



# **Different Diagnosis of Coronary Multiple Lumen Formation**

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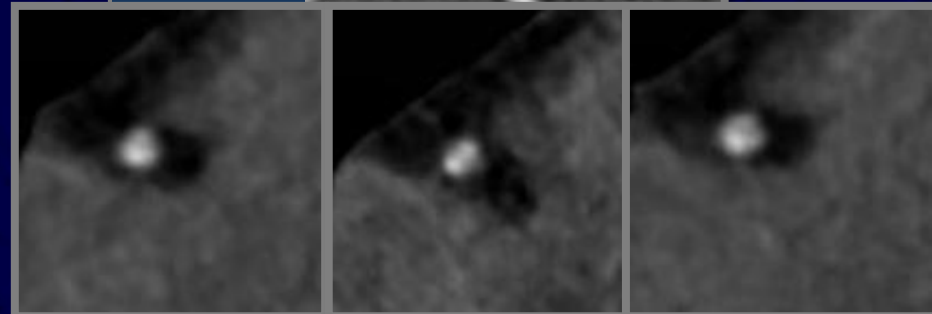
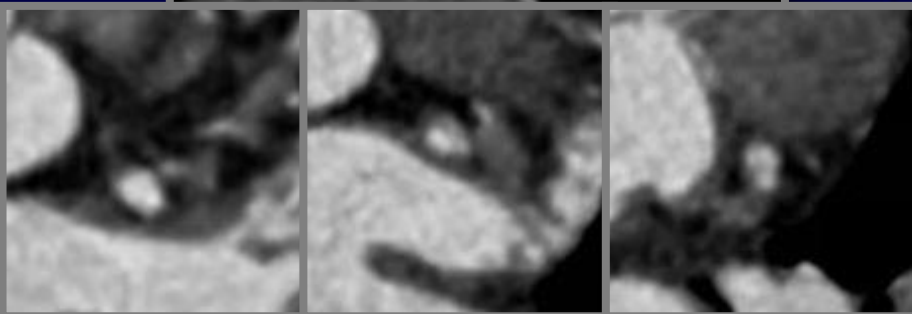
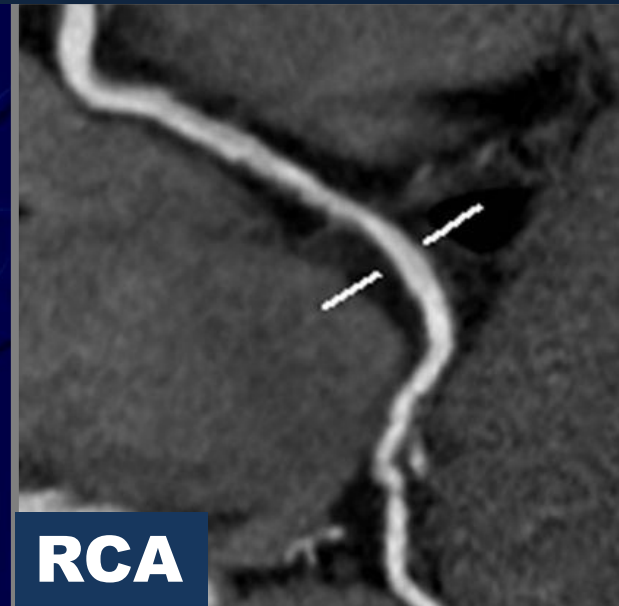
Shanghai East Hospital  
Tongji University

**Shanghai East Hospital**



# Case 1 – Baseline & CTA

- Male, 67yrs, smoker
- CTA showed “spontaneous multiple dissection” in routine healthy examination
- Labs & other noninvasive examination: within normal limits





# Case 1 – CAG



LM: No visible stenosis

LAD: Proximal segment ectasia

LCX : Spiral dissection in the proxi-mid segment

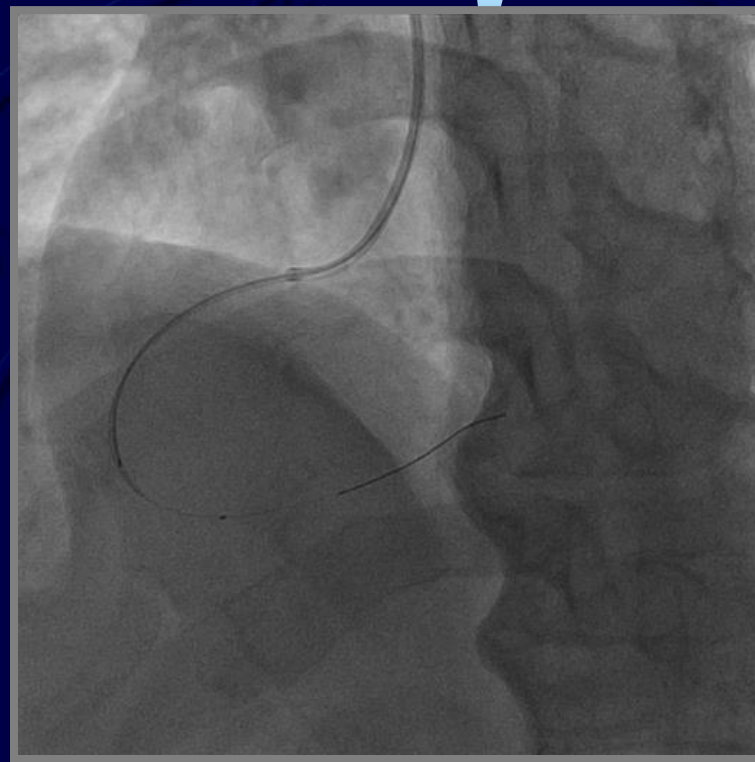
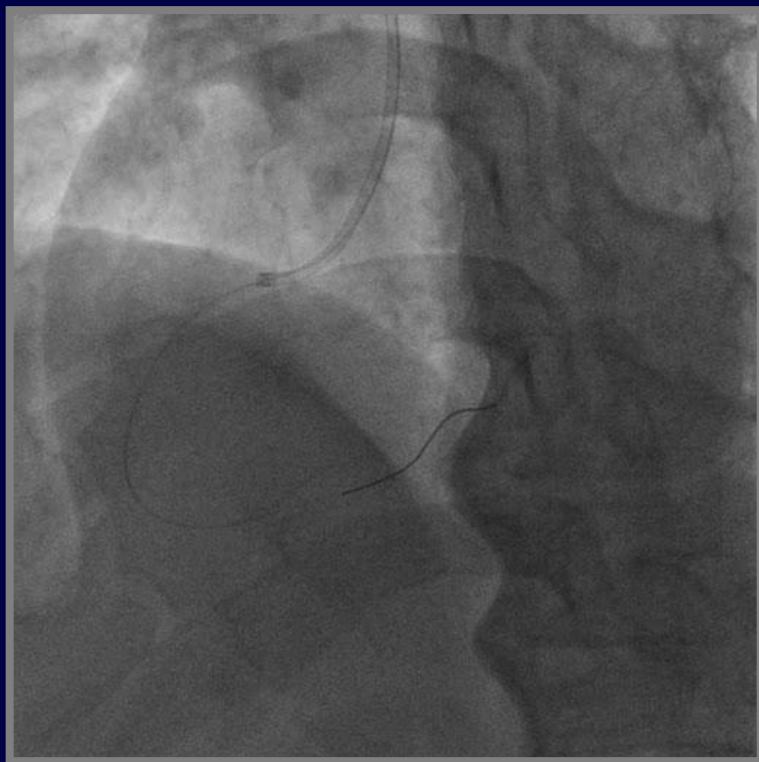
# Case 1 – CAG



