

# **What is it?**

## **Clinical usefulness of OCT**

**Myeong-Ki Hong, MD**

**Professor of Medicine**

**Division of Cardiology, Severance Cardiovascular Hospital**

**Yonsei University College of Medicine, Seoul, Korea**

- **Sixty years old female patient**

- **Diagnosis:**

Stable angina pectoris with typical effort chest pain

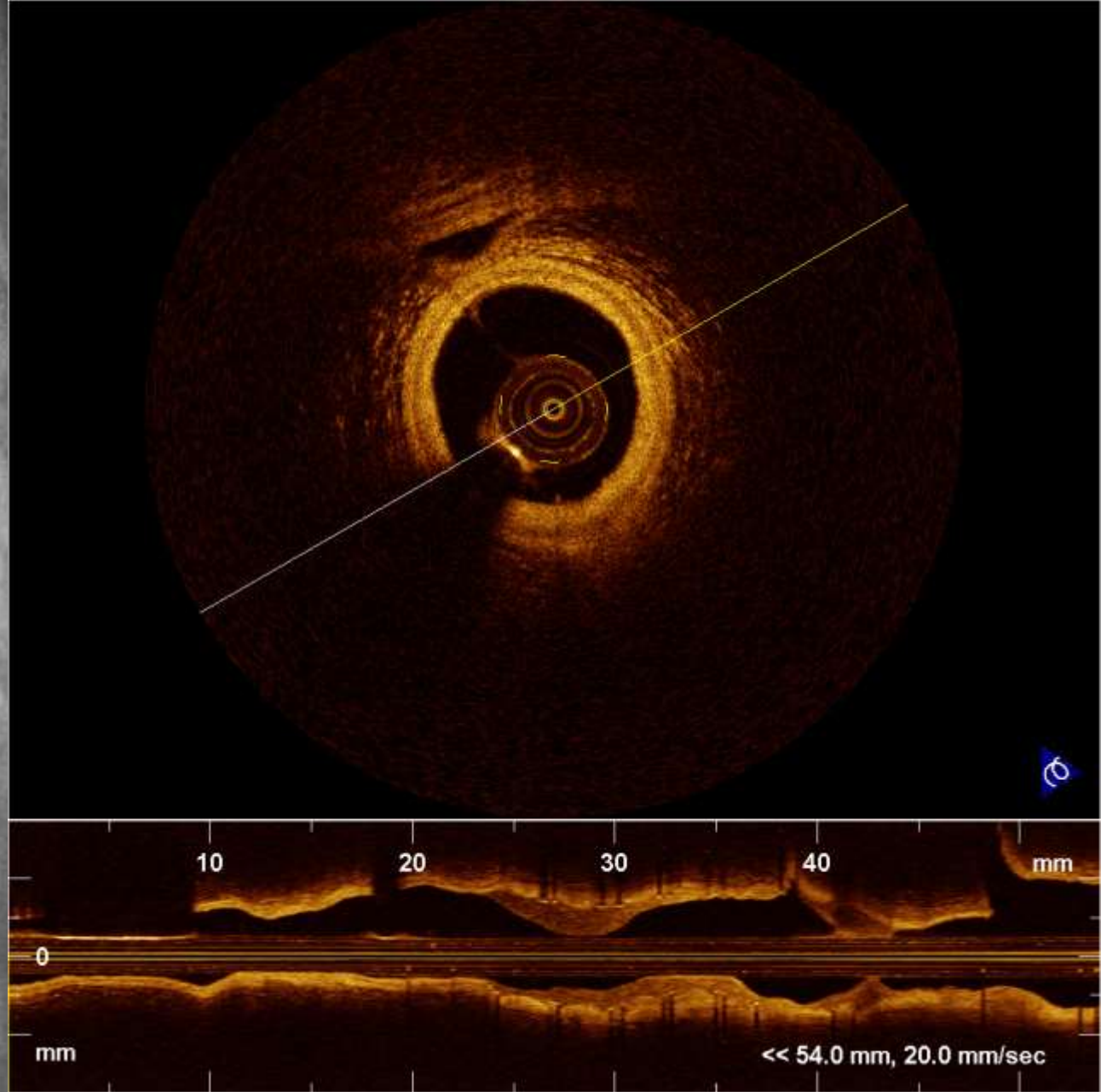
- **Past Hx:**

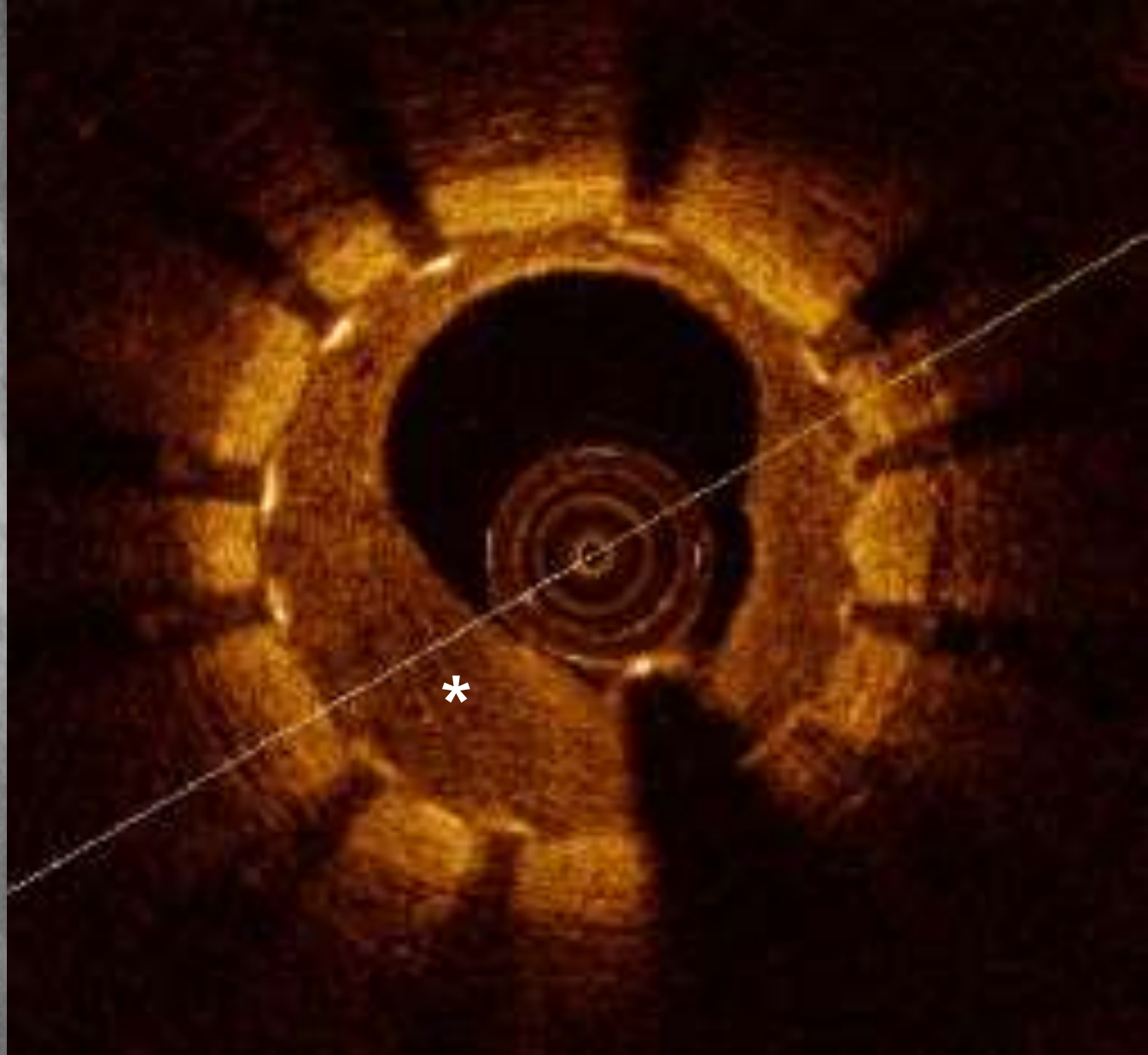
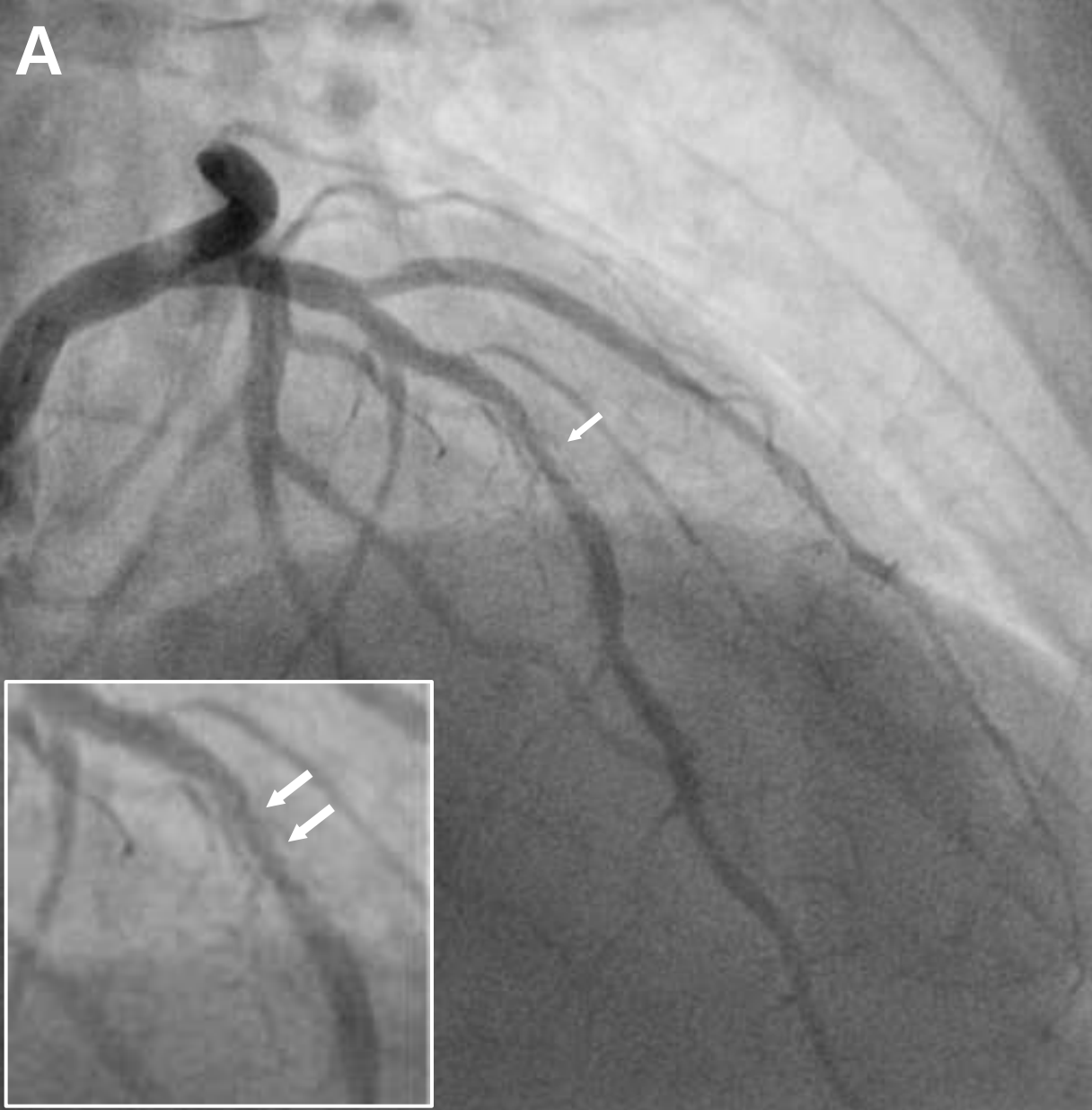
PCI with stent at mLAD (Nobori 3.0x18) 3 months ago

