

Stent Partial Crush by Balloon Angioplasty for In-stent Restenosis

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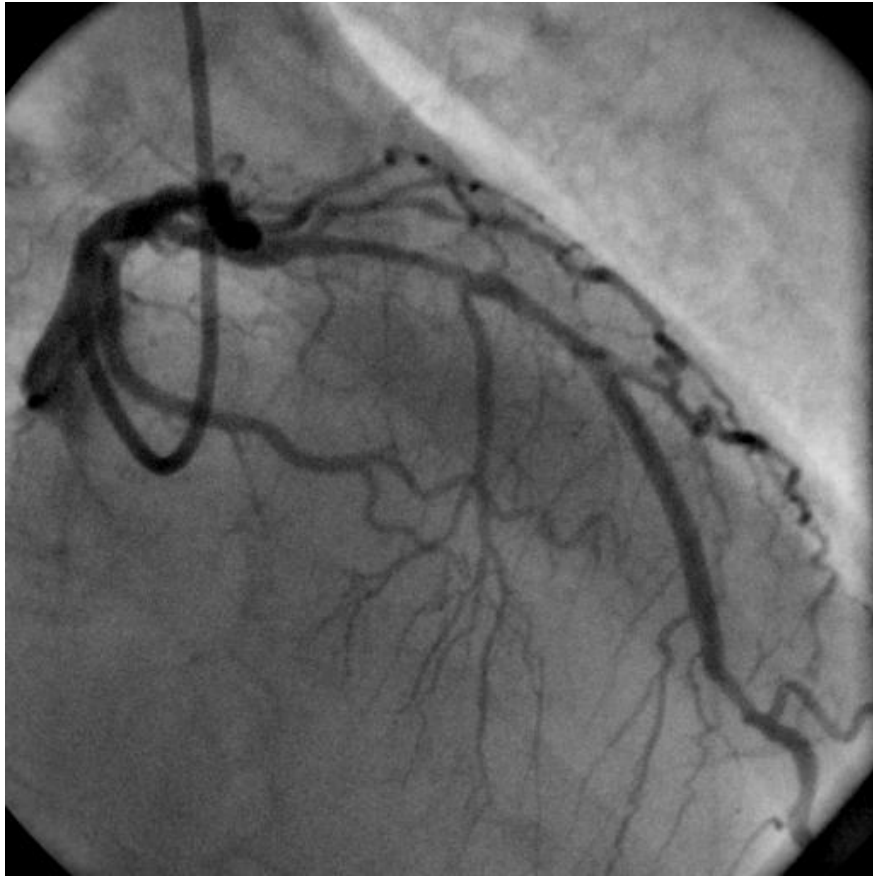
Taipei Taiwan

Case profile

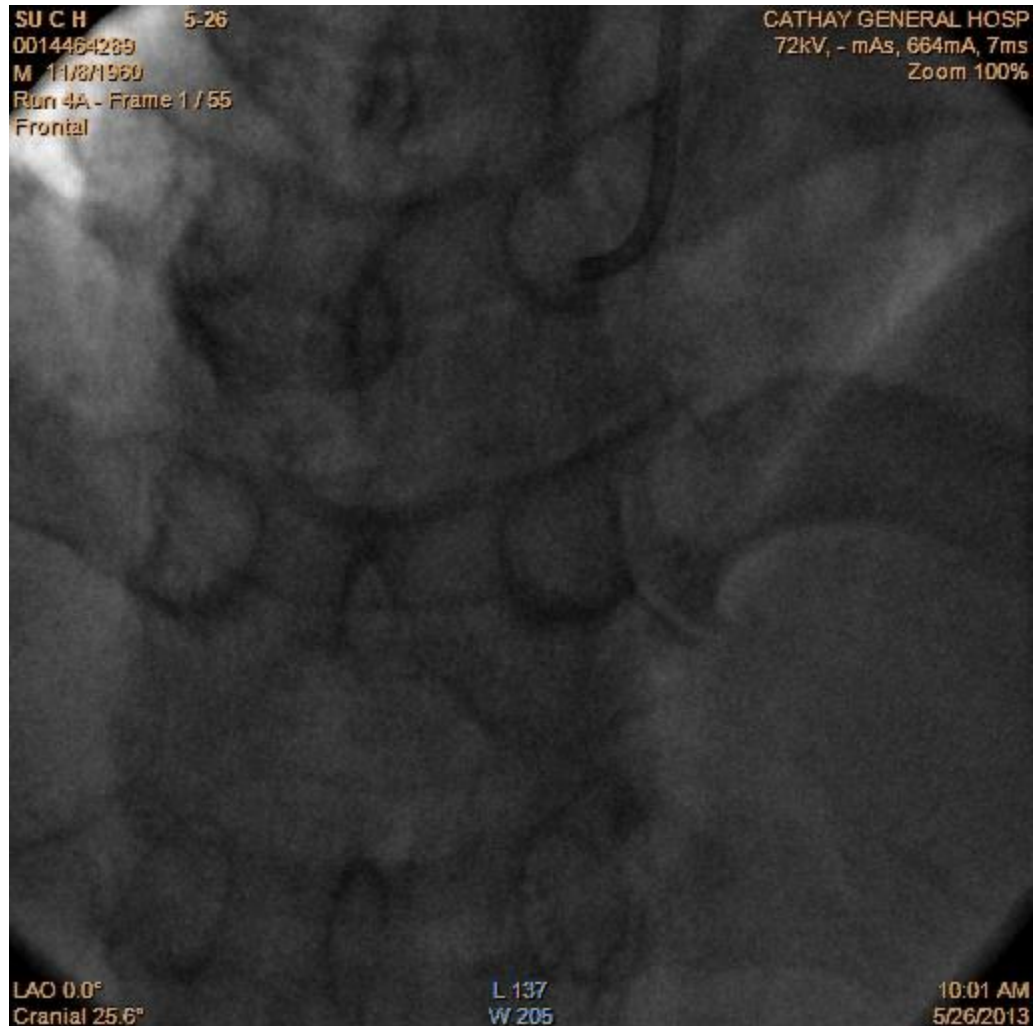
- Age: 52 y/o
- Gender: male
- Risk factor: Hypertension, Hyperlipidemia
- History:
 - Acute inferior MI on May 26, 2013
 - CAG: CAD (3-V-D), RCA(2) total occlusion
 - PCI for RCA with 2 Resolute Integrity stent (3.5x38, 3.5x26mm)



