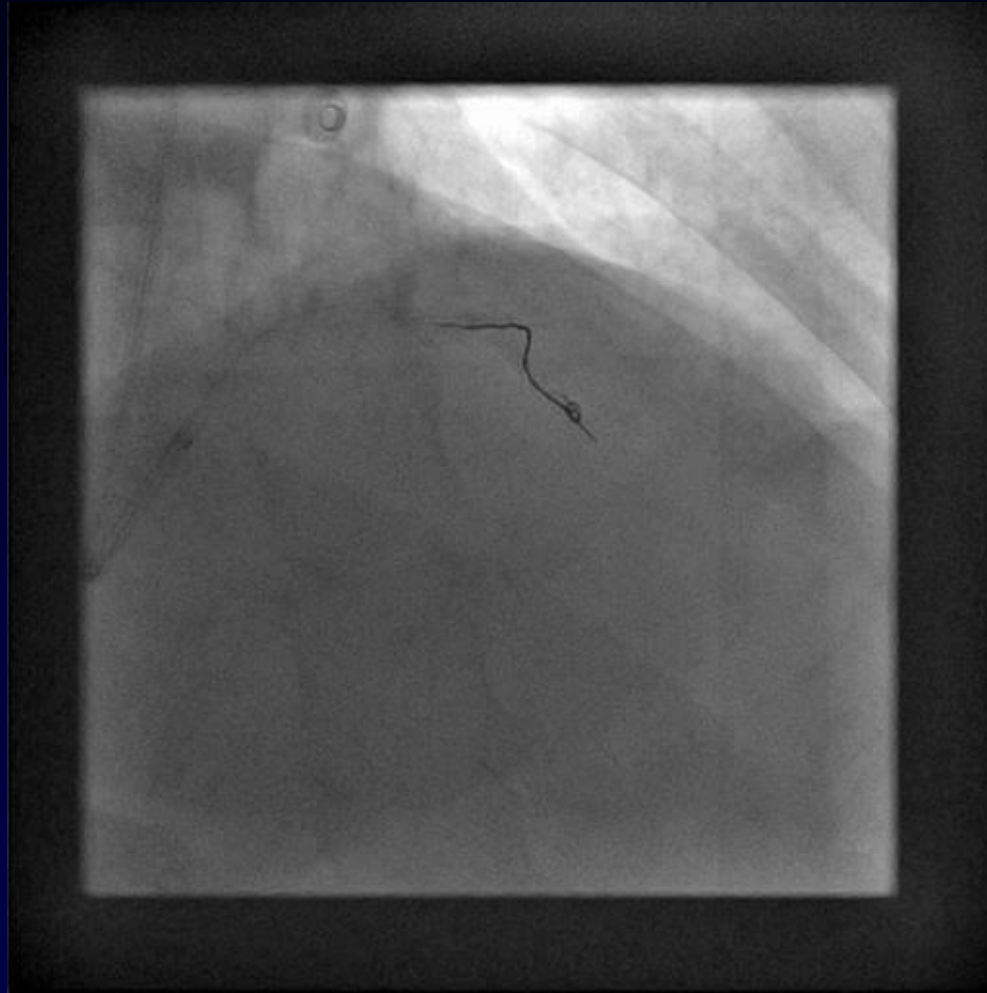
---



Two guide wire twisting technique



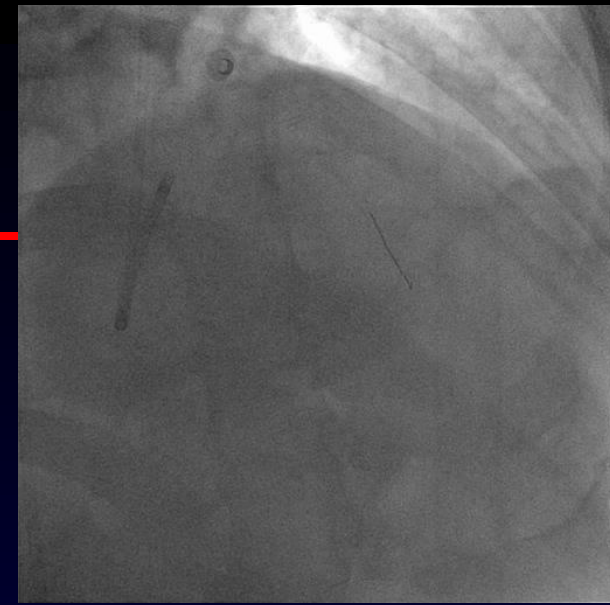
# PCI (December 4<sup>th</sup>, 2013)



