Decoding the Haze—
OCT Evaluation of Angiographically Ambiguous Hazy Lesion

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Dr.M.Kathiresan MD,DM,FNB

Interventional Cardiologist

Kauvery Hospital, Chennai, India

Case Summary

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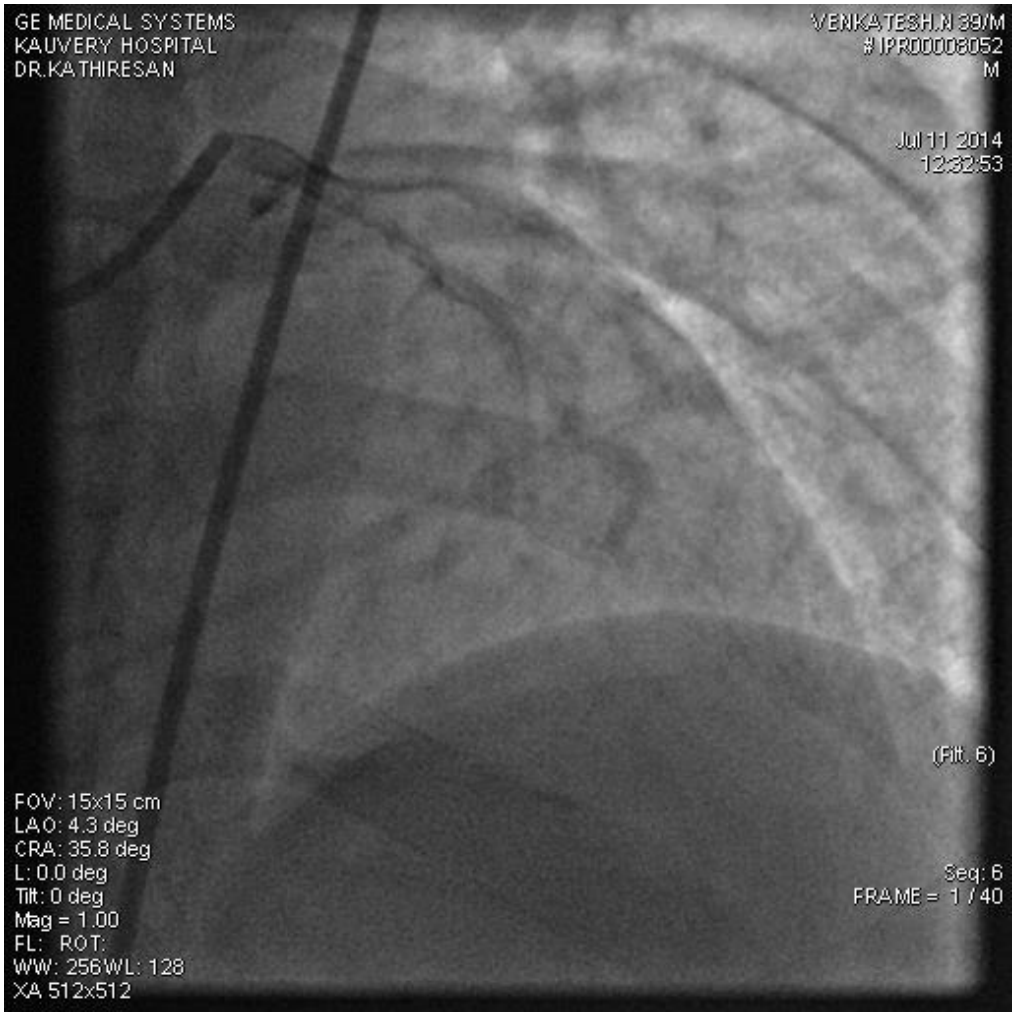
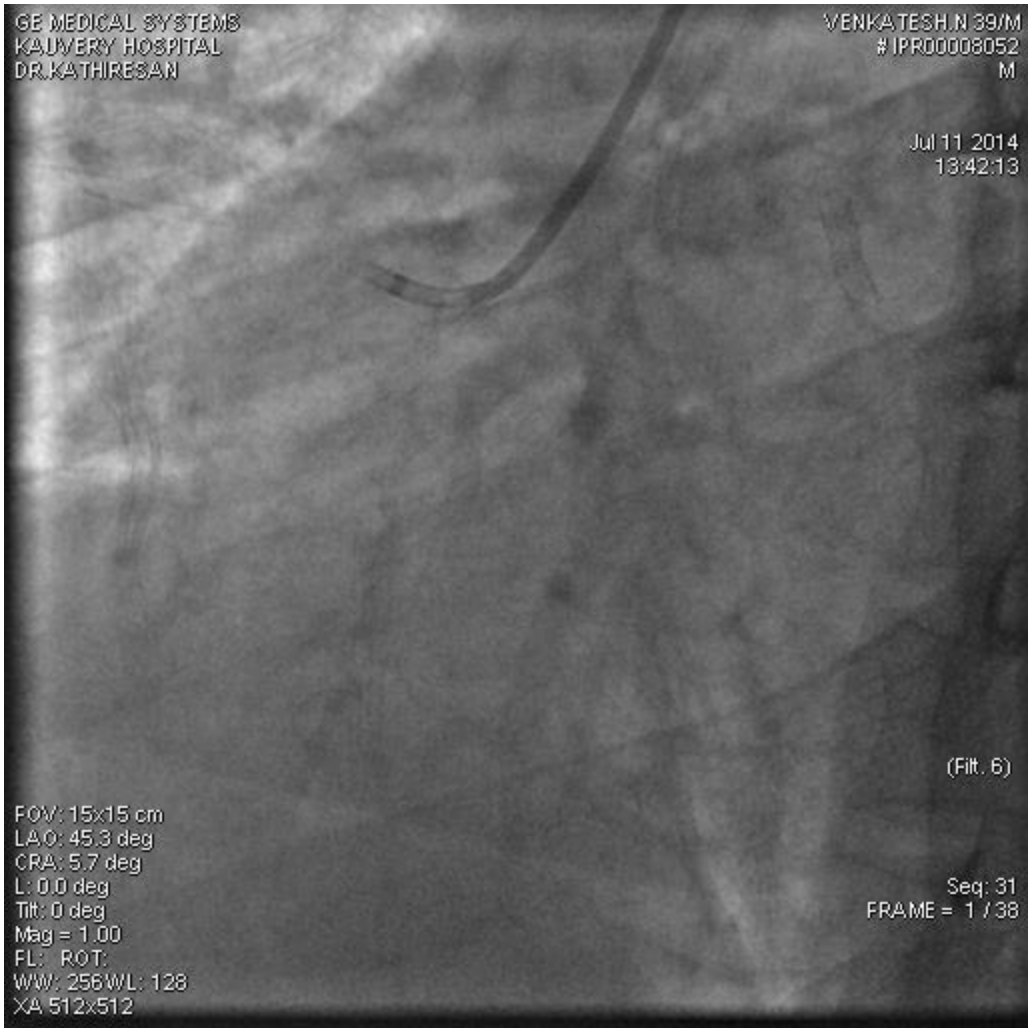
- 39 year old male
- Current heavy smoker
- Not a diabetic or hypertensive
- Presented with Acute inferior wall myocardial infarction and was thrombolyzed with Streptokinase in another hospital
- Coronary angiogram revealed recanalized Right coronary artery but proximal Left Anterior Descending Artery showed unusual haziness and hence referred to our centre for further evaluation

Baseline Angiogram



Baseline Angiogram



Intraluminal filling defects/Haziness

- Thrombus
- Spontaneous coronary artery dissection
- Mural calcification
- Emboli
- Aneurysm
- Collateral blood flow
- Unopposed stent struts

Angiographic ambiguity

- Diagnostic dilemma
- Therapeutic dilemma

What is it ?