RCA: Spiral dissection in the proximal-mid segment;  
The multiple channels then merge again in distal part



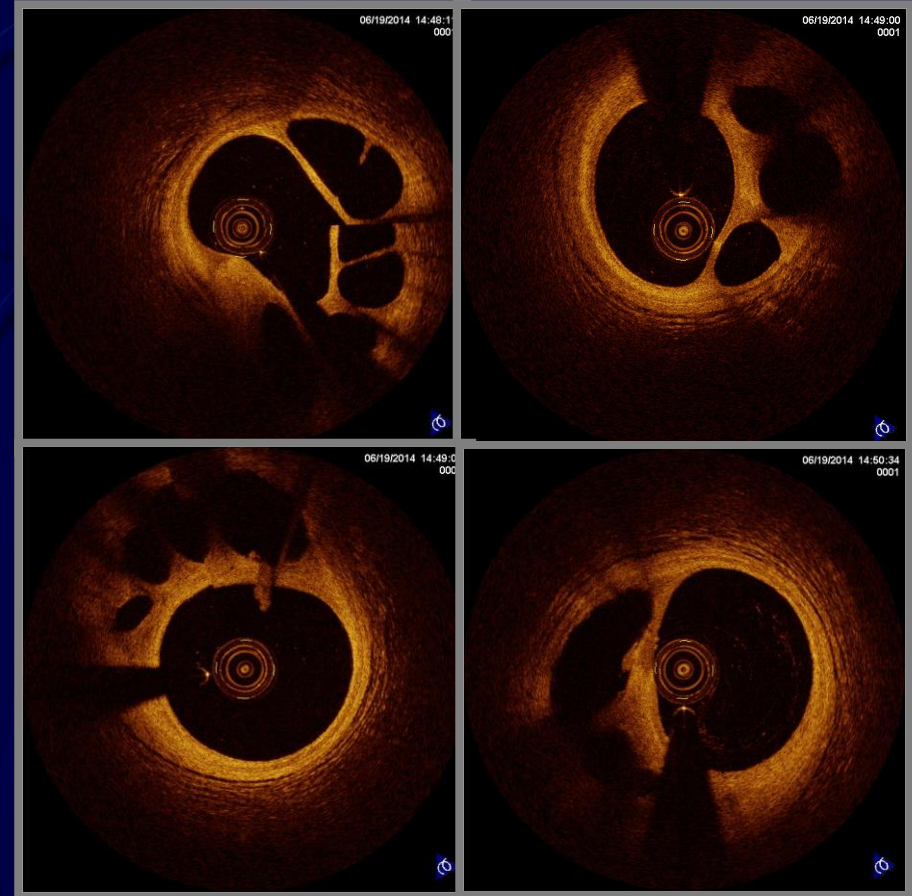
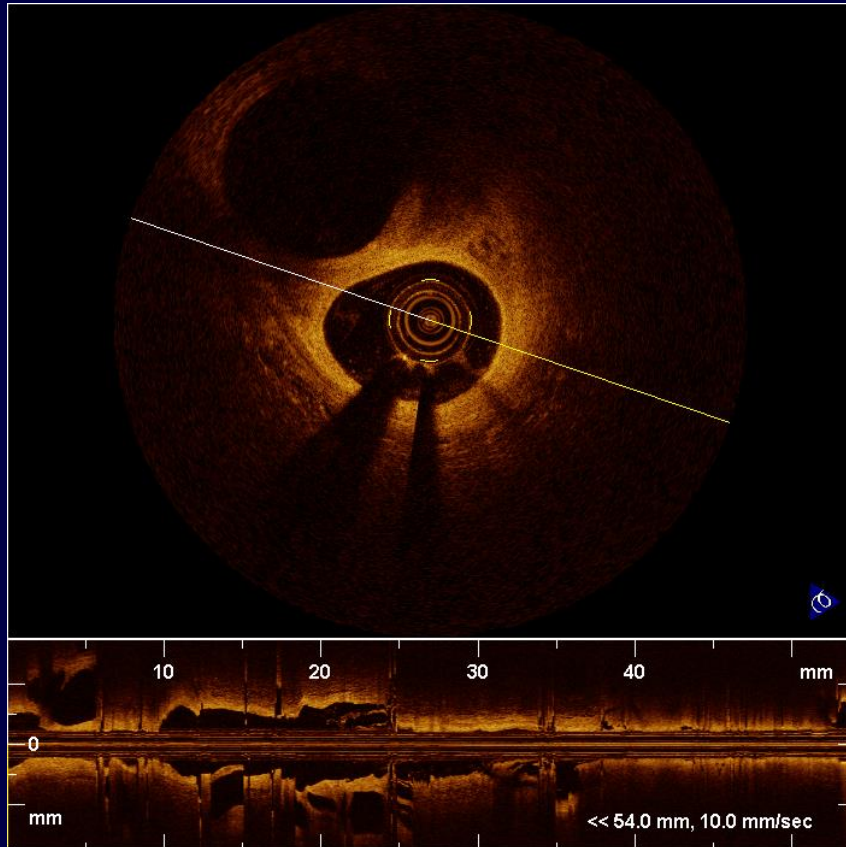
# Case 1 – CAG