# Strategy?

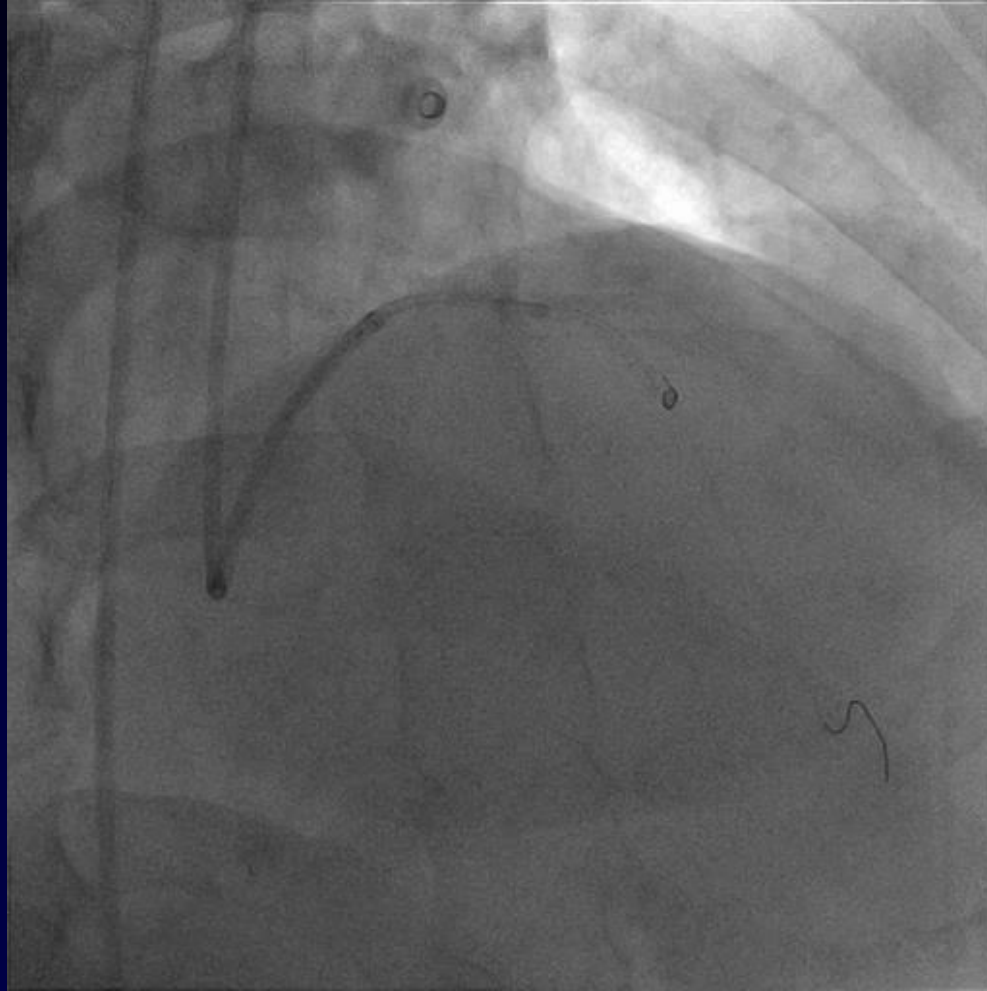
---

- Cut-off coronary guide wire trapped in LAD



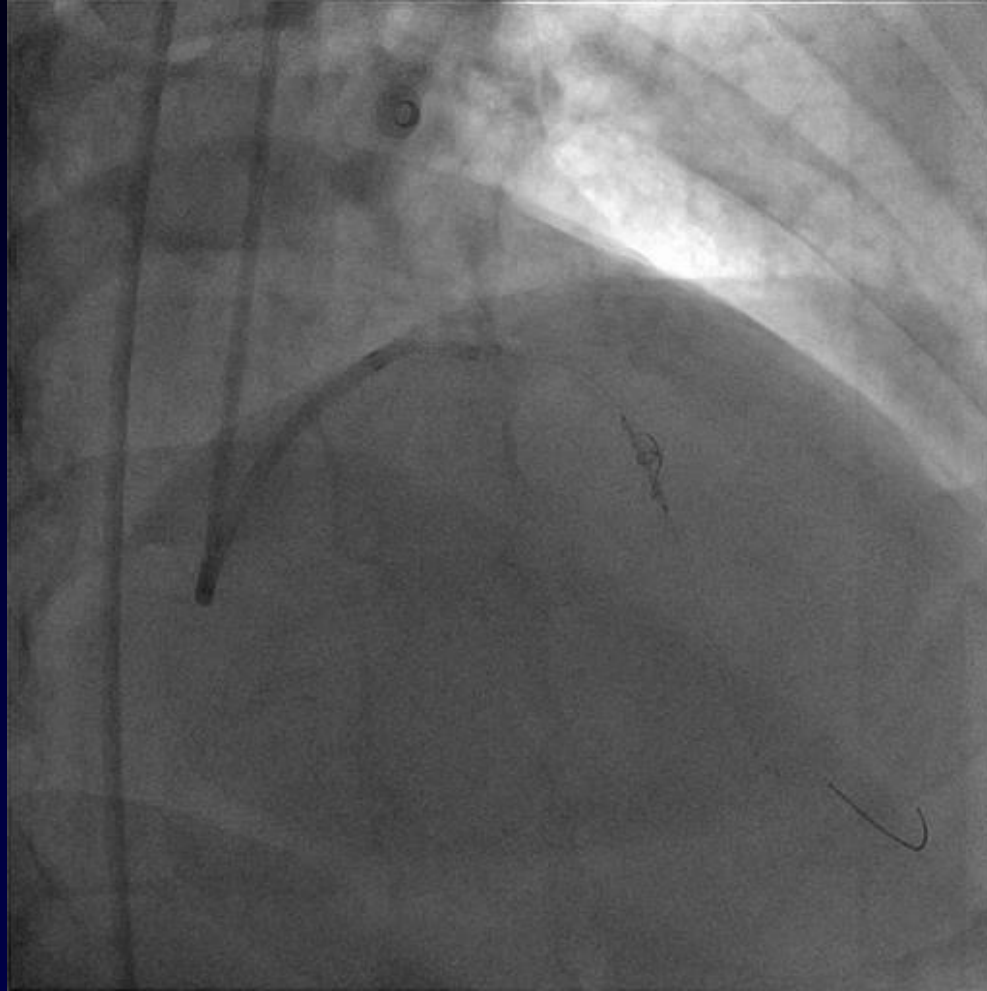
- ① Two wire twisting technique until success
- ② Implant coronary stent & crush to wall
- ③ Surgery
- ④ Let it be

# PCI (December 4<sup>th</sup>, 2013)



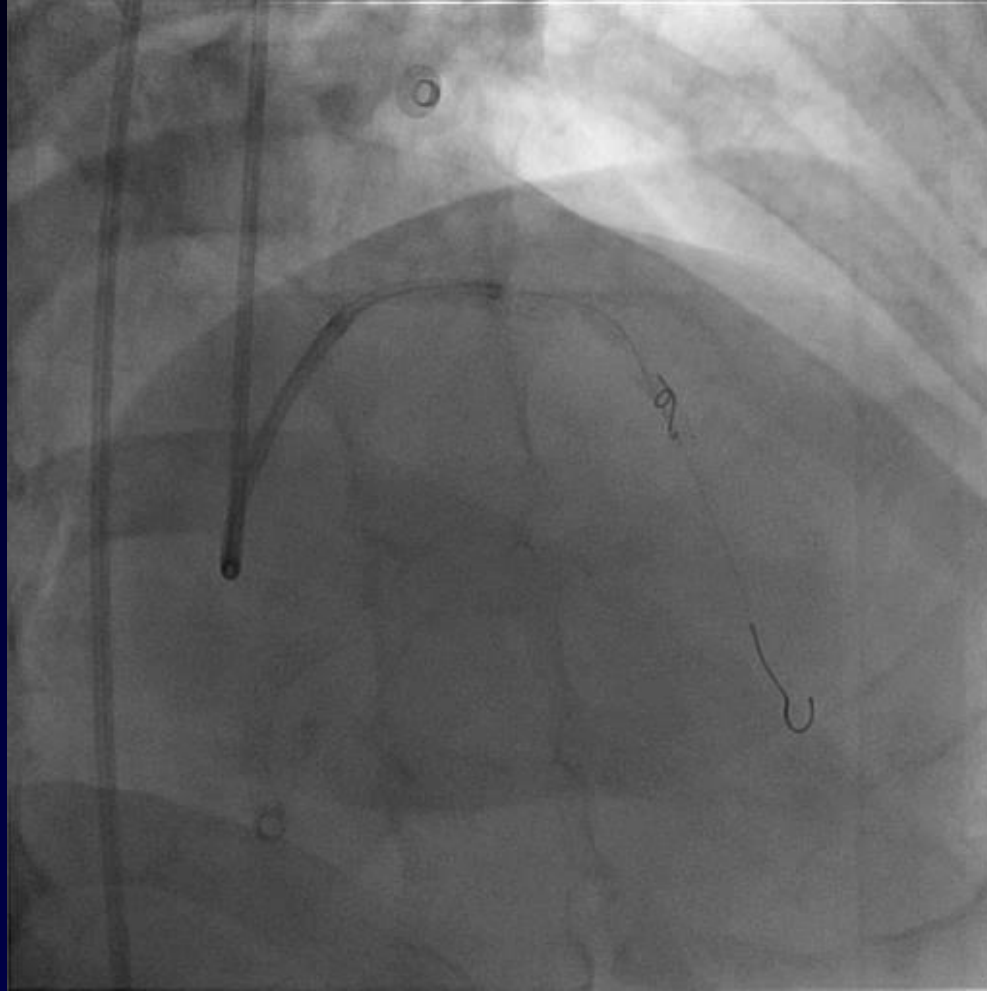
Heartrail®, Terumo & Xience Prime® 2.5 x 15, Abbott