No Hypertension, DM or dyslipidemia

- **Echocardiography**

No RWMA, EF=65%





**Pre-intervention**

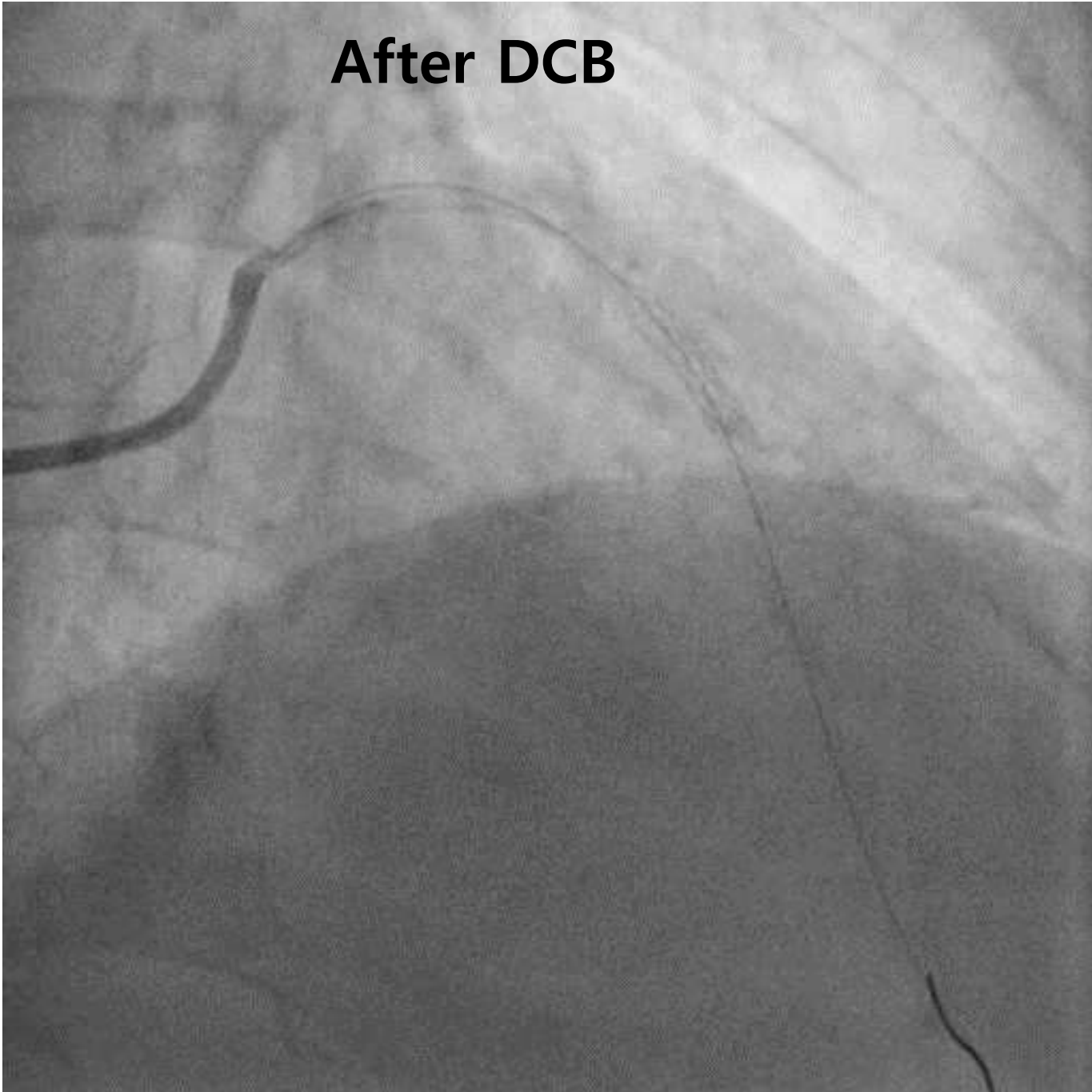
**Q1. What is the best choice of treatment for early DES ISR lesion at mLAD?**

- 1. Medical treatment**
- 2. Drug-coating balloon (DCB)**
- 3. another DES with same limus- drug**
- 4. another DES with different limus- drug**
- 5. CABG**

**Q2. What is the morphologic appearance of neointima of early (3 months after PCI) DES ISR lesion?**

- 1. Homogeneous**
- 2. Heterogeneous**
- 3. Layered**
- 4. Neoatherosclerotic**
- 5. Thrombus**

