

# **Effectiveness of Vessel Stretch by a Retrograde Wire to Advance an Antegrade wire**

**Hyogo Prefectural Amagasaki General  
Medical Center**

**Akihiko Miyata, Kozo Hotta, Rei Fukuhara**

**Case :** A Female in her early 70s

**Chief Complaint :** chest pain

**Clinical Course :**

A female in her early 70s, who was an outpatient for hypertension, claimed symptoms of effort angina. She had no particular medical history other than hypertension. The exercise electrocardiogram showed ischemic change on exercise.

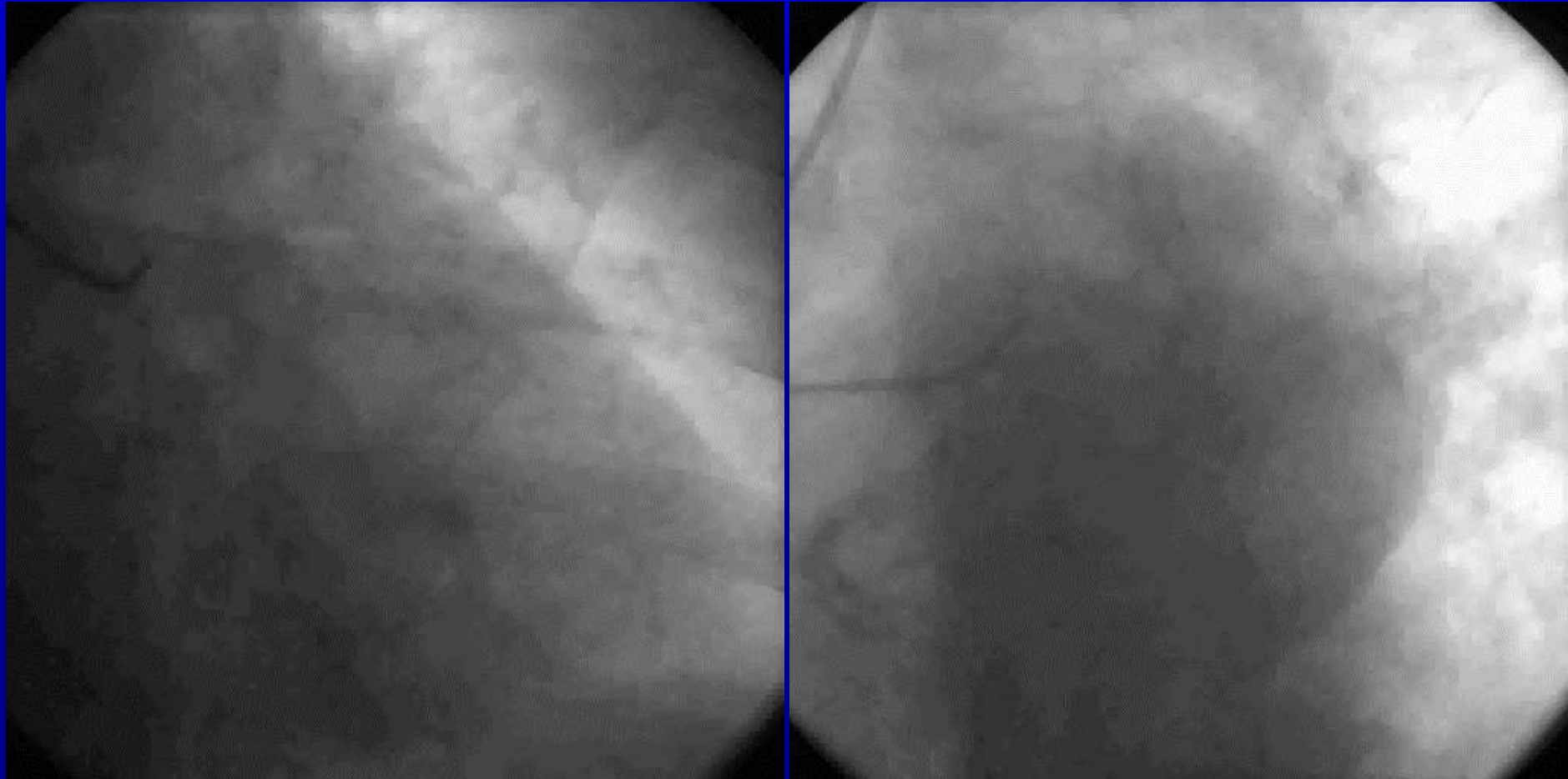
**Past medical history :** hypertension

**Coronary risk :** HTN(+), DLP(-), DM(-), past heavy smoker

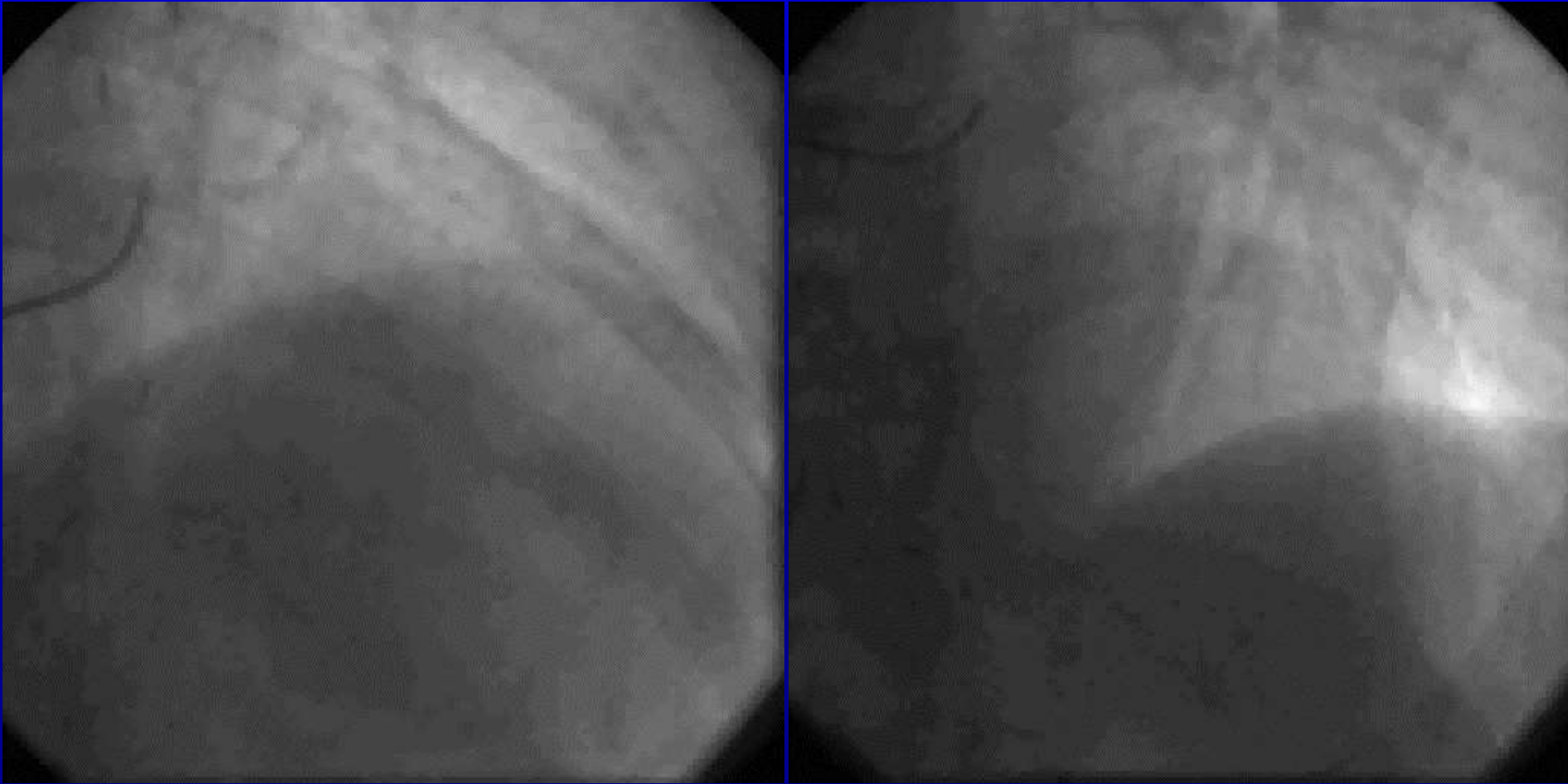
**Renal function :** eGFR 94mL/min

**Cardiac function :** normal LV contraction, asynergy-

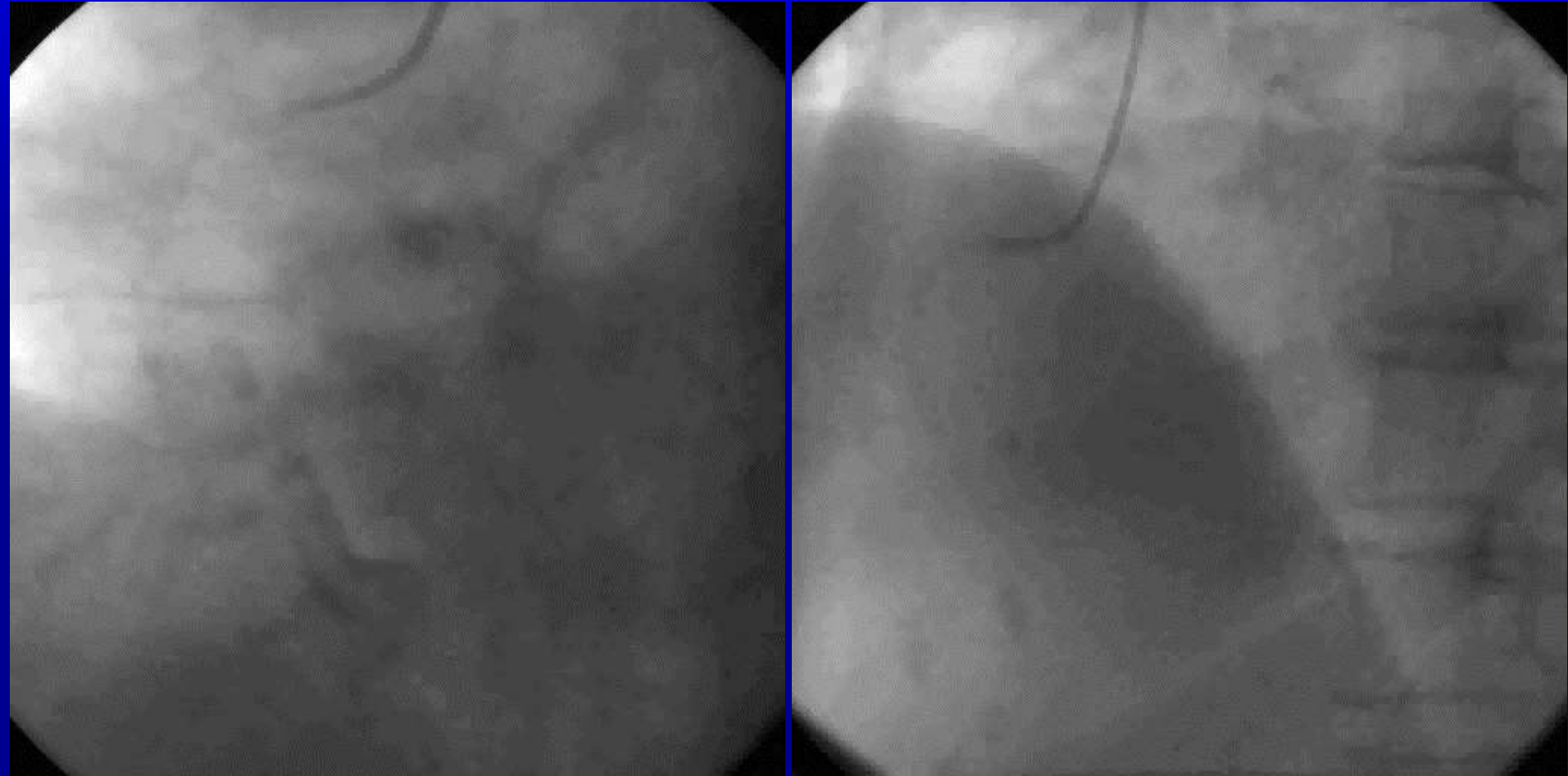
# Initial CAG



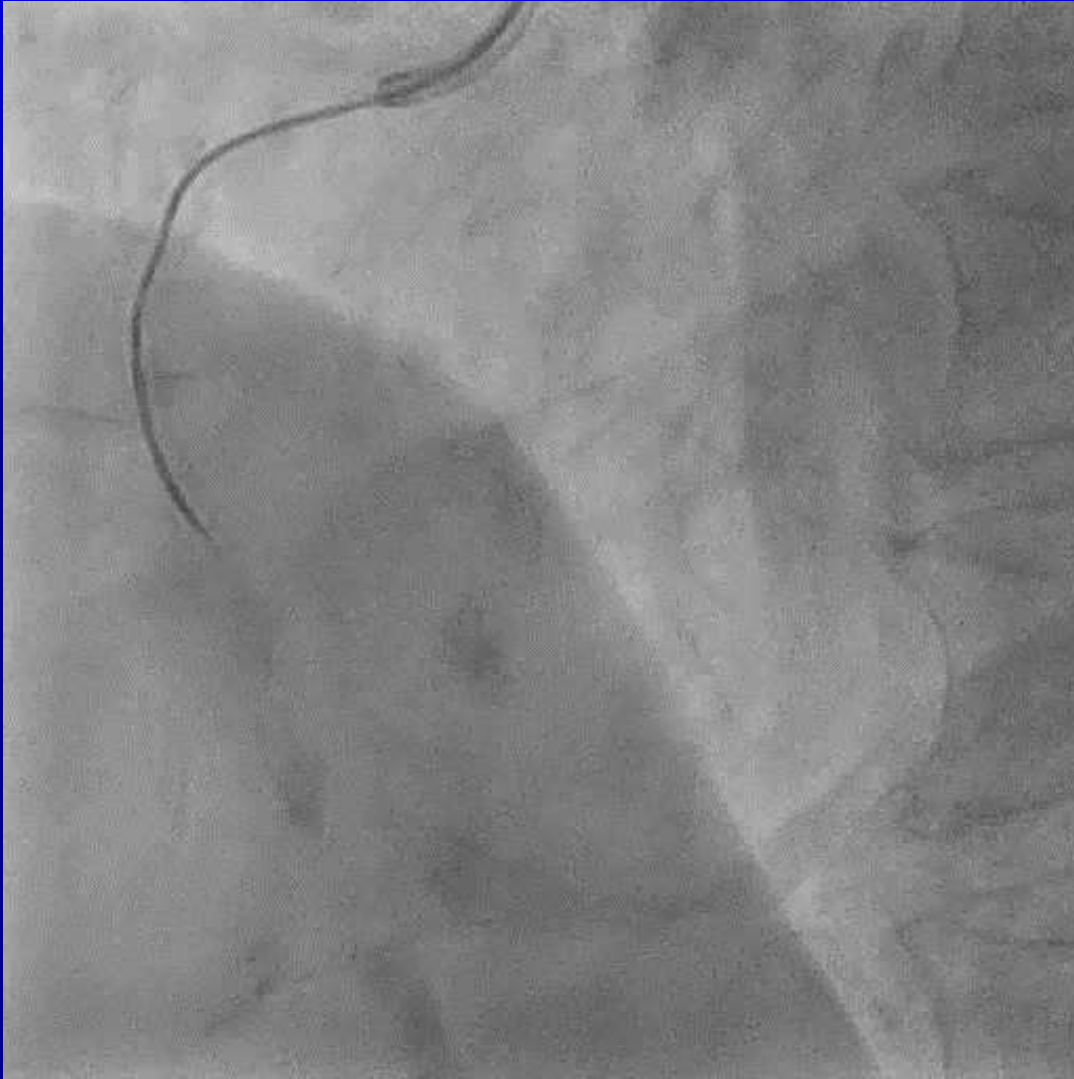
# Initial CAG



## Initial CAG

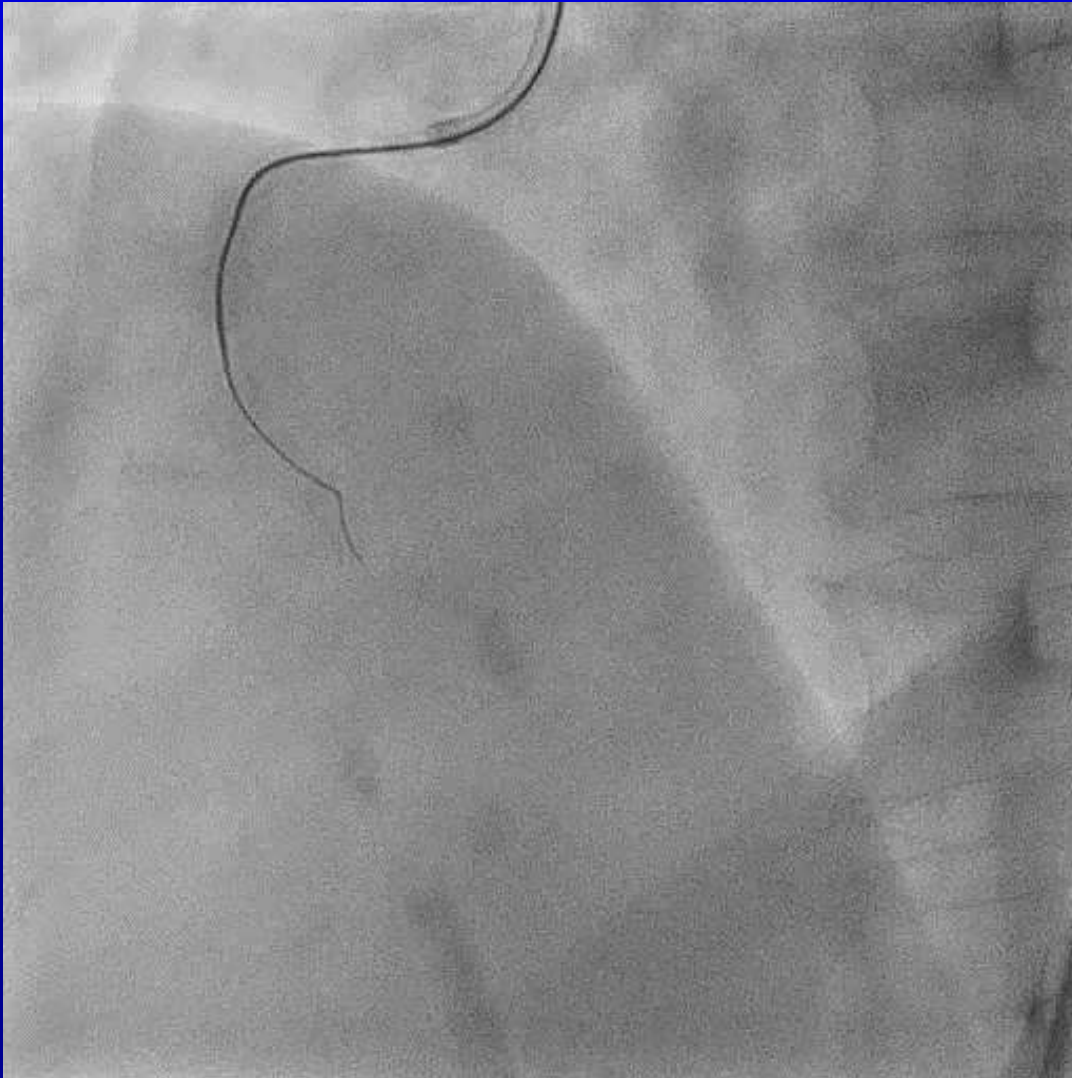


## PCI for RCA CTO



Bilateral femoral approach  
7Fr.Britetip JR4.0 SH  
7Fr.Launcher EBU3.5 SH

## PCI for RCA CTO



Bilateral femoral approach  
7Fr.Britetip JR4.0 SH  
7Fr.Launcher EBU3.5 SH

After Corsair was induced to the proximal end of the CTO, Gaia1st and 2nd could not proceed.