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Clin. Cardiol. 30, 480–484 (2007)

Short Communication

Intraluminal Filling Defects on Coronary Angiography: More than Meets the Eye

RONEN JAFFE, M.D., AFFAN IRFAN, M.B.B.S., TONY HONG, B.S.C., ROBERT J. CHISHOLM, M.D., F.R.C.P.C., ASIM N. CHEEMA, M.D., F.R.C.P.C.
Terrence Donnelly Heart Center, Division of Cardiology, Department of Medicine, St. Michael's Hospital, Toronto, Ontario, Canada

THREE CASES OF ANGIOGRAPHIC HAZINESS EXAMINED WITH IVUS IN 2007

Case 1

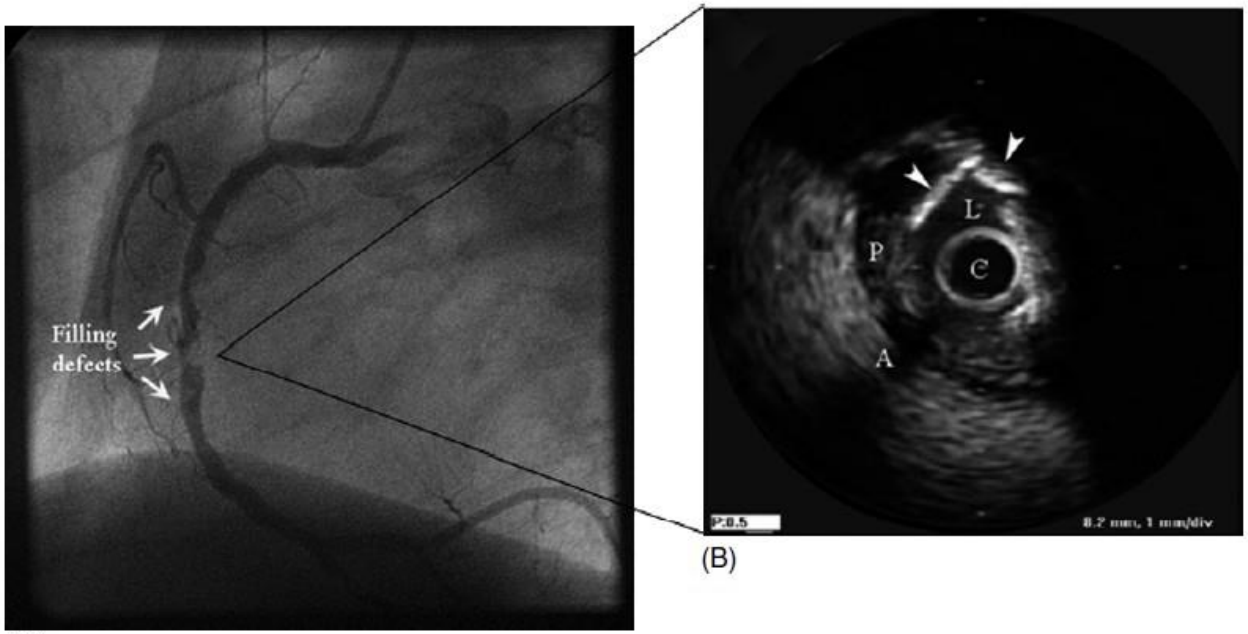
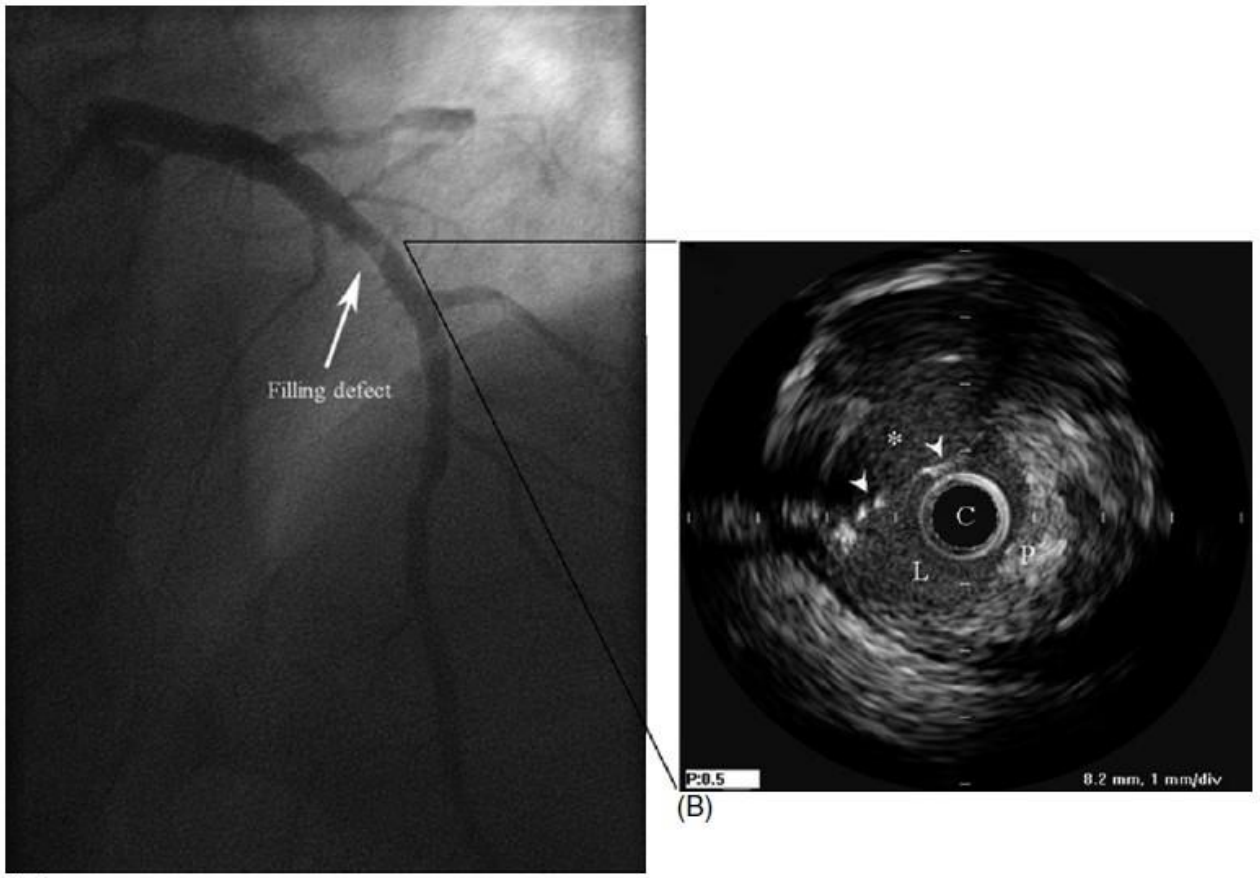


FIG. 1 Filling defects (arrows) noted in the mid segment of the right coronary artery on angiography in a patient presenting with inferior ST elevation myocardial infarction (A). IVUS showed extensive calcification at the site of the angiographic filling defects (B). Arrow heads–superficial calcification of the atherosclerotic plaque, A–arterial adventitia, C–IVUS catheter, L–arterial lumen, P–atherosclerotic plaque.

CASE 2



(A)

(B)

CASE 3

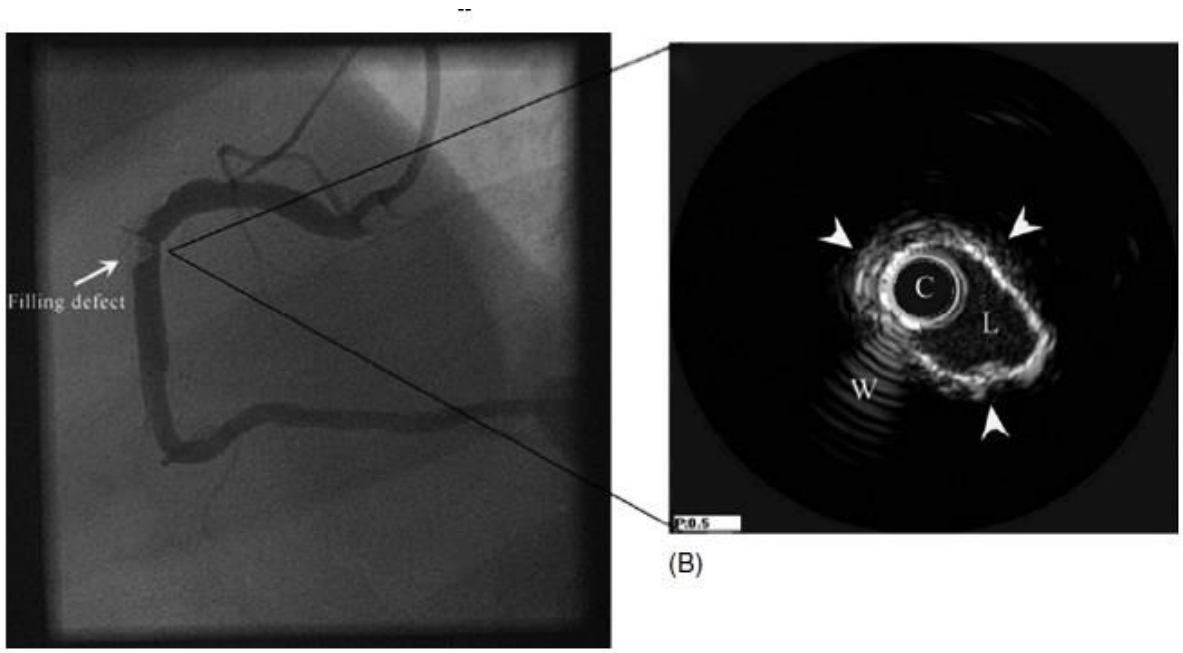


FIG. 3 A filling defect in the proximal RCA that persisted despite 48 h treatment with aspirin, clopidogrel, heparin and eptifibatide (A). IVUS demonstrated a heavily calcified atherosclerotic plaque at the site of the angiographic filling defect. Arrow heads–extensive superficial calcification of the atherosclerotic plaque, C–IVUS catheter, L–arterial lumen, W–guide wire artifact.