**After DCB**

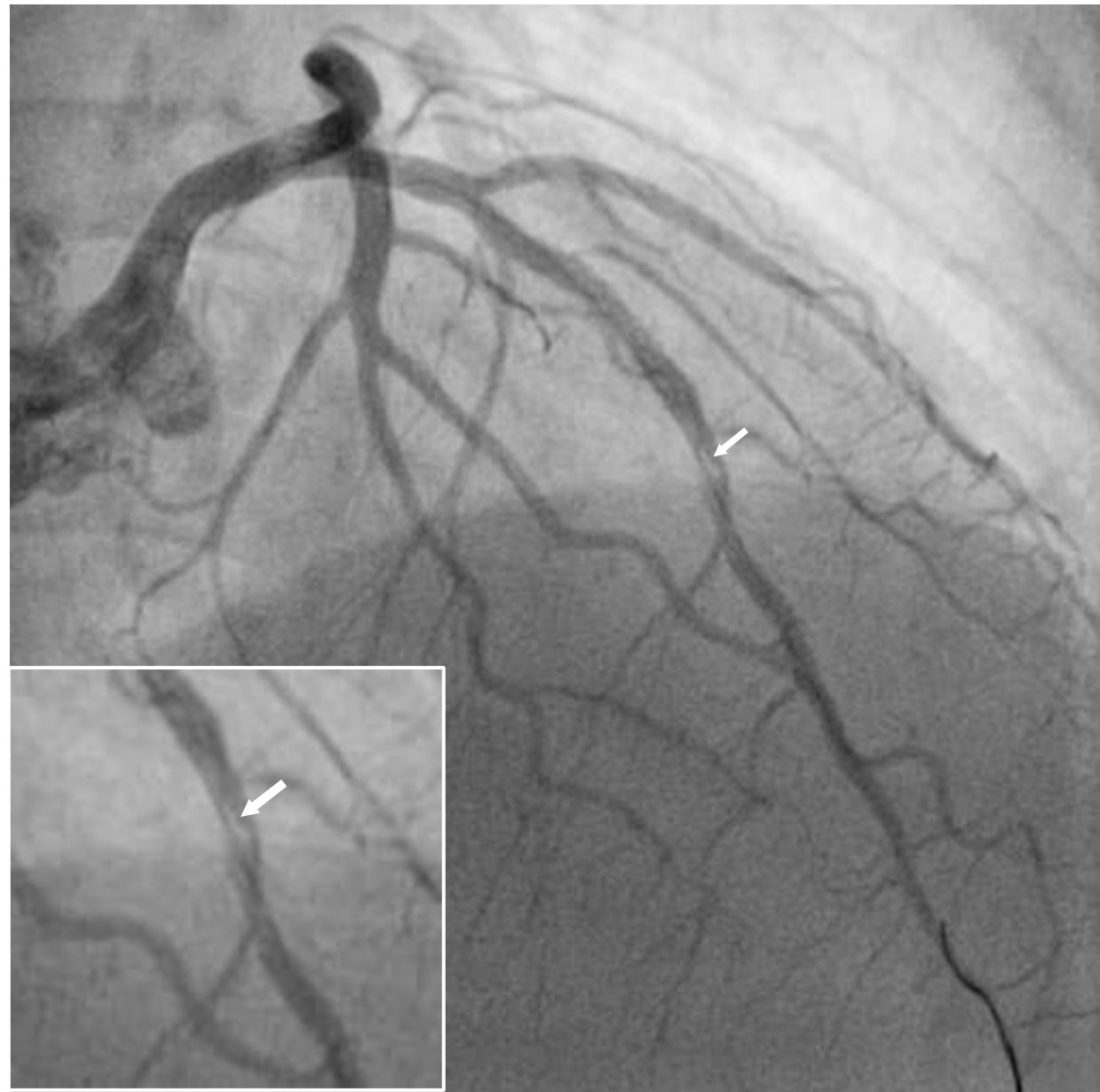
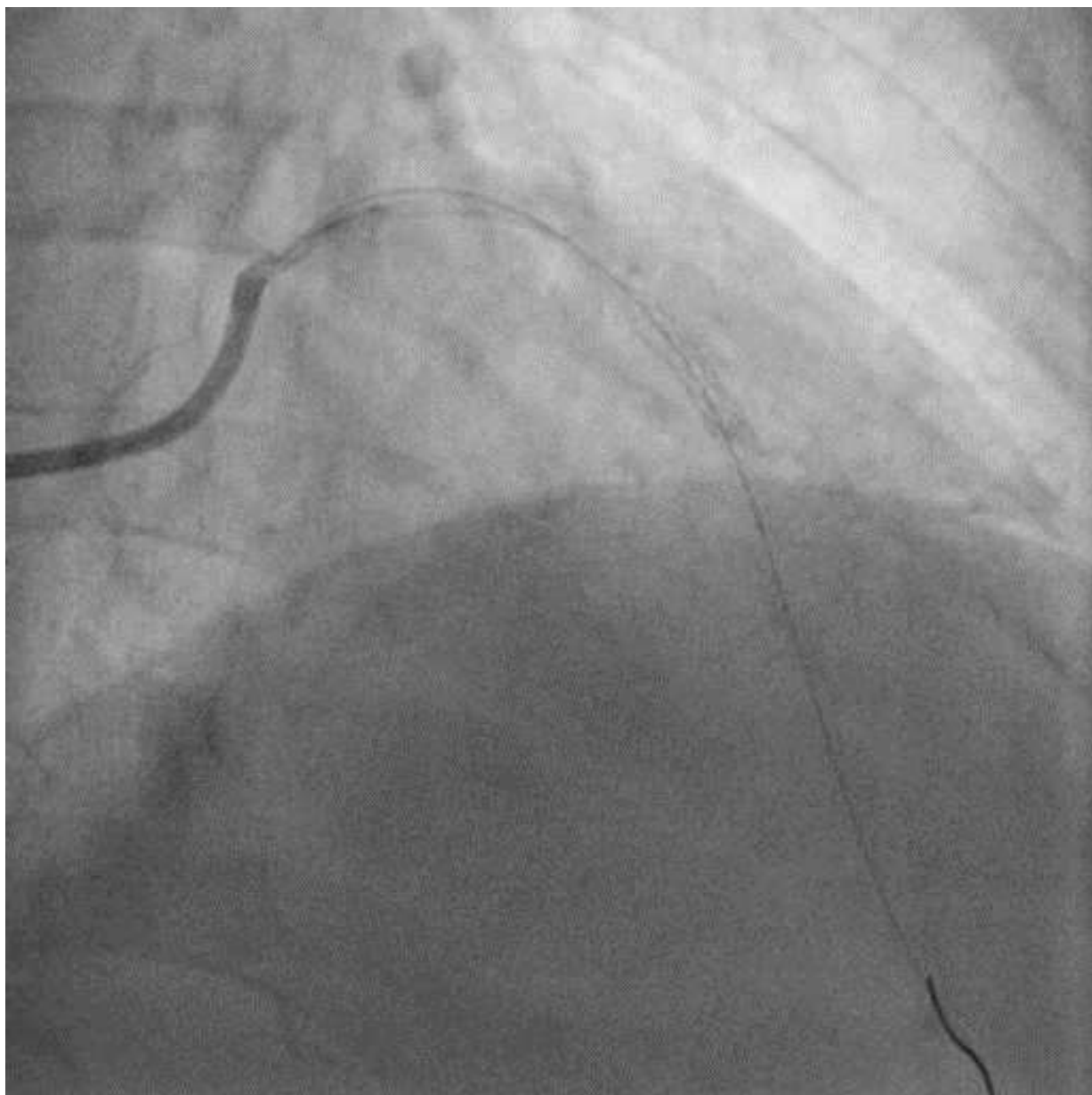