## PCI for RCA CTO



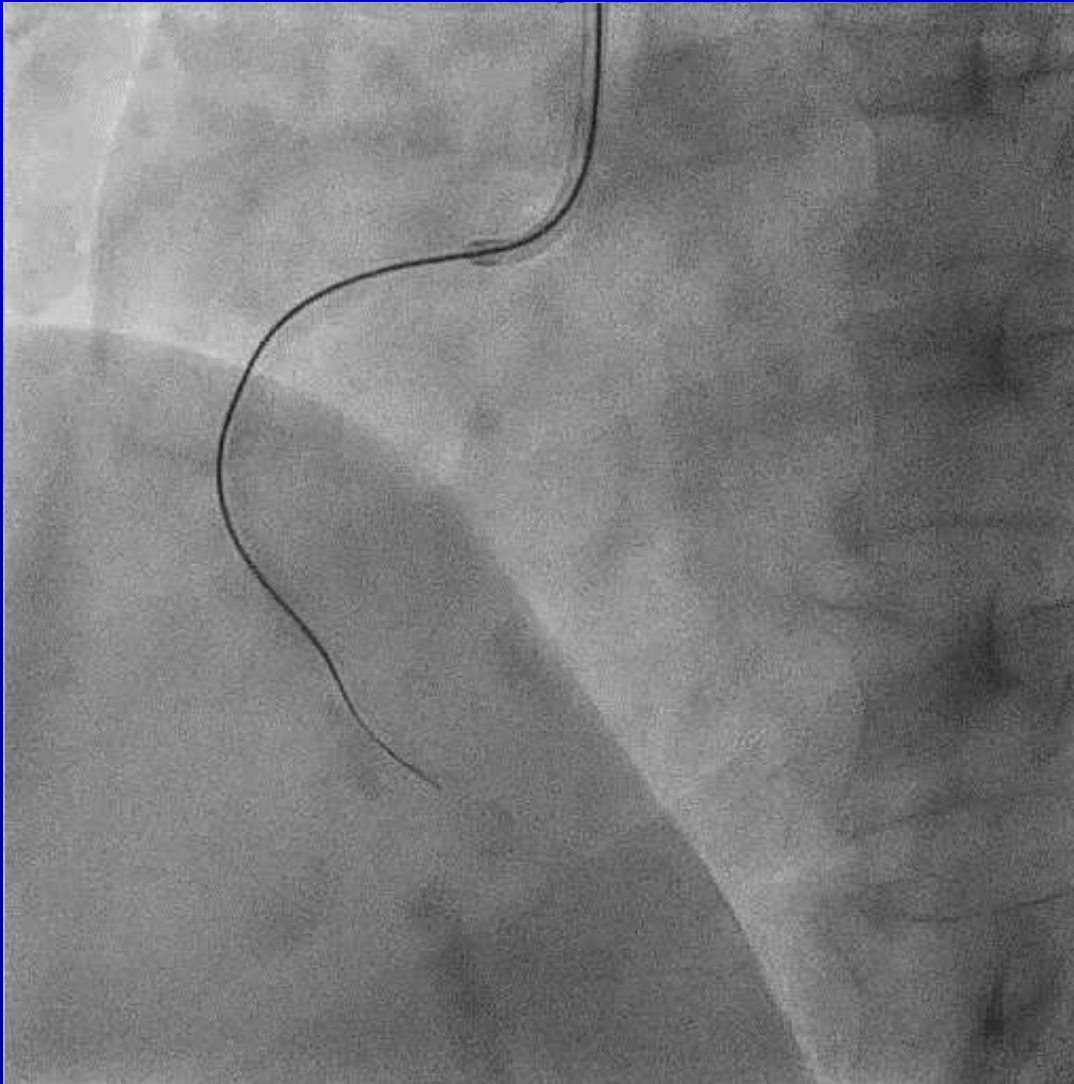
Bilateral femoral approach  
7Fr.Britetip JR4.0 SH  
7Fr.Launcher EBU3.5 SH

After Corsair was induced to the proximal end of the CTO, Gaia1st and 2nd could not proceed.

- There existed a curvature just after the entry point.
- The proximal cap was so hard.
- Gaia 1<sup>st</sup>/2<sup>nd</sup> uncontrollable.



## PCI for RCA CTO



Bilateral femoral approach  
7Fr.Britetip JR4.0 SH  
7Fr.Launcher EBU3.5 SH

After Corsair was induced to the proximal end of the CTO, Gaia1st and 2nd could not proceed.

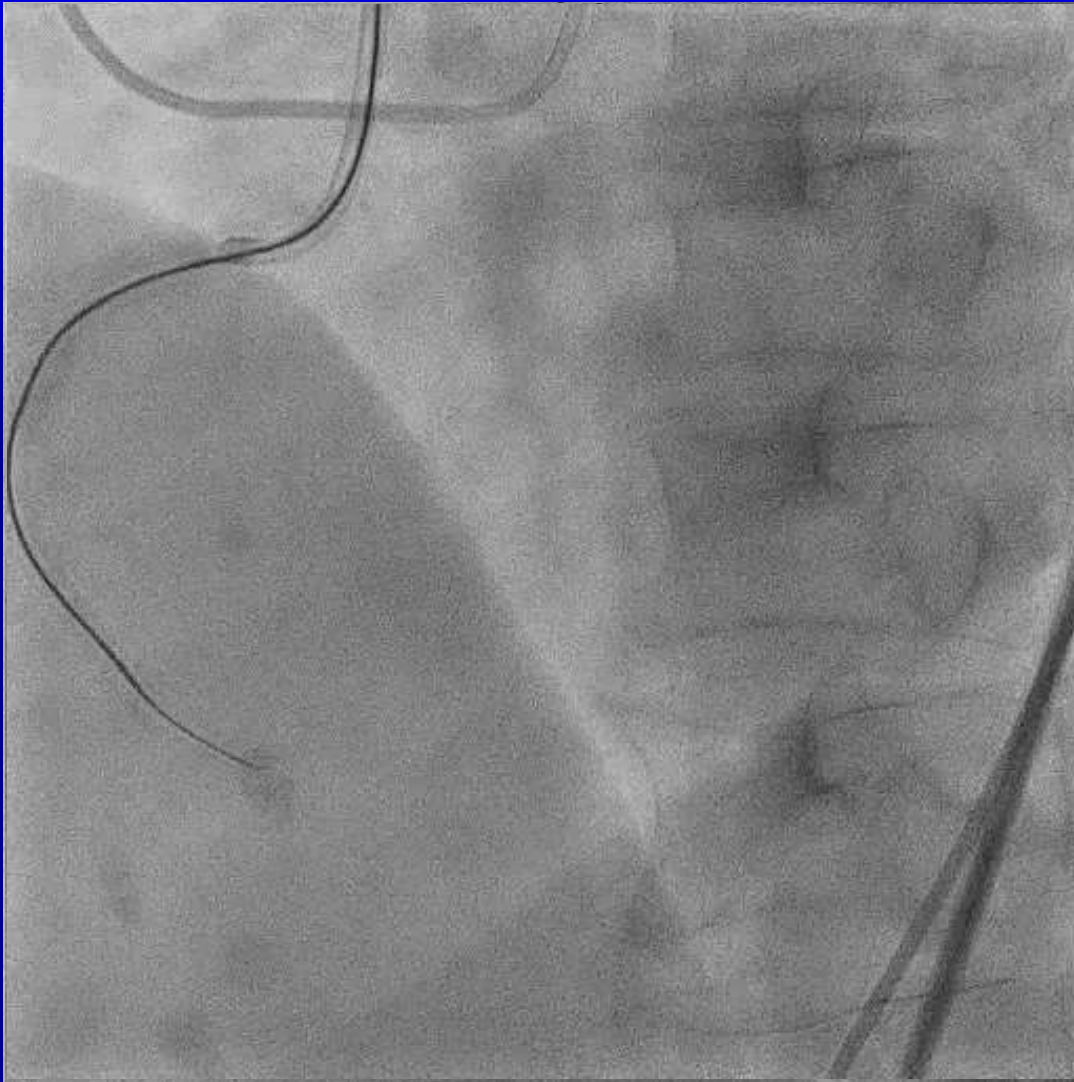
- There existed a curvature just after the entry point.
- The proximal cap was so hard.

→Gaia 1<sup>st</sup>/2<sup>nd</sup> uncontrollable.

→Stepped up to Confianza pro12

- calcium distribution
- contralateral contrast

## PCI for RCA CTO



Bilateral femoral approach  
7Fr.Britetip JR4.0 SH  
7Fr.Launcher EBU3.5 SH

After Corsair was induced to the proximal end of the CTO, Gaia1st and 2nd could not proceed.

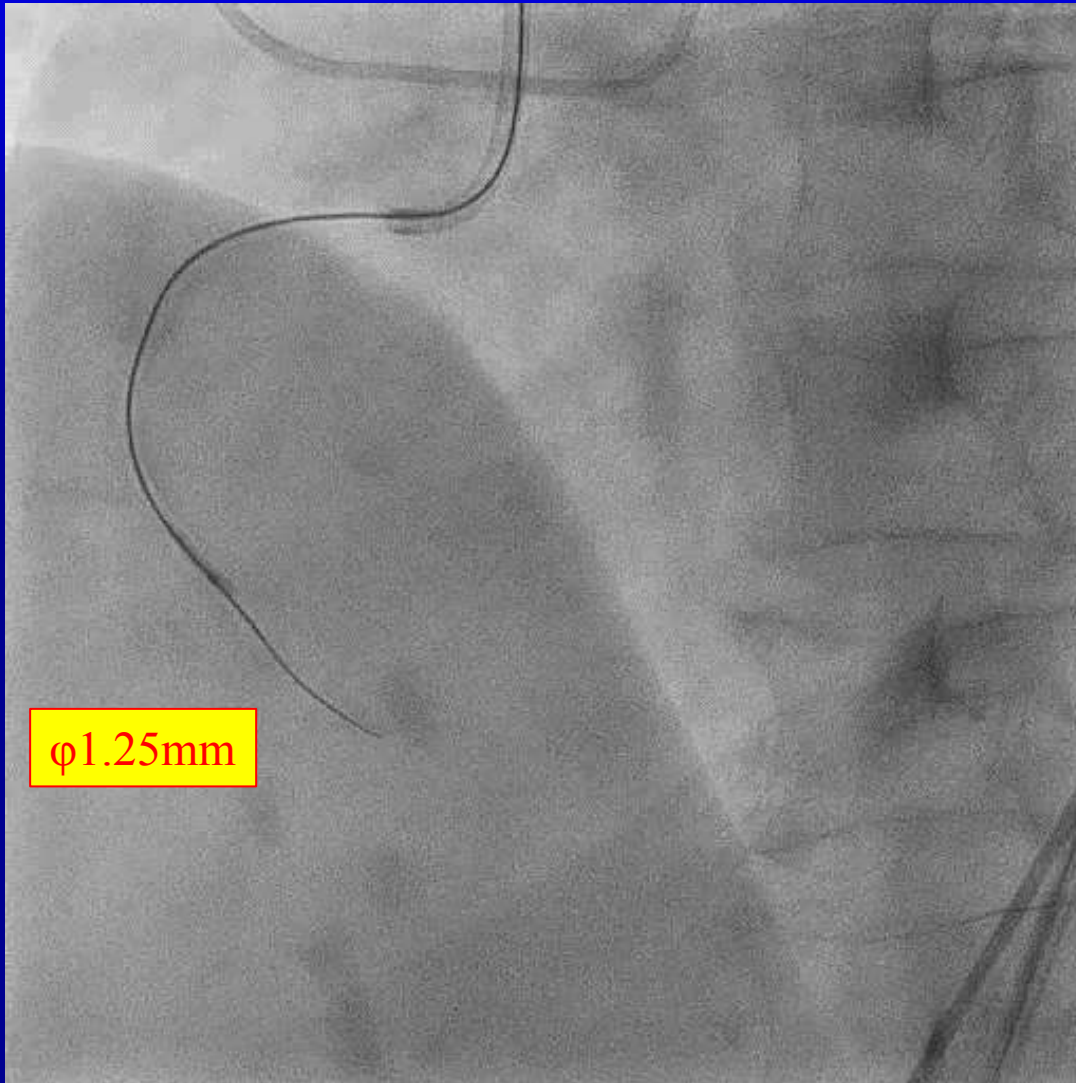
- There existed a curvature just after the entry point.
- The proximal cap was so hard.

→Gaia 1<sup>st</sup>/2<sup>nd</sup> uncontrollable.

→Stepped up to Confianza pro12

- calcium distribution
- contralateral contrast**

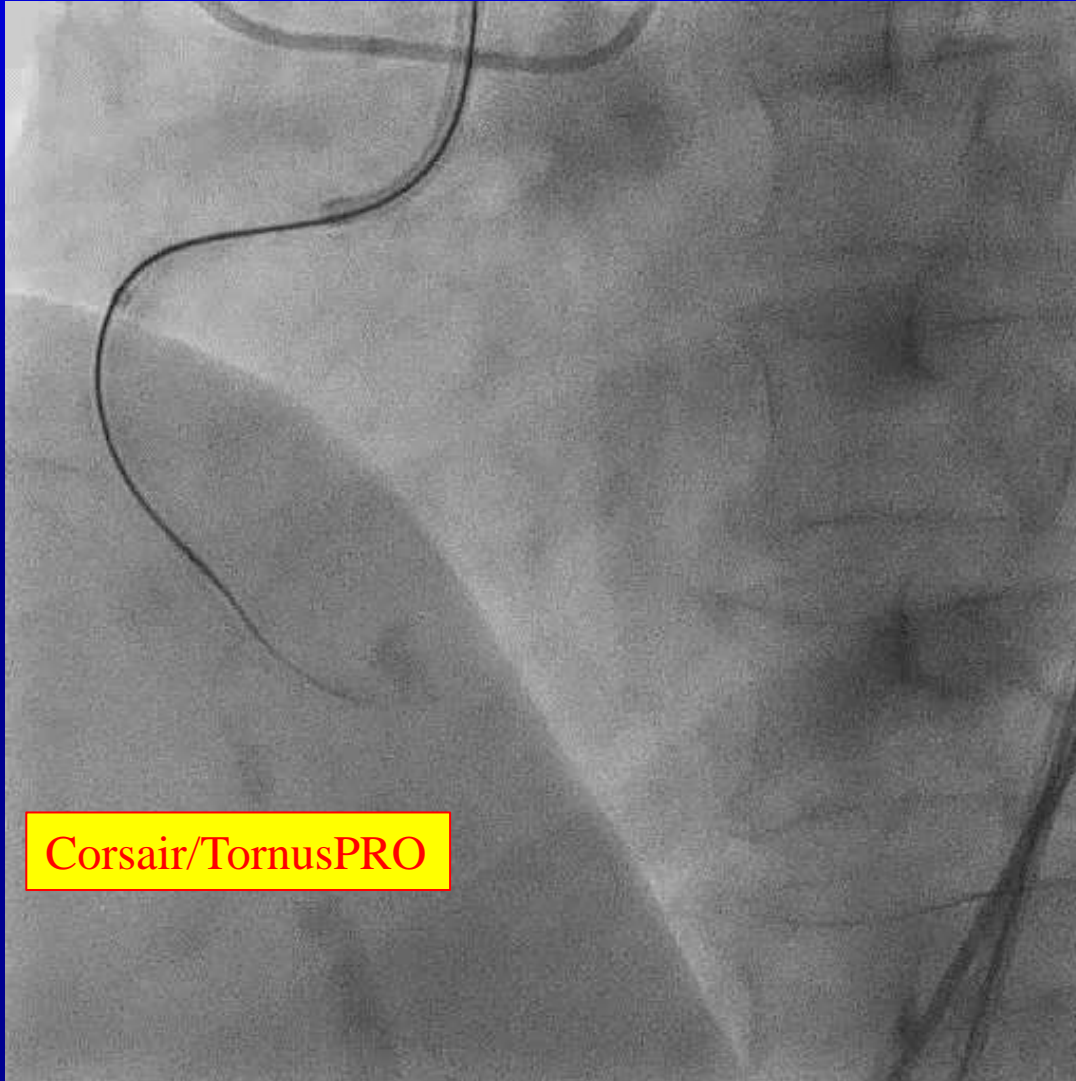
## PCI for RCA CTO



Bilateral femoral approach  
7Fr.Britetip JR4.0 SH  
7Fr.Launcher EBU3.5 SH

Corsair, Tornus PRO nor  
small balloon( $\phi$ 1.25mm)  
could follow the wire little  
into the CTO.

## PCI for RCA CTO

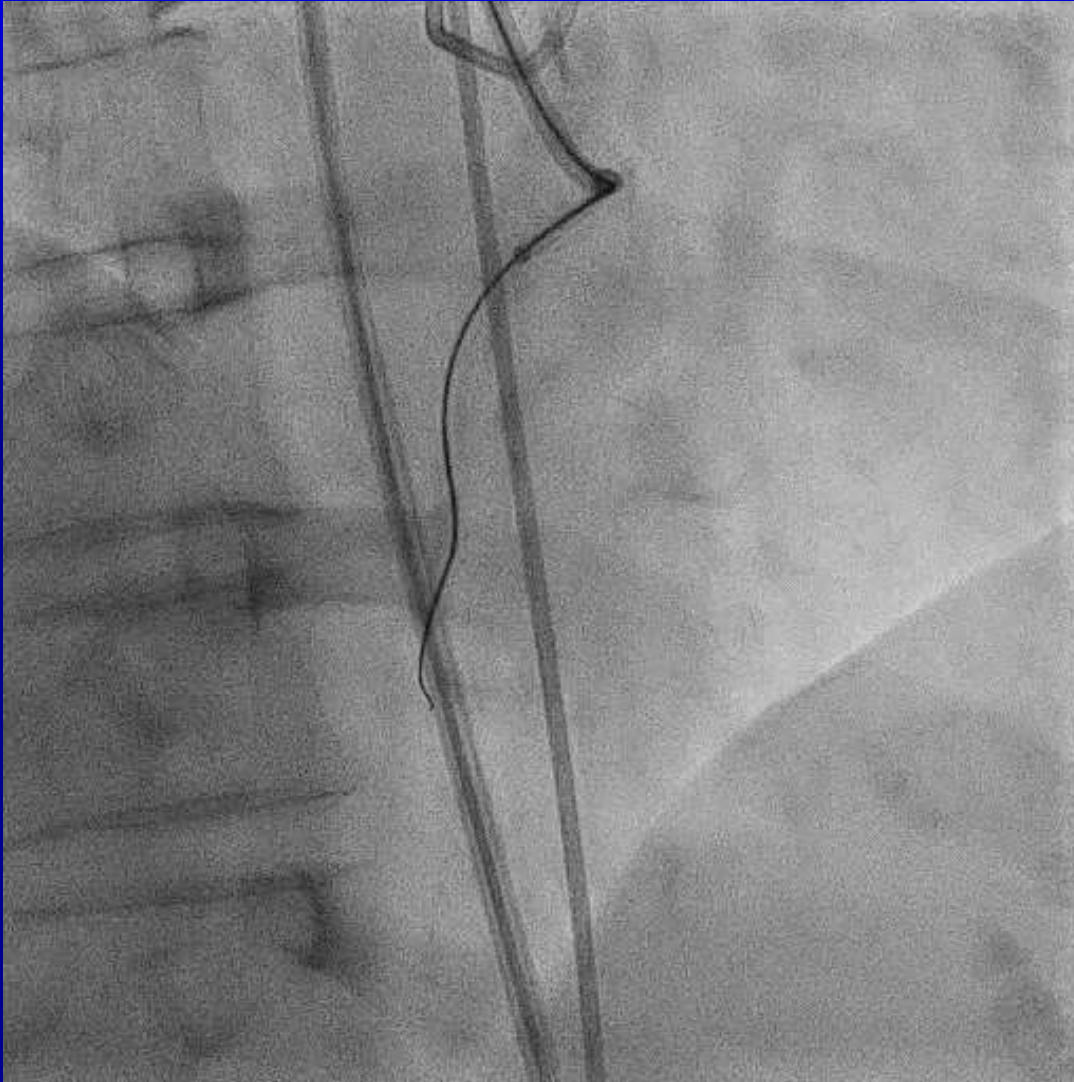


Corsair/TornusPRO

Bilateral femoral approach  
7Fr.Britetip JR4.0 SH  
7Fr.Launcher EBU3.5 SH

Corsair, Tornus PRO nor  
small balloon( $\phi$ 1.25mm)  
could follow the wire little  
into the CTO.

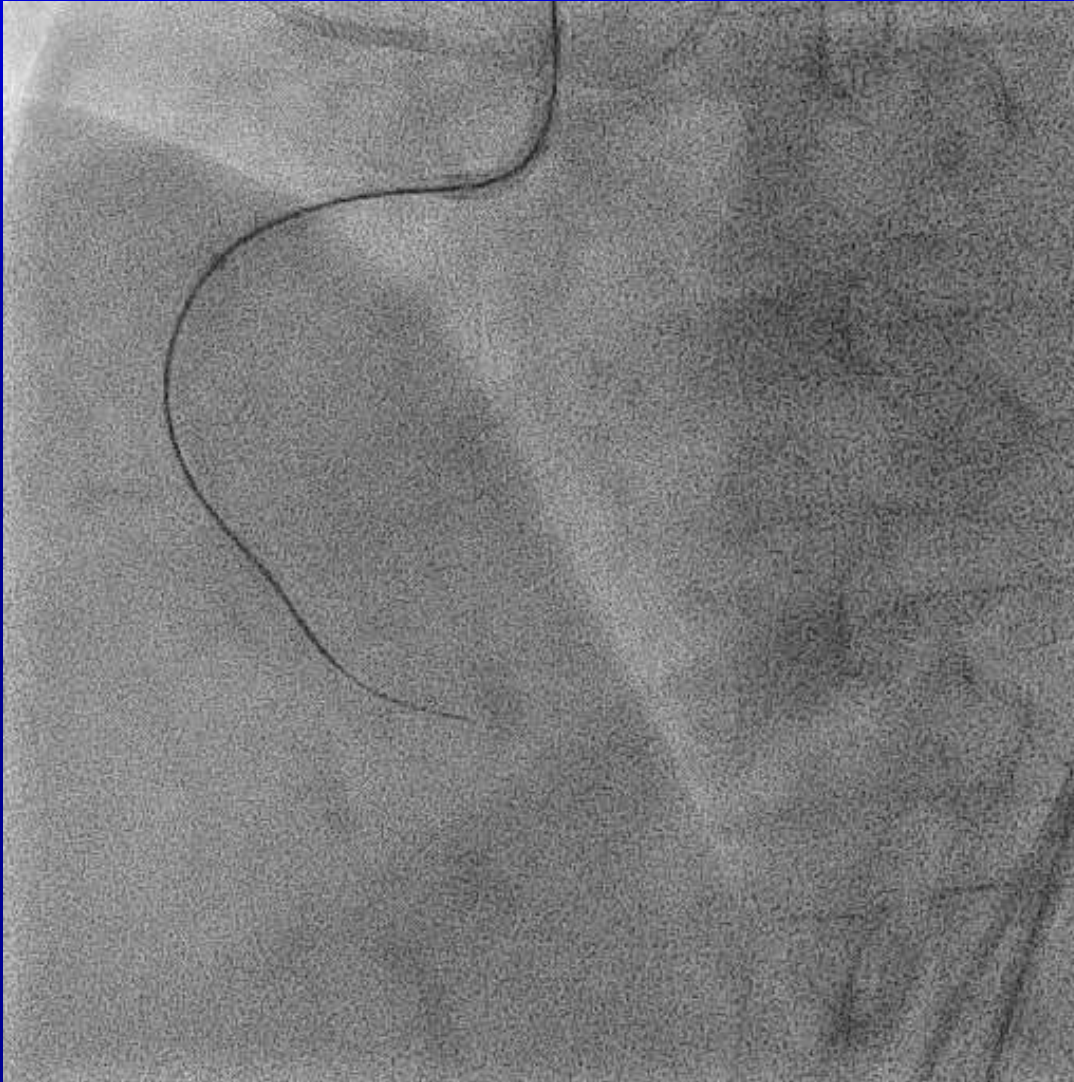
## PCI for RCA CTO



Bilateral femoral approach  
7Fr.Britetip JR4.0 SH  
7Fr.Launcher EBU3.5 SH

Then we were forced to continue wiring with Confianza pro12 without support of microcatheter.