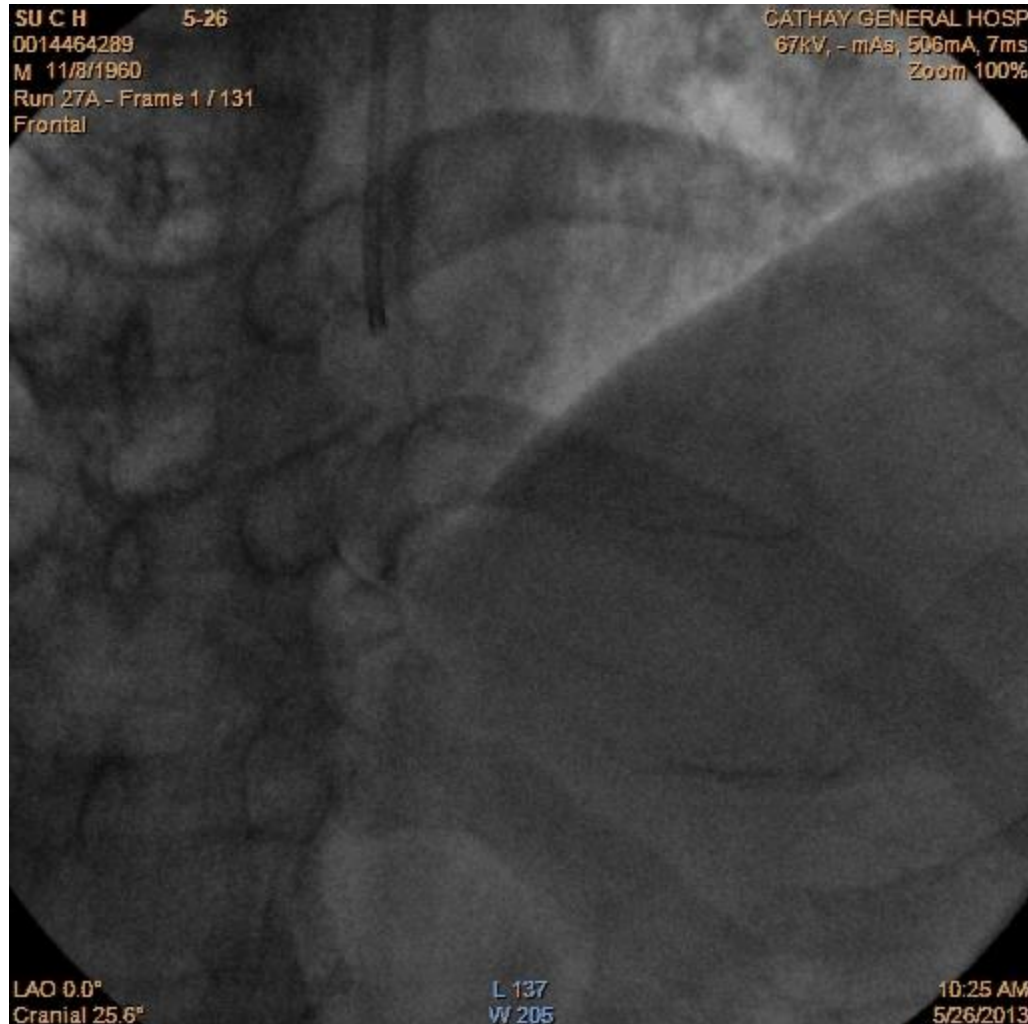
LCA CAG (May 26)



RCA CAG (May 26)



RCA p PCI



RCA (1-2)
3.5x38mm
3.5x26mm
Resolute Integrity

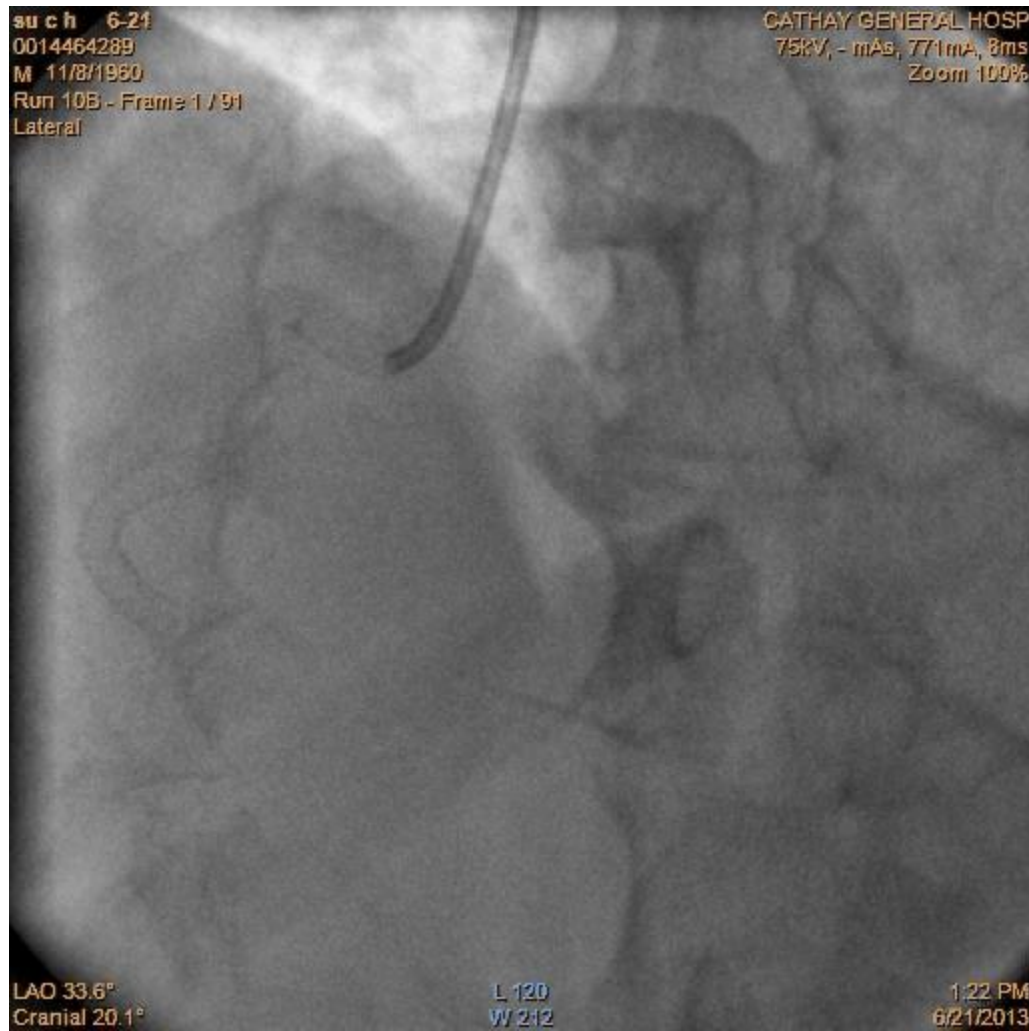


Case profile

- Black out with cold sweating on Jun 15, 2013
- No chest pain, cardiac enzyme within normal limit
- No ECG change
- CAG was done 5 days later, and showed in-stent total occlusion



CAG (Jun 21)