# PCI (December 4<sup>th</sup>, 2013)

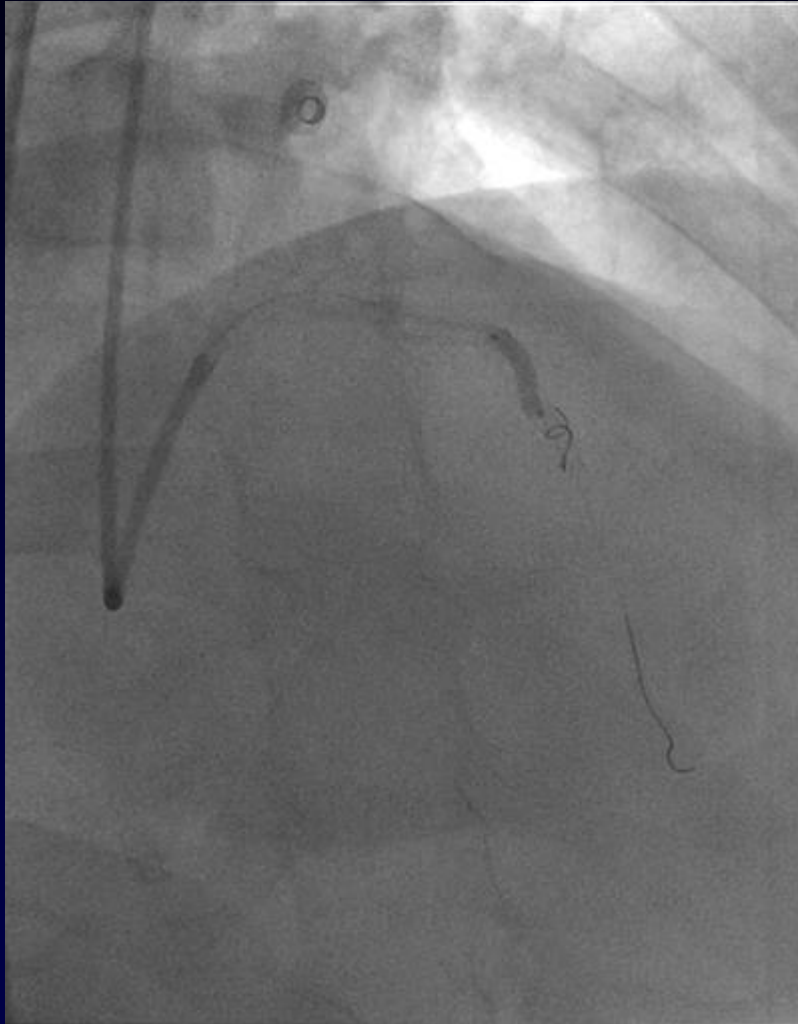


Heartrail®, Terumo & Promus® 2.5 x 12, Boston Scientific

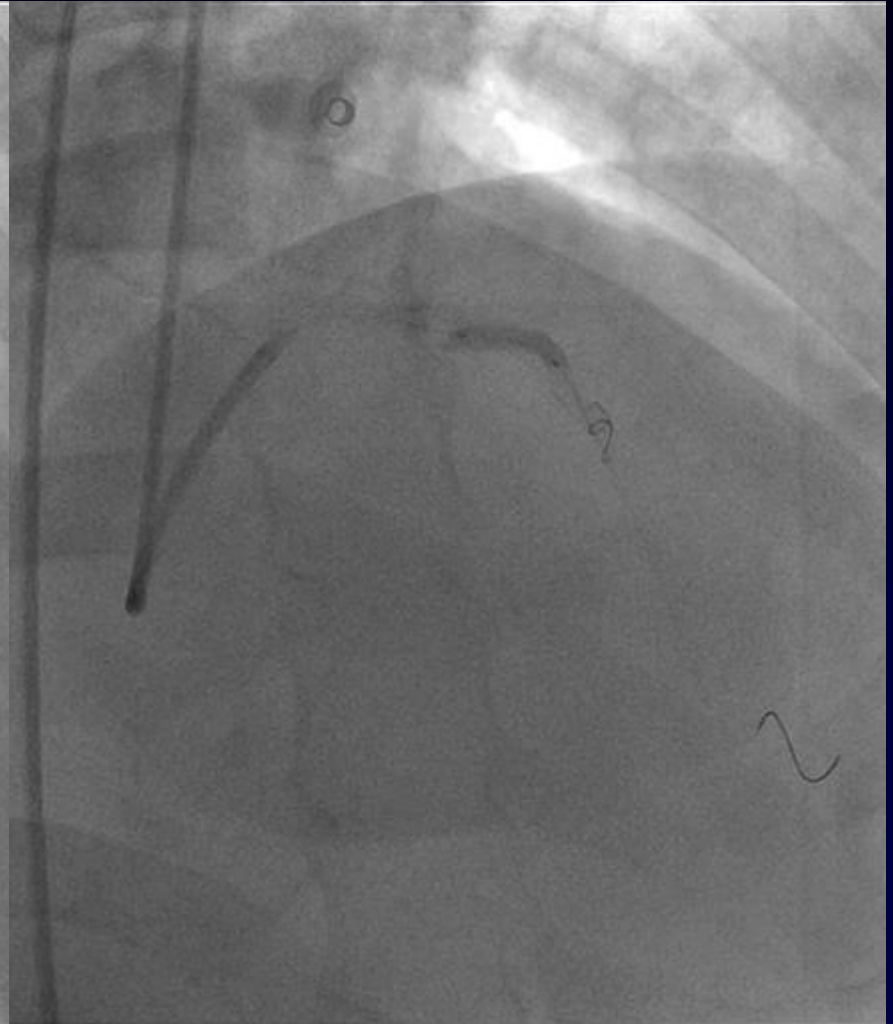
# PCI (December 4<sup>th</sup>, 2013)