Our Case -OCT Done

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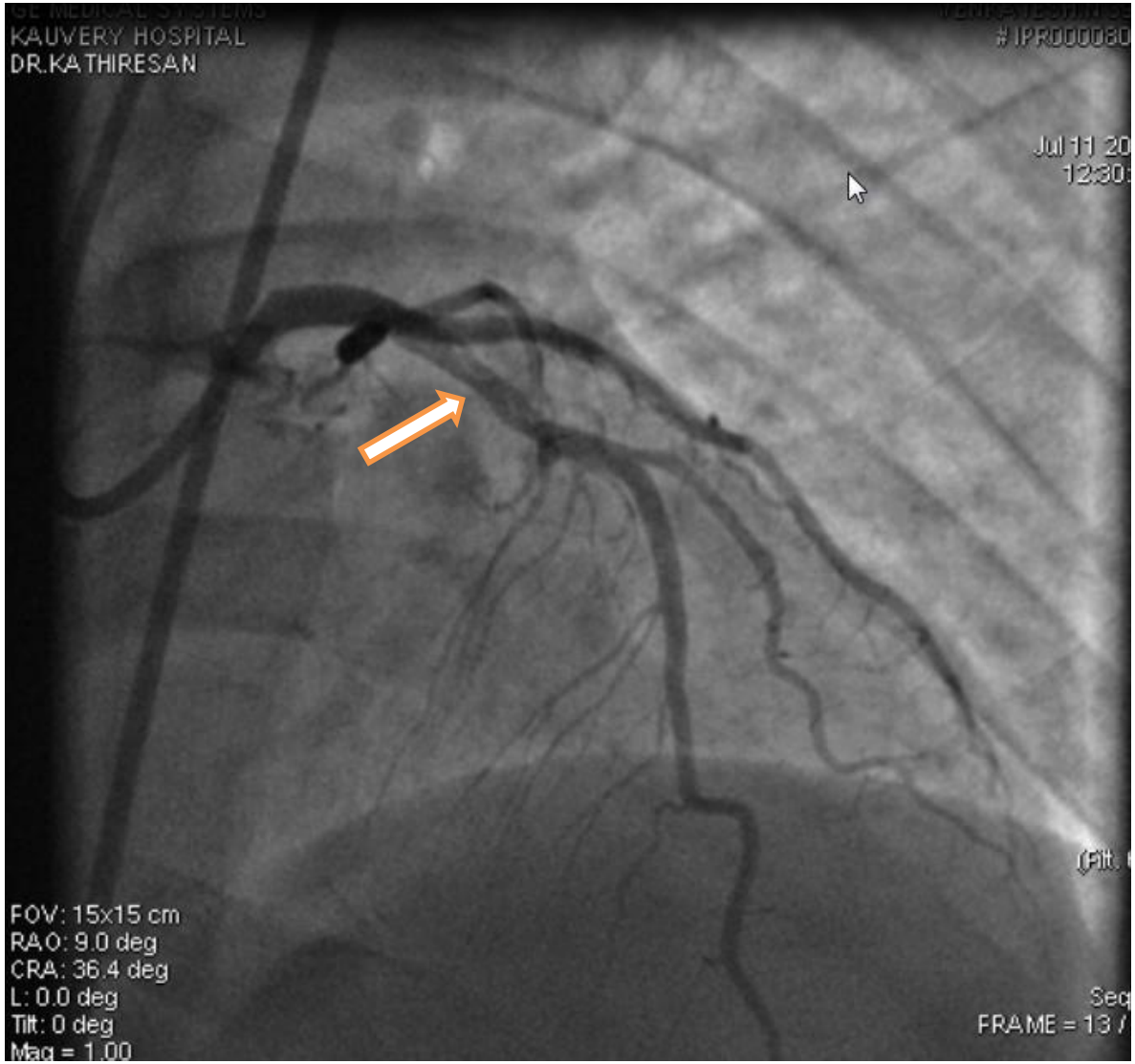

OCT revealed organized thrombus with multiple microchannels

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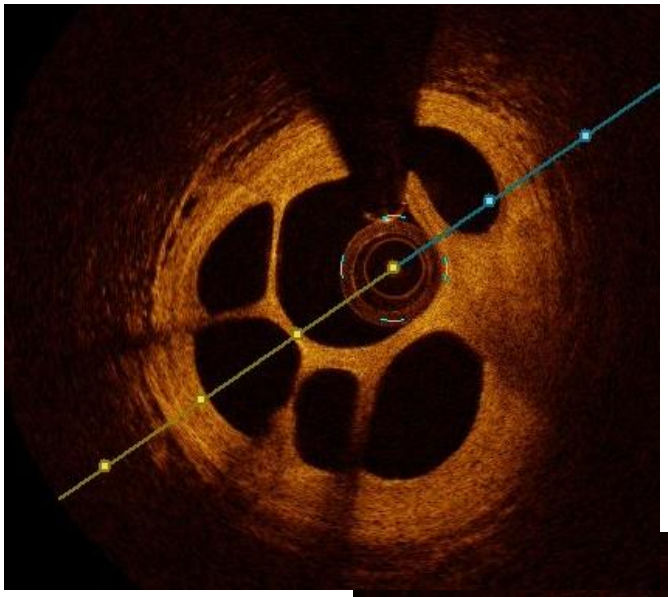
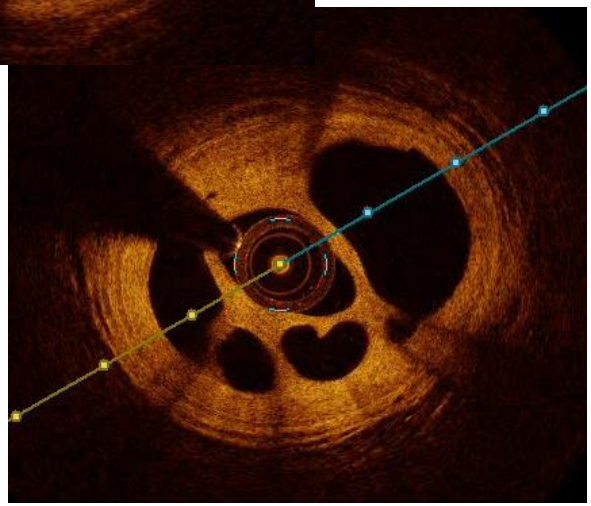
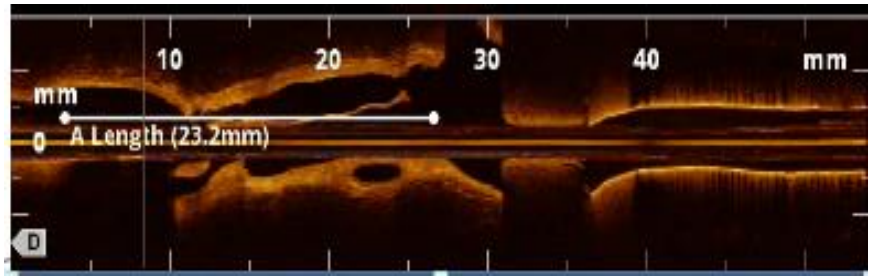




- Thrombus starts just after ostium of Left Anterior Descending Artery and ends before first major Diagonal with total length of 22 mm
- No evidence of spontaneous dissection or plaque rupture



OCT RECOGNITION OF RECANALIZED THROMBUS

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- OCT findings of recanalized thrombus- signal-rich, high backscattered septa that divided the lumen into multiple small cavities communicating with each other.
- These structures, which had smooth inner borders, creates a pattern described as