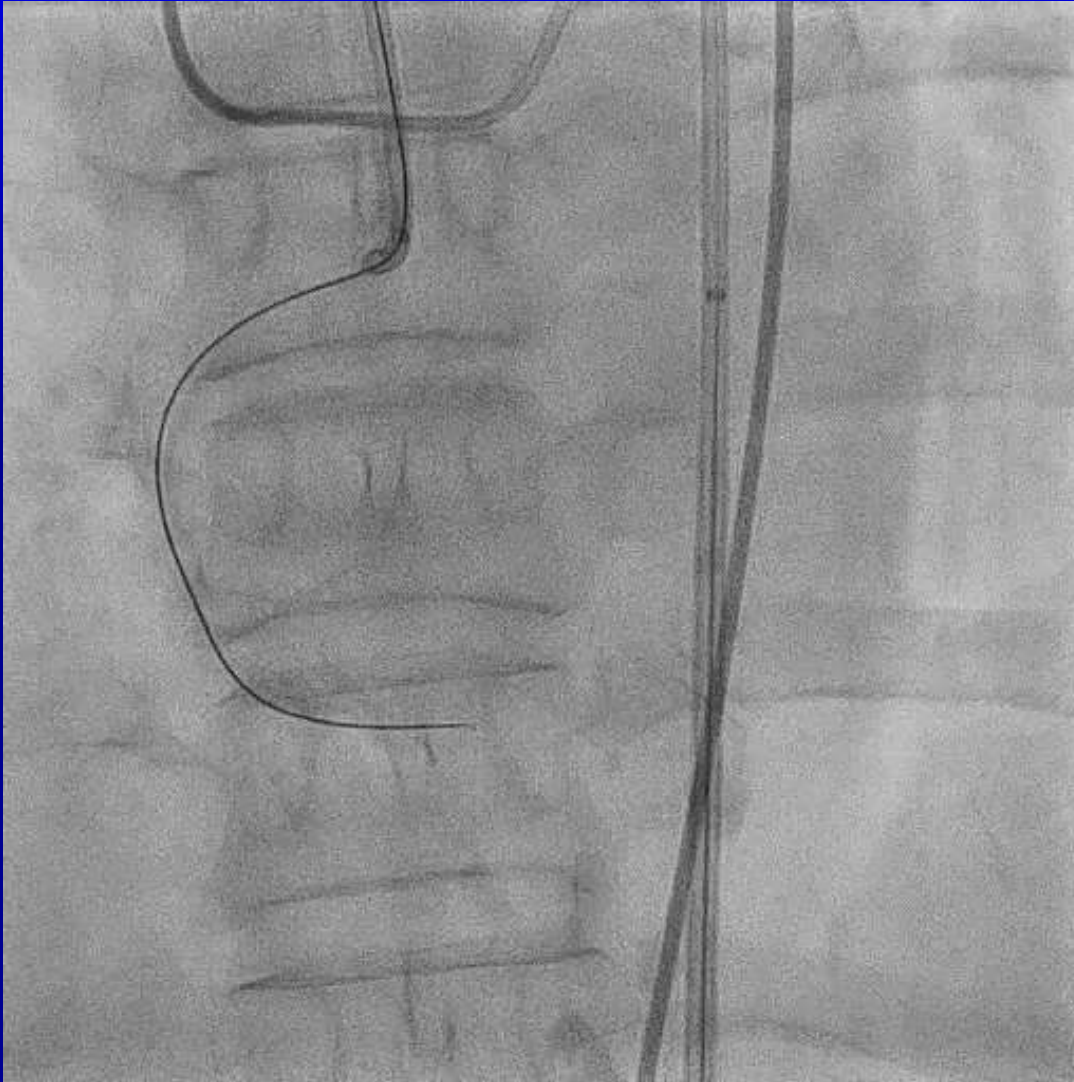
## PCI for RCA CTO



Bilateral femoral approach  
7Fr.Britetip JR4.0 SH  
7Fr.Launcher EBU3.5 SH

Then we were forced to continue wiring with Confianza pro12 without support of microcatheter.

## PCI for RCA CTO

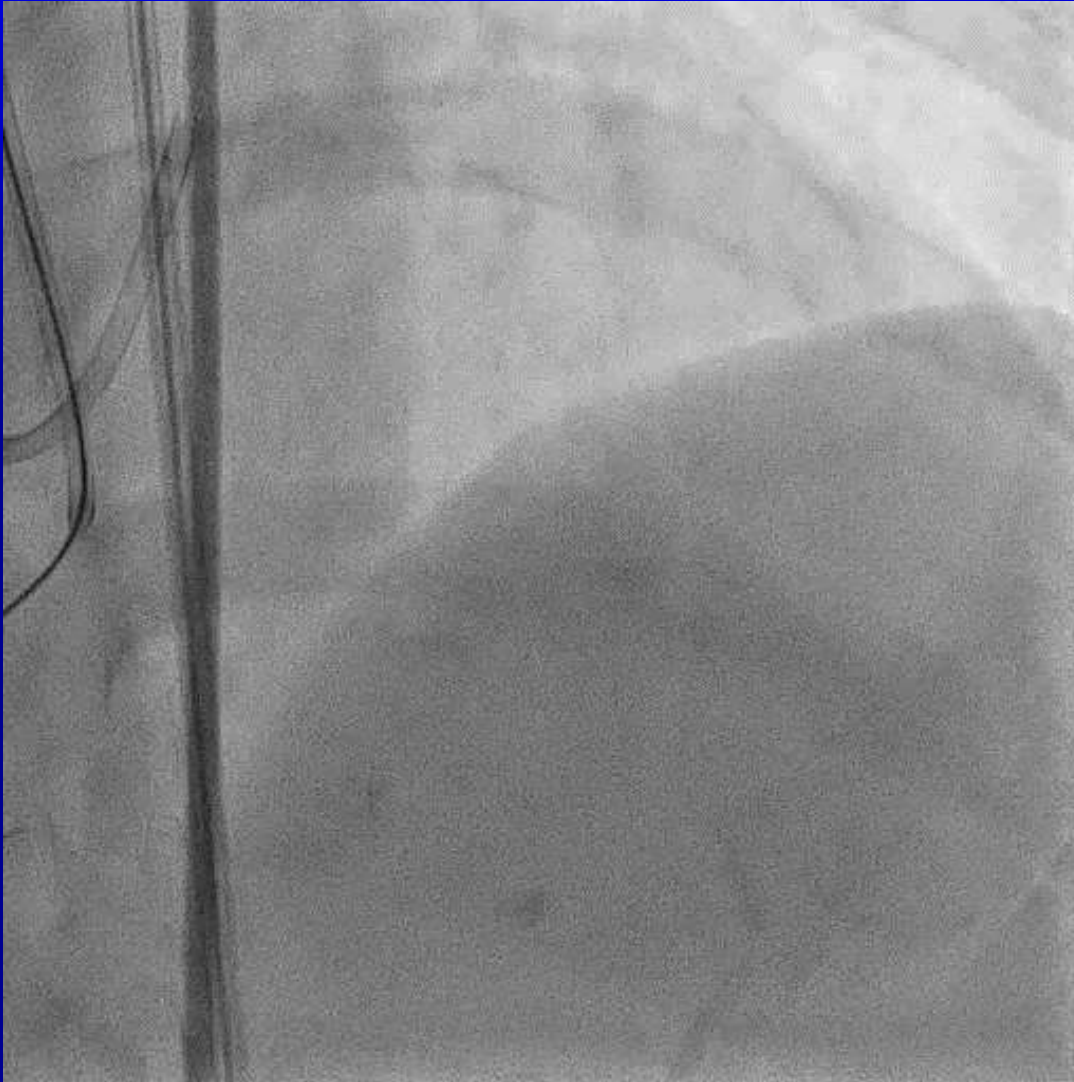


Bilateral femoral approach  
7Fr.Britetip JR4.0 SH  
7Fr.Launcher EBU3.5 SH

Then we were forced to continue wiring with Confianza pro12 without support of microcatheter.

Contralateral contrast revealed the tip of the Confianza pro12 out of the vessel at seg3.

## PCI for LMT-LAD



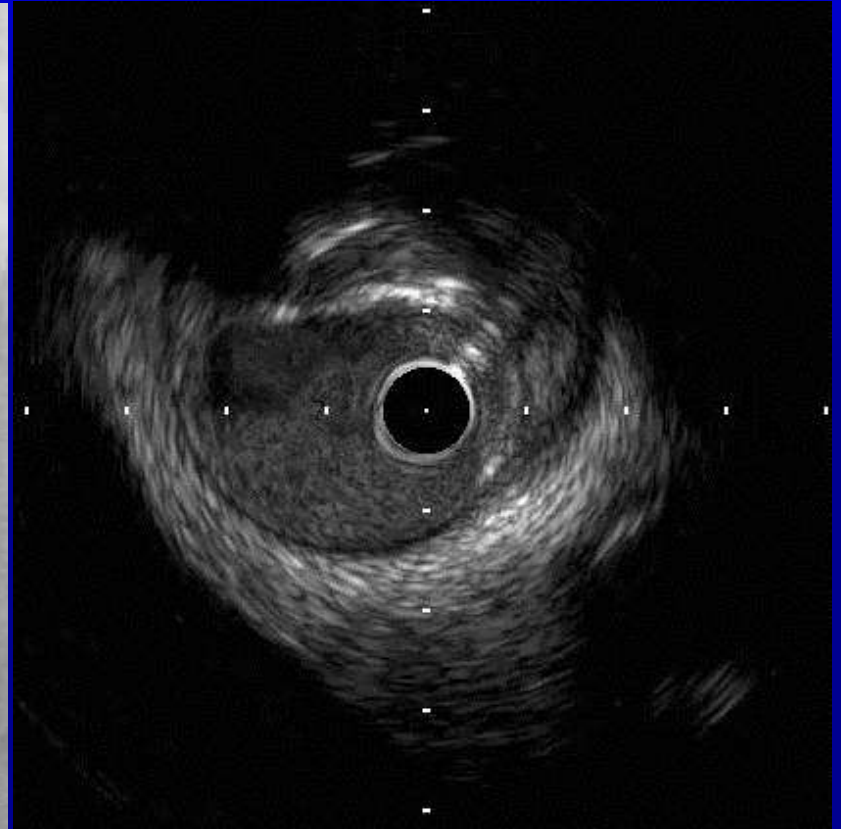
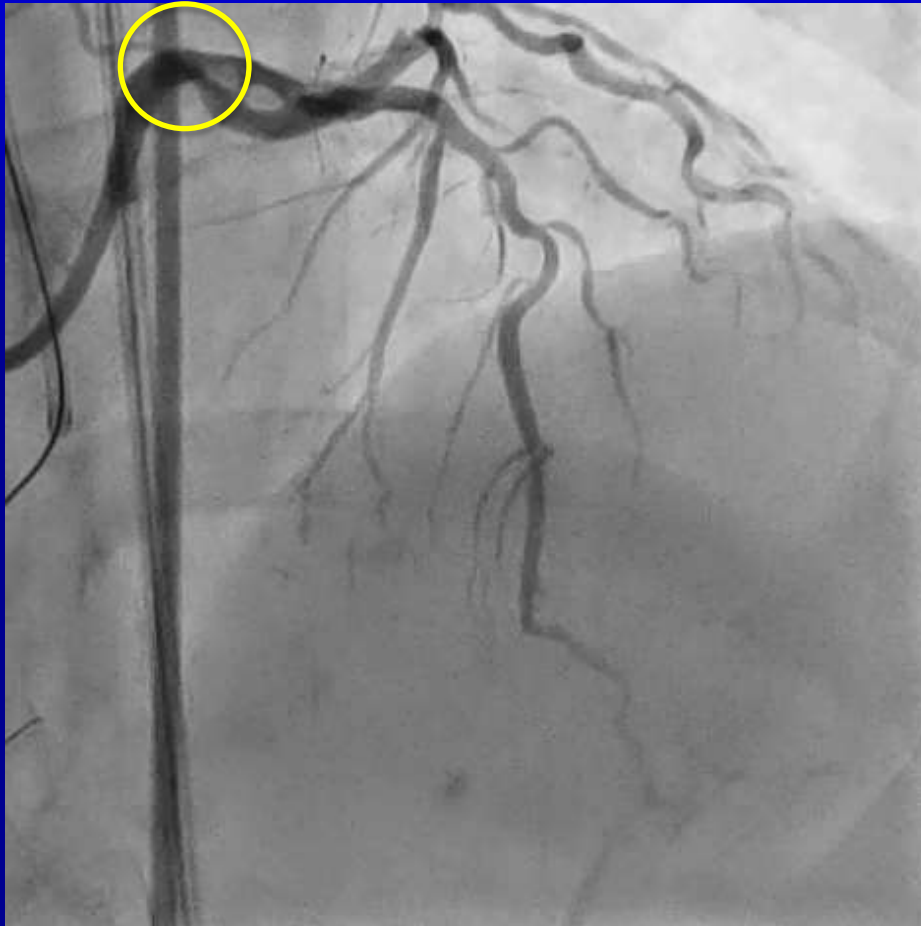
Lt. femoral approach  
7Fr.Hyperion SPB3.5 SH

We tried to switch to the retrograde approach.