# PCI (December 4<sup>th</sup>, 2013)

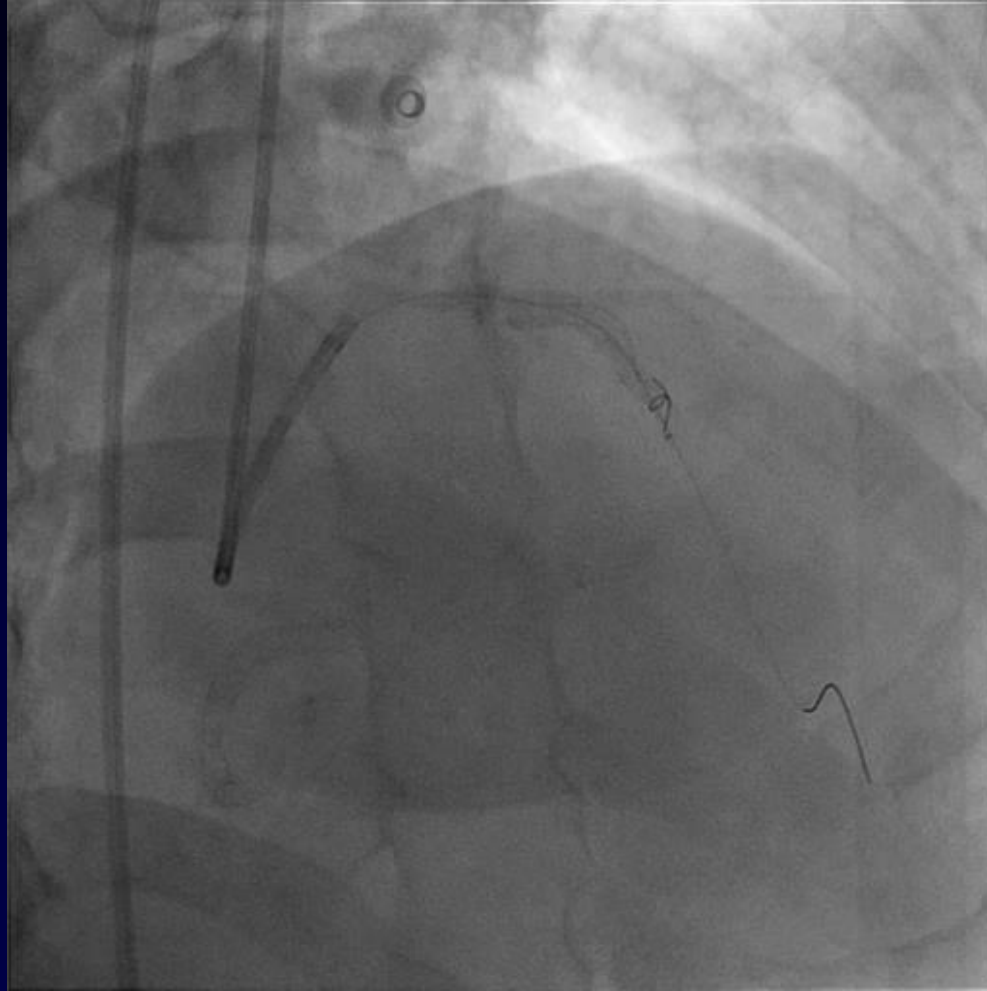


Promus ® 2.5 x 12, Boston Scientific



Promus ® 2.75 x 12, Boston Scientific

# PCI (December 4<sup>th</sup>, 2013)



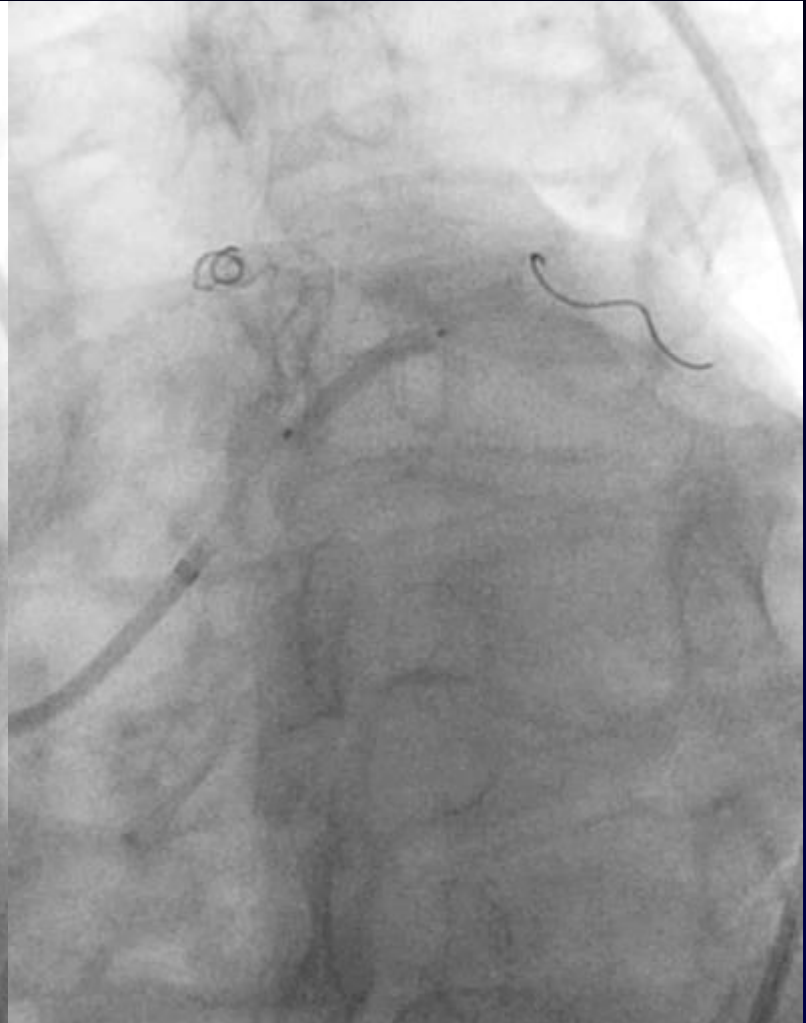