6F JR4.0 GC  
0.014 Runthrough GW to distal PL  
OCT catheter only can reach the mid-RCA

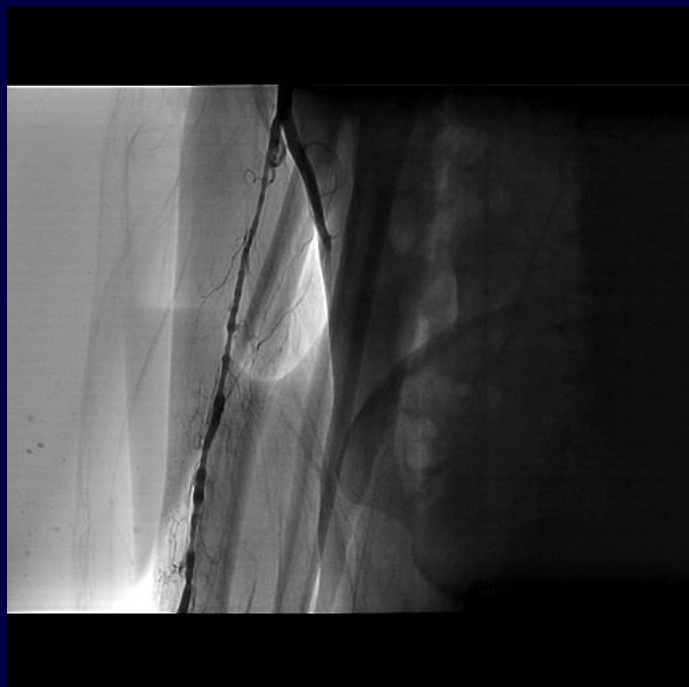


# Case 1 – OCT imaging





# Case 1 – Final result



- Fail to have OCT imaging of LCA due to severe RAS
- Treatment: Follow-up without any medication
- NO symptoms during the 5 months follow-up



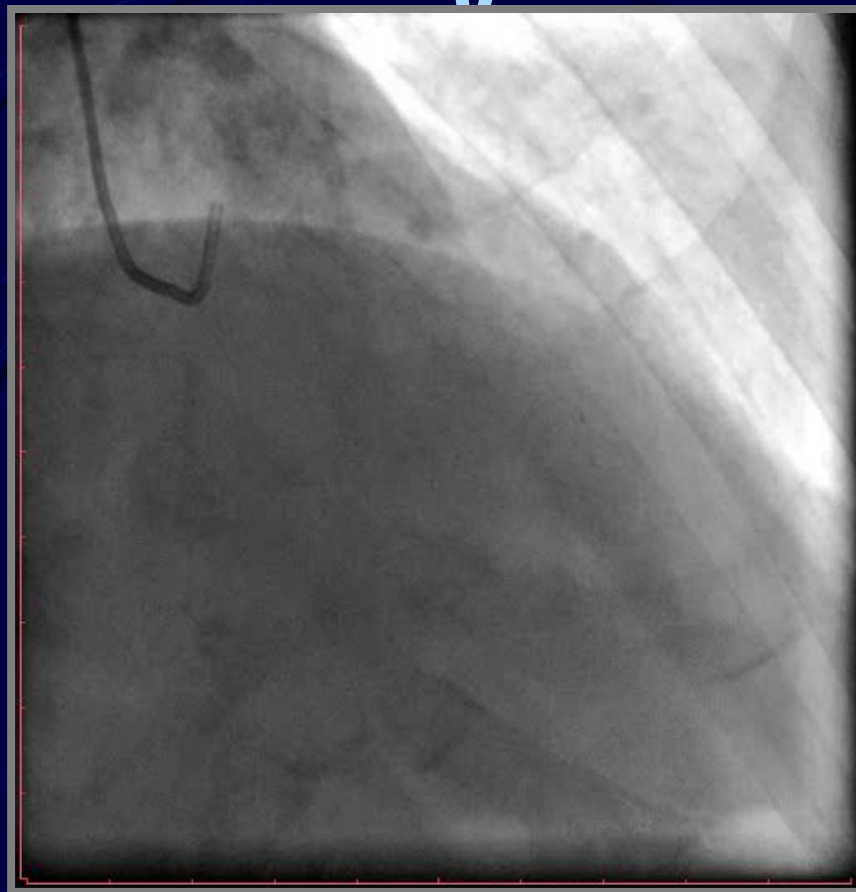
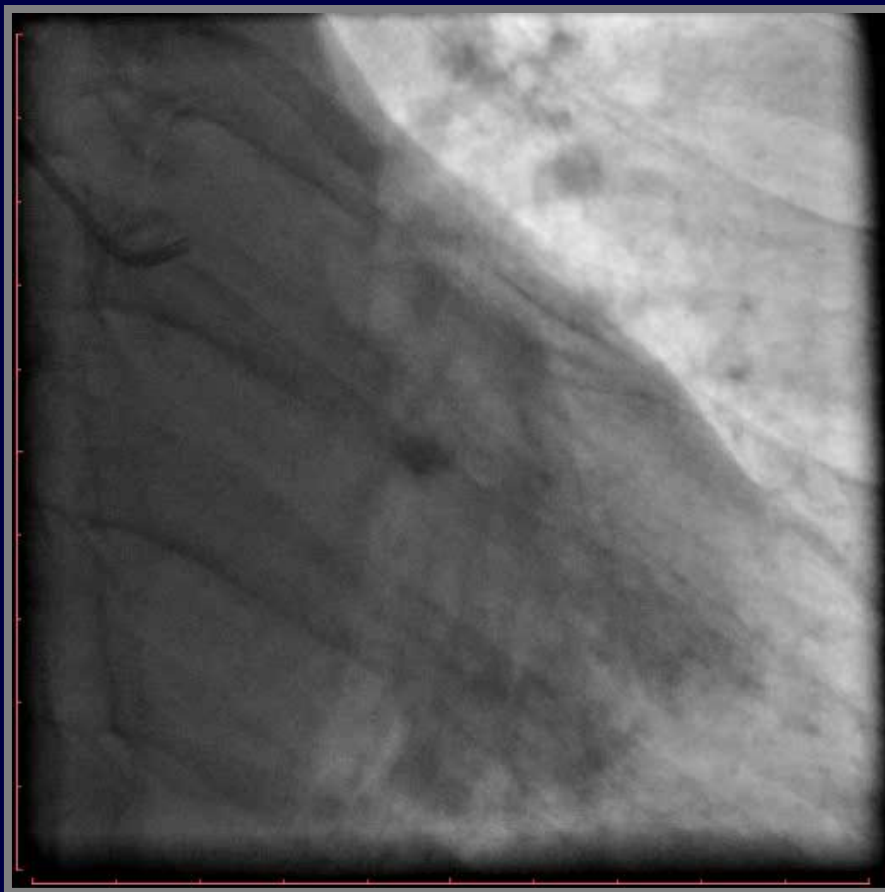
# Case 2 -- Baseline