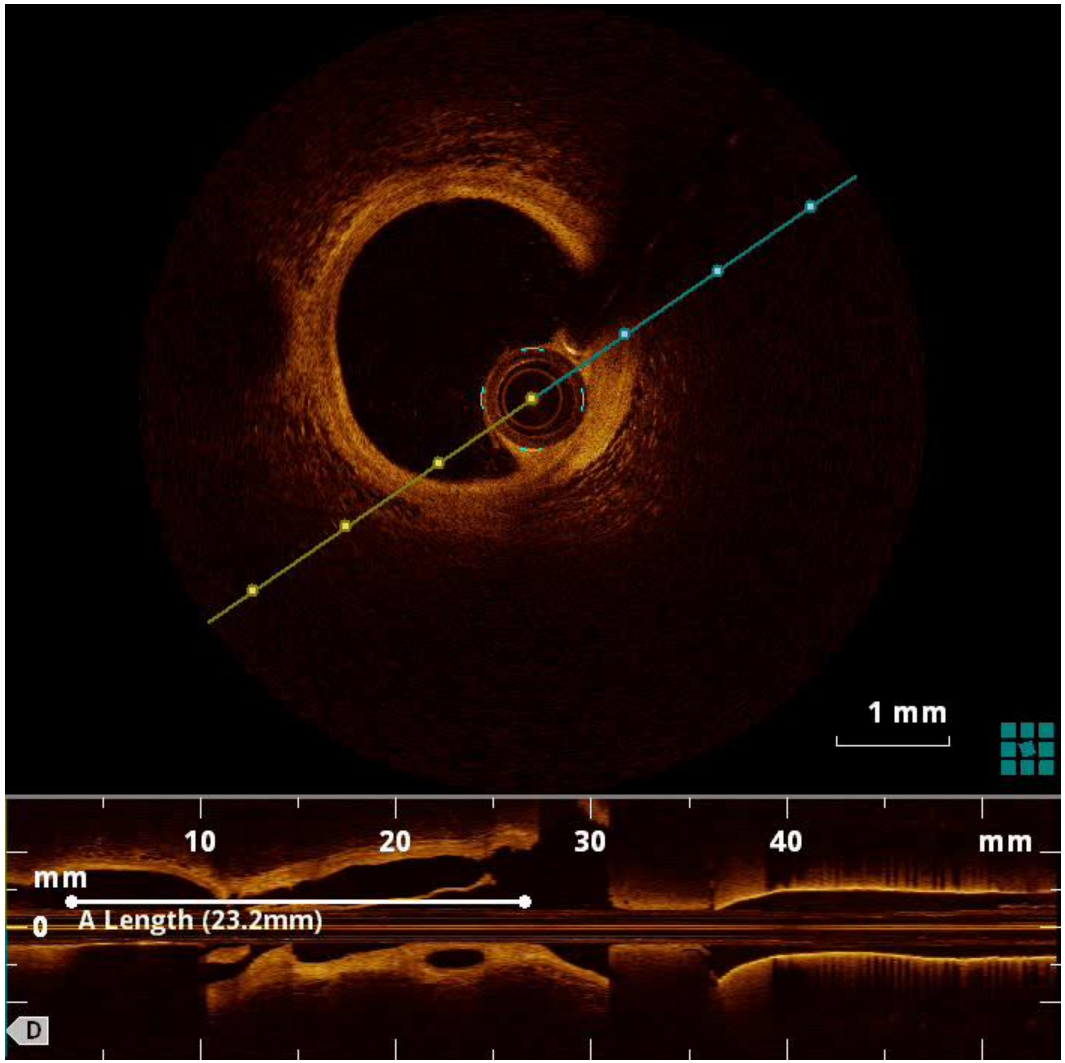
1.Swiss cheese appearance

2.Honey comb appearance

3.Spider web appearance

4. Lotus Petal appearance.

OCT Pullback



Fractional Flow Reserve was 0.66!