LAD, final angiography



# PCI (December 4<sup>th</sup>, 2013)

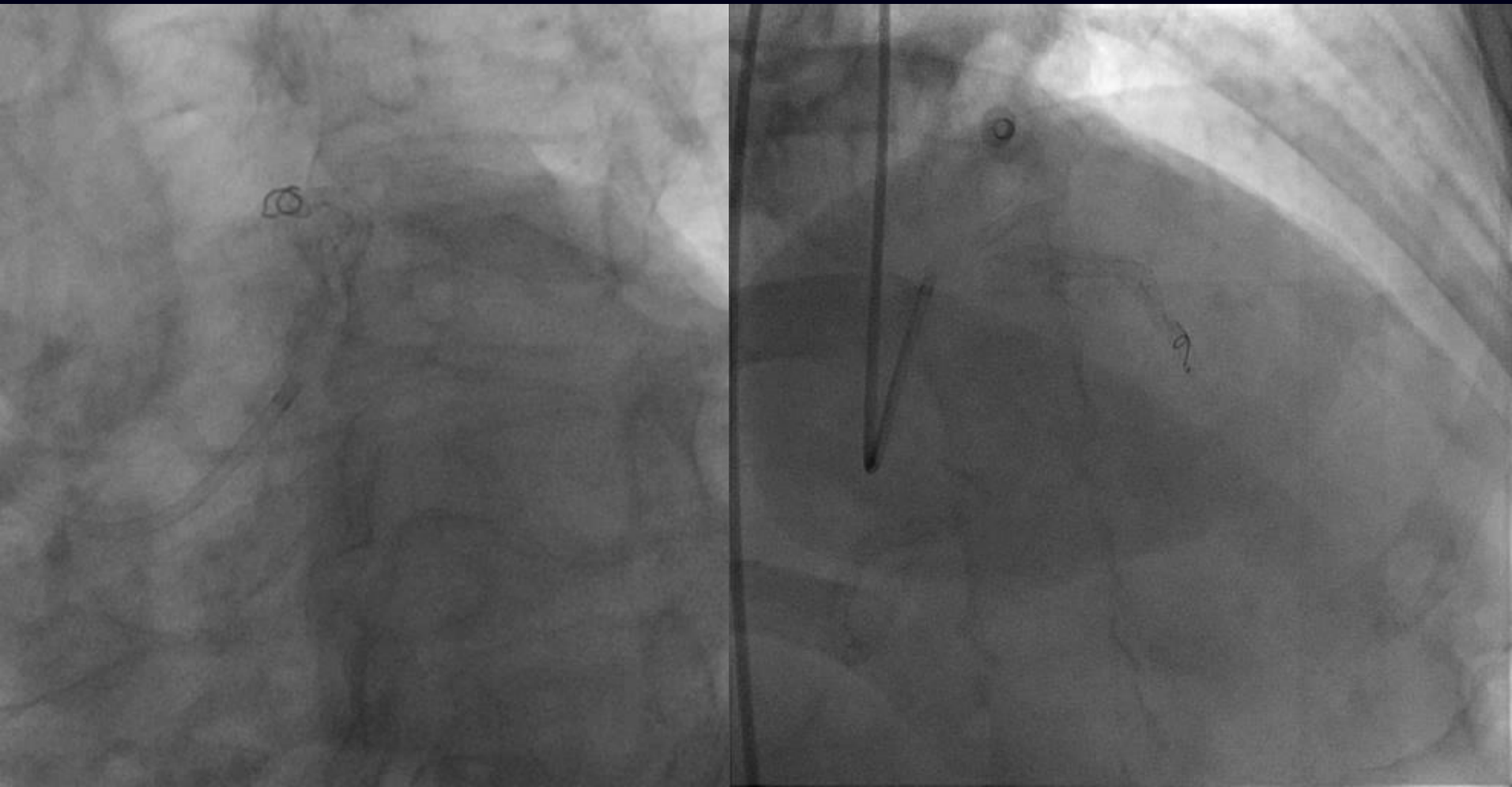


Ramus IM

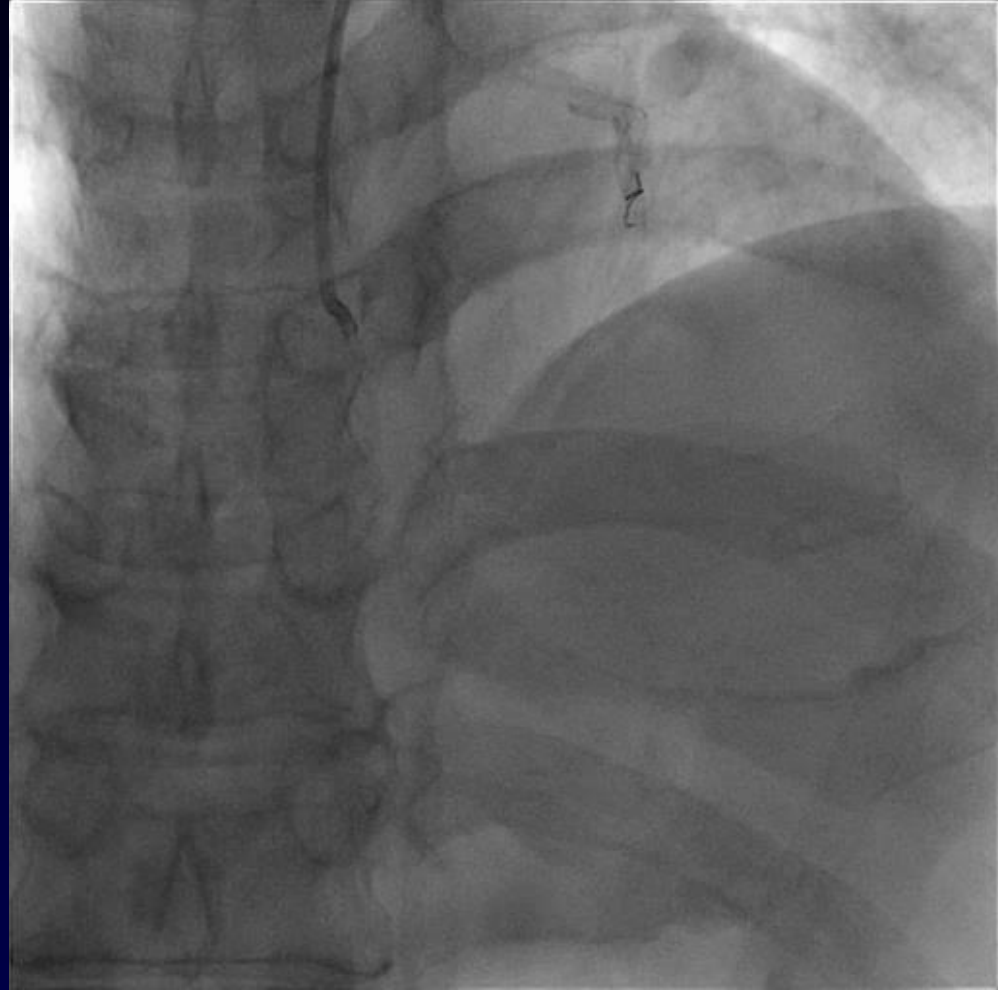
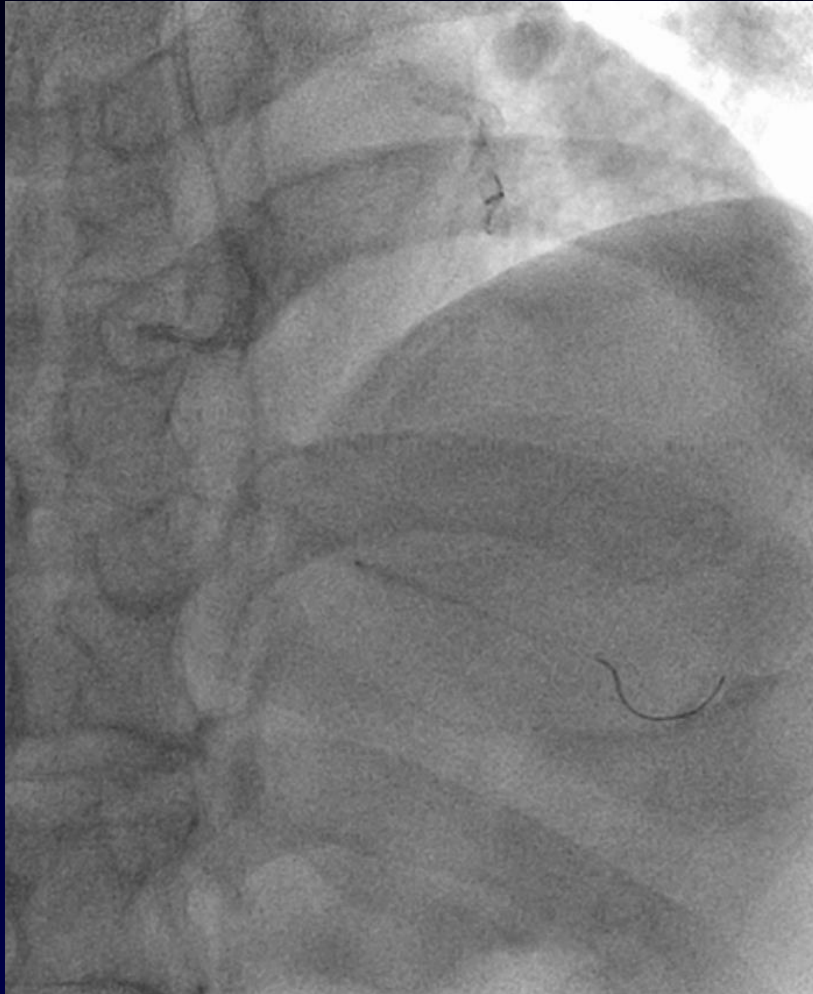