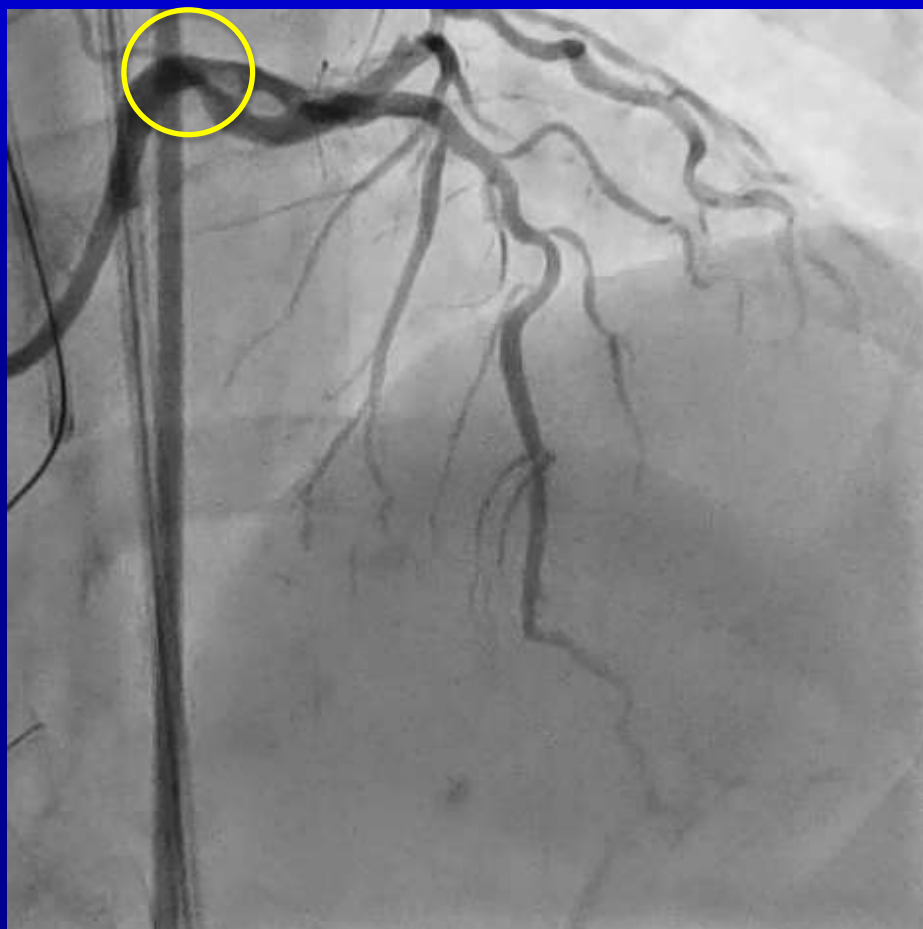
# PCI for LMT-LAD

Lt. femoral approach  
7Fr.Hyperion SPB3.5 SH



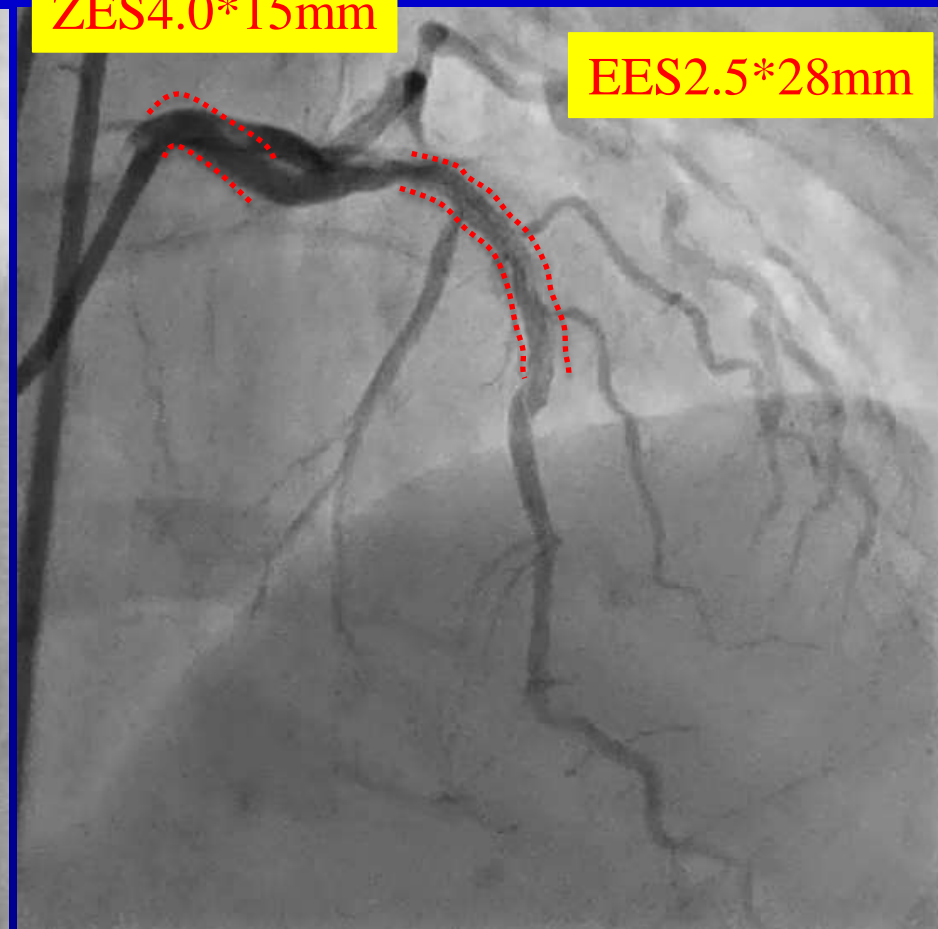
# PCI for LMT-LAD

Lt. femoral approach  
7Fr.Hyperion SPB3.5 SH



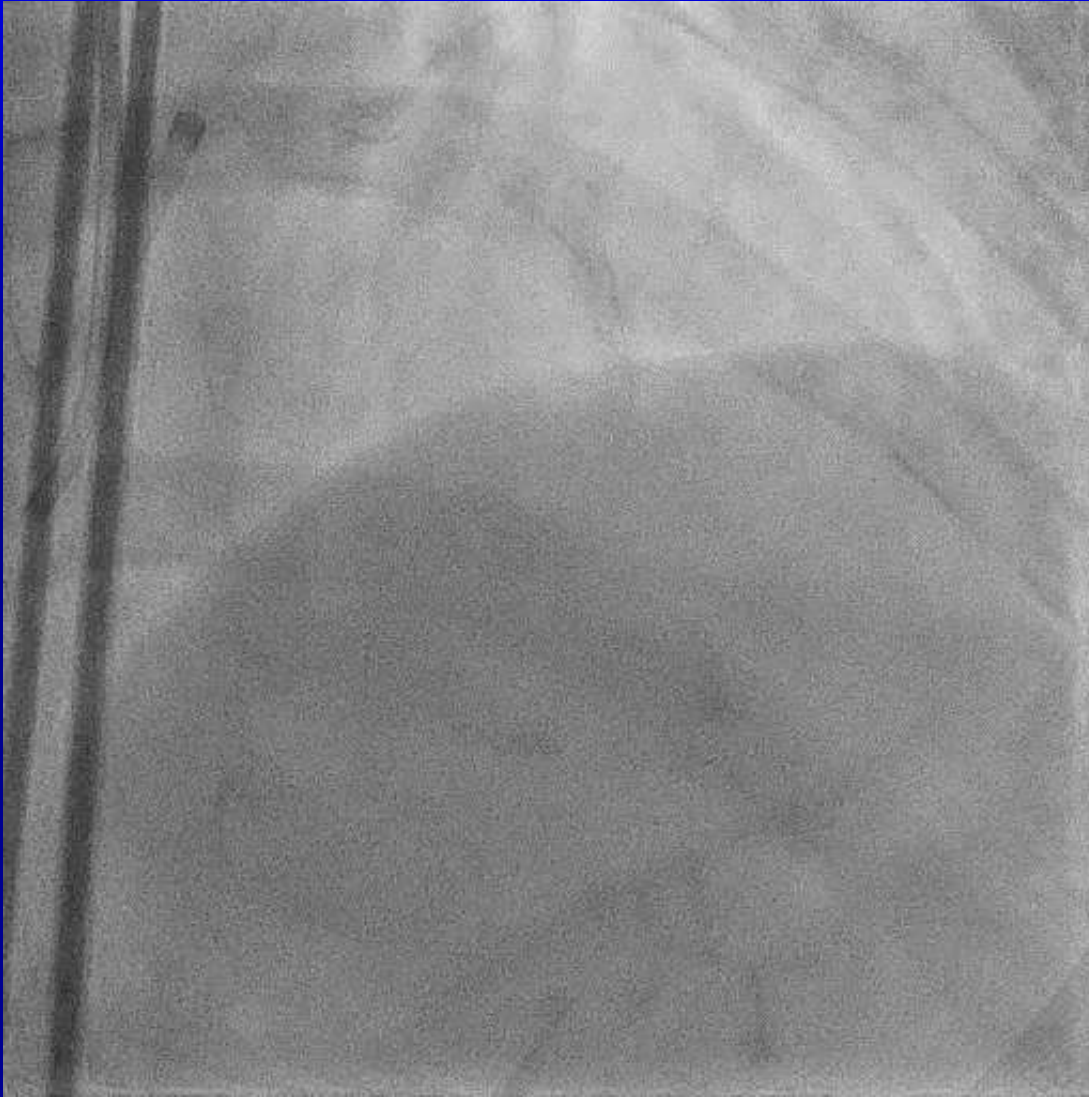
ZES4.0\*15mm

EES2.5\*28mm



*2017 / 11 / 30 Complex PCI*

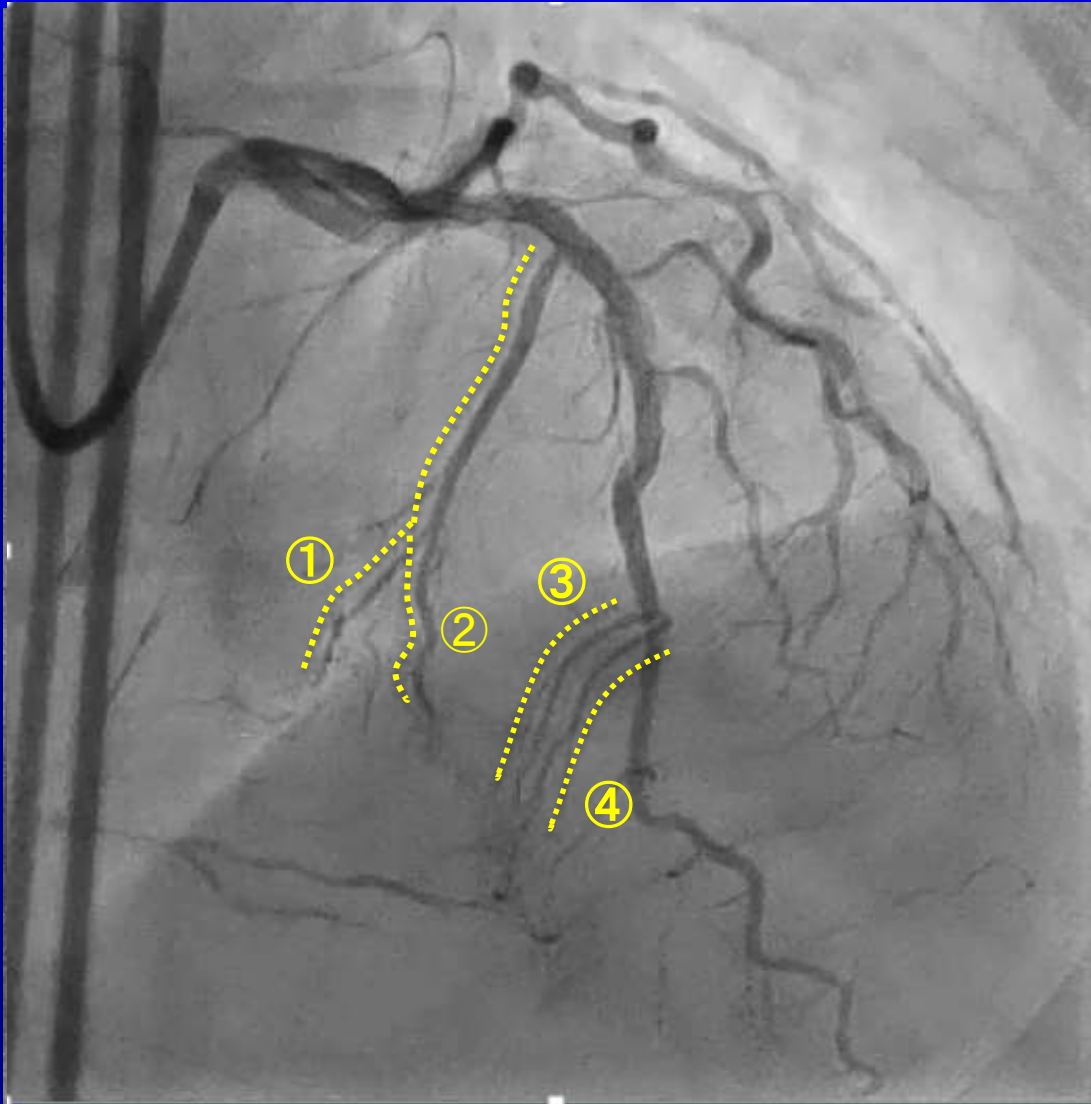
## **PCI for RCA CTO**



Bilateral femoral approach  
6Fr.Britetip JR4.0 SH  
8Fr.Hyperion SPB3.5 SH

*Hyogo Prefectural Amagasaki General Medical Center*

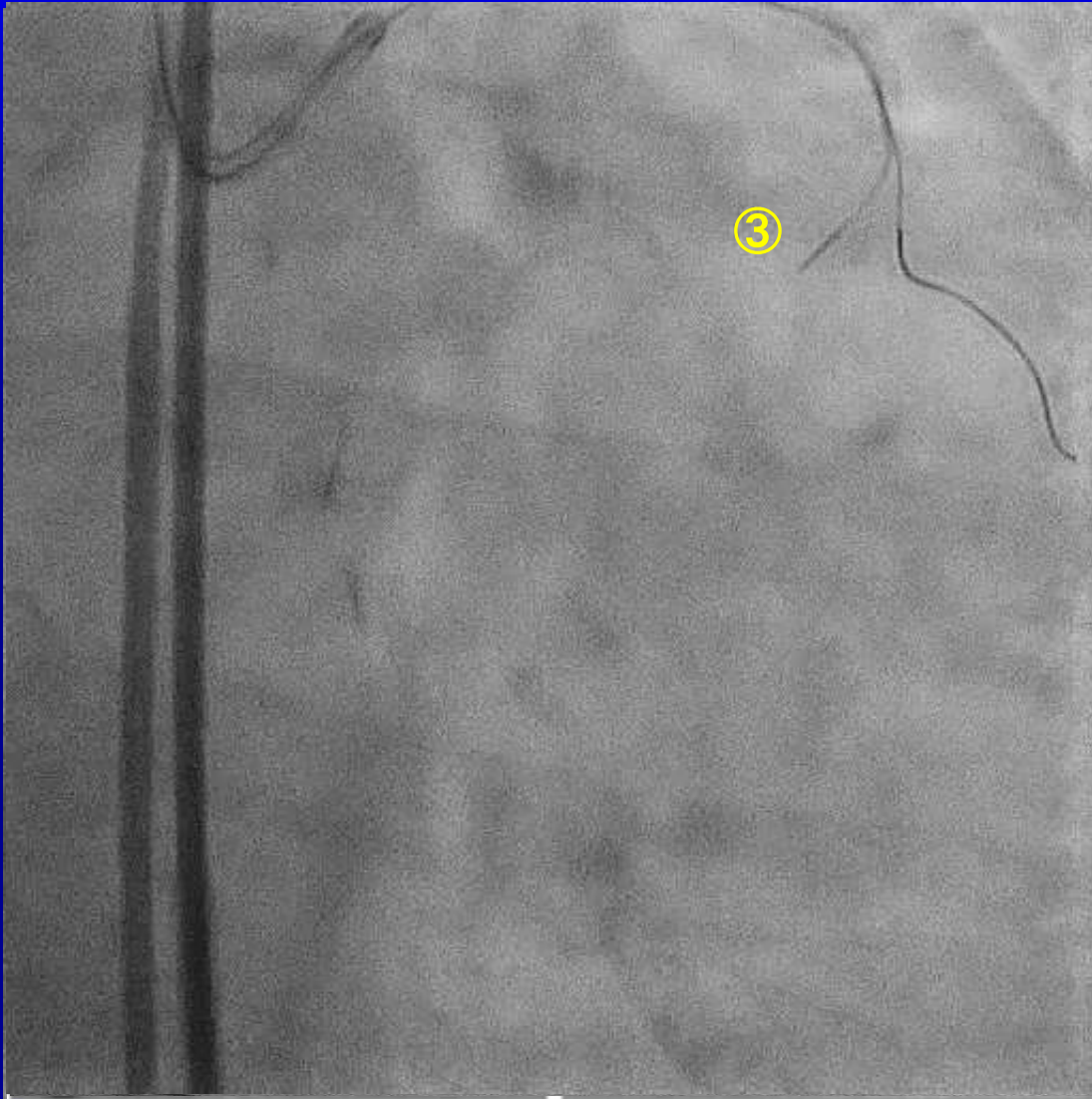
## PCI for RCA CTO



Bilateral femoral approach  
6Fr.Britetip JR4.0 SH  
8Fr.Hyperion SPB3.5 SH

There seemed to be about four  
septal channels available.

## PCI for RCA CTO

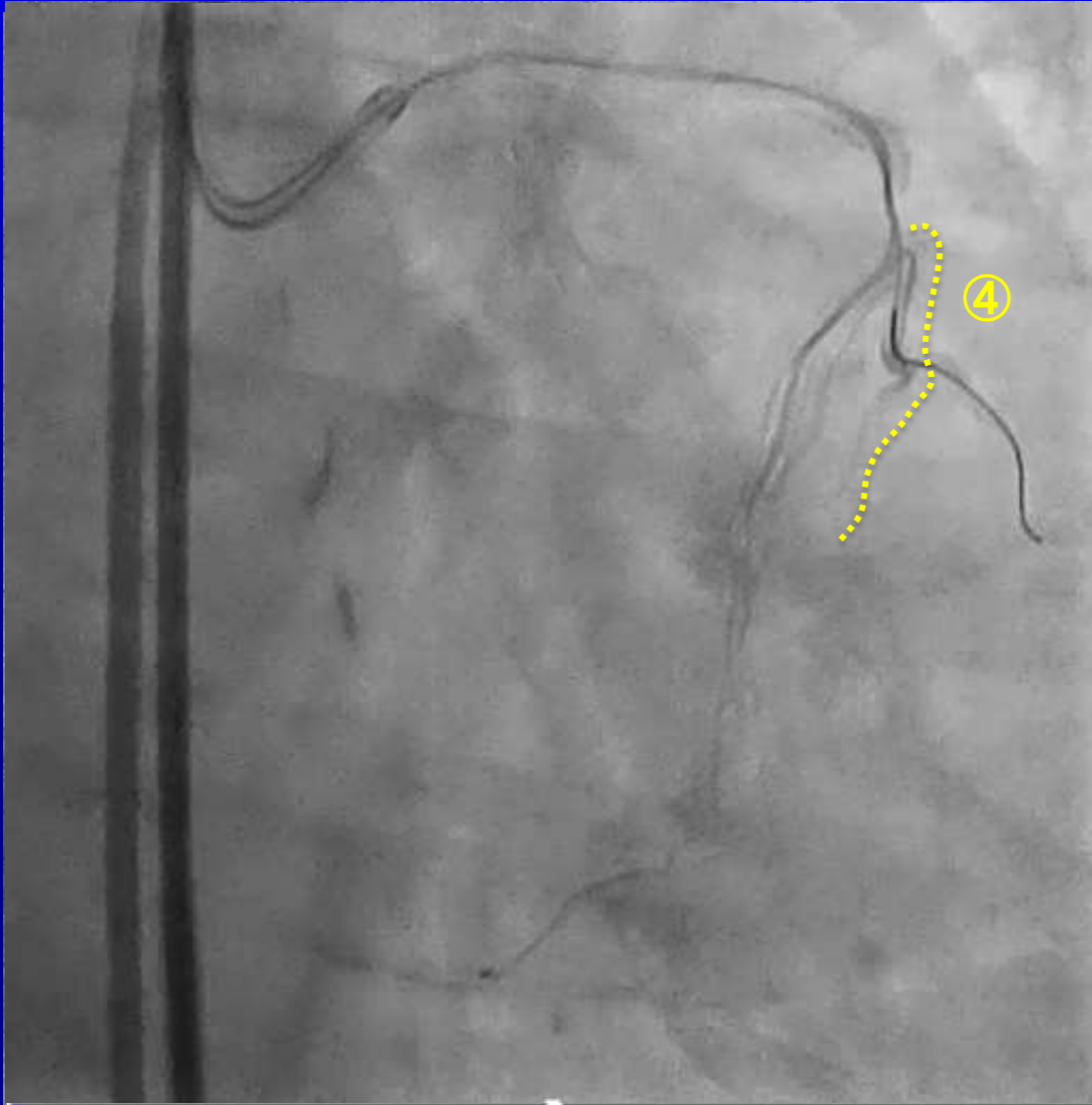


Bilateral femoral approach  
6Fr.Britetip JR4.0 SH  
8Fr.Hyperion SPB3.5 SH

There seemed to be about four septal channels available.

We tried from proximal septal channel, but channel ①-③ were not promising.

## PCI for RCA CTO



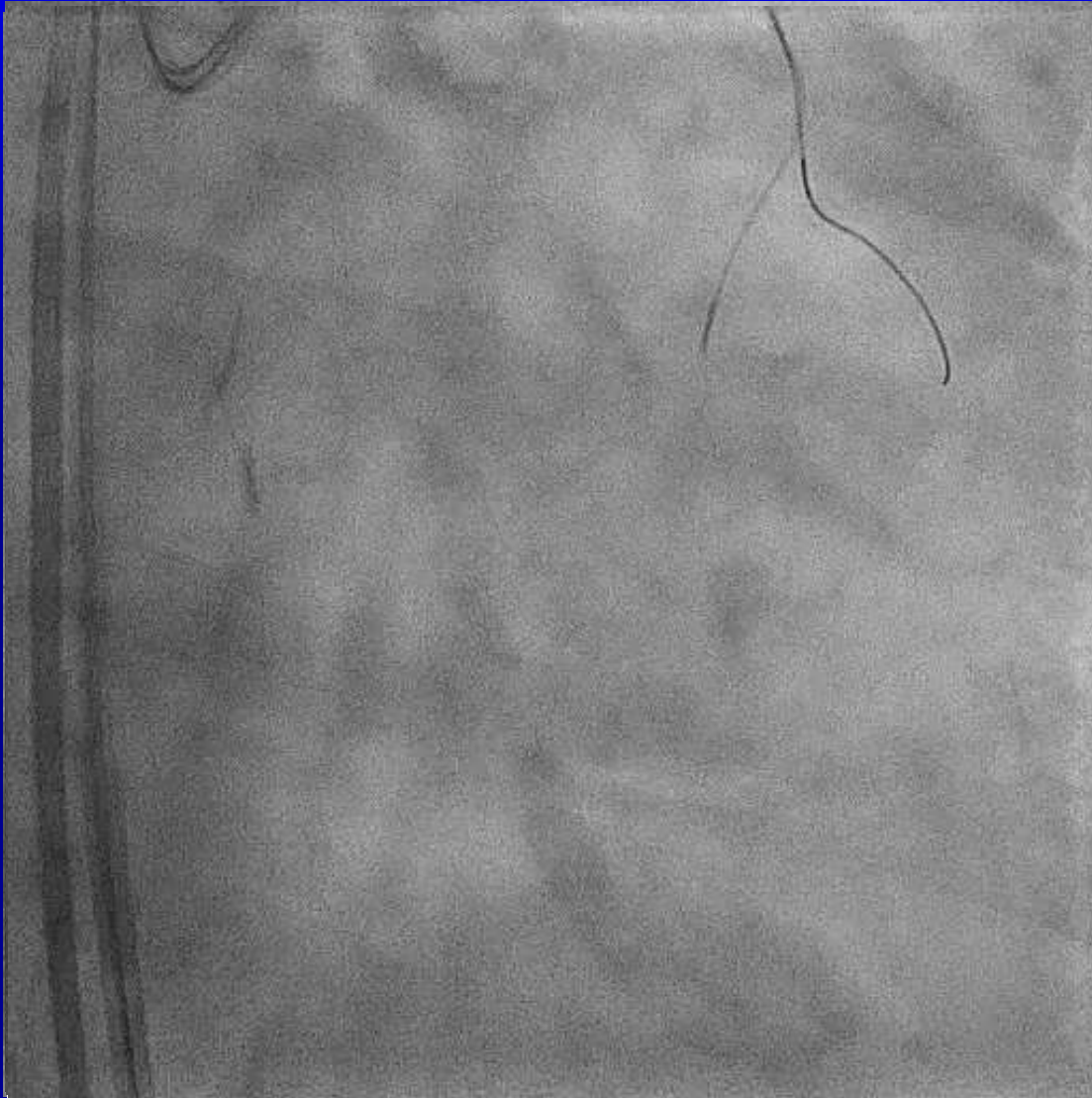
Bilateral femoral approach  
6Fr.Britetip JR4.0 SH  
8Fr.Hyperion SPB3.5 SH

There seemed to be about four septal channels available.

We tried from proximal septal channel, but channel ①-③ were not promising.

Septal Channel④ originated from the proximal site of channel③.