PCI for ISR

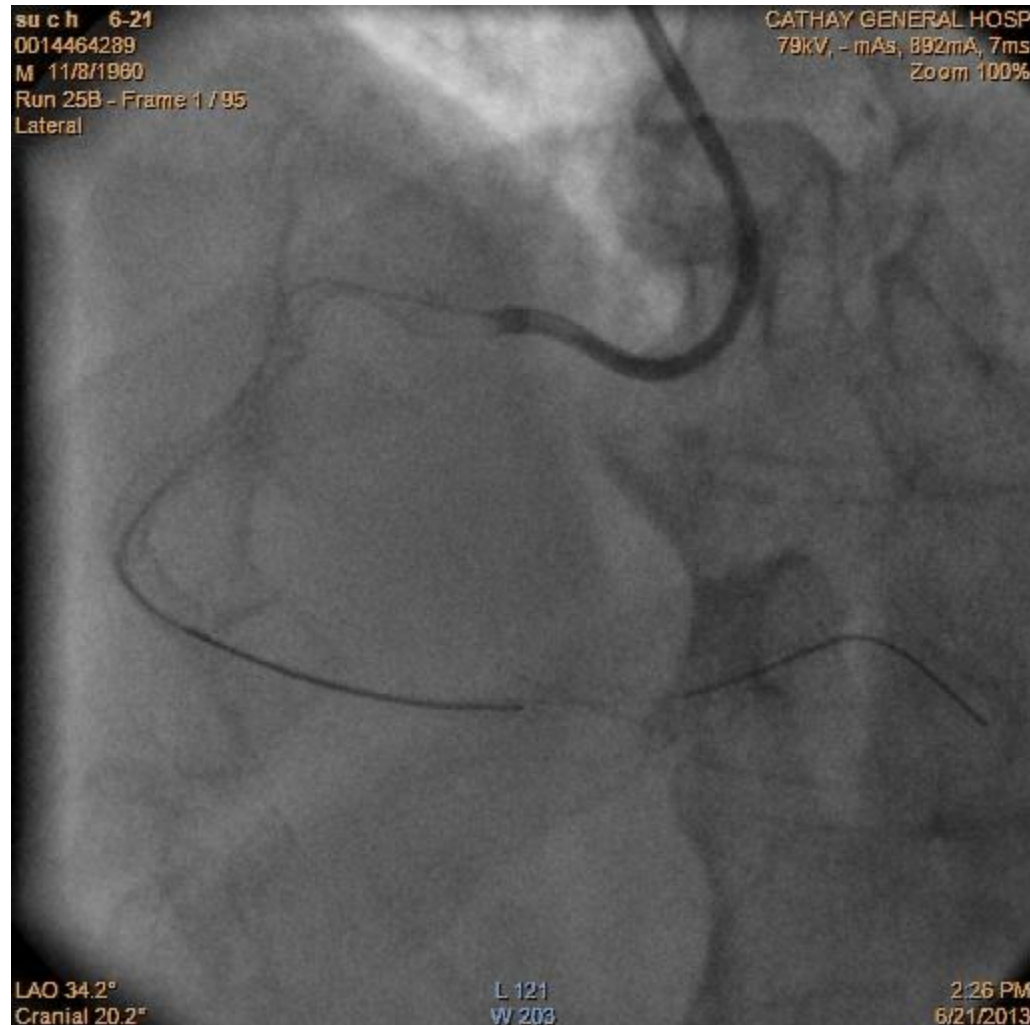
- GC: 6Fr AL0.75
- GW: Fielder FC, Sion, Runthrough NS
- Ryujin plus(1.25x10 mm) balloon was unable to cross lesion
- Switch to Sapphire(1.0x5mm) balloon then cross lesion and pre-dilate