Promus © 2.5 x 16, Boston Scientific

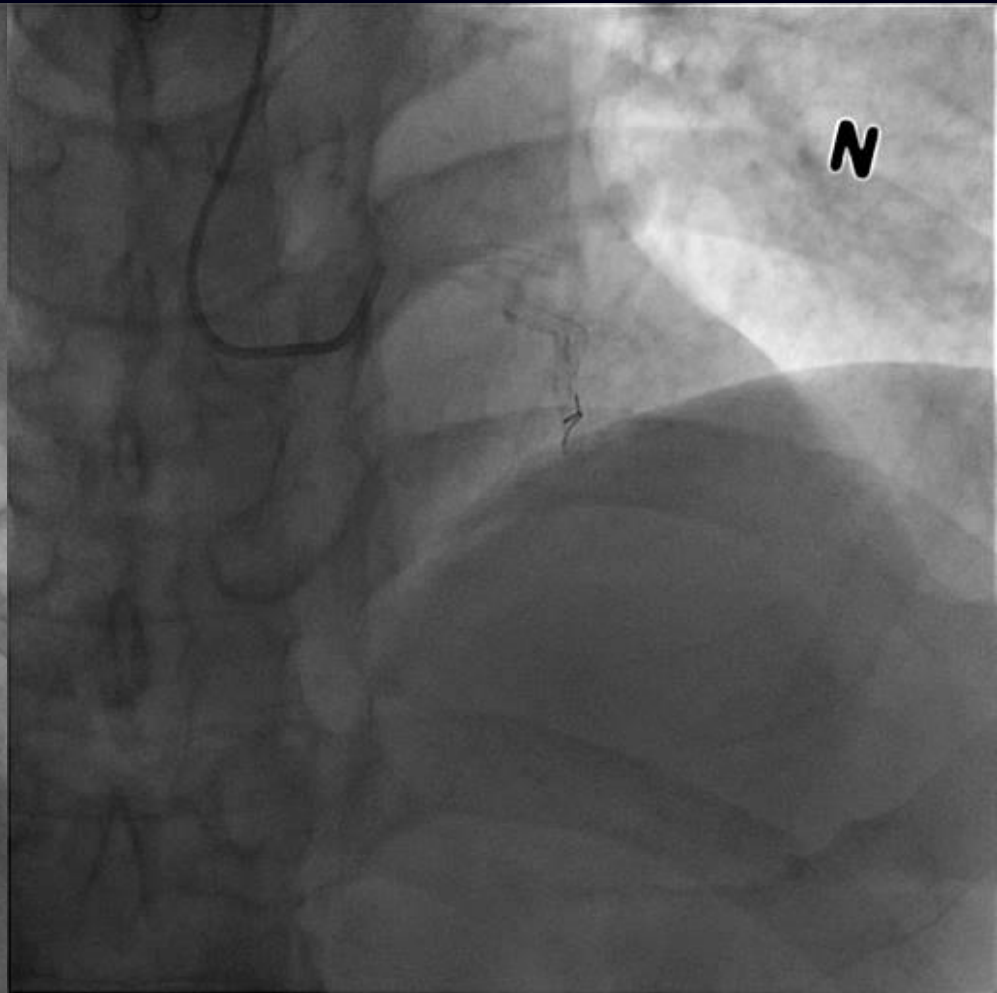
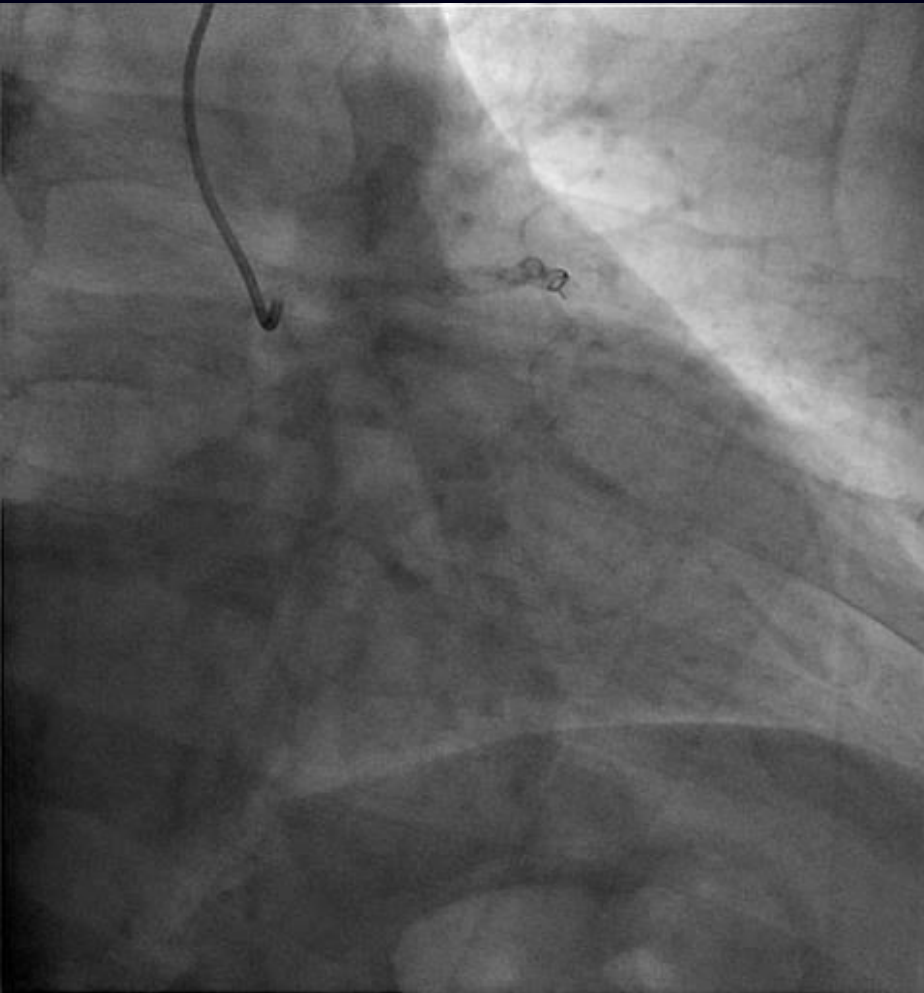
# PCI (December 4<sup>th</sup>, 2013)