- Male, 68yrs;
- Chest distress for 2 yrs, exertion for 1 month.
- Cardiac risk: Hypertension, Smoker
- Lab: Cardiac damage marker, CBC, D-dimer: Normal
- ECG: Sinus rhythm with CLBBB
- Echo: Lower septal motion, mild mitral and tricuspid regurgitation  
, LVEF57%.





# Case 2 -- CAG



LM & LCX: Normal  
LAD: proximal 40% stenosis



# Case 2 -- CAG



dis-RCA: Hazy lesion with multiple channels, TIMI-3 antegrade flow

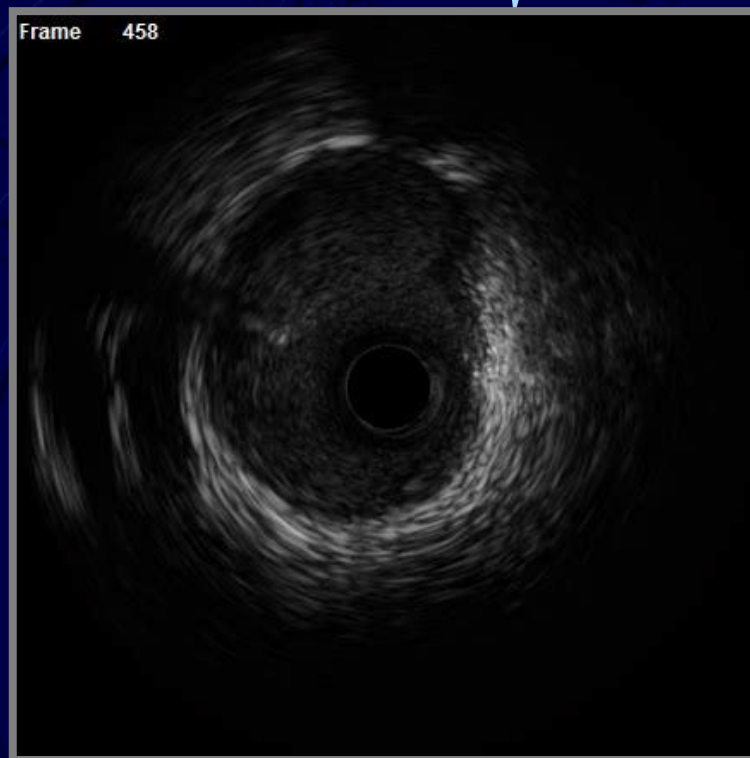