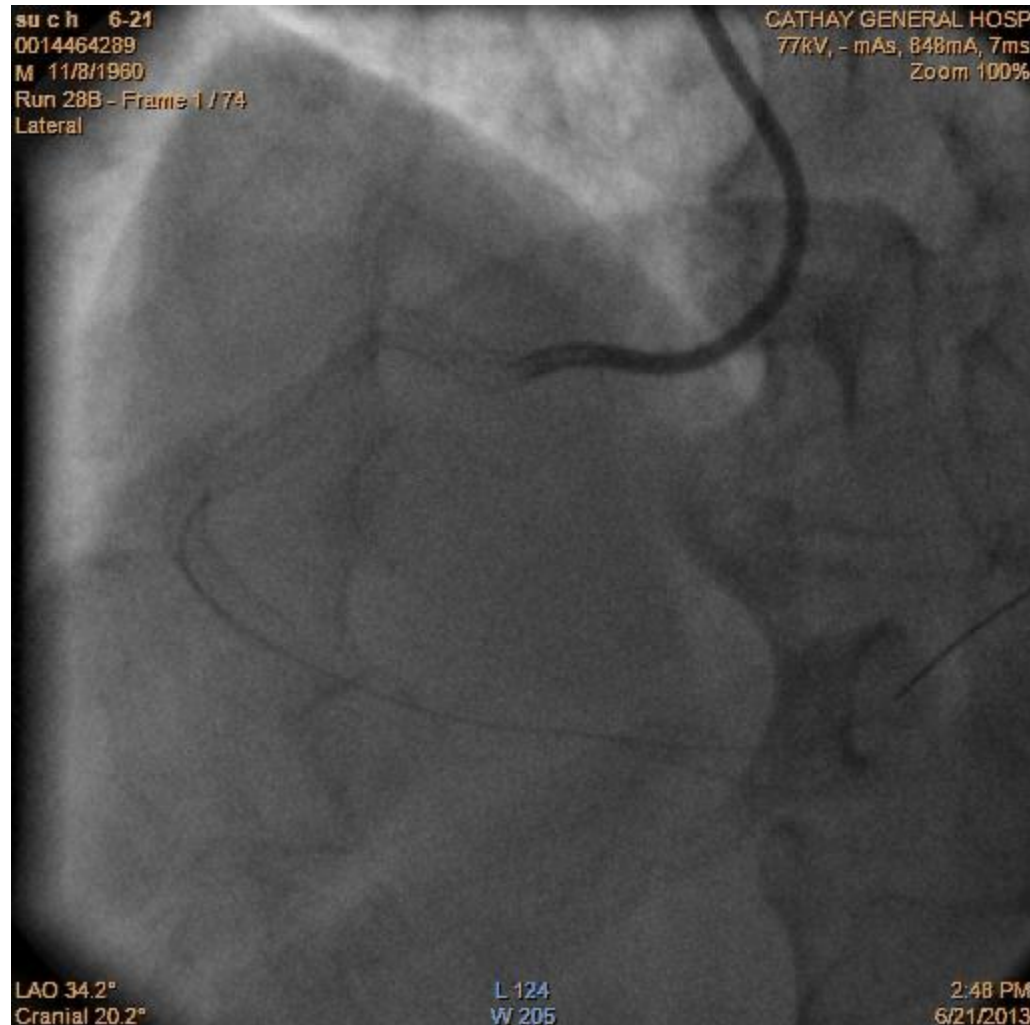
Step up to Sprinter L(2.0x15mm) balloon



ISR p PTCA c (2.0x15mm) balloon



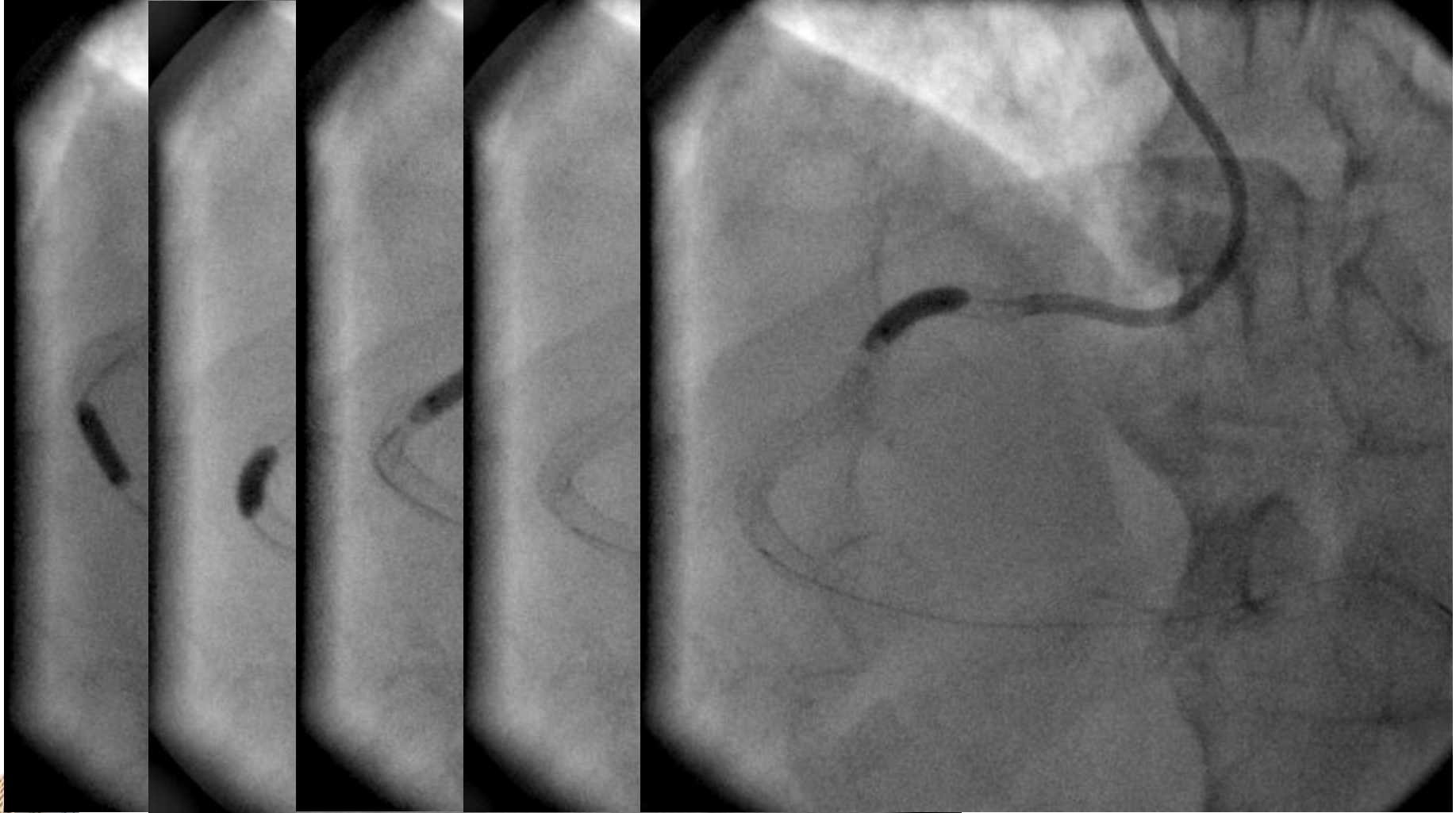
ISR p PTCA c (2.0x15mm) balloon



Flow was not restore



Upsize to 3.0x12mm balloon



ISR p 3.0x12mm balloon angioplasty

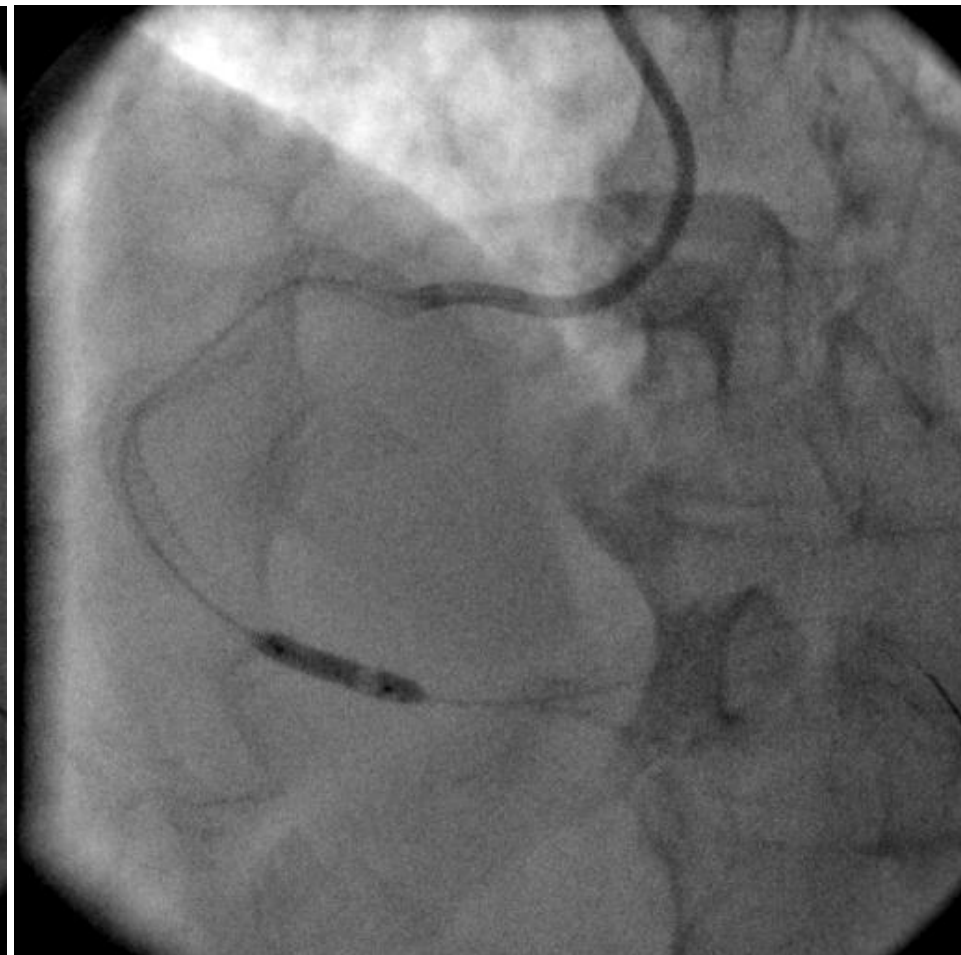