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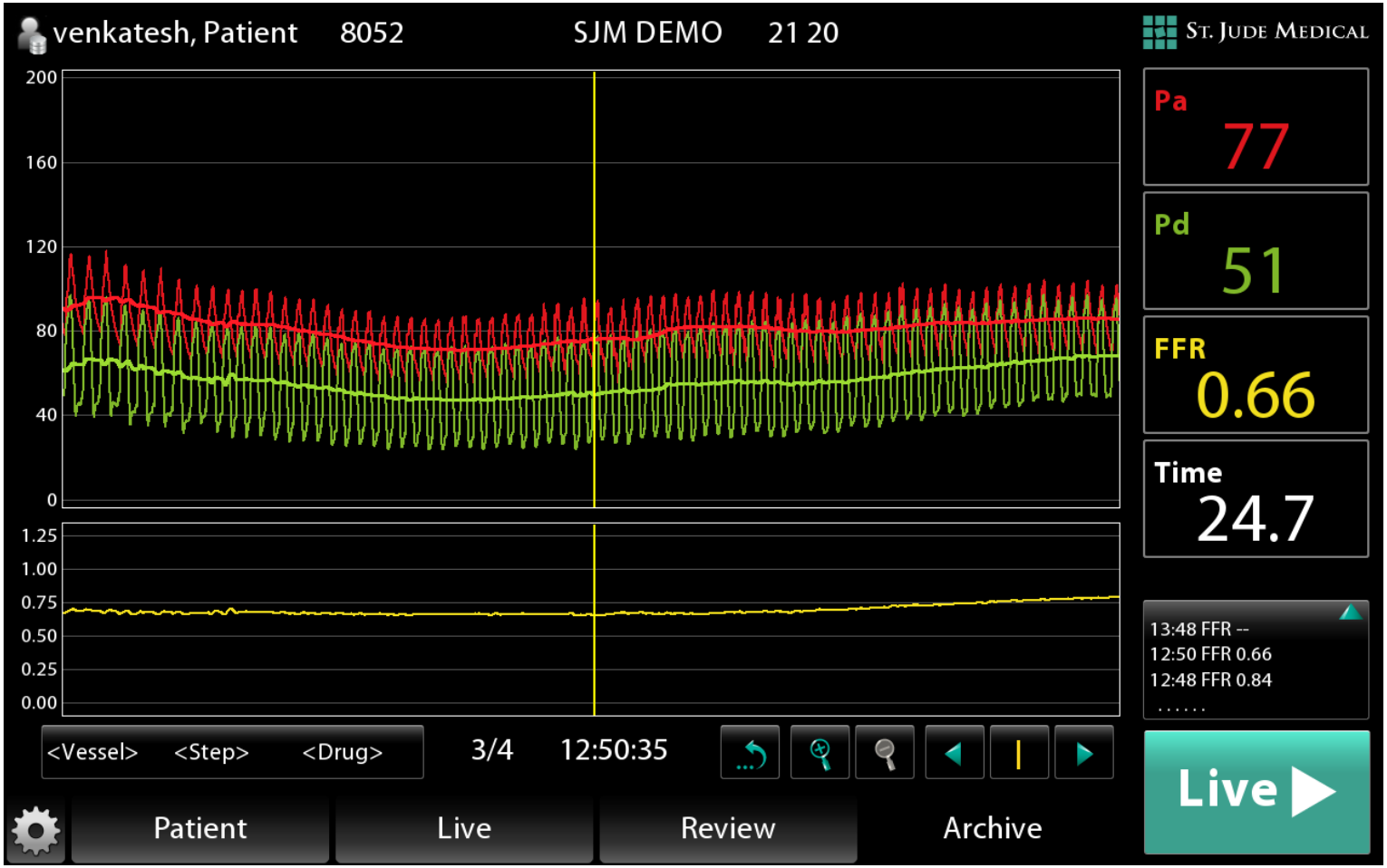
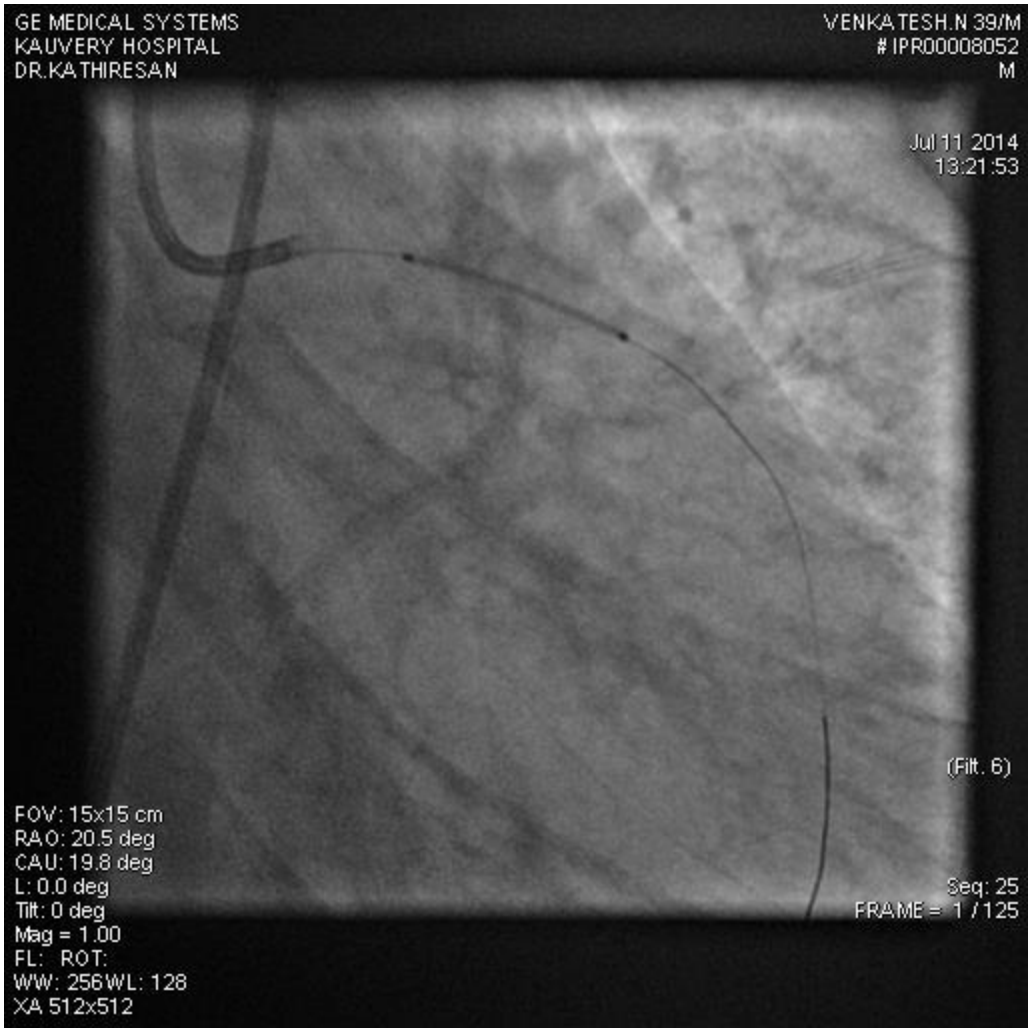
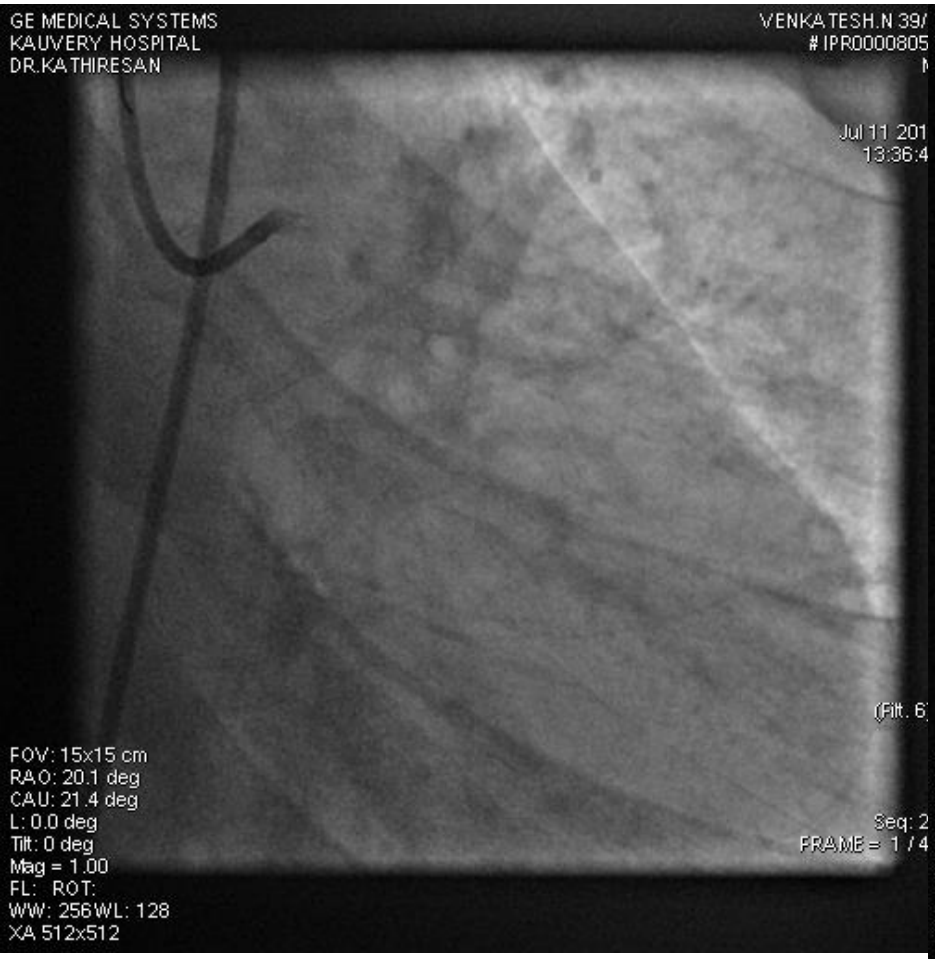
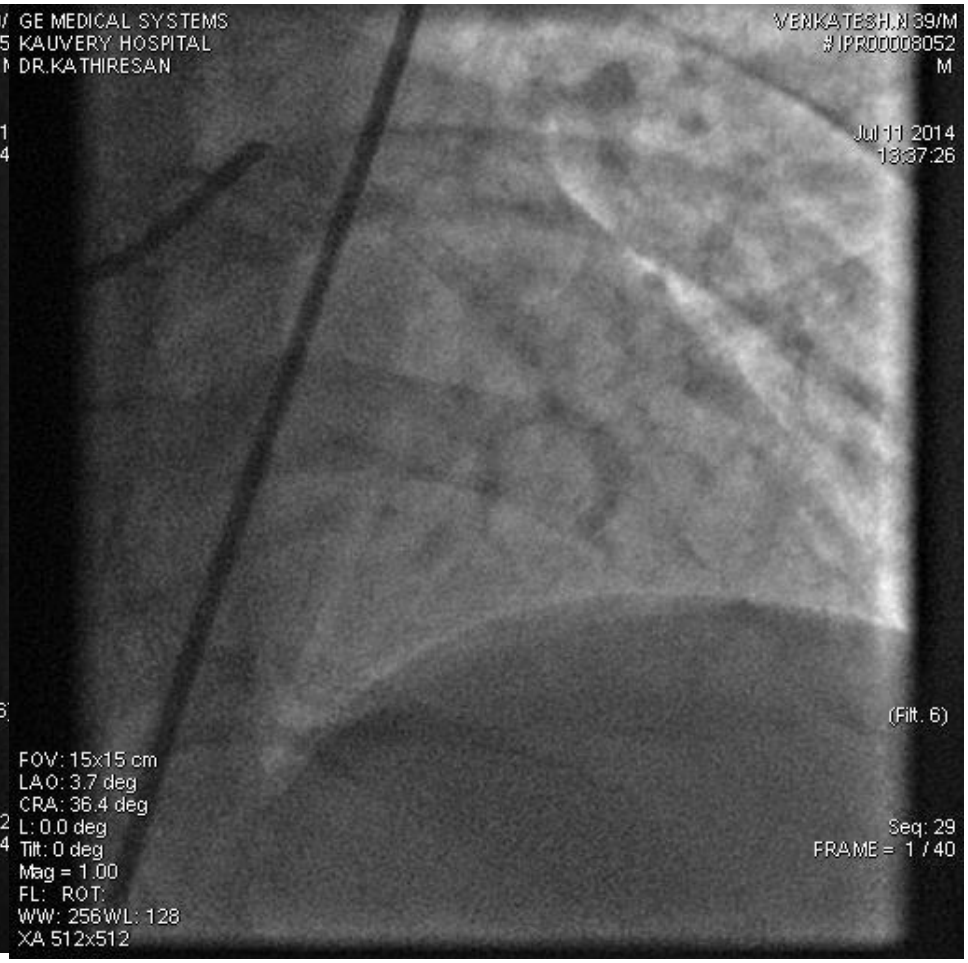