# Case 2 -- IVUS



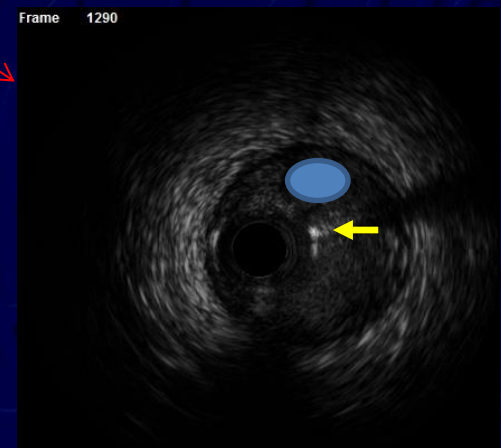
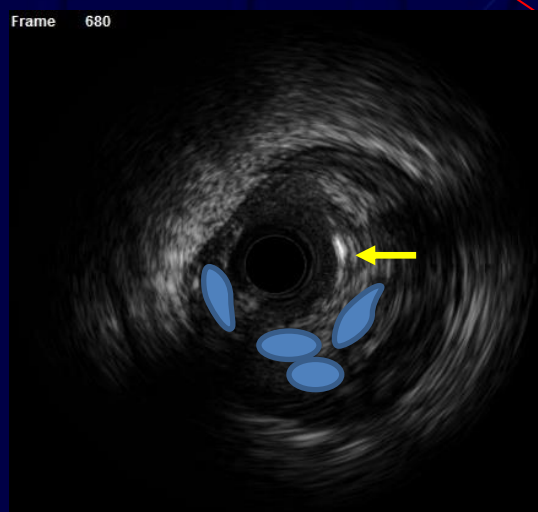
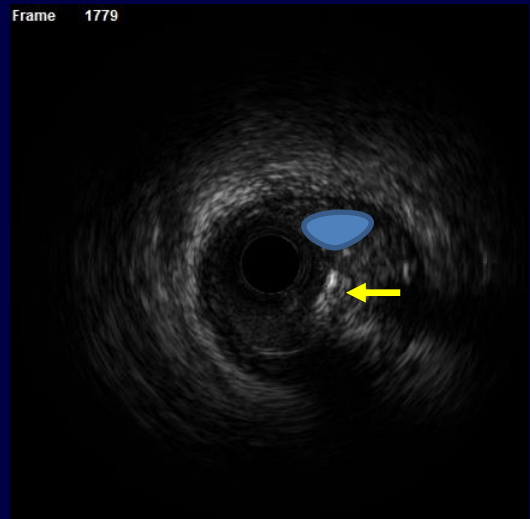
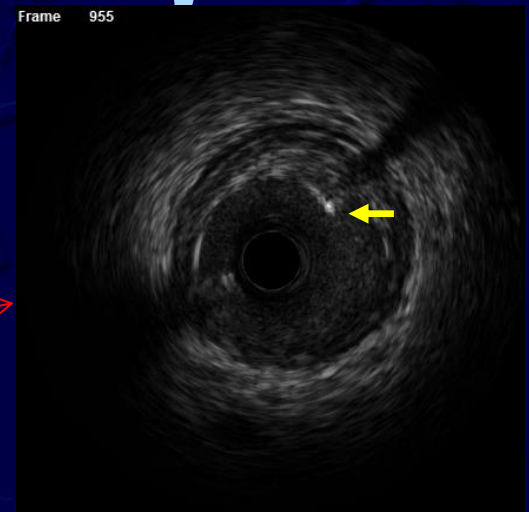
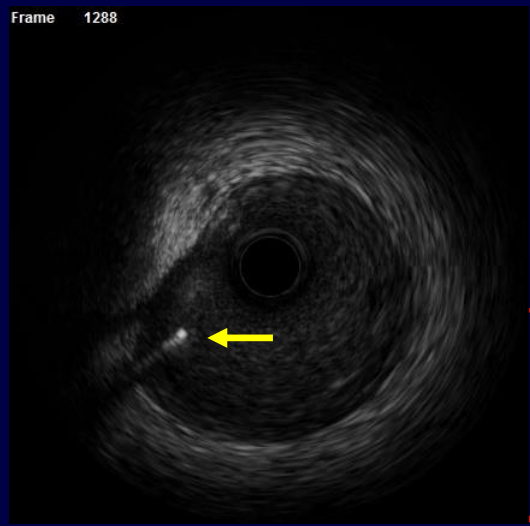
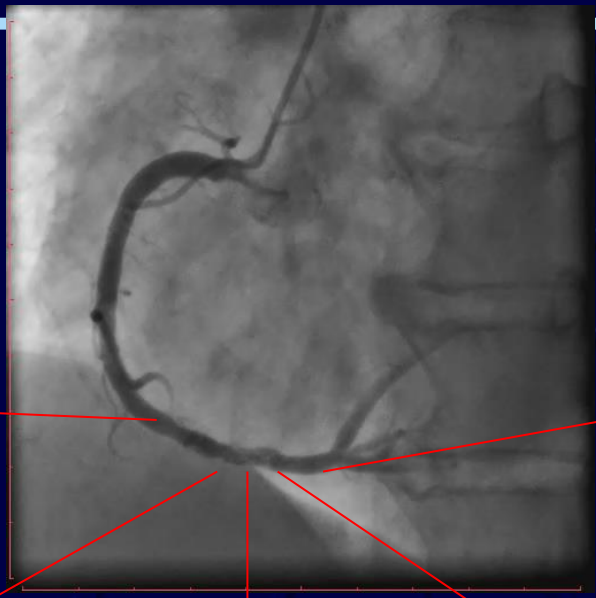
- 6F SAL 0.75 GC
- 0.014 Runthrough GW to PL
- 0.014 Sion GW to PD
- IVUS Catheter cannot pass the lesion, 2.0\*20 Balloon to PD
- IVUS catheter pass through the lesion