**Q3. Are the results of PCI acceptable?**

- 1. Yes**
- 2. No**

**Q4. What is next step at this time?**

- 1. No more any procedure**
- 2. OCT**
- 3. Additional PCI at ISR lesion without OCT**



**After DCB**

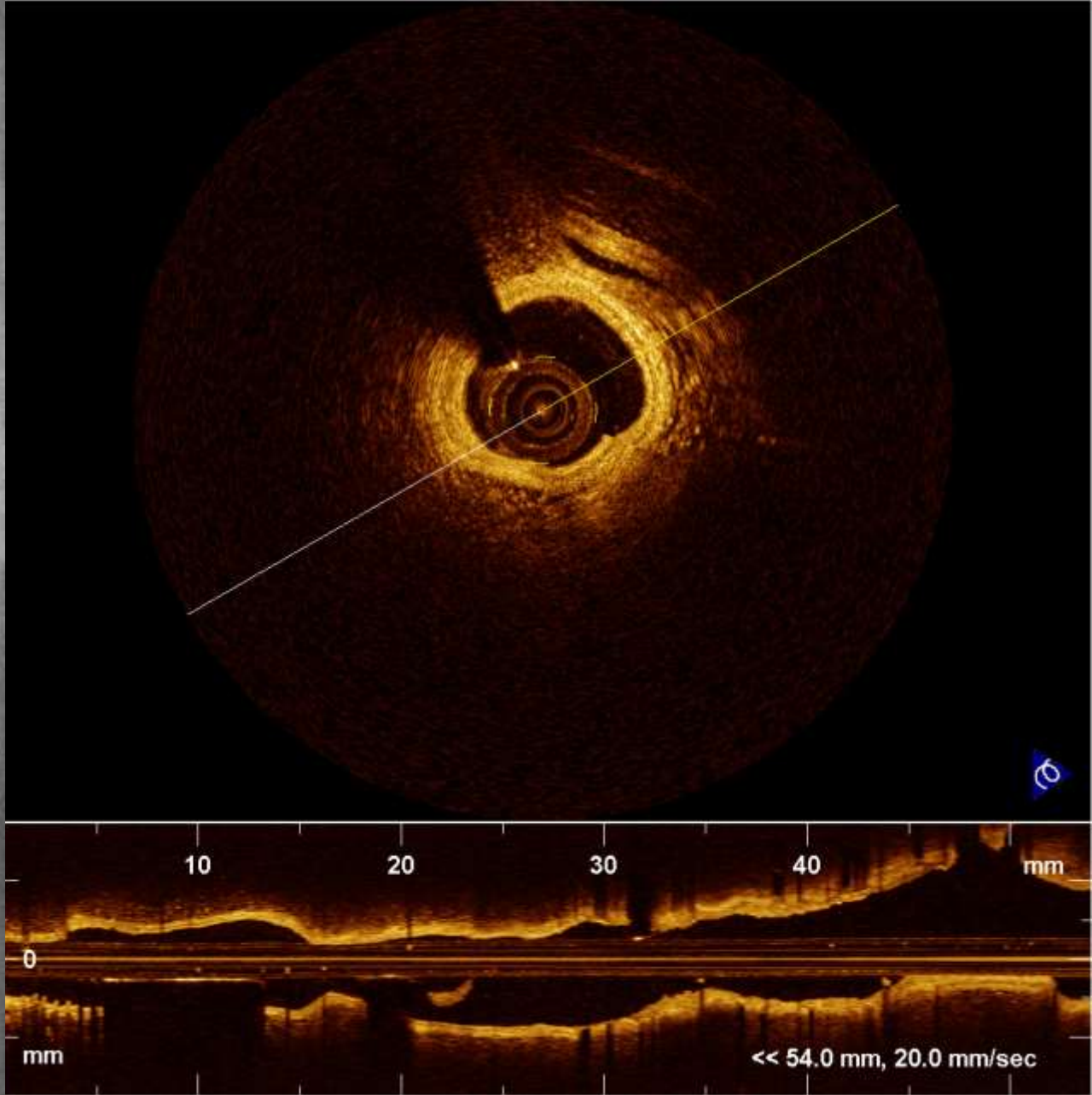
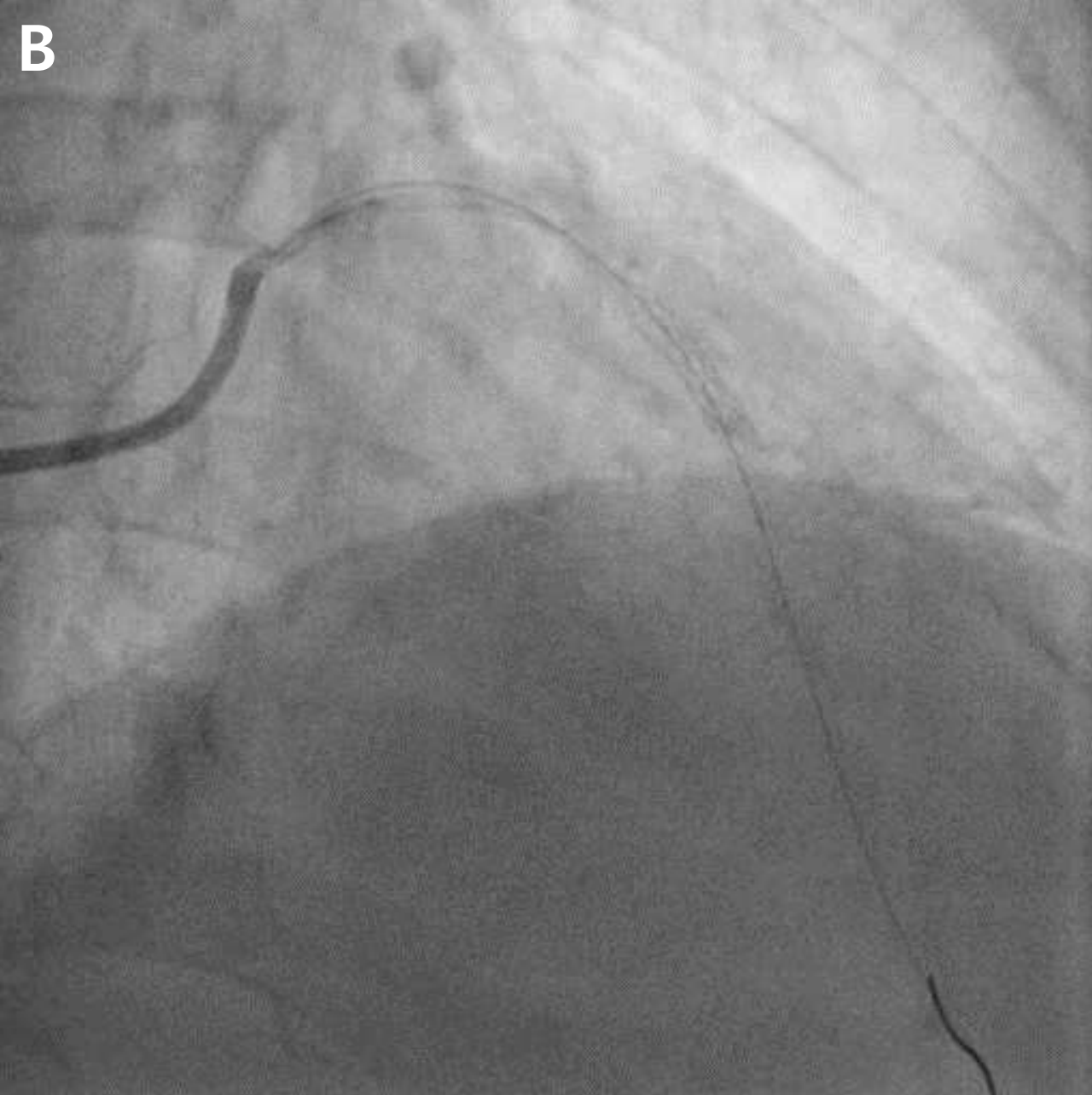