Direct stenting done with Everolimus DES 3.0 X 23 mm at 14 atmospheres



Post Stent Result





Post stent OCT showed well deployed stent

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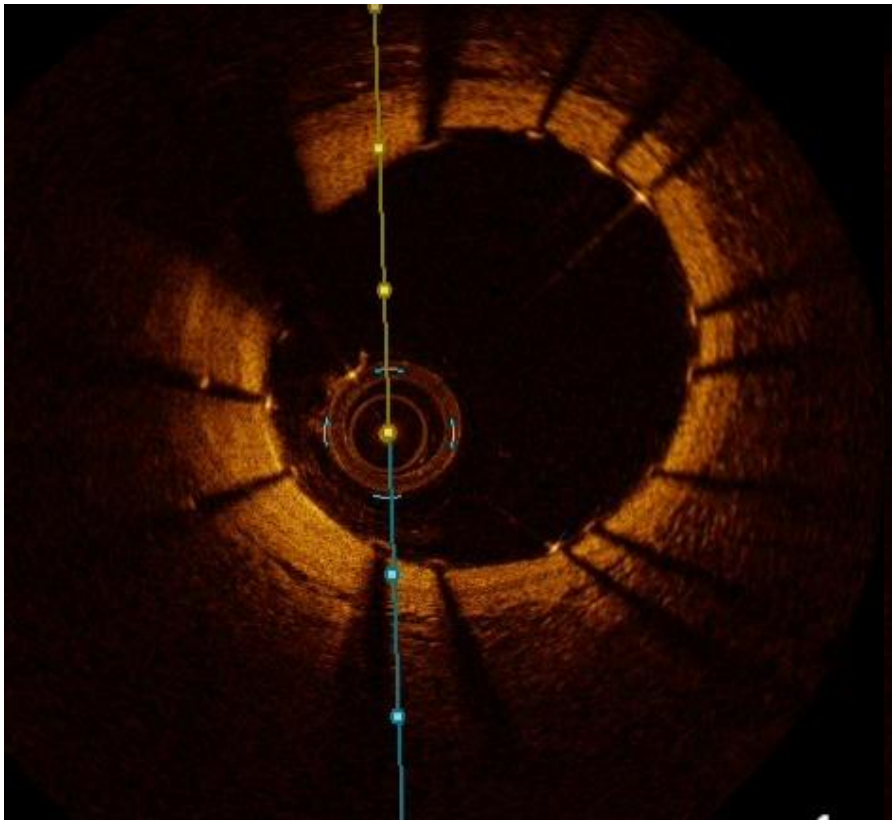
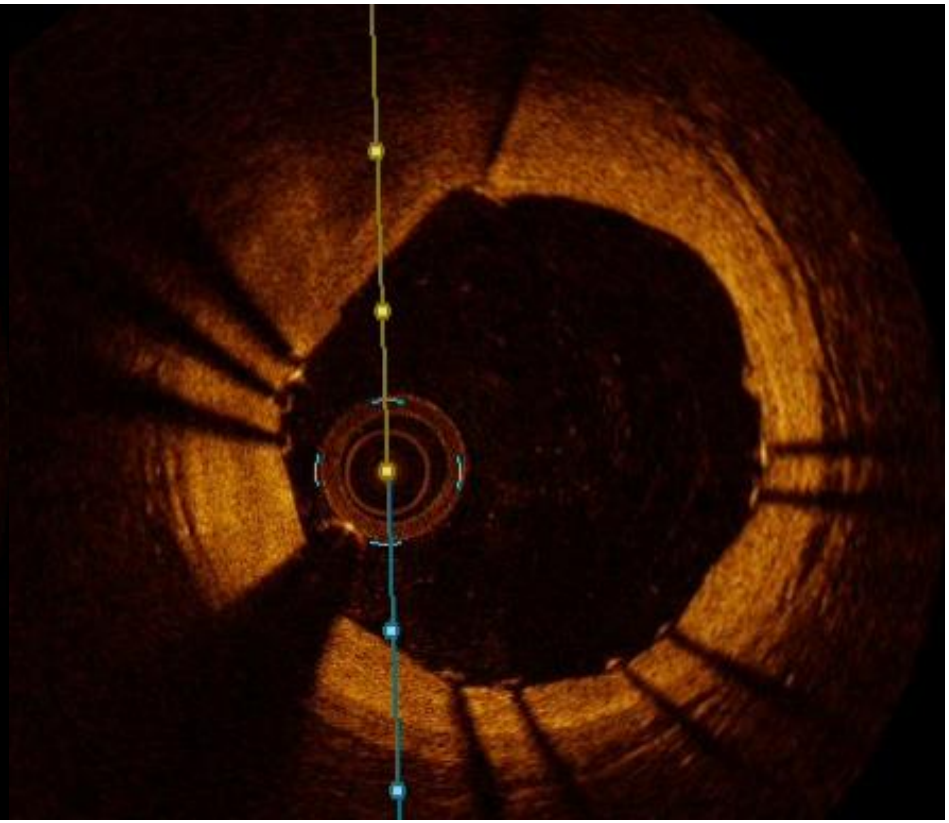
Distal LAD



Proximal LAD



Baseline

Final Result

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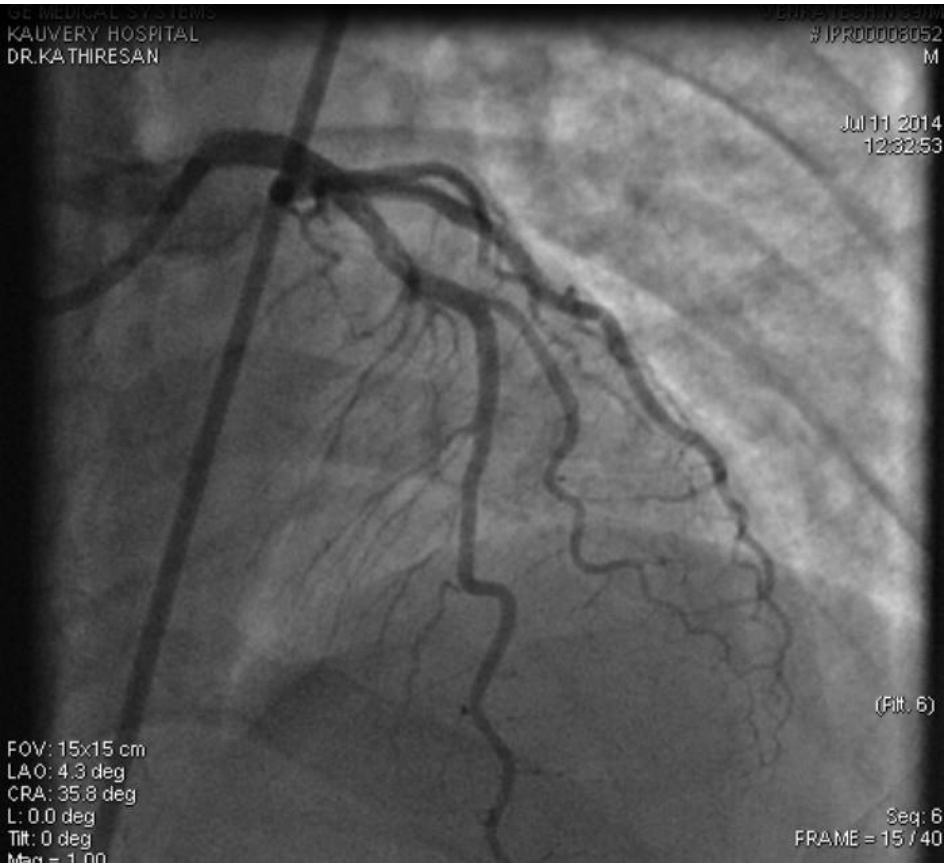