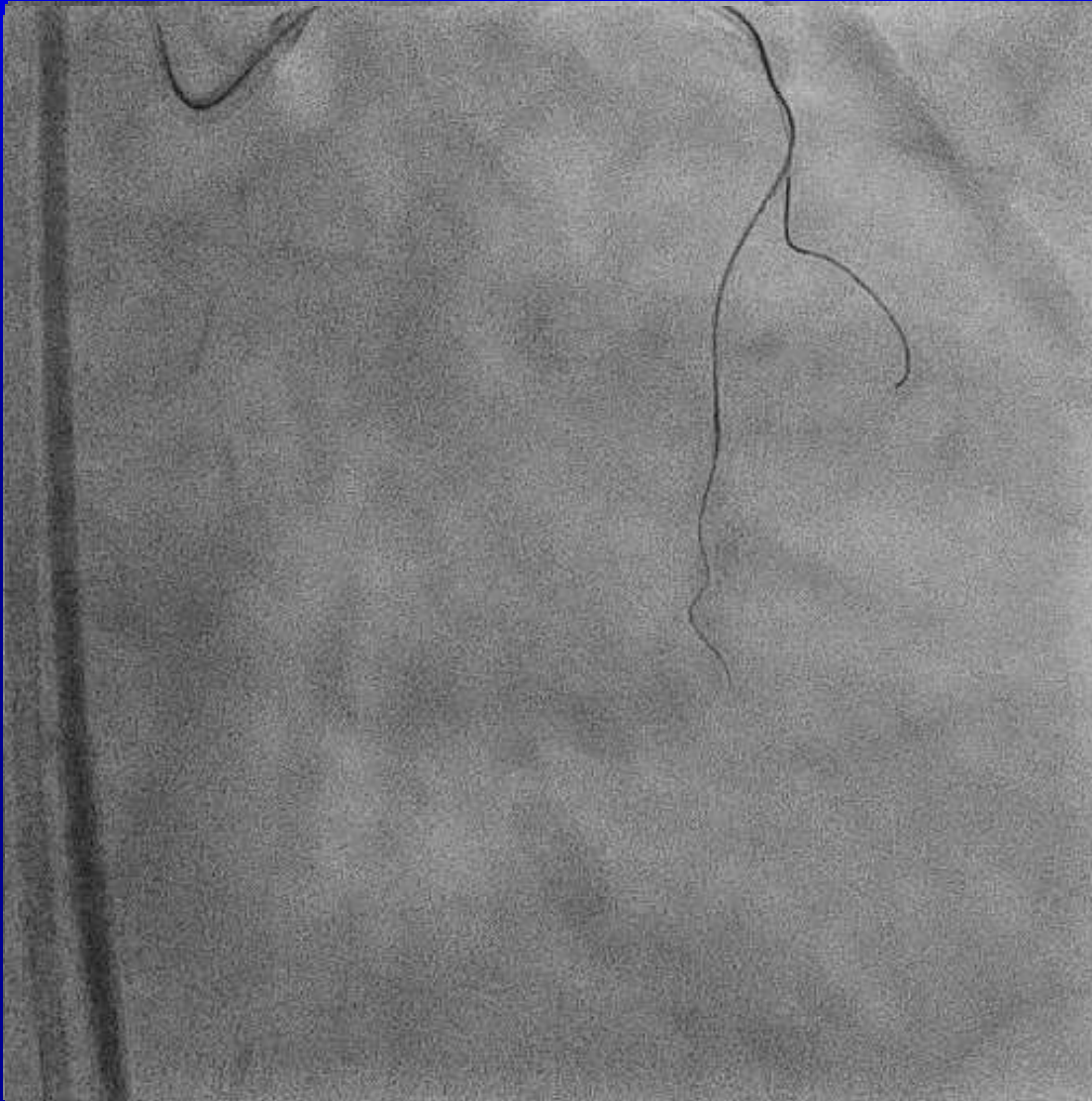
## PCI for RCA CTO



Bilateral femoral approach  
6Fr.Britetip JR4.0 SH  
8Fr.Hyperion SPB3.5 SH

So we carried a Sasuke, multi-function catheter to the ③ septal branch, and could select the ④ septal channel with a Suoh03.

## PCI for RCA CTO



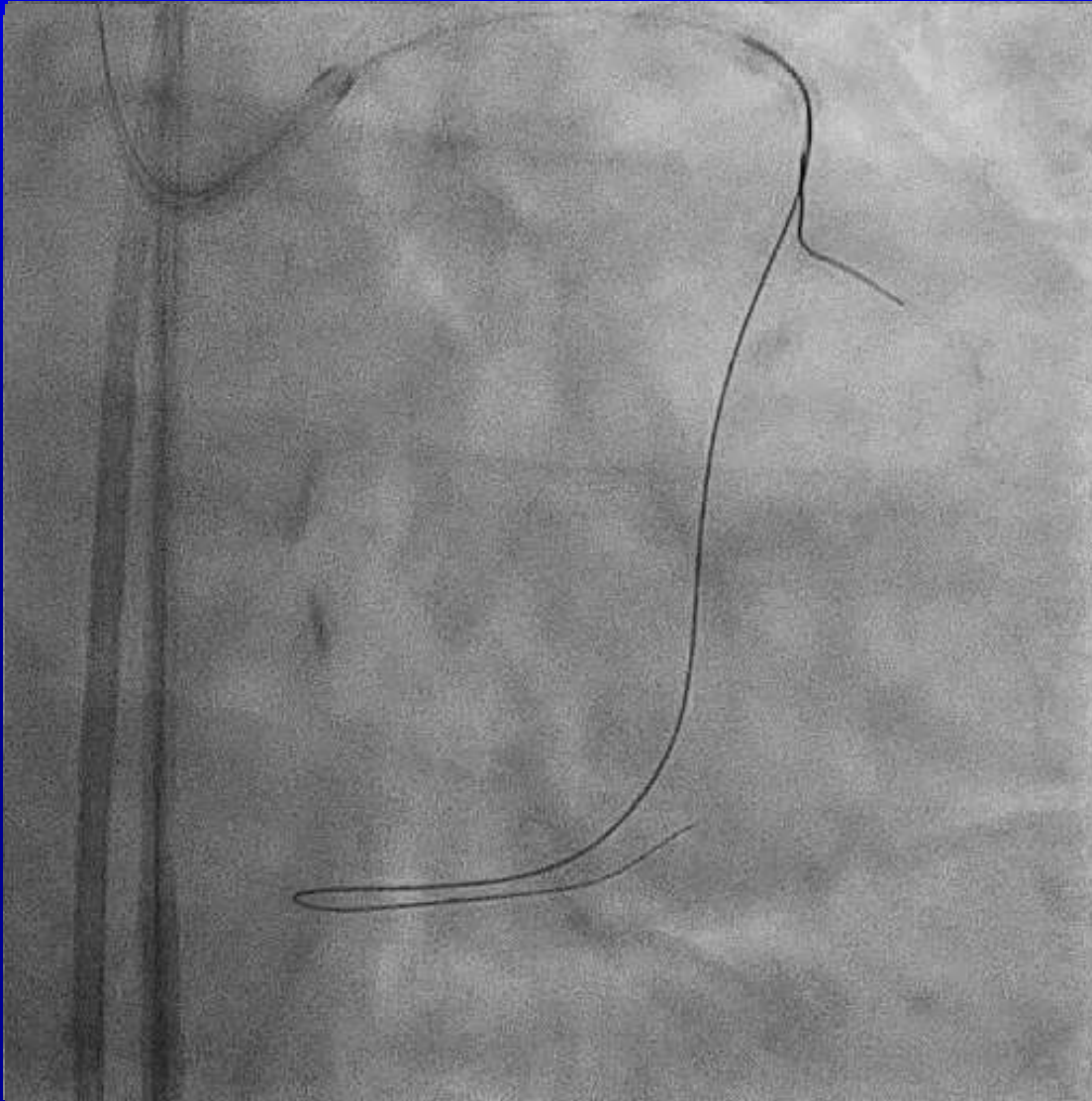
Bilateral femoral approach  
6Fr.Britetip JR4.0 SH  
8Fr.Hyperion SPB3.5 SH

So we carried a Sasuke, multi-function catheter to the ③ septal branch, and could select the ④ septal channel with a Suoh03.

And finally we crossed to #4PD with XT-R.



## PCI for RCA CTO

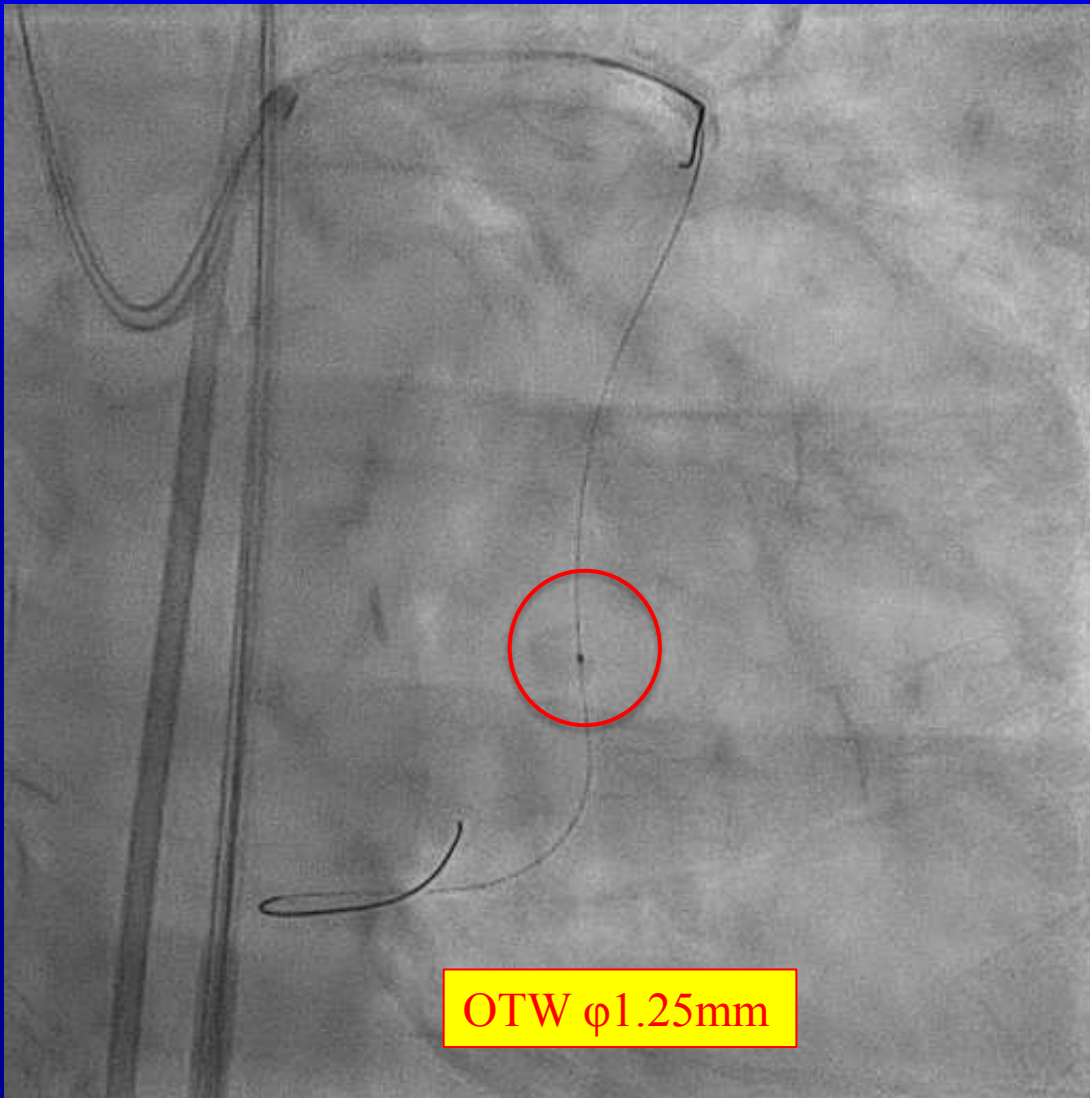


Bilateral femoral approach  
6Fr.Britetip JR4.0 SH  
8Fr.Hyperion SPB3.5 SH

So we carried a Sasuke, multi-function catheter to the ③ septal branch, and could select the ④ septal channel with a Suoh03.

And finally we crossed to #4PD with XT-R.

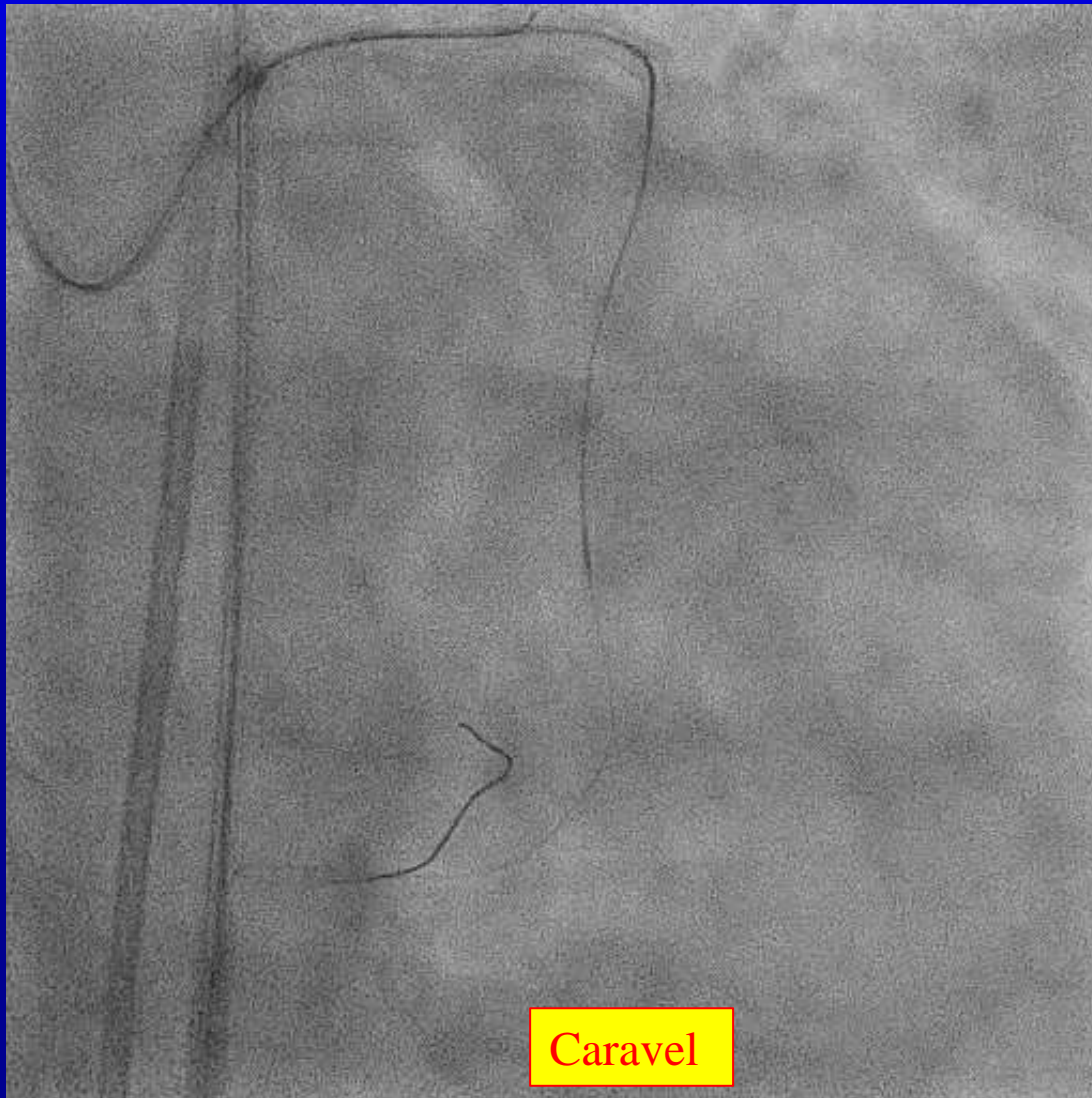
## PCI for RCA CTO



Bilateral femoral approach  
6Fr.Britetip JR4.0 SH  
8Fr.Hyperion SPB3.5 SH

Septal dilatation was required  
for Caravel crossing the septal  
channel.

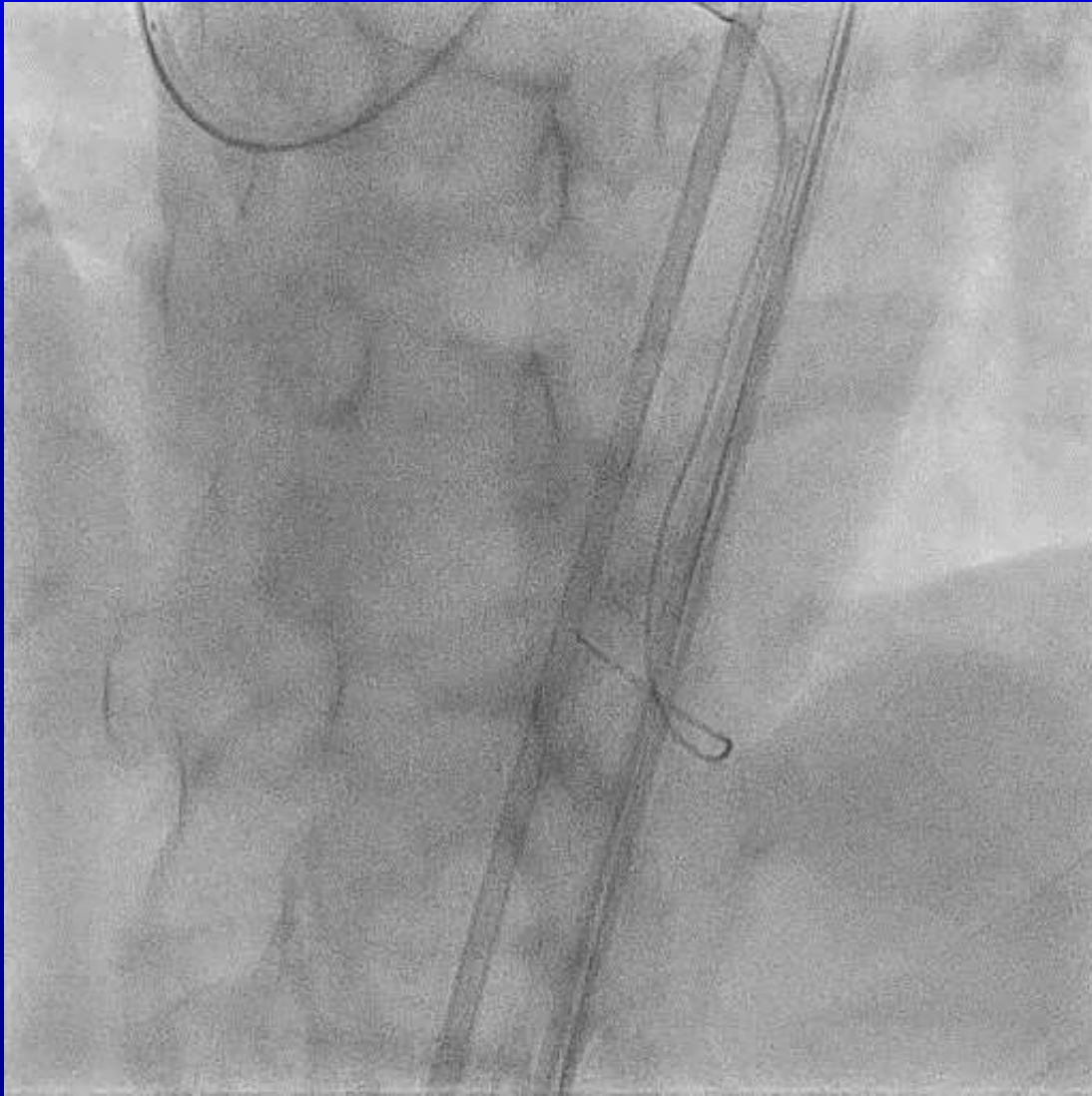
## PCI for RCA CTO



Bilateral femoral approach  
6Fr. Britetip JR4.0 SH  
8Fr. Hyperion SPB3.5 SH

Septal dilatation was required  
for Caravel crossing the septal  
channel.

## PCI for RCA CTO



Bilateral femoral approach  
6Fr.Britetip JR4.0 SH  
8Fr.Hyperion SPB3.5 SH

Septal dilatation was required for Caravel crossing the septal channel.

After checking the morphology of the CTO distal end by the tip injection from retro Caravel,

## PCI for RCA CTO

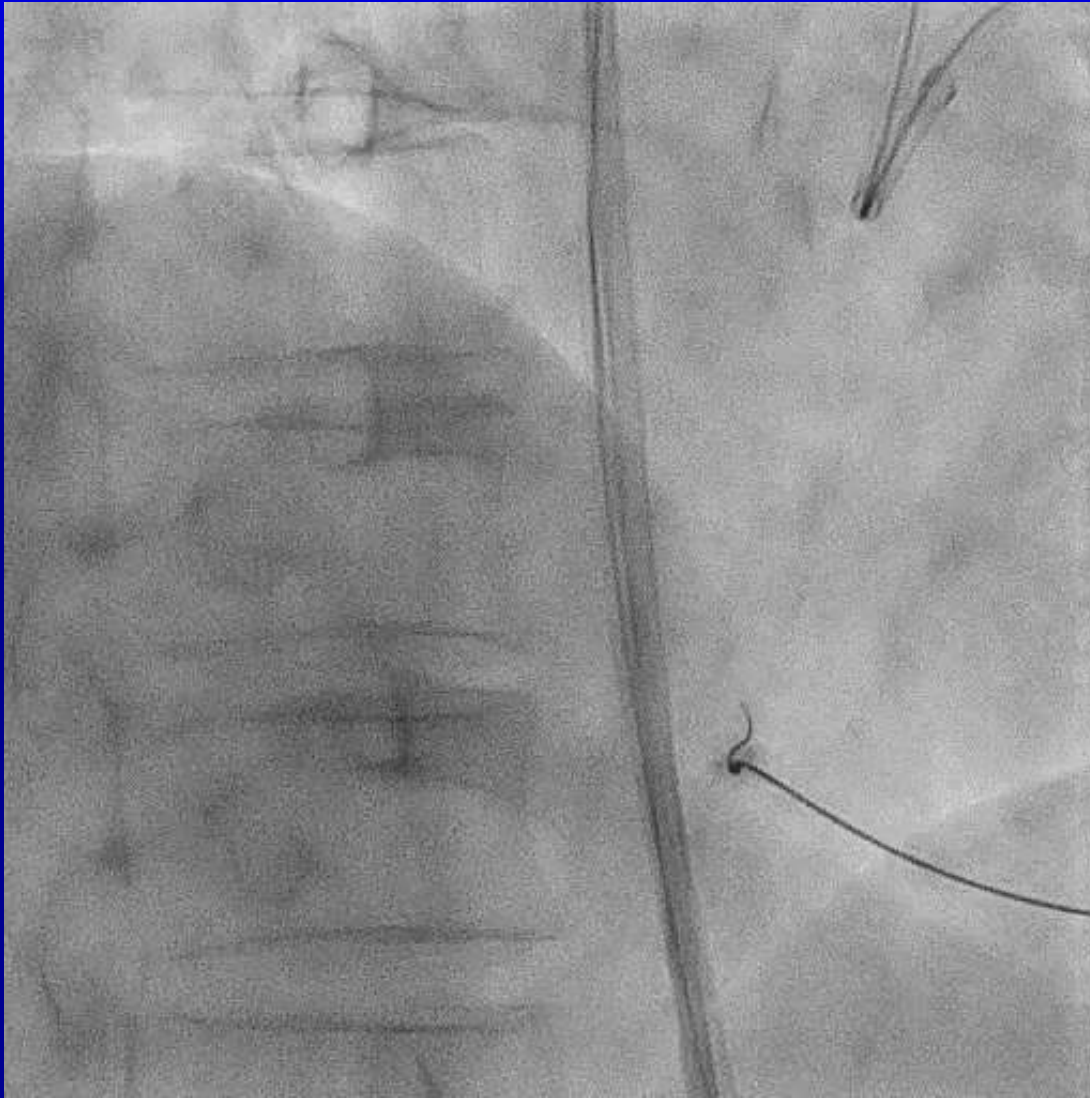


Bilateral femoral approach  
6Fr.Britetip JR4.0 SH  
8Fr.Hyperion SPB3.5 SH

Septal dilatation was required for Caravel crossing the septal channel.