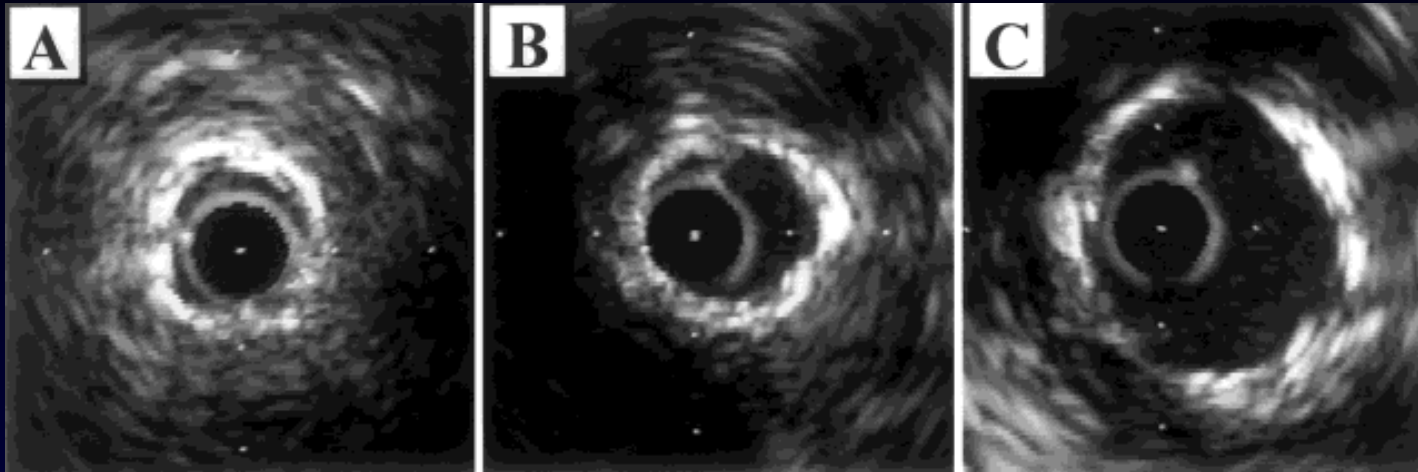
# PCI (December 4<sup>th</sup>, 2013)



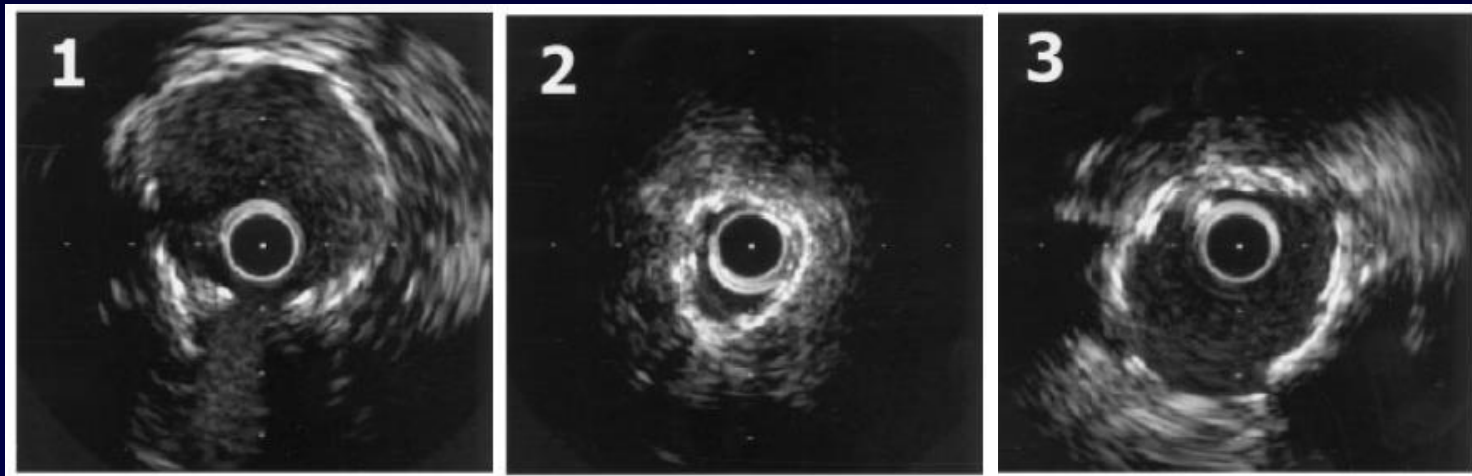
# F/U Angiography, the next day



# Stent Ablation with Rotational Atherectomy



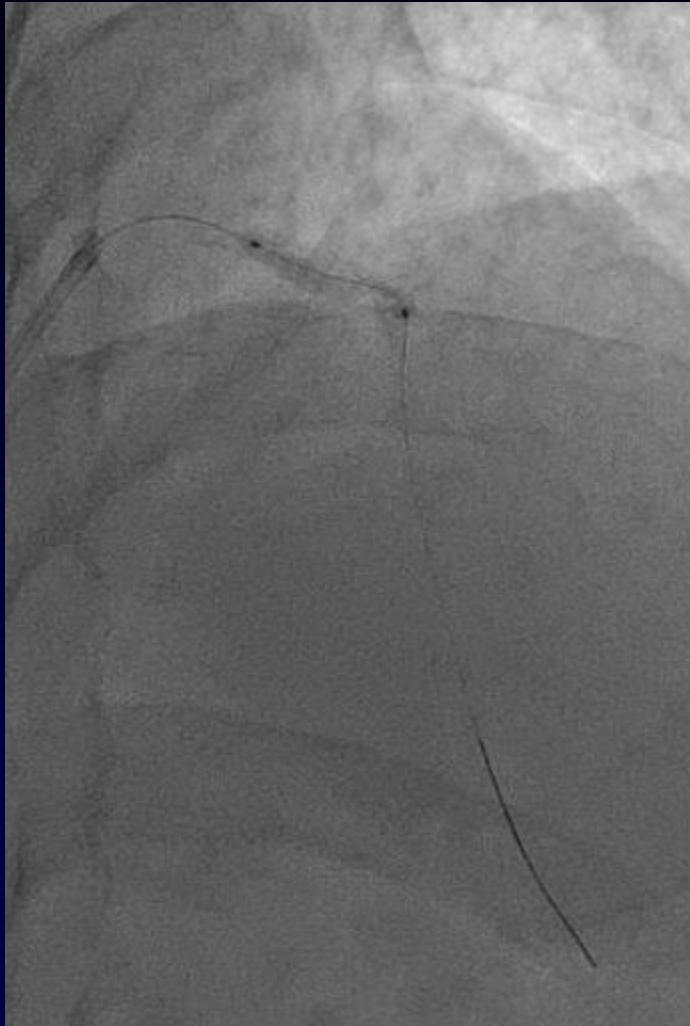
Yoshio Kobayashi et al. Cathet Cardiovasc Intervent 2001