Flow was not good after 3.0x12mm balloon angioplasty

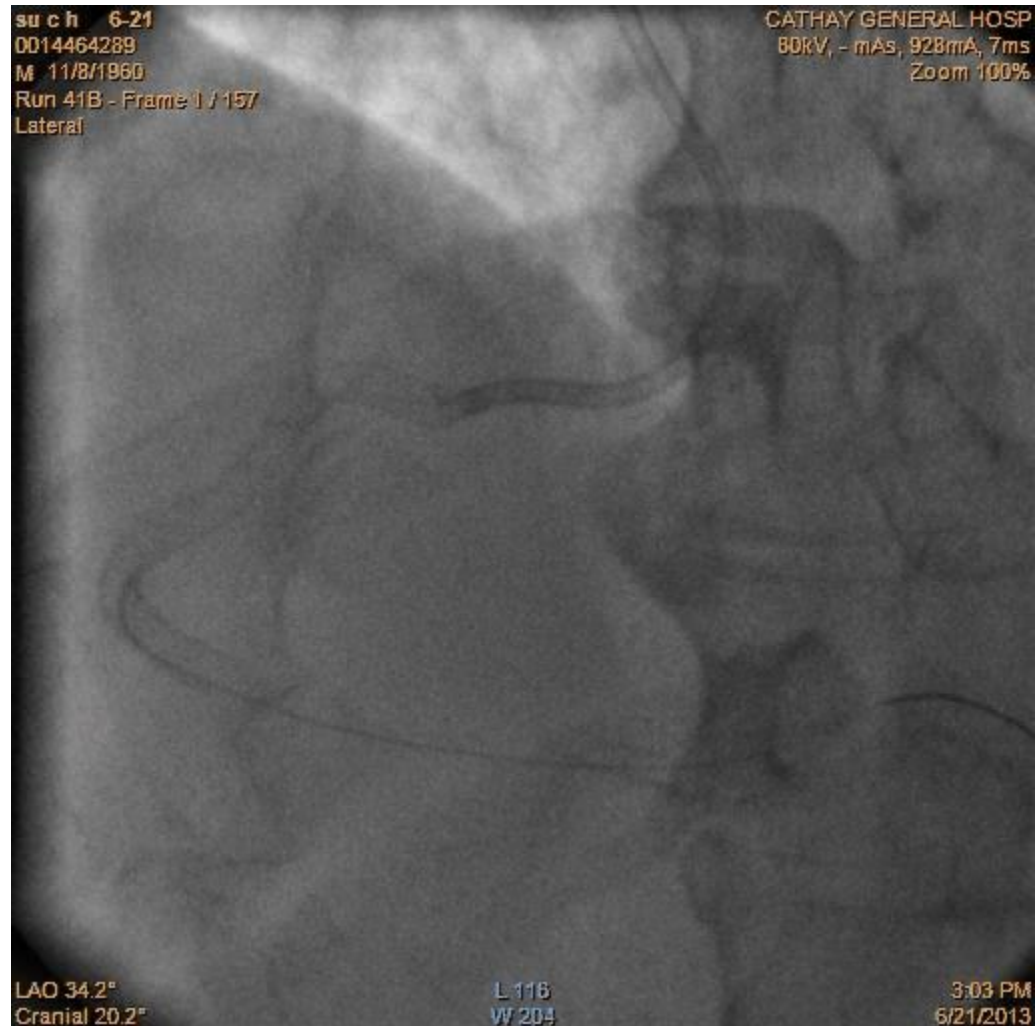
- Balloon undersize ?
- Distal lesion limited flow?
- Thrombus ?
- **We try to treat distal lesion first**



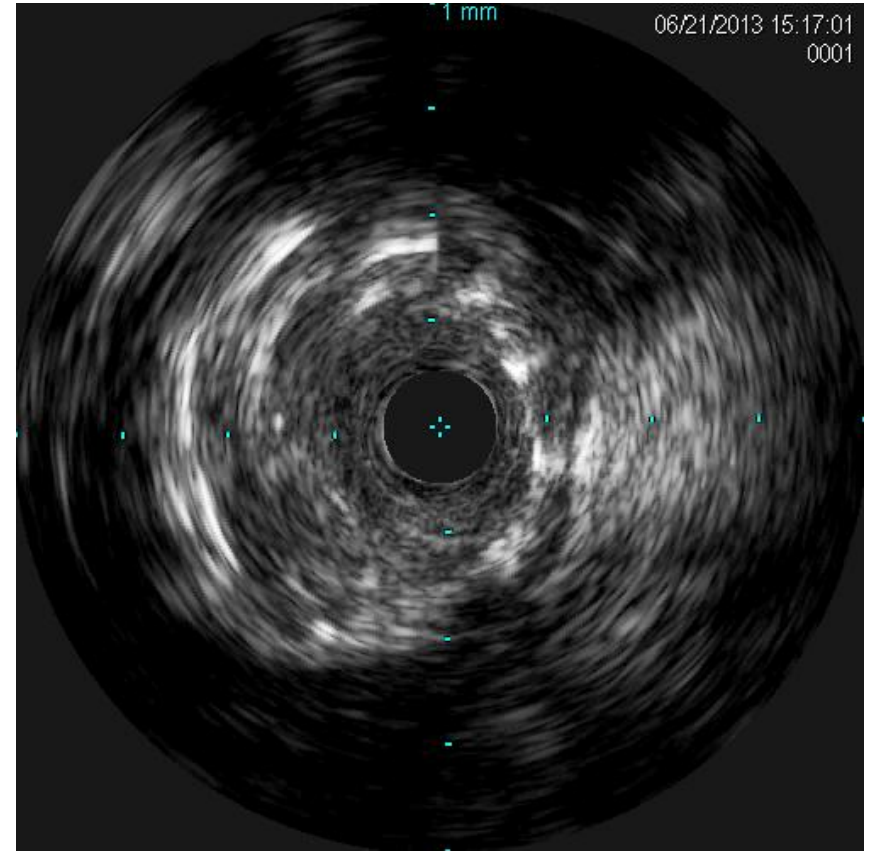
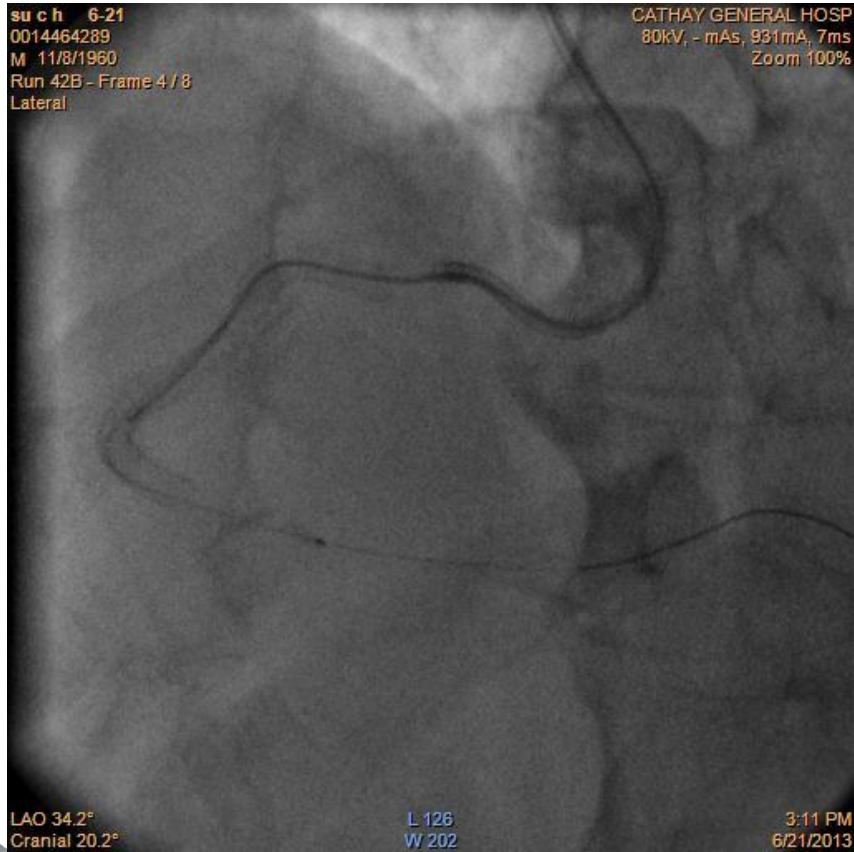
PTCA for RCA(3) c 3.0x12mm balloon