# Case 2 -- IVUS

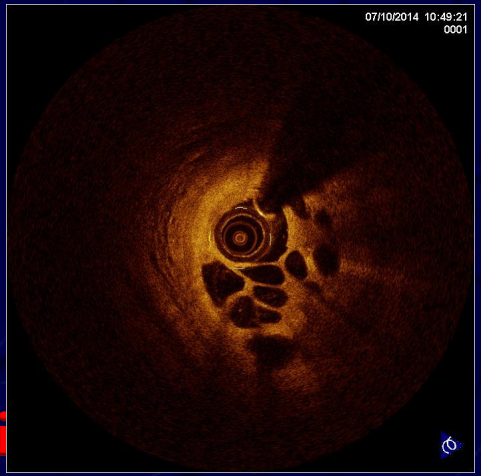
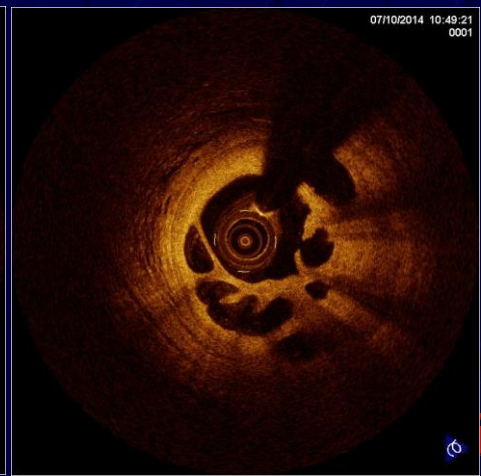
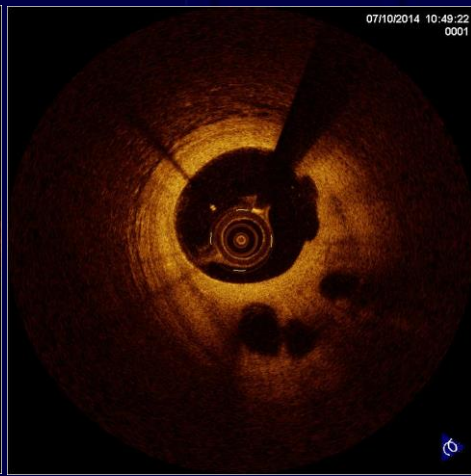
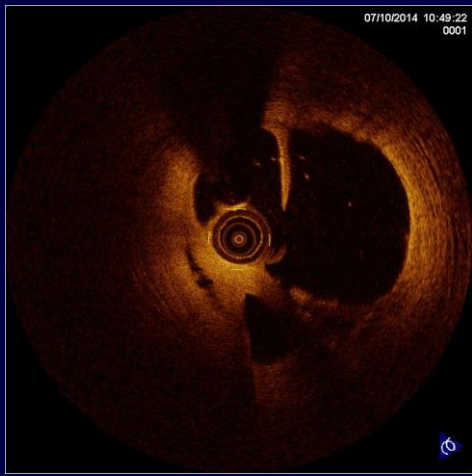
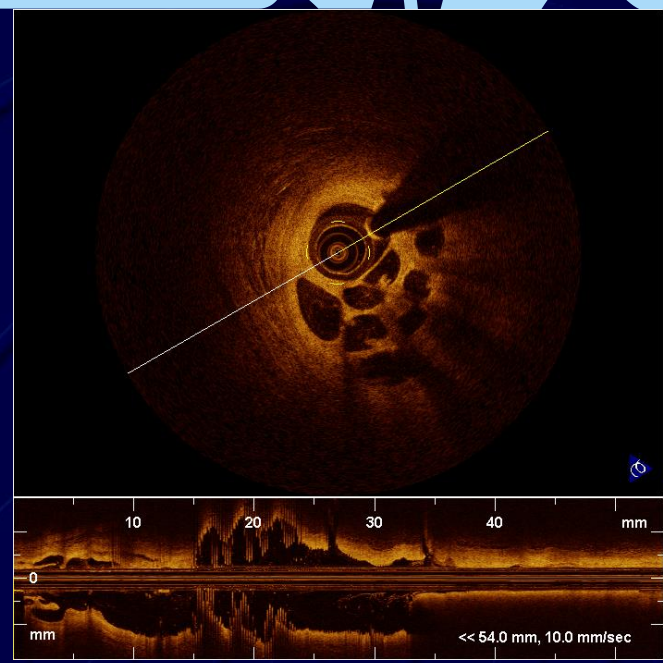




# Case 2 -- IVUS



# Case 2 -- OCT



# Different Diagnosis of Coronary multiple lumen formation

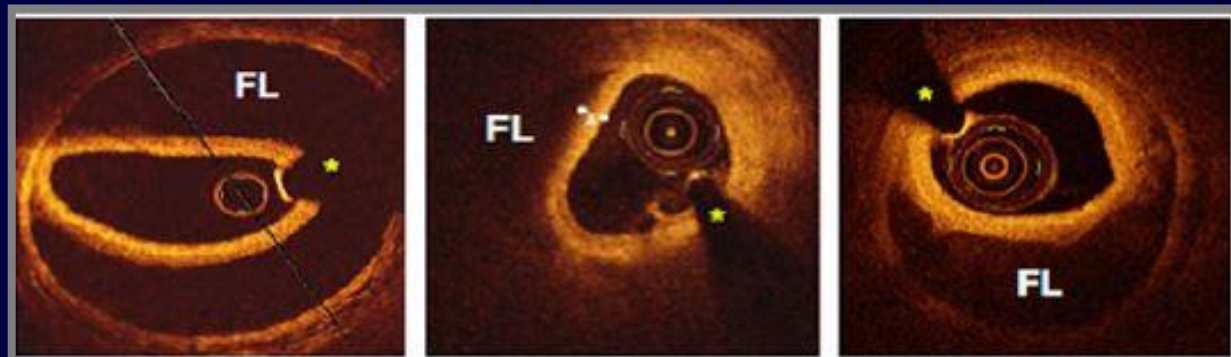


- Spontaneous coronary dissection
- Woven Coronary
- Recanalized thrombus formation
- CTO lesion with vasa vasorum bridging collaterals

# Spontaneous Coronary Dissection

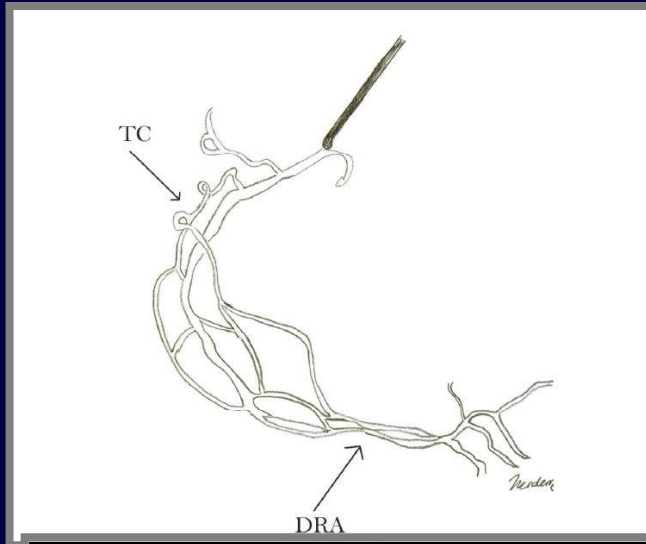


- Most frequently associated with pregnant women or those in the postpartum
- 80% patients with no history of heart disease or cardiovascular risk factors
- Typically in the LAD
- Dissection occurs by separation of layers of the arterial wall