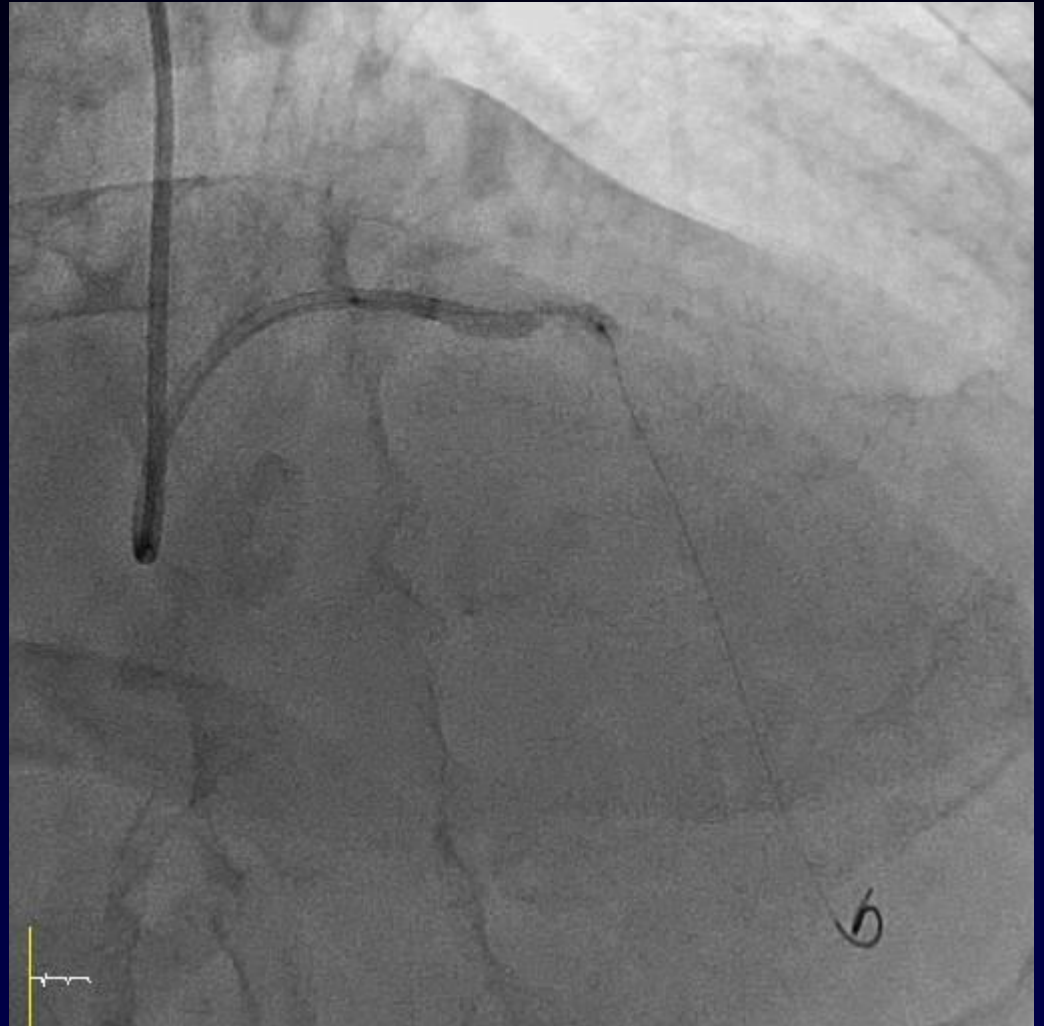
Alfonso Medina et al. Catheter Cardiovasc Interv 2003



# Two Overlapped DES



Biomatrix® 2.75 x 18, Biosensors



SeQuent® Please 2.75 x 26, B.Braun

# Retrieval from Coronary Arteries

---

- Dislodged stents
- Tip of guide catheter
- Tip of IVUS
- Broken angioplasty balloon
- Tip of guide wire



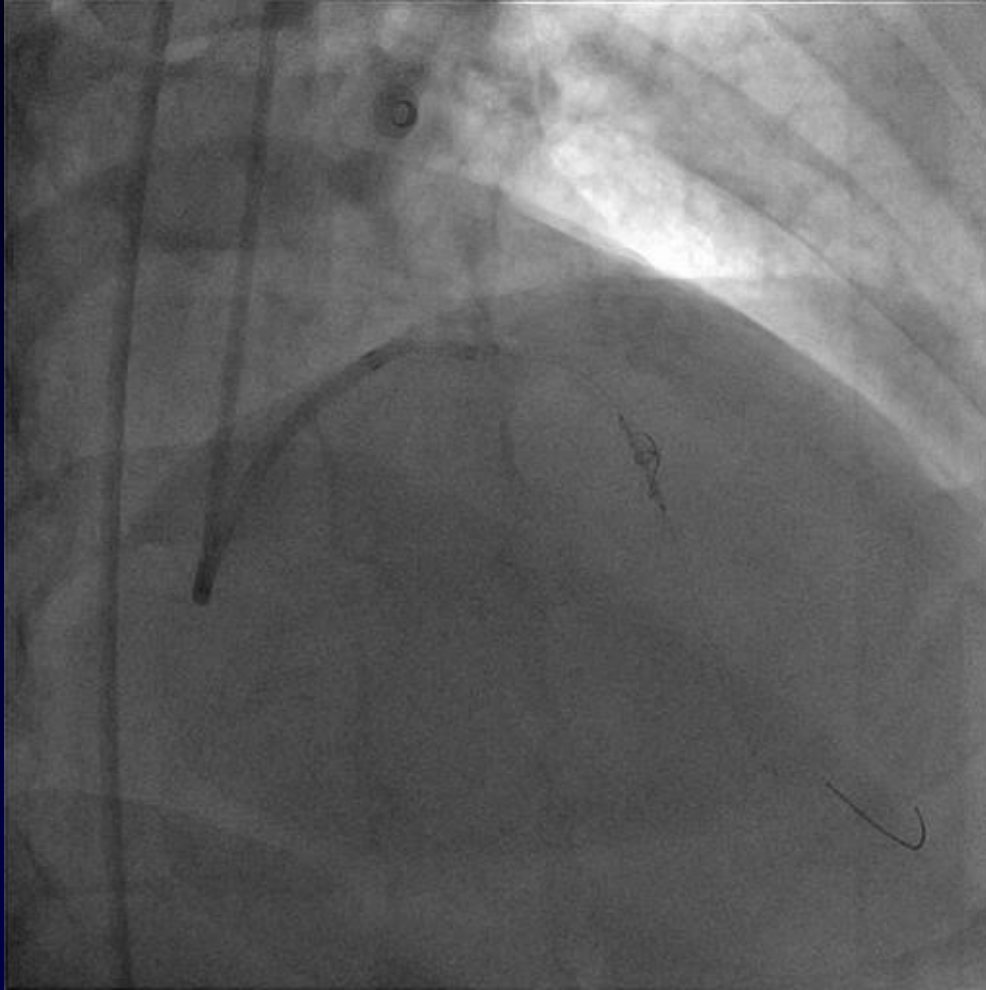
# Why was it cut?



- Rotablator
- Extraction
- Twisted

# Successful Crushing

---



# Case Summary

---

- Poorly dilated PCI
- Rotational atherectomy for previously stent implanted lesion
- Trapped cut-off guide wire crushing with drug eluting stent