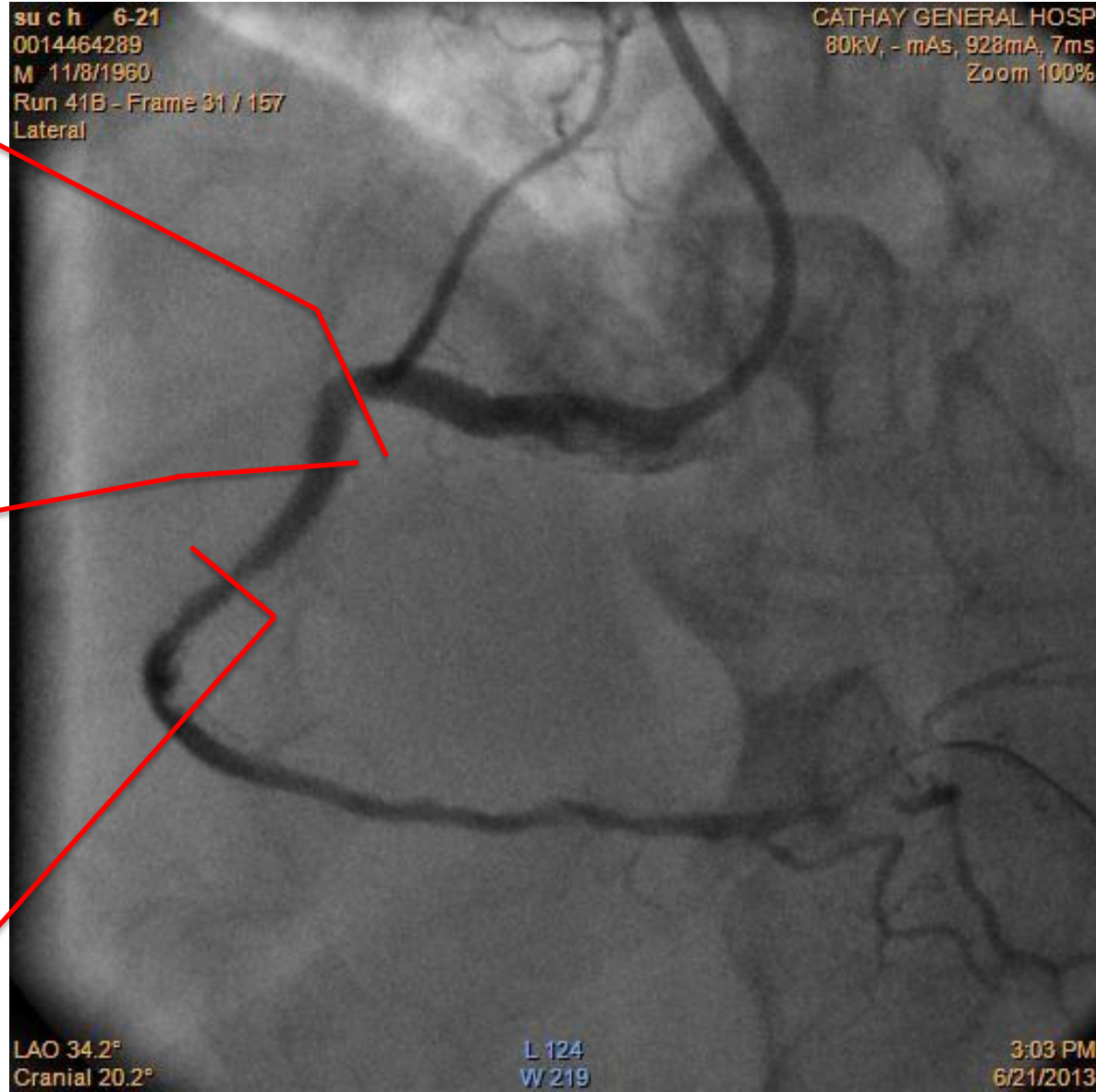
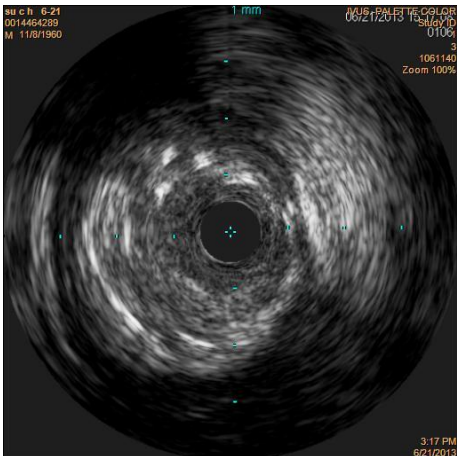
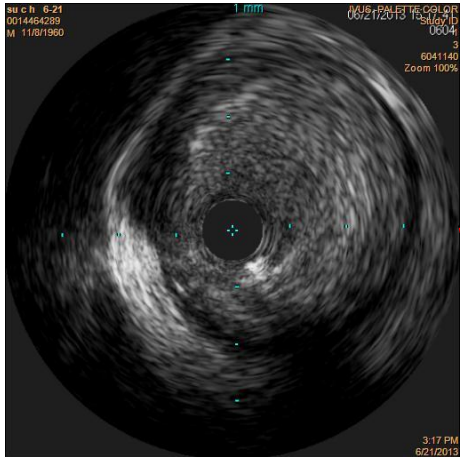
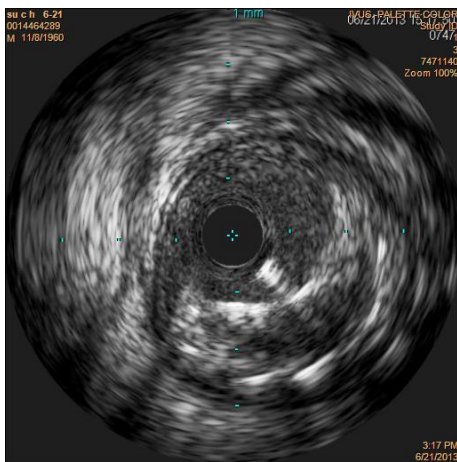


Post PTCA for RCA(3)