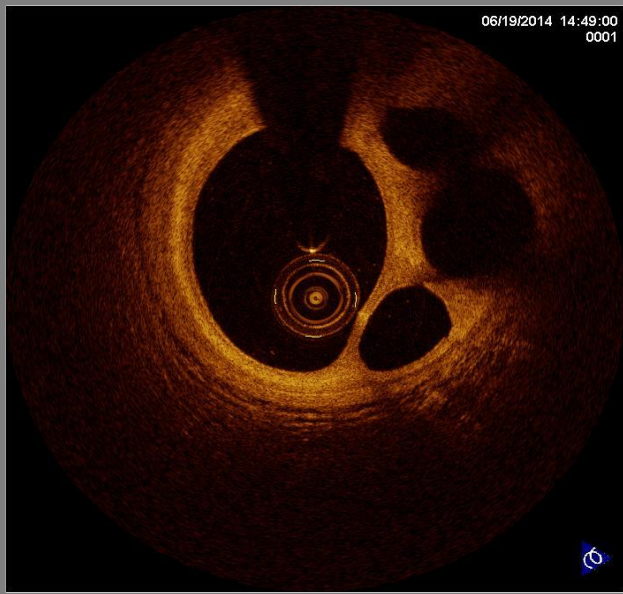




# Woven Coronary

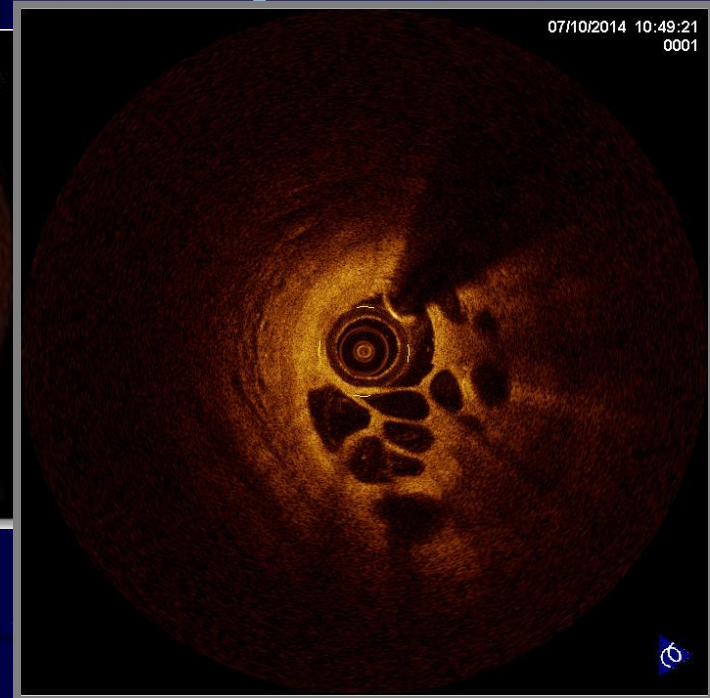
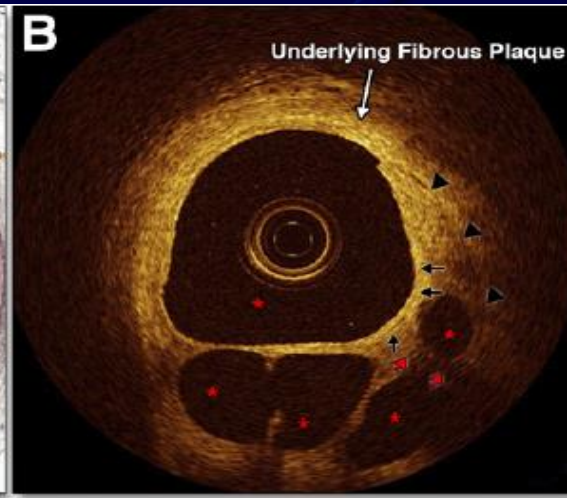
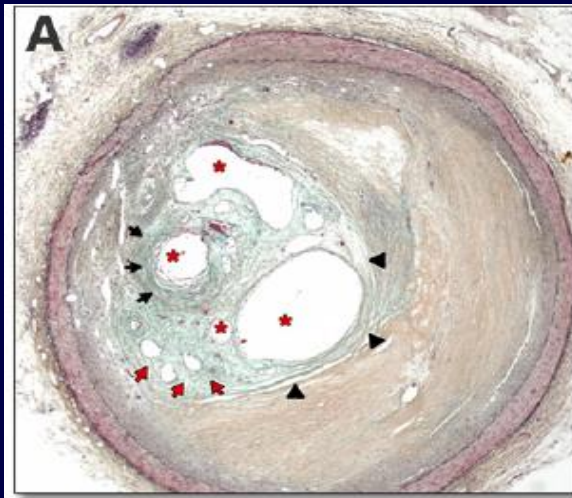


- **Extremely rare congenital malformation**
- **First described by Sane in 1988**
- **The blood flow is completely normal**
- **Accepted as a “benign condition”**