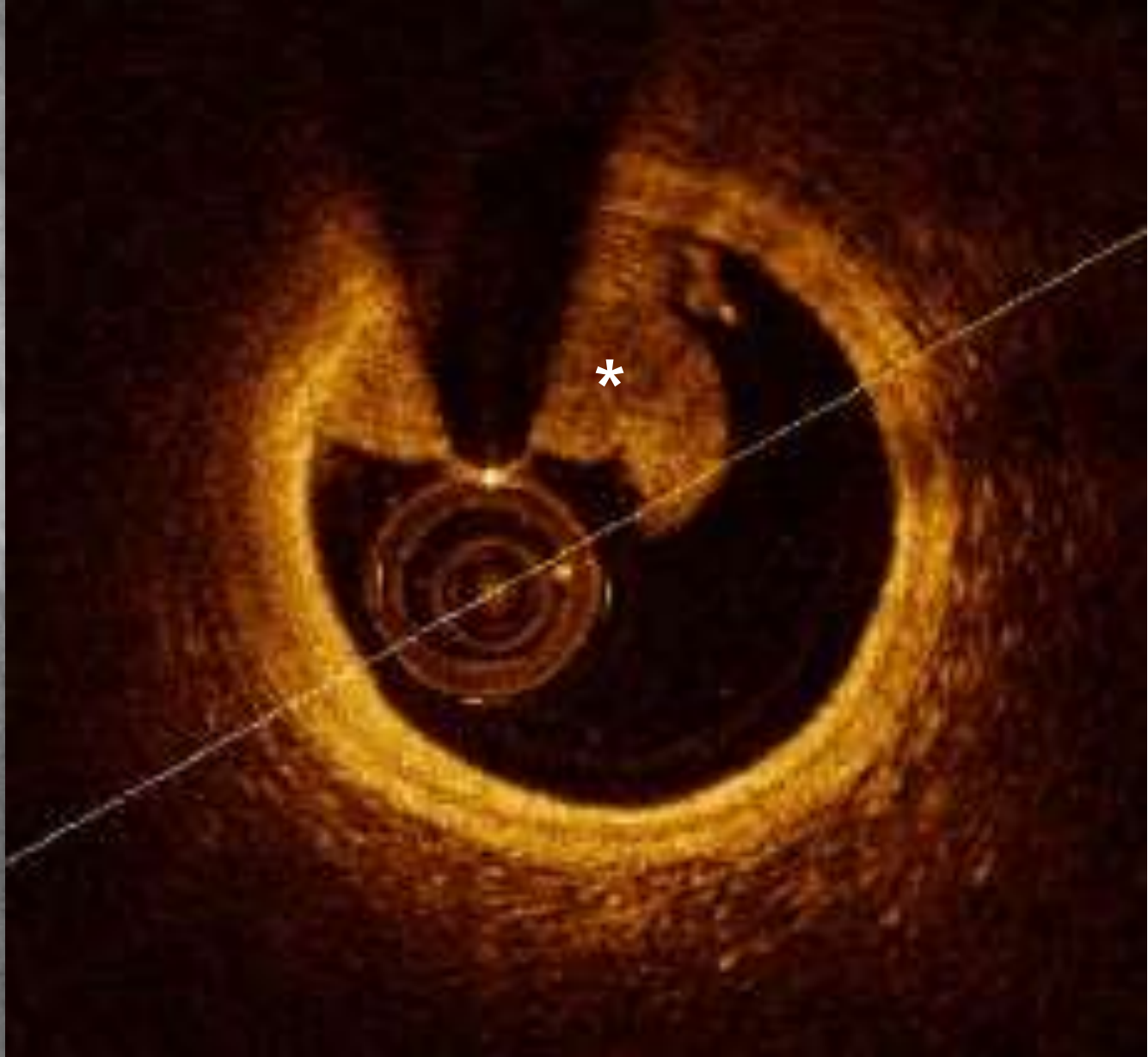
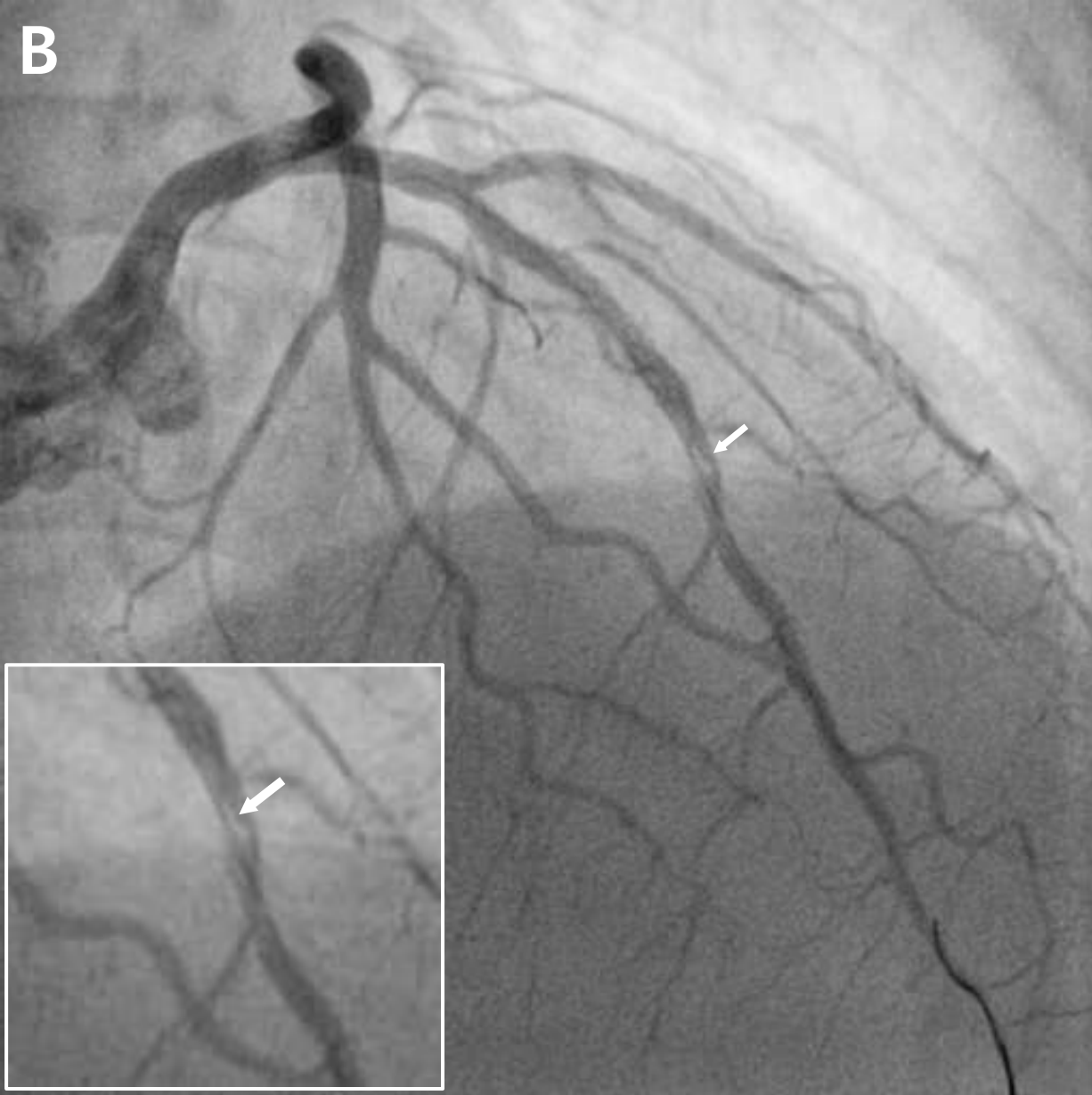
**Q5. What is hazy appearance distal to ISR lesions after DCB?**