After checking the morphology of the CTO distal end by the tip injection from retro Caravel,

## PCI for RCA CTO



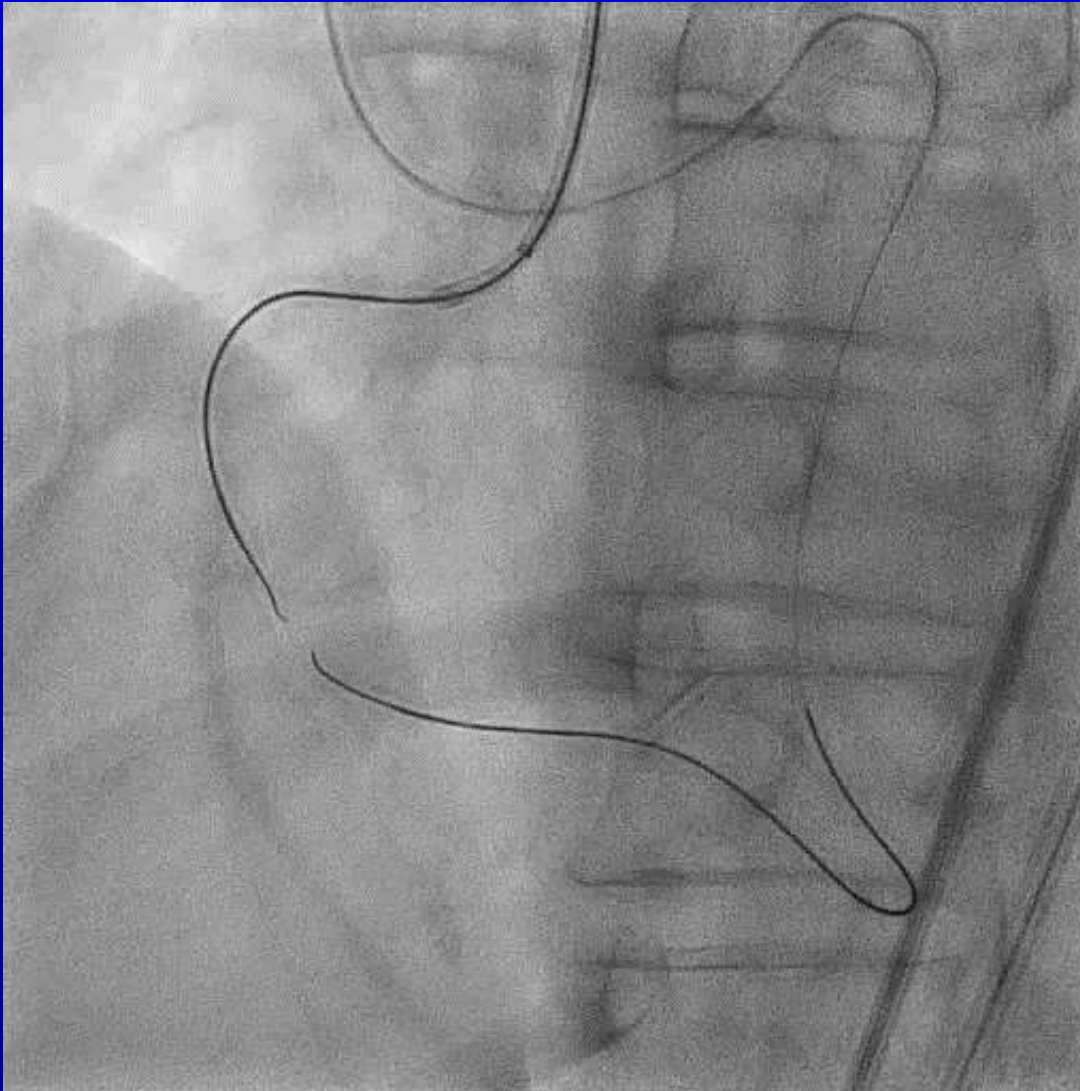
Bilateral femoral approach  
6Fr.Britetip JR4.0 SH  
8Fr.Hyperion SPB3.5 SH

Septal dilatation was required for Caravel crossing the septal channel.

After checking the morphology of the CTO distal end by the tip injection from retro Caravel,

we retrogradely advanced Ultimate bros3, to the distal of #2, but could not proceed over the curvature.

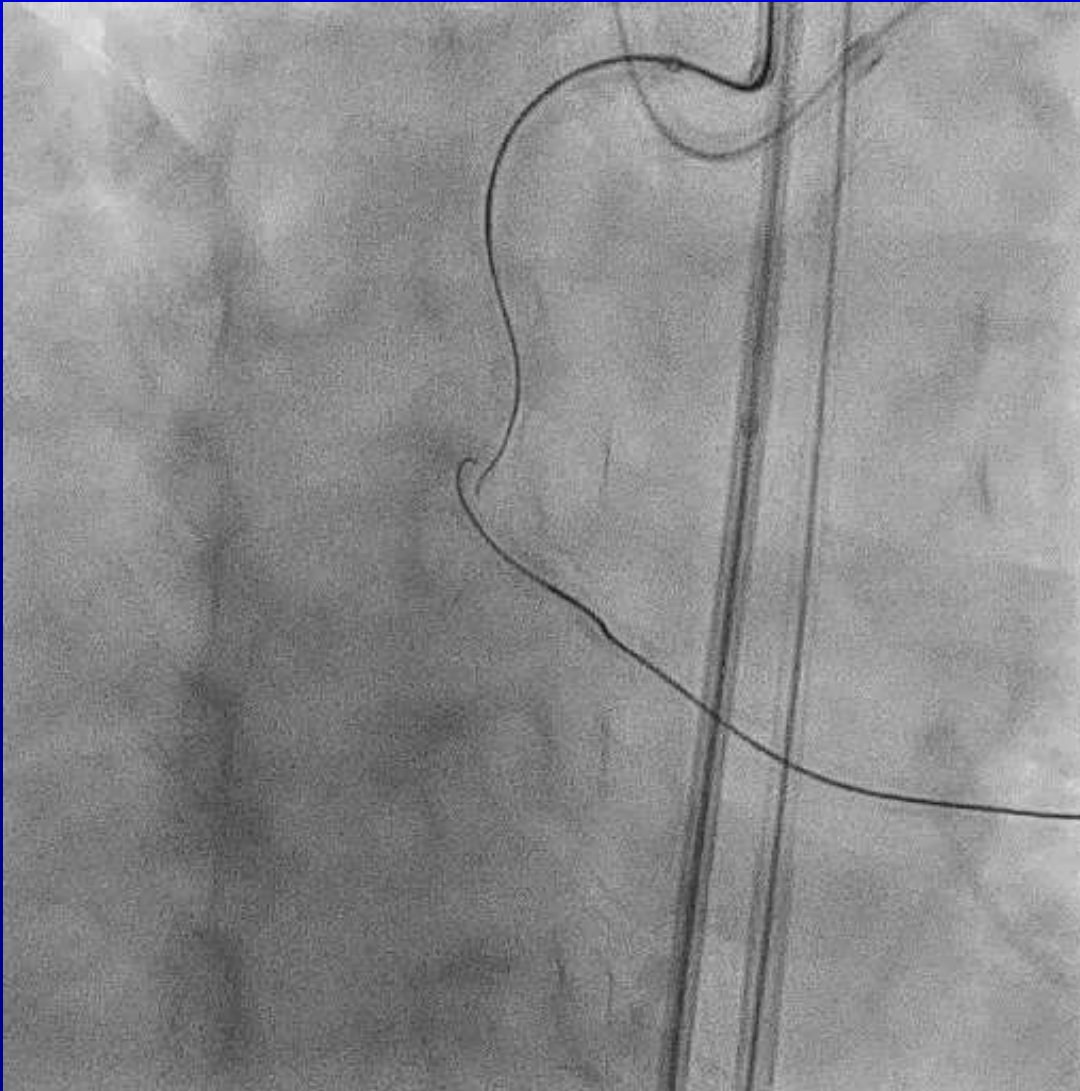
## PCI for RCA CTO



Bilateral femoral approach  
6Fr.Britetip JR4.0 SH  
8Fr.Hyperion SPB3.5 SH

Then, antegrade wiring with Gaia3rd, supported by Corsair was retried, but we could not also cross the curvature.

## PCI for RCA CTO

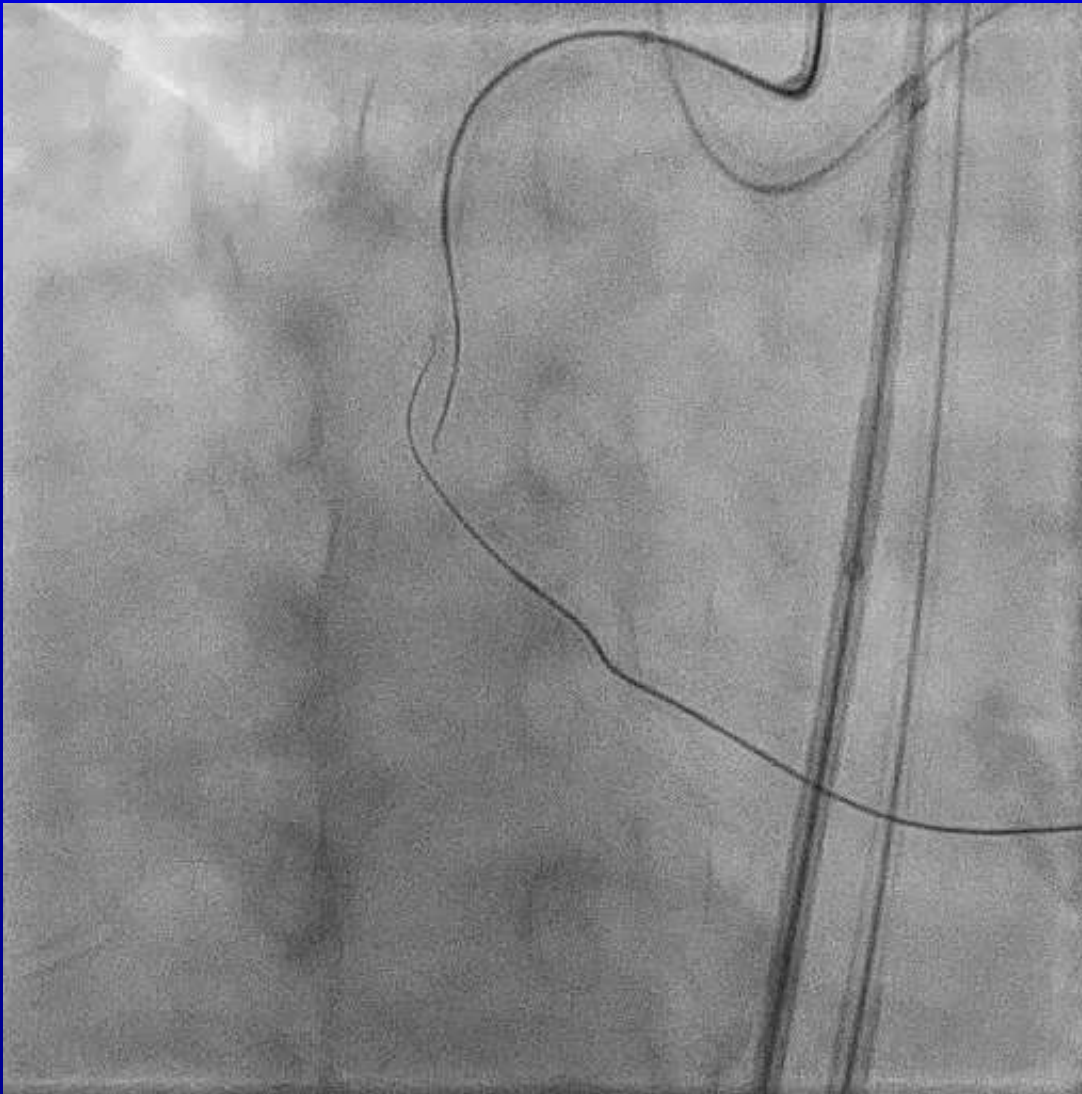


Bilateral femoral approach  
6Fr.Britetip JR4.0 SH  
8Fr.Hyperion SPB3.5 SH

Then, antegrade wiring with Gaia3rd, supported by Corsair was retried, but we could not also cross the curvature.



## PCI for RCA CTO

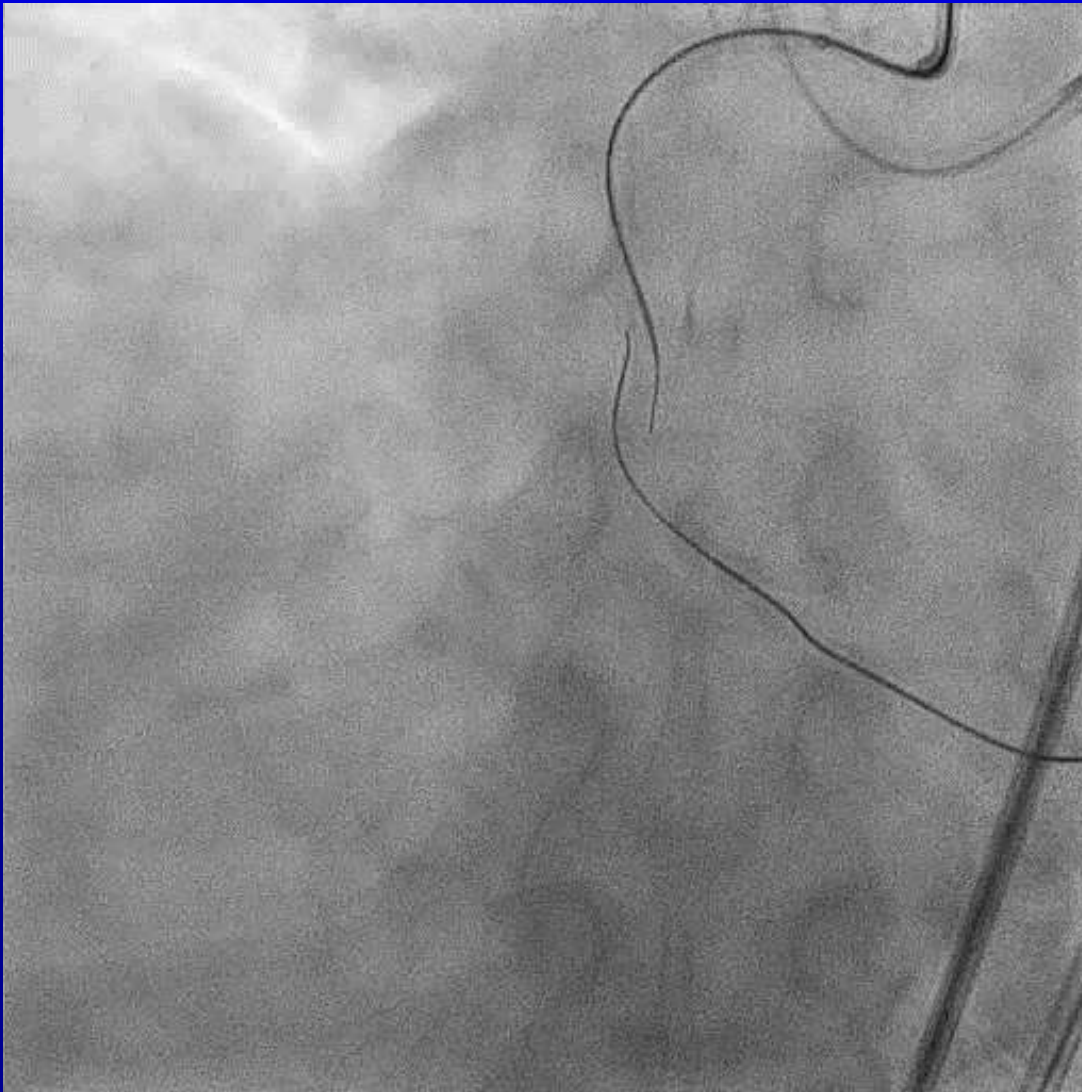


Bilateral femoral approach  
6Fr.Britetip JR4.0 SH  
8Fr.Hyperion SPB3.5 SH

Then, antegrade wiring with Gaia3rd, supported by Corsair was retried, but we could not also cross the curvature.

Retrograde wiring with Gaia2nd was re-performed but they all went to the subintimal space.

## PCI for RCA CTO

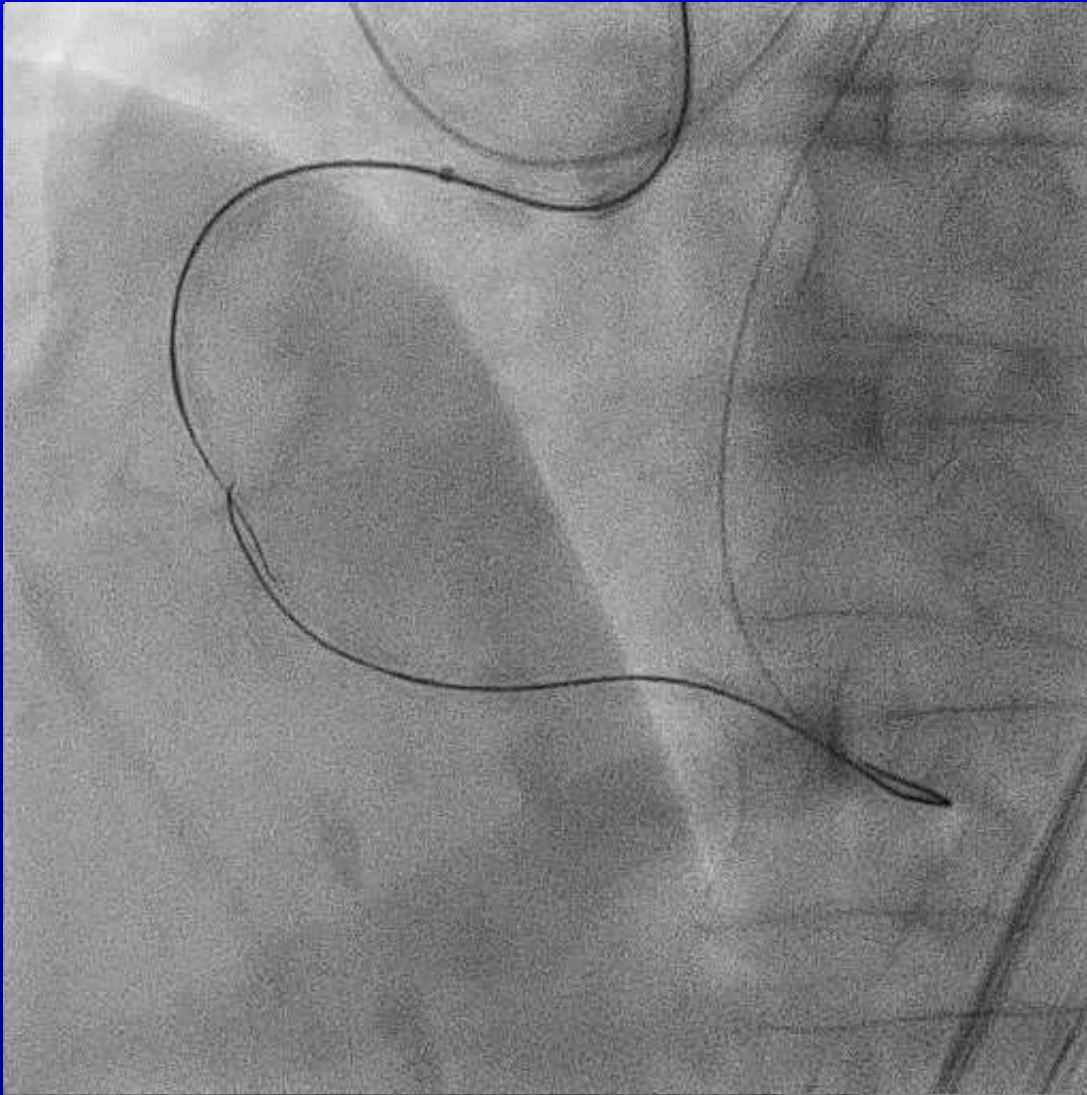


Bilateral femoral approach  
6Fr.Britetip JR4.0 SH  
8Fr.Hyperion SPB3.5 SH

Reverse CART at the curvature was not favorable, and was better at Seg3.