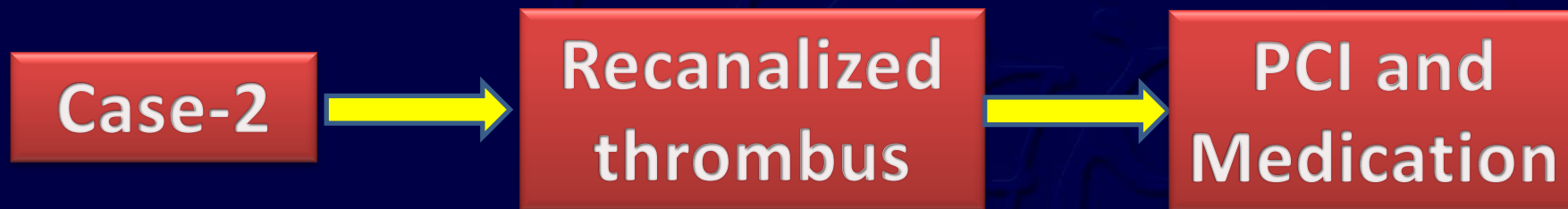


# Recanalization of Thrombi

## —Honeycomb-like structure



Three major findings were observed in coronary lesions with recanalization of organized thrombi: 1) common angiographic findings such as multiple irregular filling defects and intraluminal haziness were not specific for recanalization; 2) on OCT, the recanalization of organized thrombi was characterized by multiple small channels divided by thin septa communicating with each other; and 3) despite the neovascularization process, most of these lesions were functionally significant.



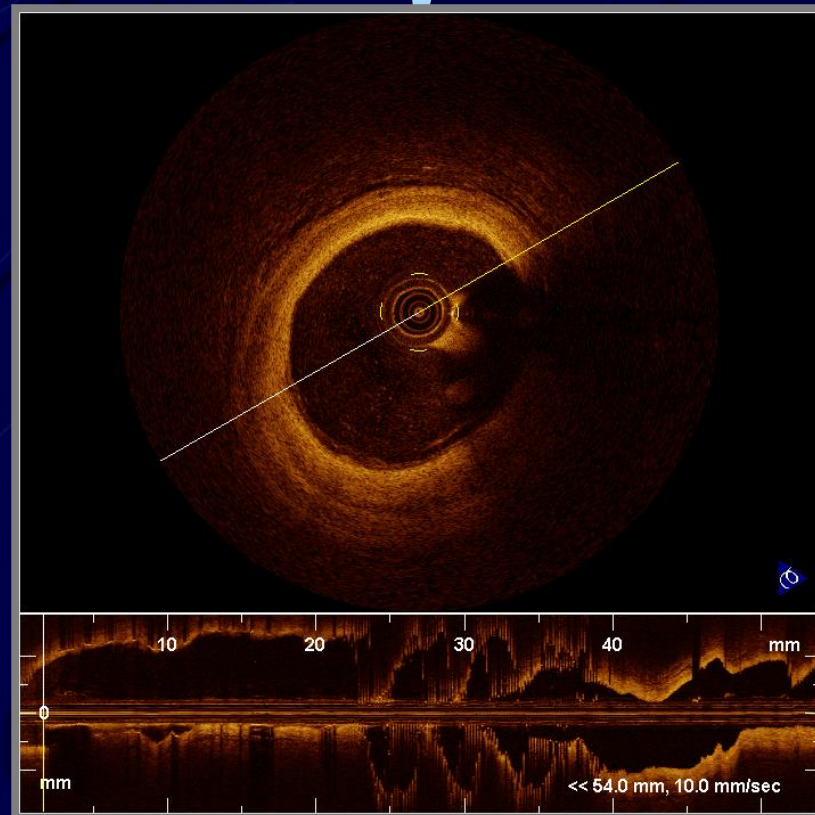
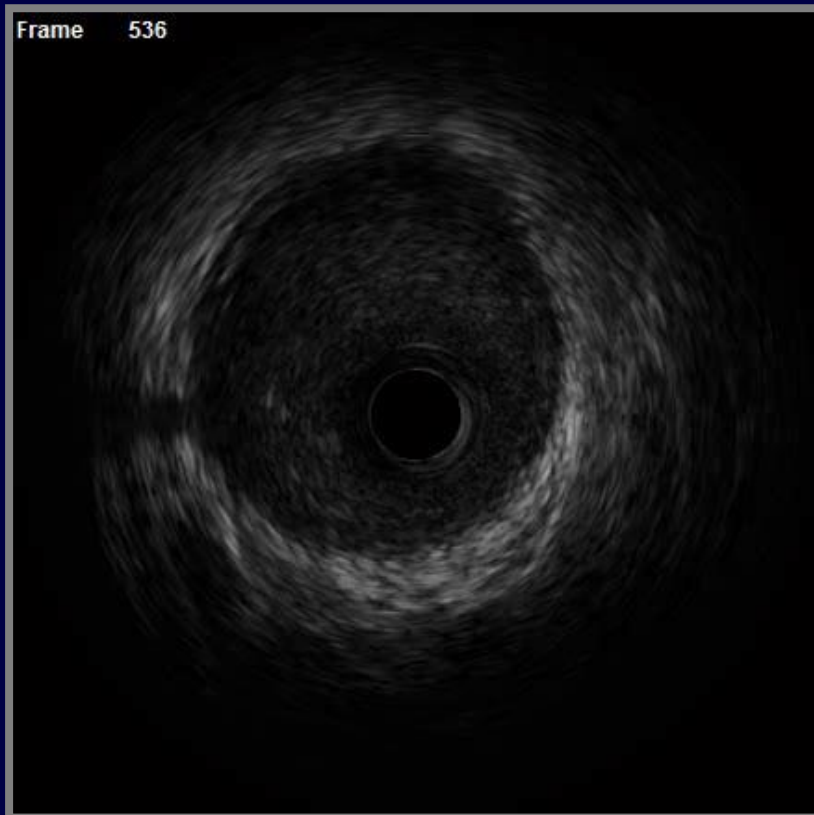
# Case 2 -- PCI



Predilation with 2.0\*20mm balloon (10atm\*5s)  
3.5\*36mm DES implantation



# Case 2 – IVUS and OCT post-procedure



# Conclusion



- **Woven coronary artery is an extremely rare anomaly which mainly accepted a benign condition**
- **OCT is a very useful technique to confirm the diagnosis of coronary multiple lumen formation**
- **Clinical symptoms and history is very important to determinate the future treatment**