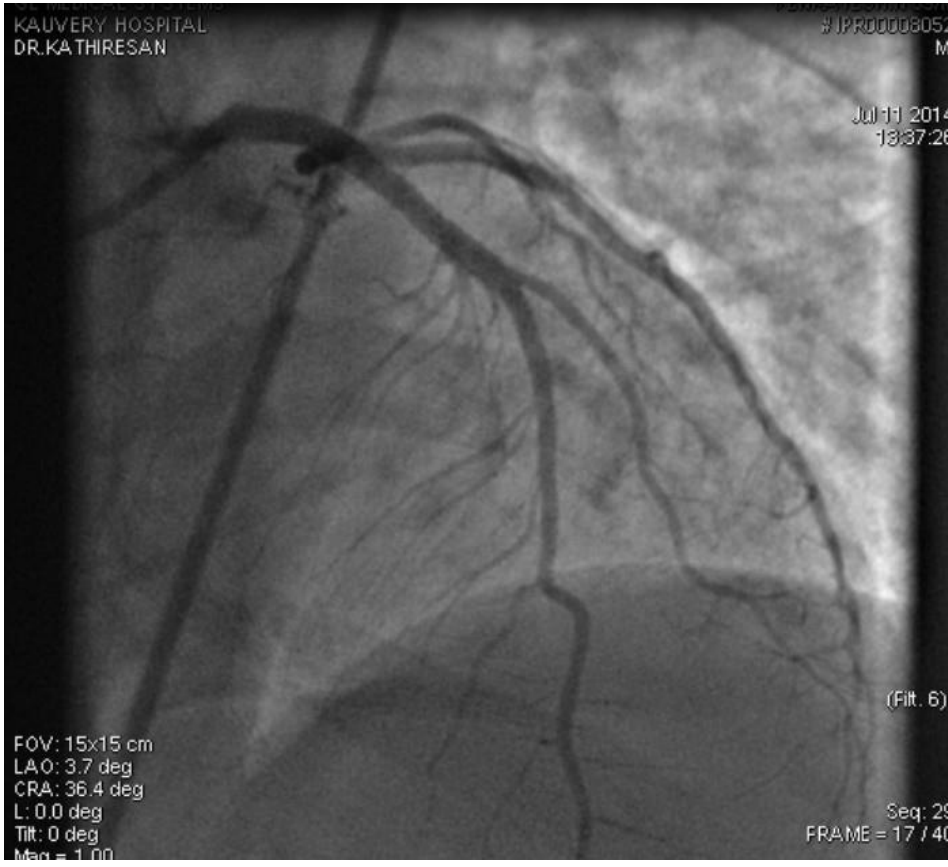

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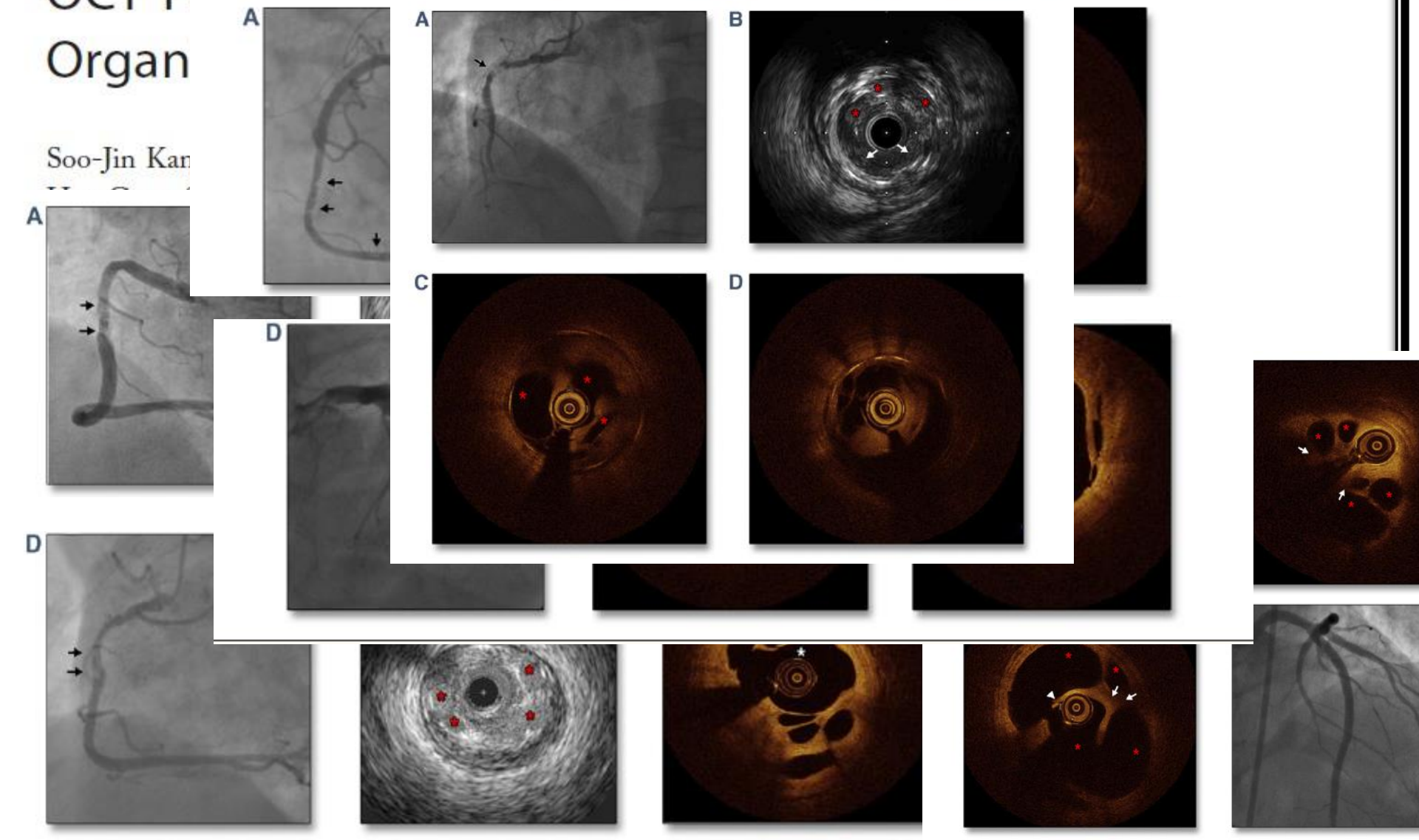
OCT Findings in Patients With Recanalization of Organ

Soo-Jin Kan

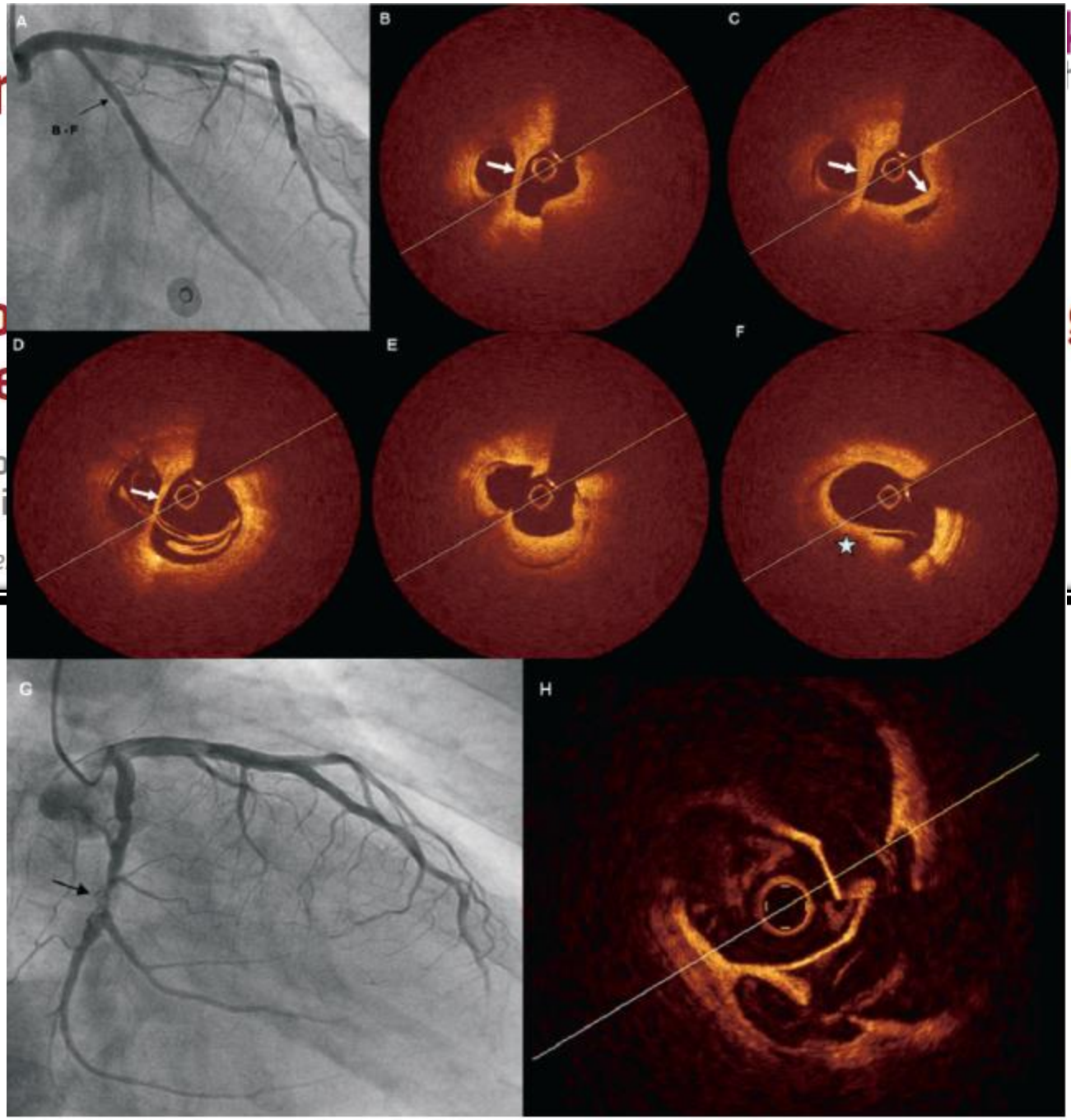


EuroInter

Optical co ge recanalise

Periklis A. Davlo Anastasia Damelou, MD; Di

Cardiology Departme



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IMAGES IN INTERVENTION

A Honeycomb-Like Structure in the Left Anterior Descending Coronary Artery

Demonstration of Recanalized Thrombus by Optical Coherence Tomography

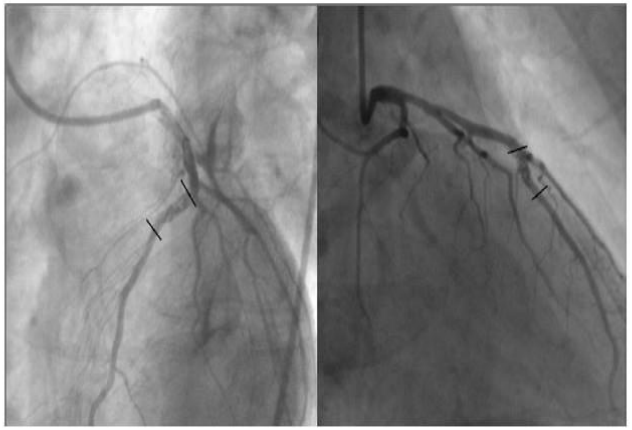

Figure 1. **Coronary Angiography of the Left Coronary Artery**

Optical coherence tomography image acquisition was performed in the segment between the lines.