- puncture with retro wire very difficult
- to prevent subintimal stenting at the curvature

## PCI for RCA CTO



Bilateral femoral approach  
6Fr.Britetip JR4.0 SH  
8Fr.Hyperion SPB3.5 SH

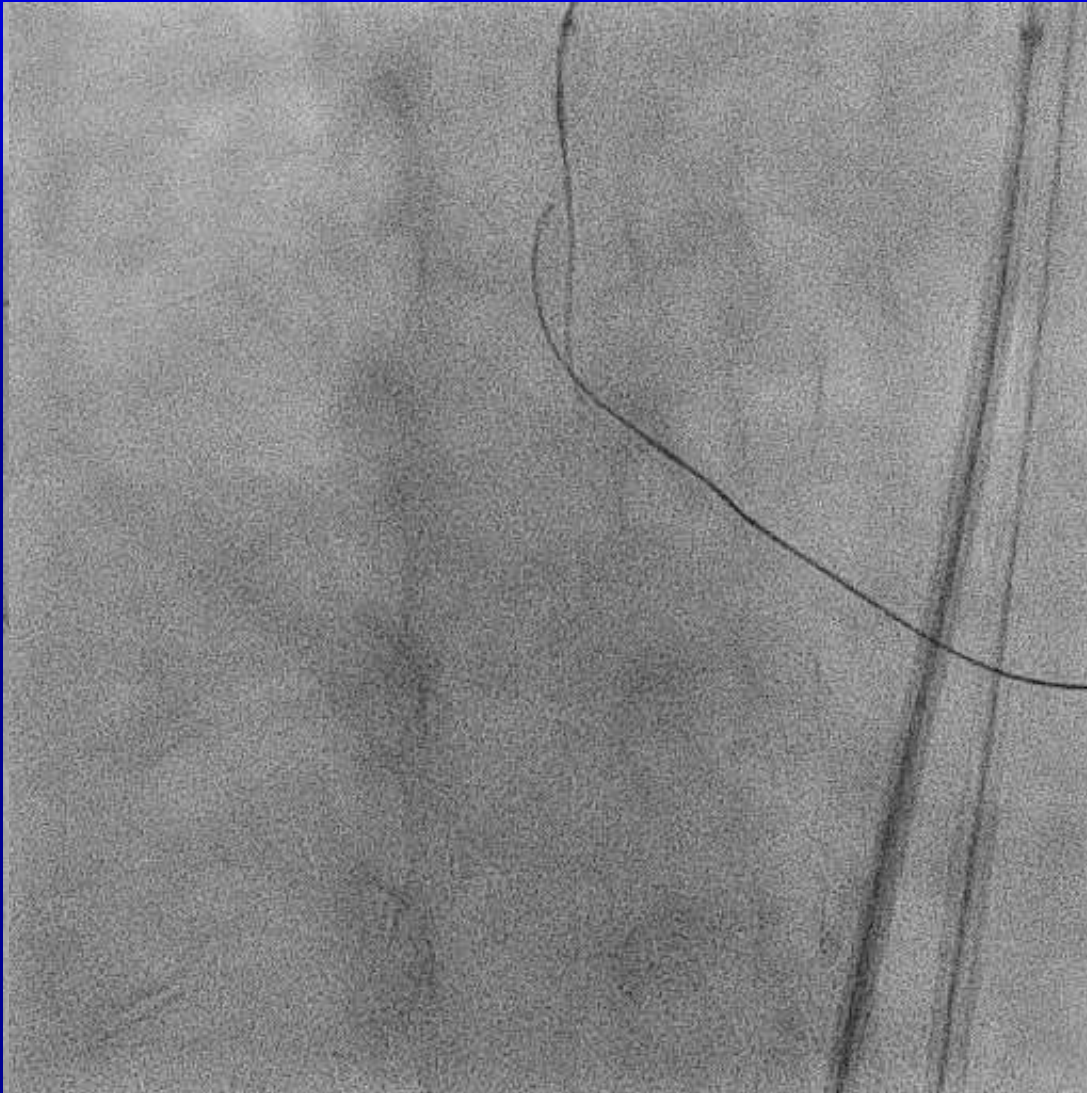
Reverse CART at the curvature was not favorable, and was better at Seg3.

-puncture with retro wire very difficult

-to prevent subintimal stenting at the curvature

We retrogradely advanced the Ultimate bro3 to the subintimal space created by Gaia2nd, and stretched the curvature.

## PCI for RCA CTO

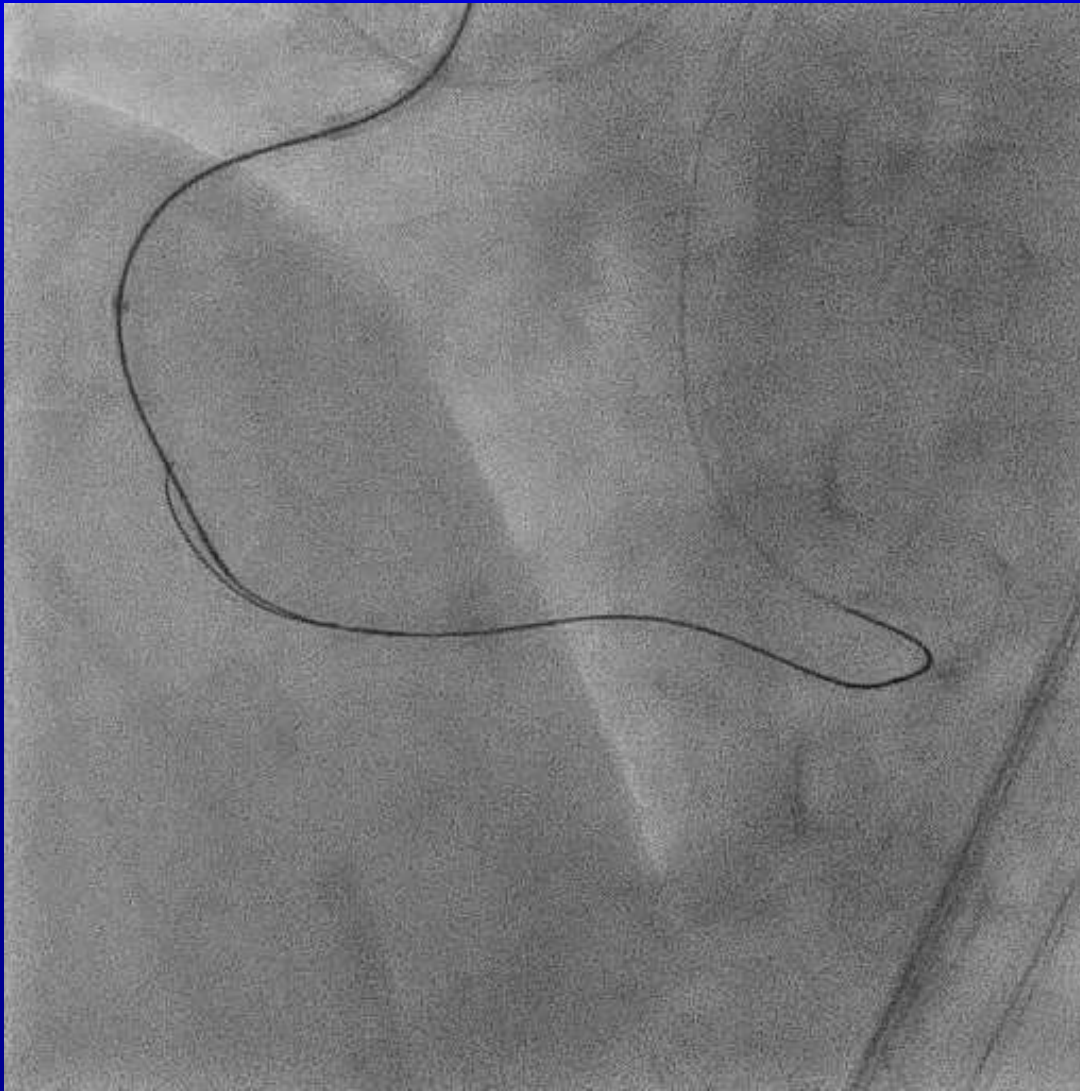


Bilateral femoral approach  
6Fr.Britetip JR4.0 SH  
8Fr.Hyperion SPB3.5 SH

We could advance a Confianza pro12 antegradely to Seg3.

- by the landmark of the retro Ultimate bros3 located at the greater curvature
- change of vessel morphology

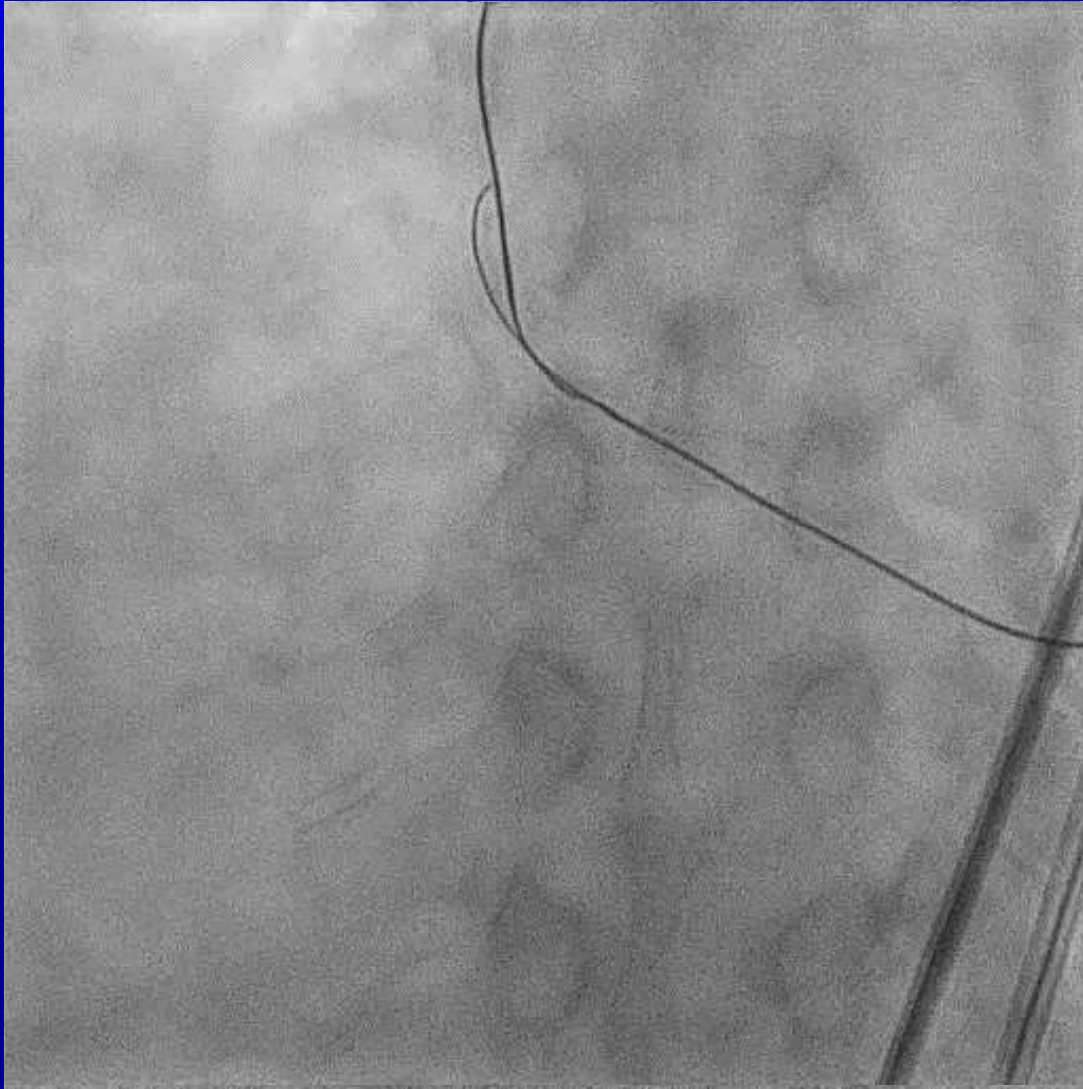
## PCI for RCA CTO



Bilateral femoral approach  
6Fr.Britetip JR4.0 SH  
8Fr.Hyperion SPB3.5 SH

Over the curvature point, we  
changed CP12 to Ultimate  
bros3,

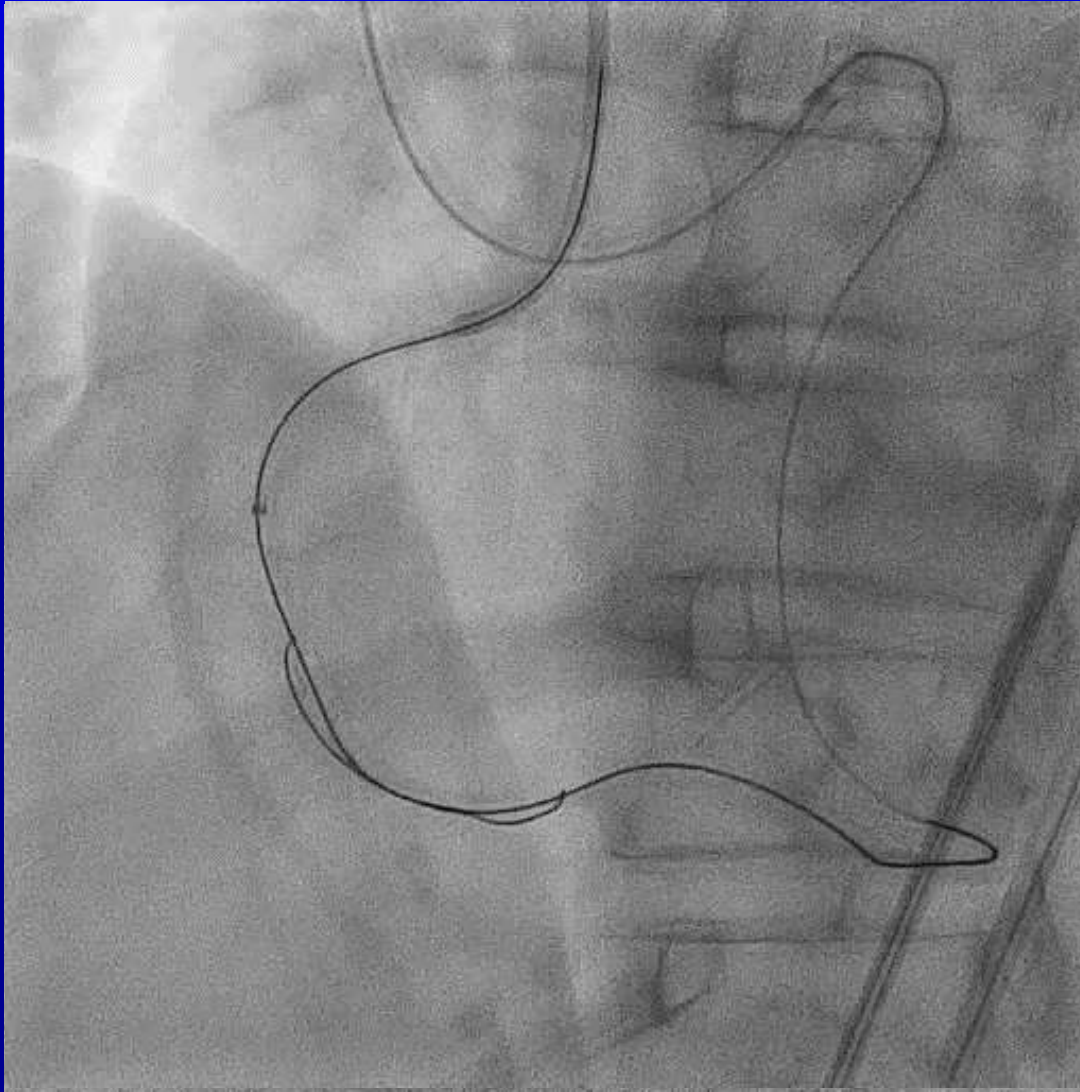
## PCI for RCA CTO



Bilateral femoral approach  
6Fr.Britetip JR4.0 SH  
8Fr.Hyperion SPB3.5 SH

Over the curvature point, we changed CP12 to Ultimate bro3, so that we could trace the intra-plaque space and increase the stability.

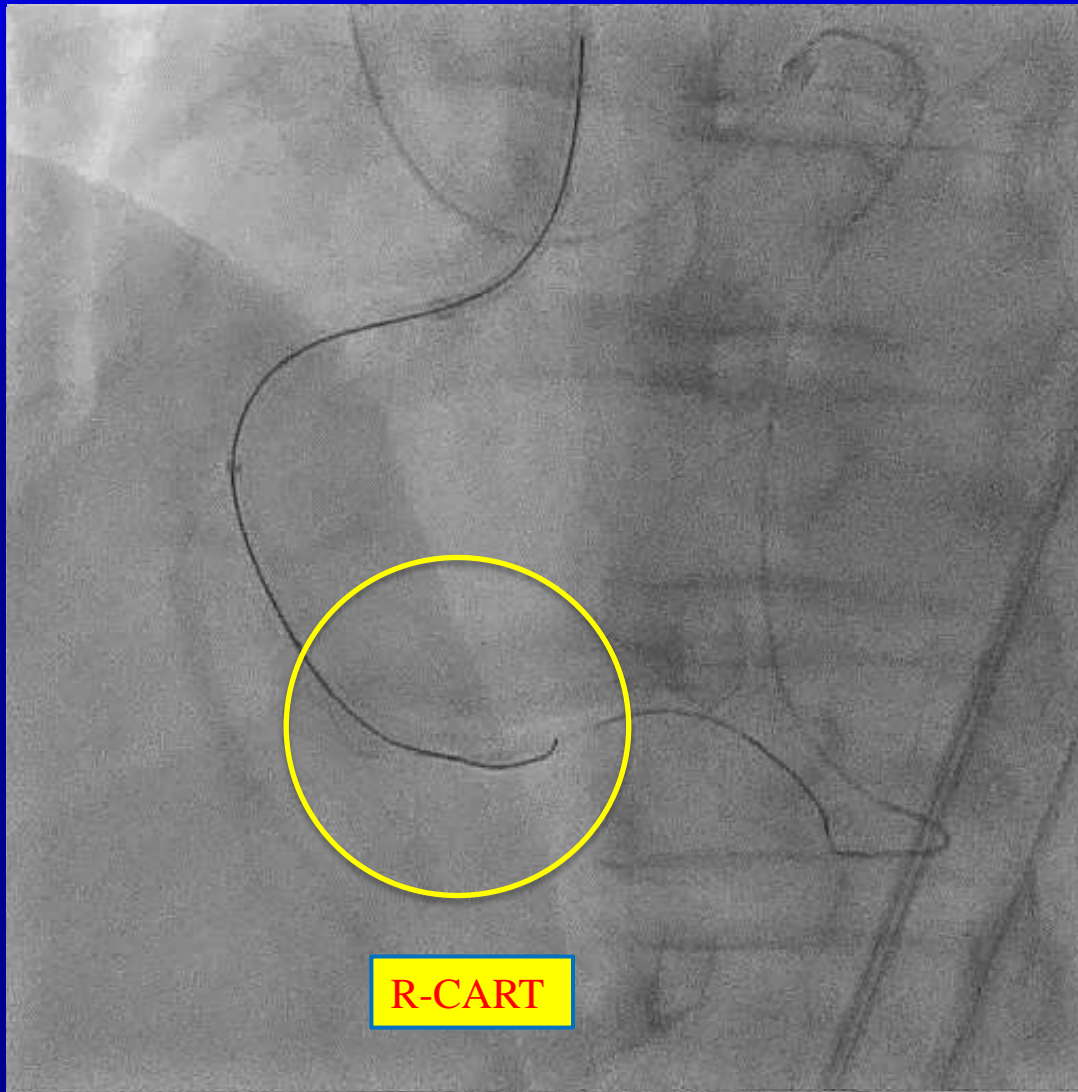
## PCI for RCA CTO



Bilateral femoral approach  
6Fr.Britetip JR4.0 SH  
8Fr.Hyperion SPB3.5 SH

Over the curvature point, we changed CP12 to Ultimate bros3, so that we could trace the intra-plaque space and increase the stability.