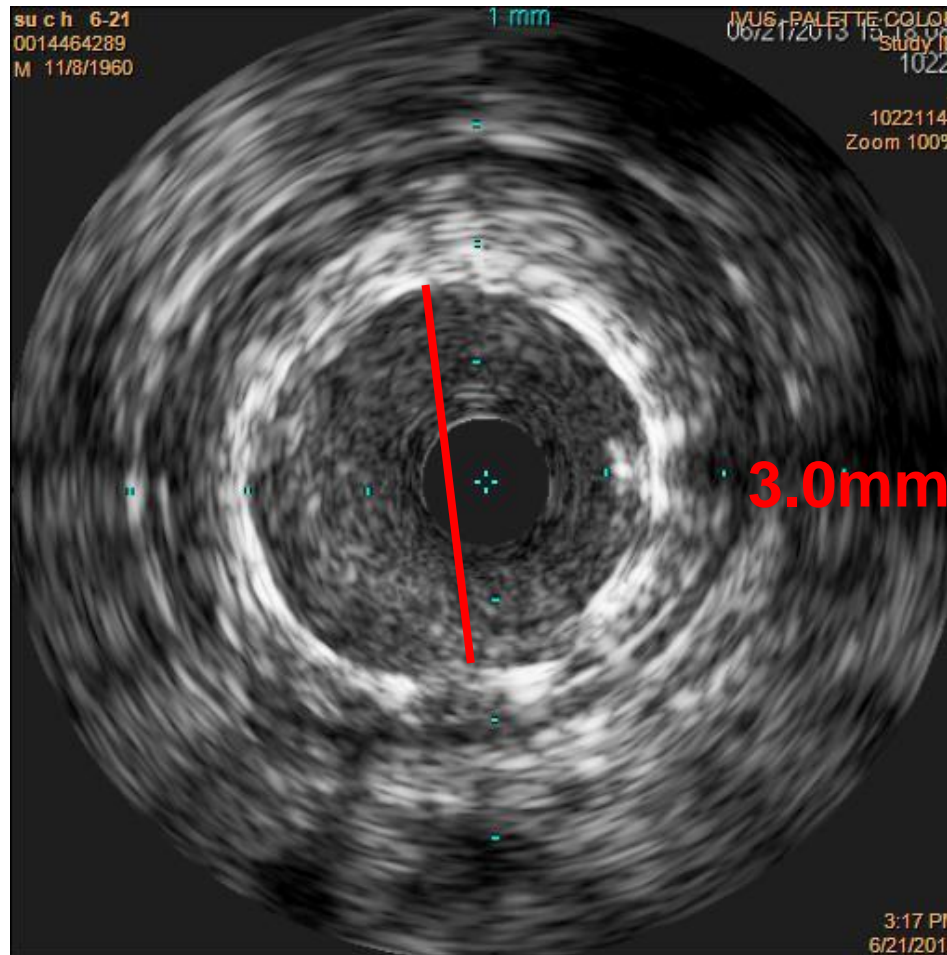


Check IVUS





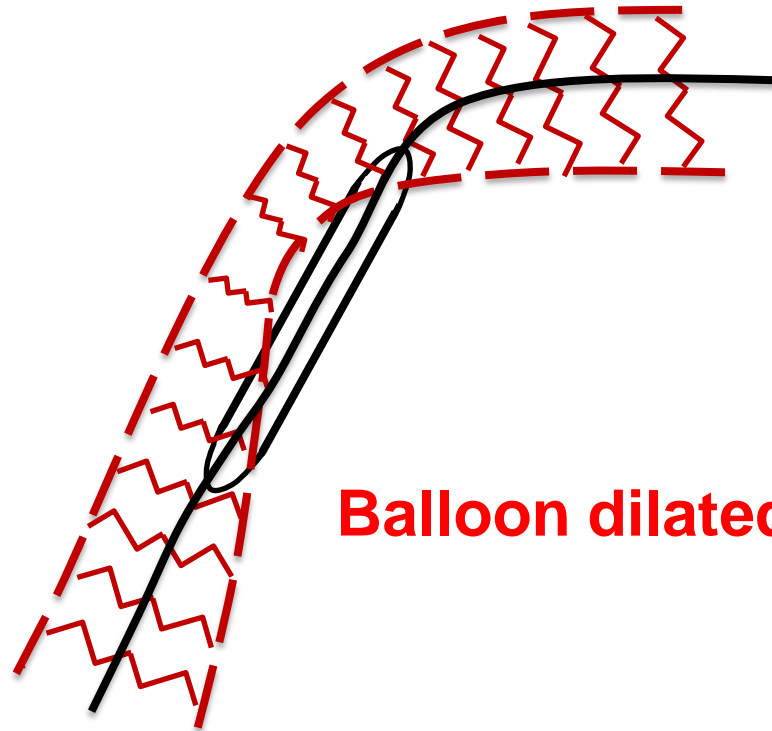
Stent incomplete expansion



3.5mm stent

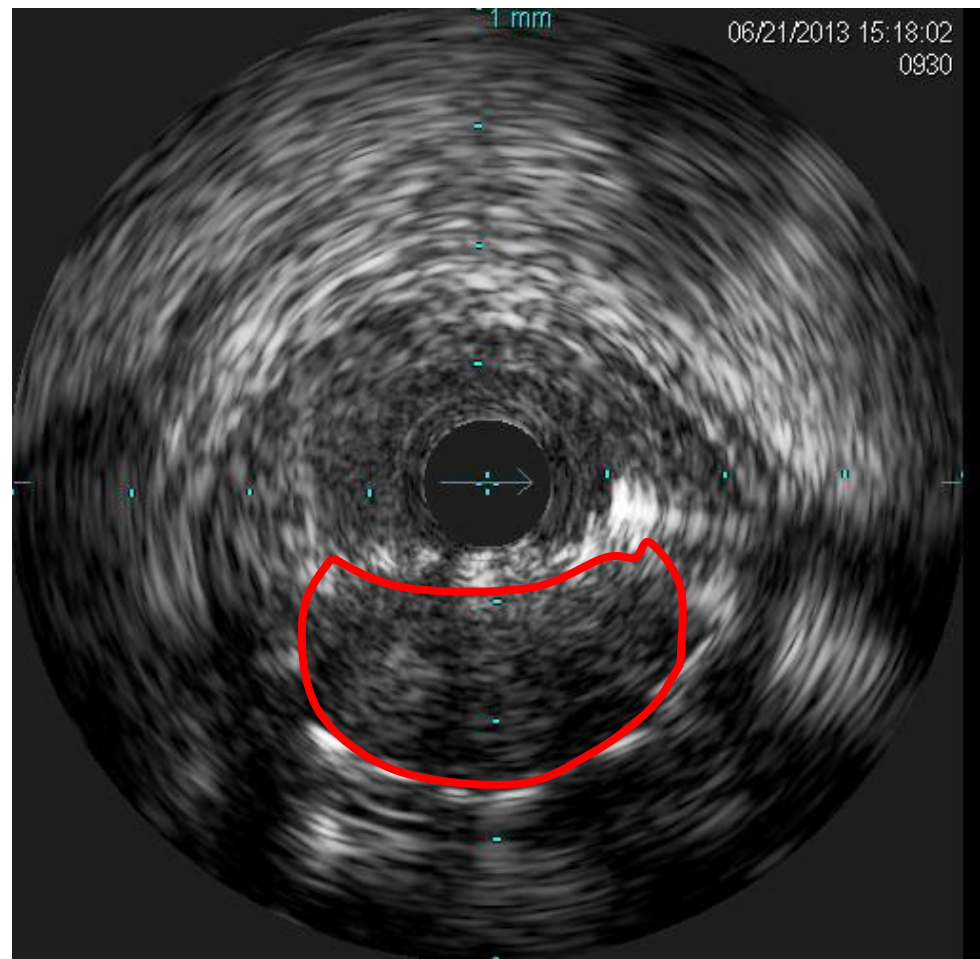


GW went out and in stent



Balloon dilated and crush stent

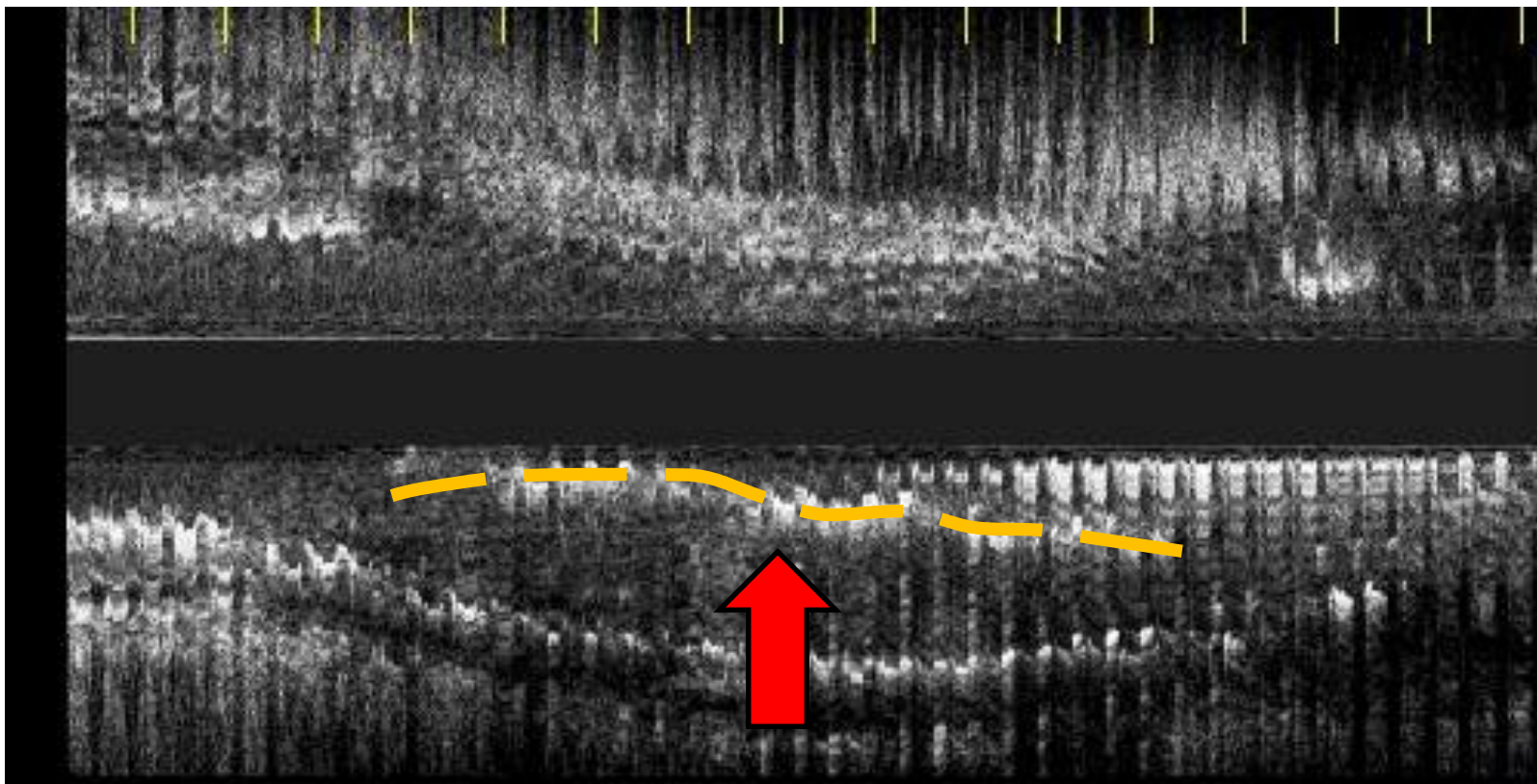




Stent partial crush



Crush Stent

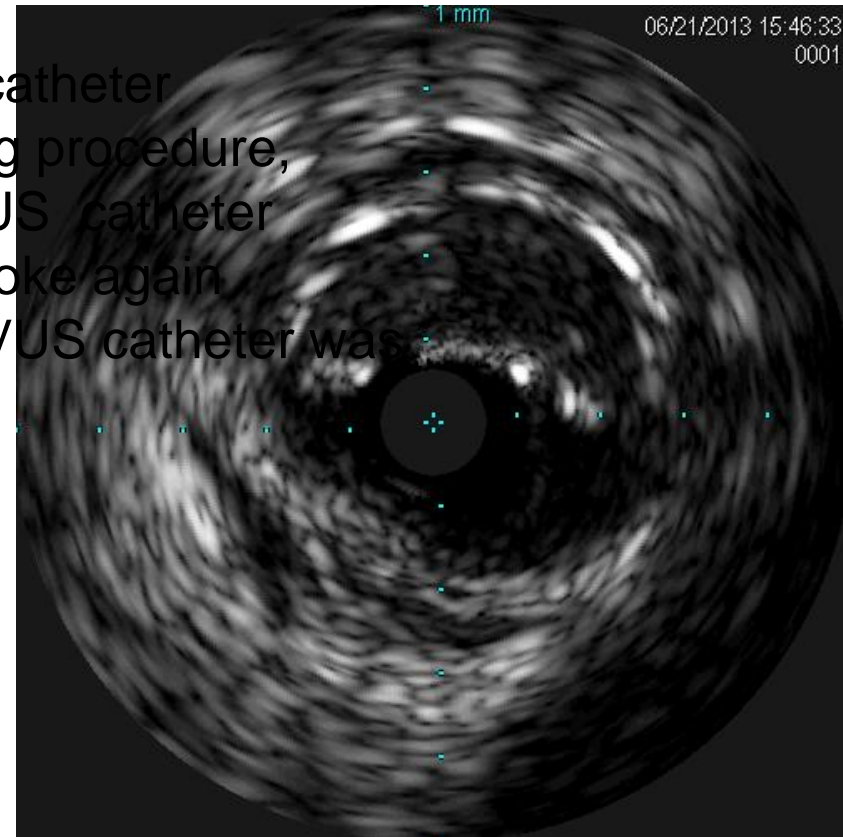


IVUS guide re-wiring

- We try to re-wiring by IVUS guide
- *However!*
- Revolution IVUS catheter was broken during procedure,
- 2nd Revolution IVUS catheter was used, and broke again
- Then Eagle eye IVUS catheter was used

Unfortunately!
It was broken again

And my heart was broken!



Final Angiography



Result

- IVUS catheter (Revolution and Eagle Eye) were broken during procedure
- CAG showed TIMI 2-3 flow
- Patient did not have chest pain
- There was no ECG change
- Keep dual anti-platelet and anticoagulant therapy
- Patient received CABG for total revascularization 2 weeks later



Conclusion

- In torturous vessel, stent may hard to full expansion or apposition
- Wiring for ISR may pass exit stent cell
- Wire inside stent or outside stent cell can not be distinguished by CAG
- Partial crush stent and stent fracture may not be seen in CAG
- IVUS could identify of guide wire was in or outside stent
- GW may or may not re-entry into stent by IVUS guide
- Partial crush stent may not reduce coronary blood flow