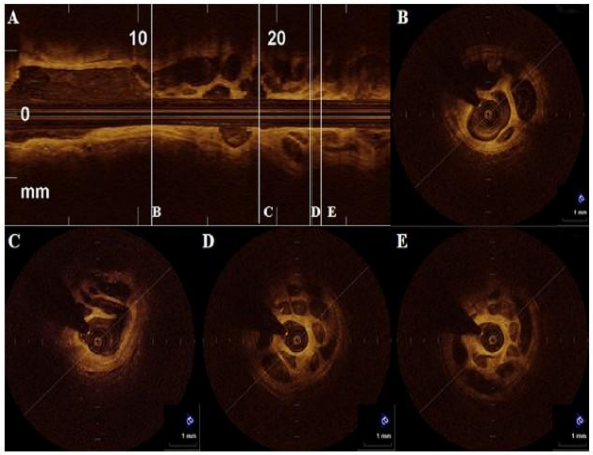

Figure 2. **Longitudinal and Cross-Sectional Morphology of the Microchannels**

(A) L-mode image showing the longitudinal morphology of the microchannels. **(B to E)** Optical coherence tomography cross-sectional images acquired from the sites corresponding to the lines in **A**. See Online Video 1.

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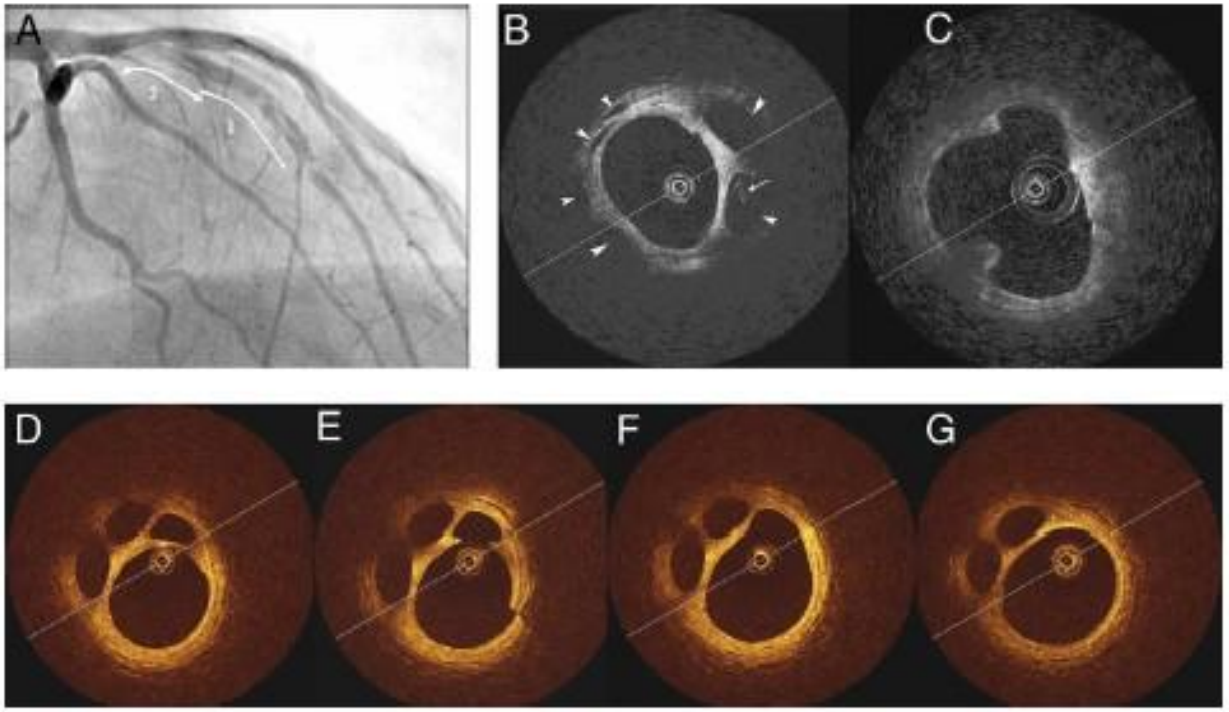
IMAGES IN CARDIOLOGY

Spontaneous Recanalization of a Coronary Artery After Thrombotic Occlusion

In Vivo Demonstration With Optical Coherence Tomography

Jin-Man Cho, MD,* Owen C. Raffel, MD,† James R. Stone, MD, PHD,† Chong-Jin Kim, MD, PHD,* Ik-Kyung Jang, MD, PHD†

Seoul, Korea; and Boston, Massachusetts



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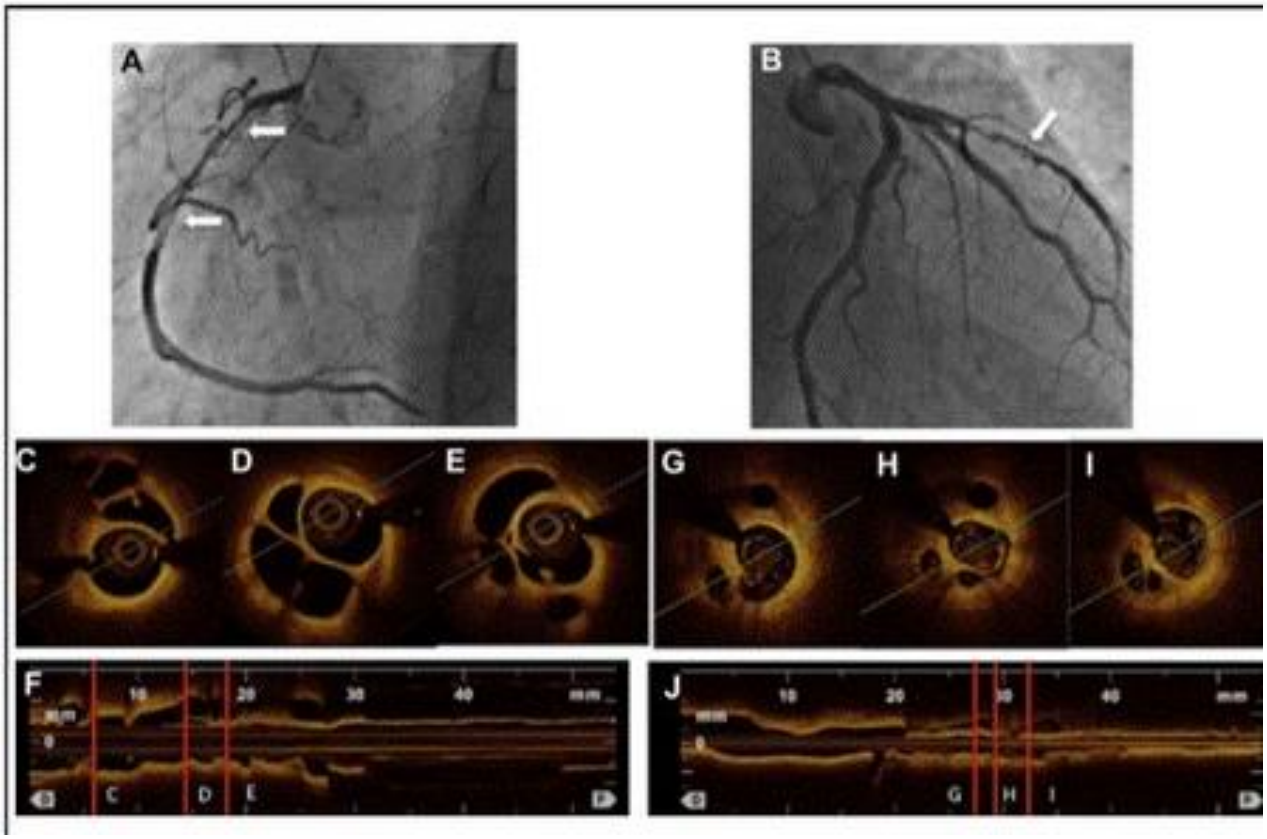
IMAGES IN INTERVENTION

Multivessel Honeycomb-Like Structure Finding in Optical Coherence Tomography

Mio Musashi, MD,*† Norio Tada, MD,* Naoki Uemura, MD,* Osamu Kawashima, MD,†
Tatsu , MD, PhD*

*Senda



Conclusion-Recanalized Thrombus

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WHAT WE KNOW

- Due to better resolution OCT can clarify angiographic haziness
- Functionally significant even when flow is TIMI III
- Mostly Present with Acute Coronary Syndrome
- Histopathologically one third of the thrombus formed is recanalized

WHAT WE STILL DON'T KNOW

- Clinical incidence and Prevalence
- Therapeutic Approach whether to stent immediately or start on anticoagulation for three months and repeat OCT