## PCI for RCA CTO



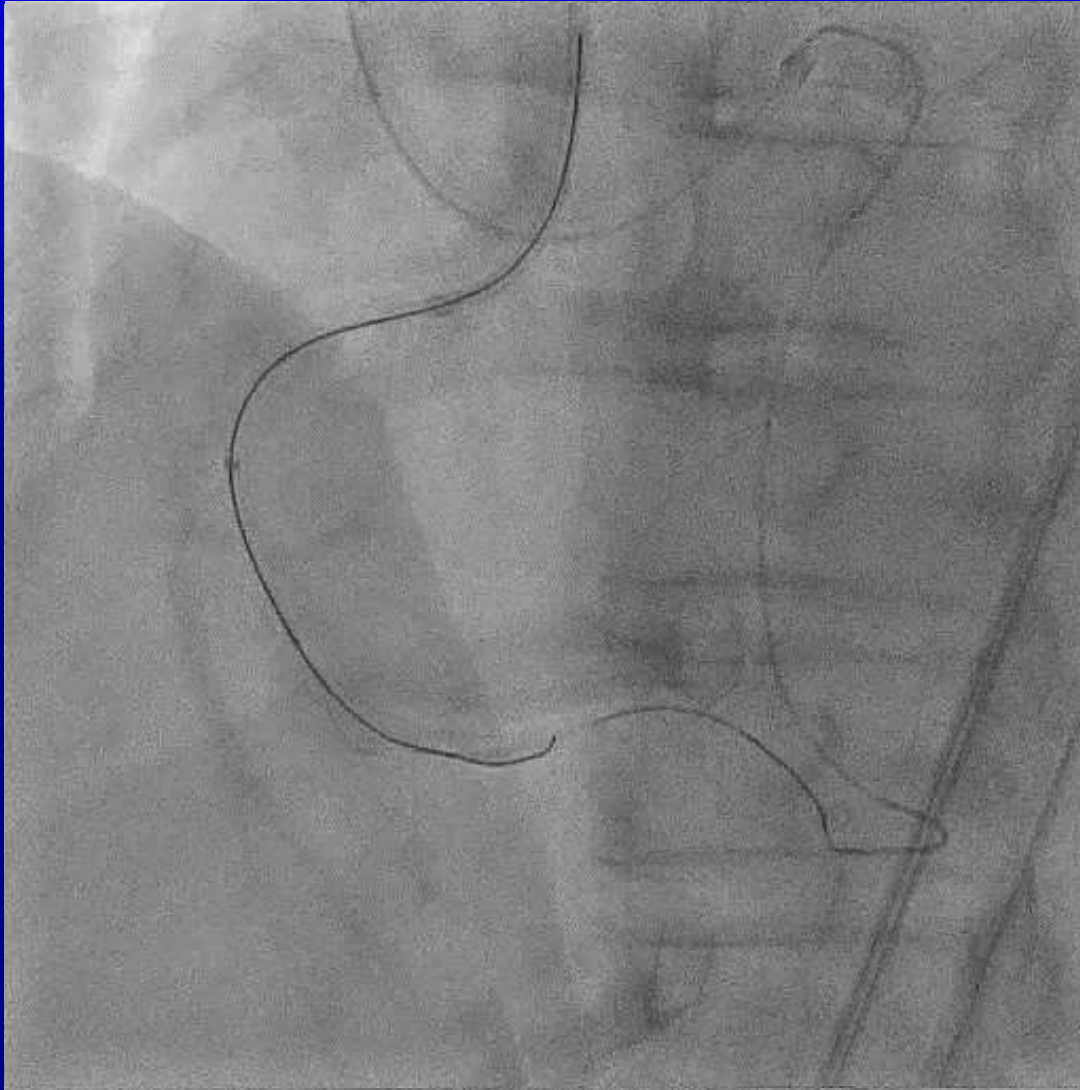
Bilateral femoral approach  
6Fr.Britetip JR4.0 SH  
8Fr.Hyperion SPB3.5 SH

Over the curvature point, we changed CP12 to Ultimate bro3, so that we could trace the intra-plaque space and increase the stability.

With reverse CART technique, we could retrogradely cross a Sion black to the proximal RCA.



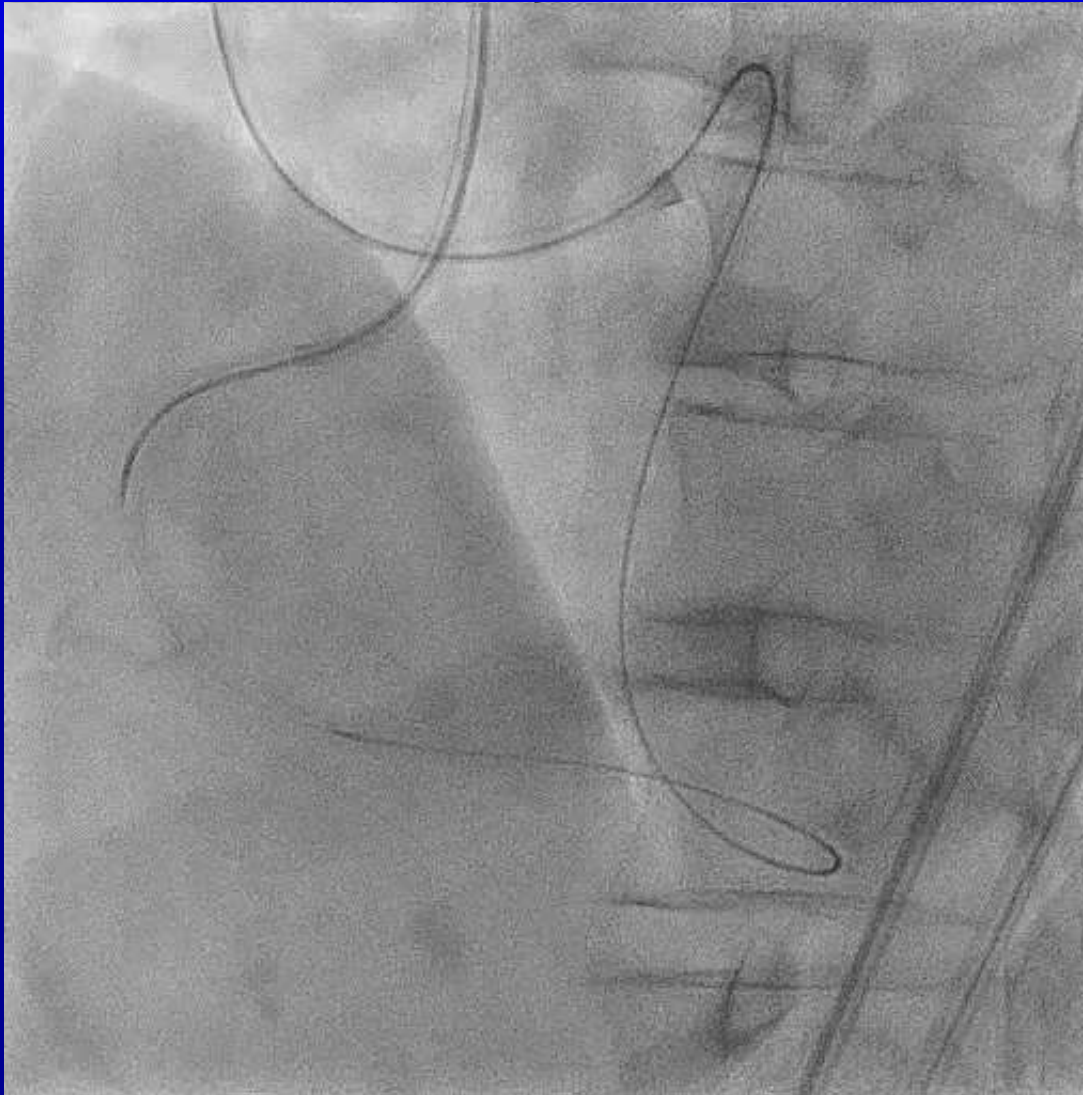
## PCI for RCA CTO



Bilateral femoral approach  
6Fr.Britetip JR4.0 SH  
8Fr.Hyperion SPB3.5 SH

Even with the entrapment of the retro wire in the ante guiding catheter, retro Caravel could not cross the CTO lesion.

## PCI for RCA CTO

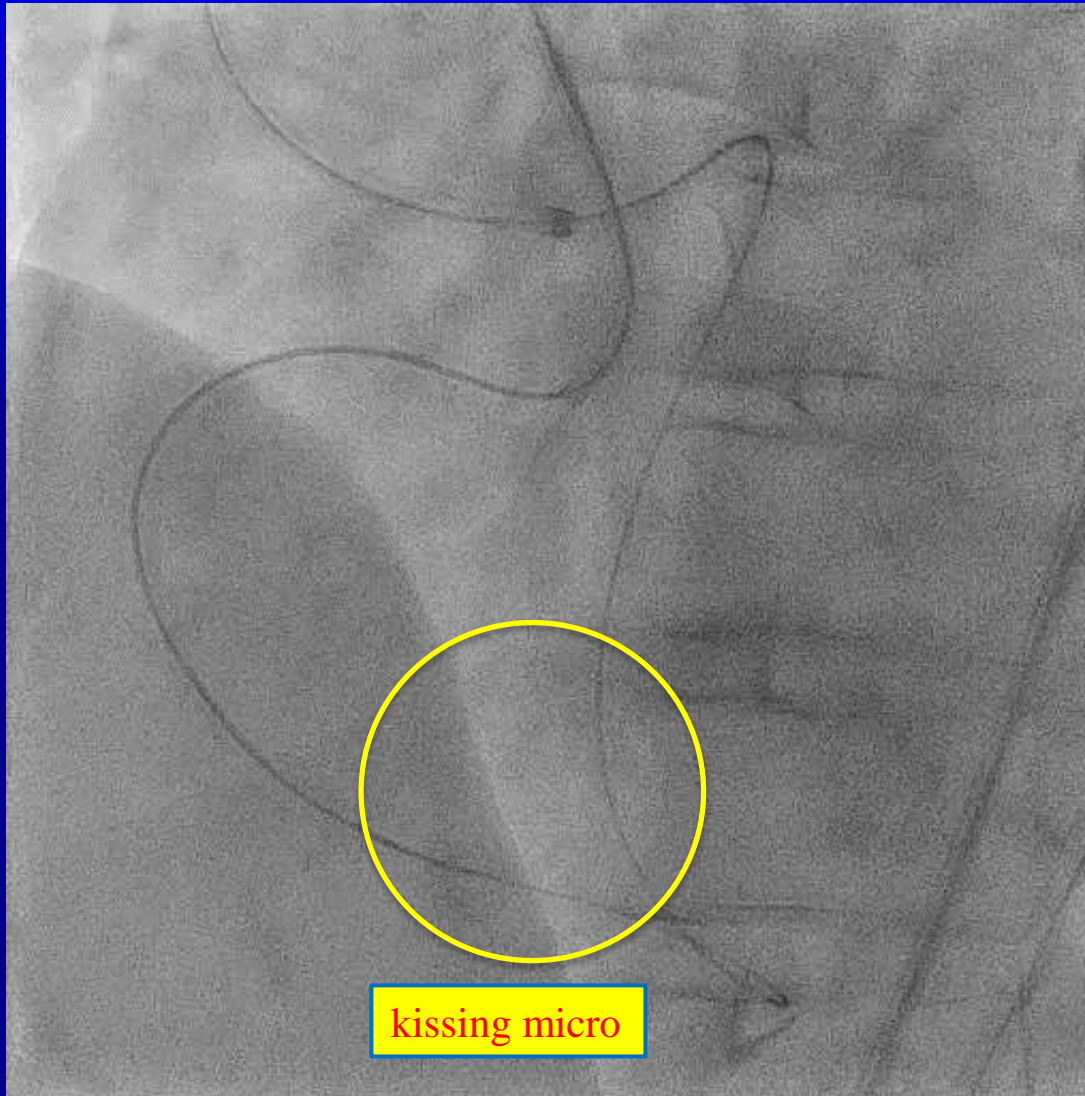


Bilateral femoral approach  
6Fr.Britetip JR4.0 SH  
8Fr.Hyperion SPB3.5 SH

Even with the entrapment of the retro wire in the ante guiding catheter, retro Caravel could not cross the CTO lesion.

With the rendez-vous technique, we cannulated the retro wire into the antegrade Corsair and delivered it to the distal of a CTO lesion.

## PCI for RCA CTO



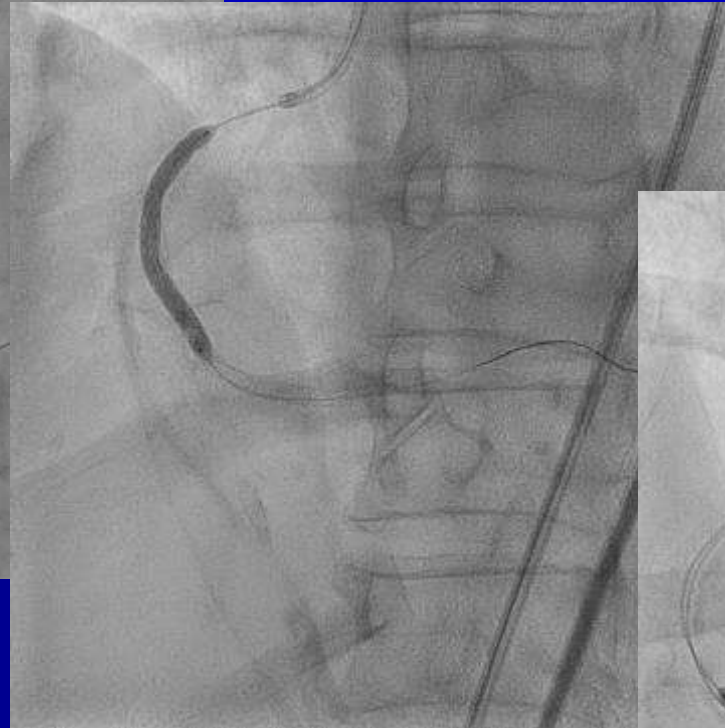
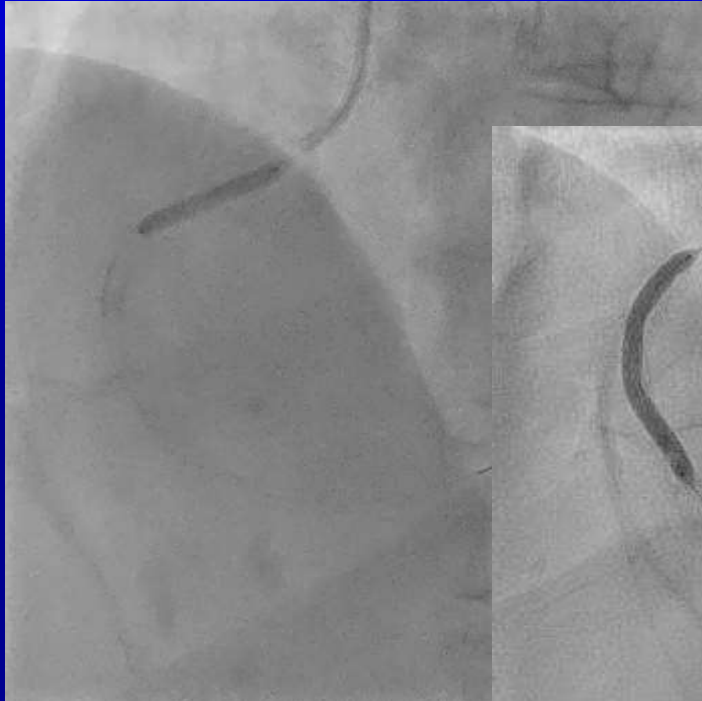
Bilateral femoral approach  
6Fr.Britetip JR4.0 SH  
8Fr.Hyperion SPB3.5 SH

Even with the entrapment of the retro wire in the ante guiding catheter, retro Caravel could not cross the CTO lesion.

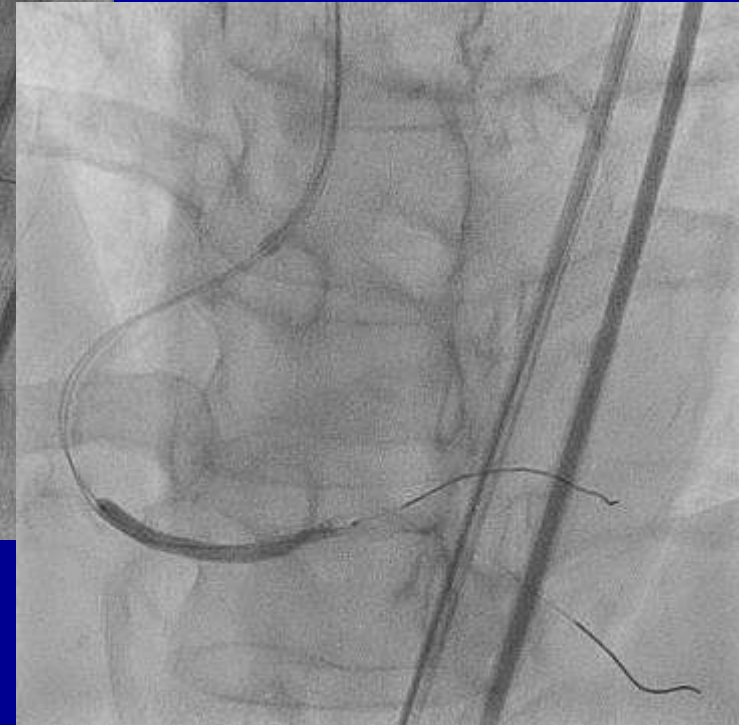
With the rendez-vous technique, we cannulated the retro wire into the antegrade Corsair and delivered it to the distal of a CTO lesion.

# PCI for RCA CTO

Bilateral femoral approach  
6Fr.Britetip JR4.0 SH  
8Fr.Hyperion SPB3.5 SH

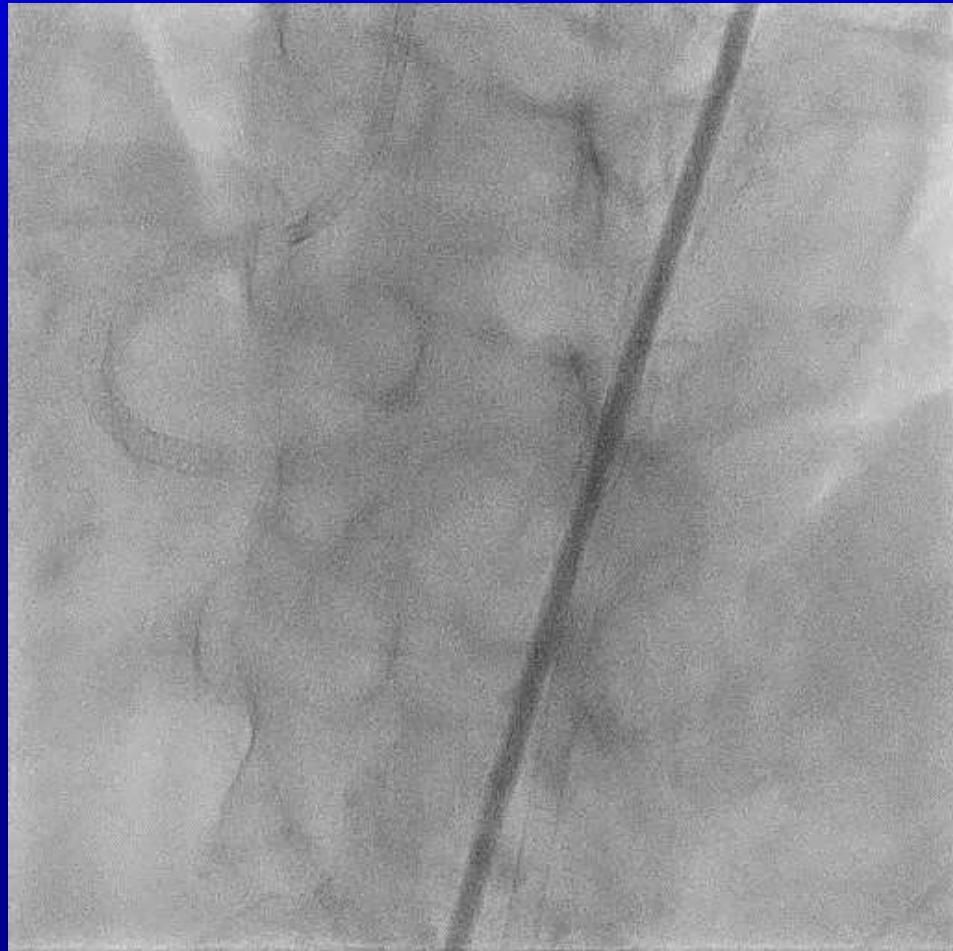


EES\*3 deploy



*2017 / 11 / 30 Complex PCI*

# **PCI for RCA CTO**



*Hyogo Prefectural Amagasaki General Medical Center*

# Case summary

- ✓ This is a case of stiff RCA CTO with a curvature just after the entry point.
- ✓ The stenosis of ostial LAD was much severer than we first expected, and an intervention to LMT-LAD was required beforehand.
  
- We needed to use a Reverse CART technique at Seg3 beyond the curvature point.
  - puncture with retro wire very difficult
  - to prevent subintimal stenting at the curvature
- In order to successfully cross the CTO, wires like Confianza Pro12, whose penetration force is higher, was necessary, but these kinds of wires usually cannot trace the intra plaque space.
- By retrogradely advancing a supportive ULTIMATEbro3 to the subintimal space at the curvature, we could stretch the vessel structure and finally advanced a Confianza Pro12 to Seg3.

Thank you for your attention.