- 1. Artifact due to turbulent flows**
- 2. Thrombus**
- 3. Dissection**
- 4. Intra-mural hematoma**
- 5. Neointima**

**Q6. Should OCT evaluation be absolutely performed in this condition?**

- 1. Yes**
- 2. No, OCT is useless.**





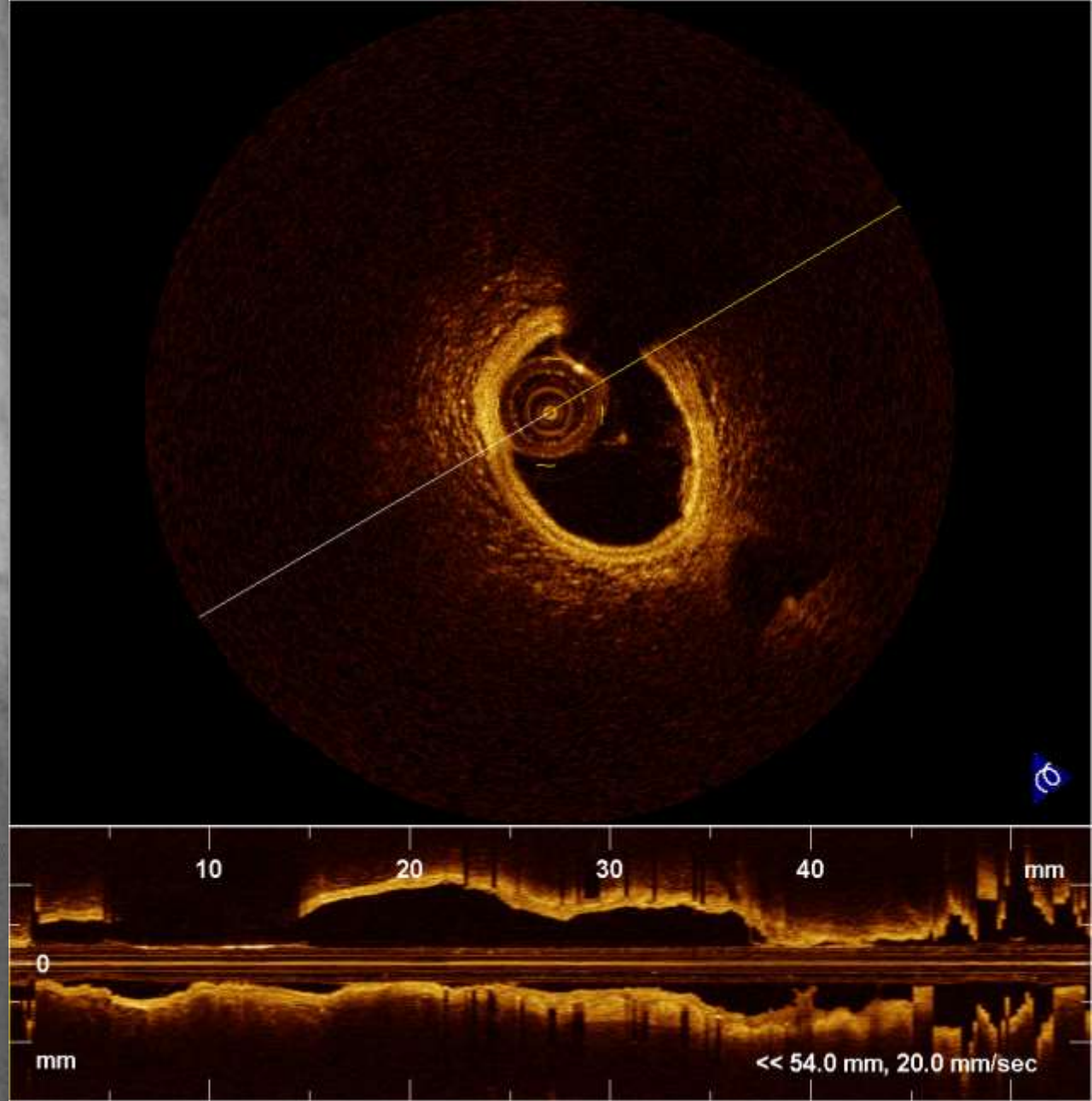
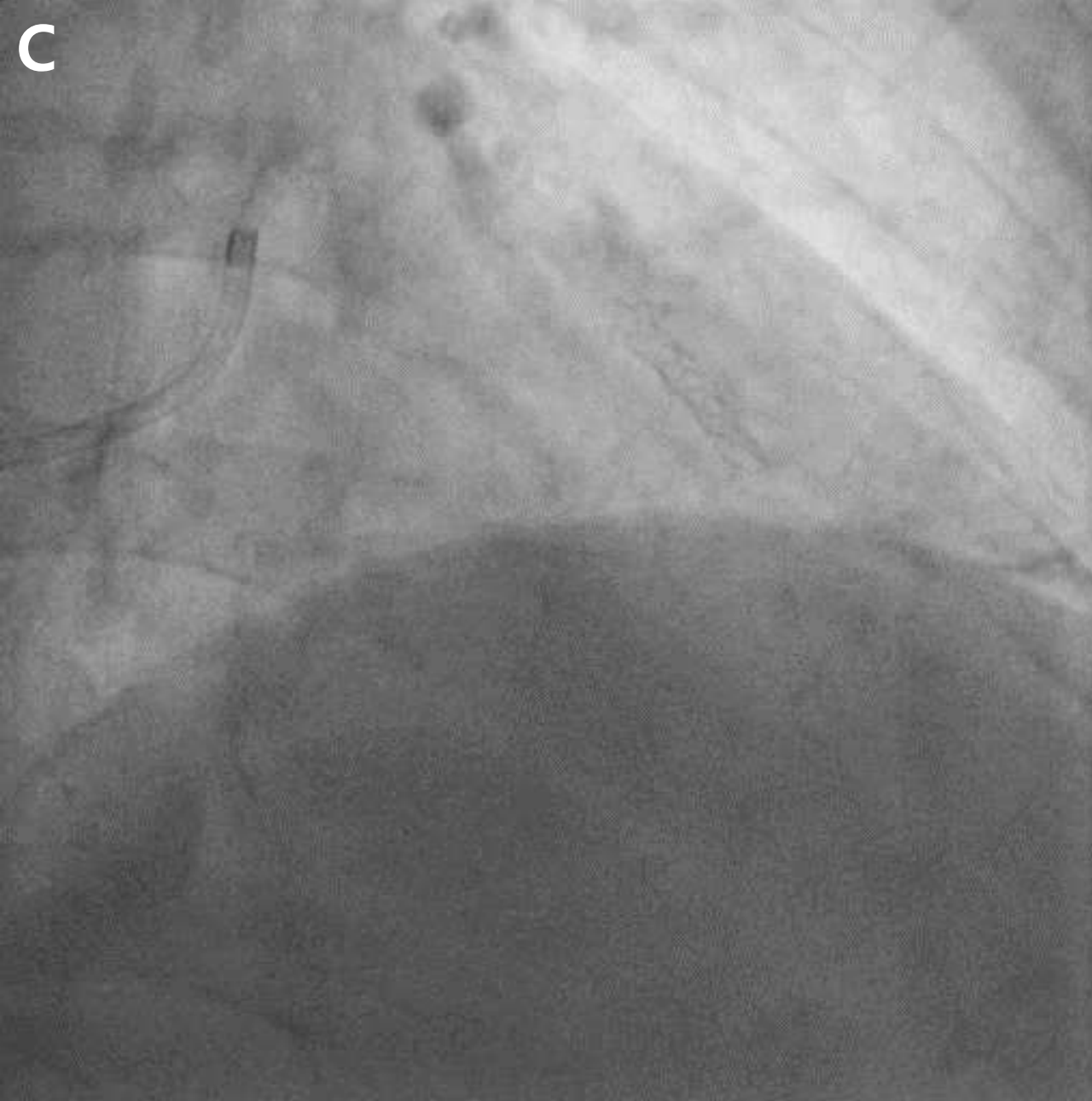
**After DCB**

**Q7. What is the abnormal material appearance in OCT evaluation?**

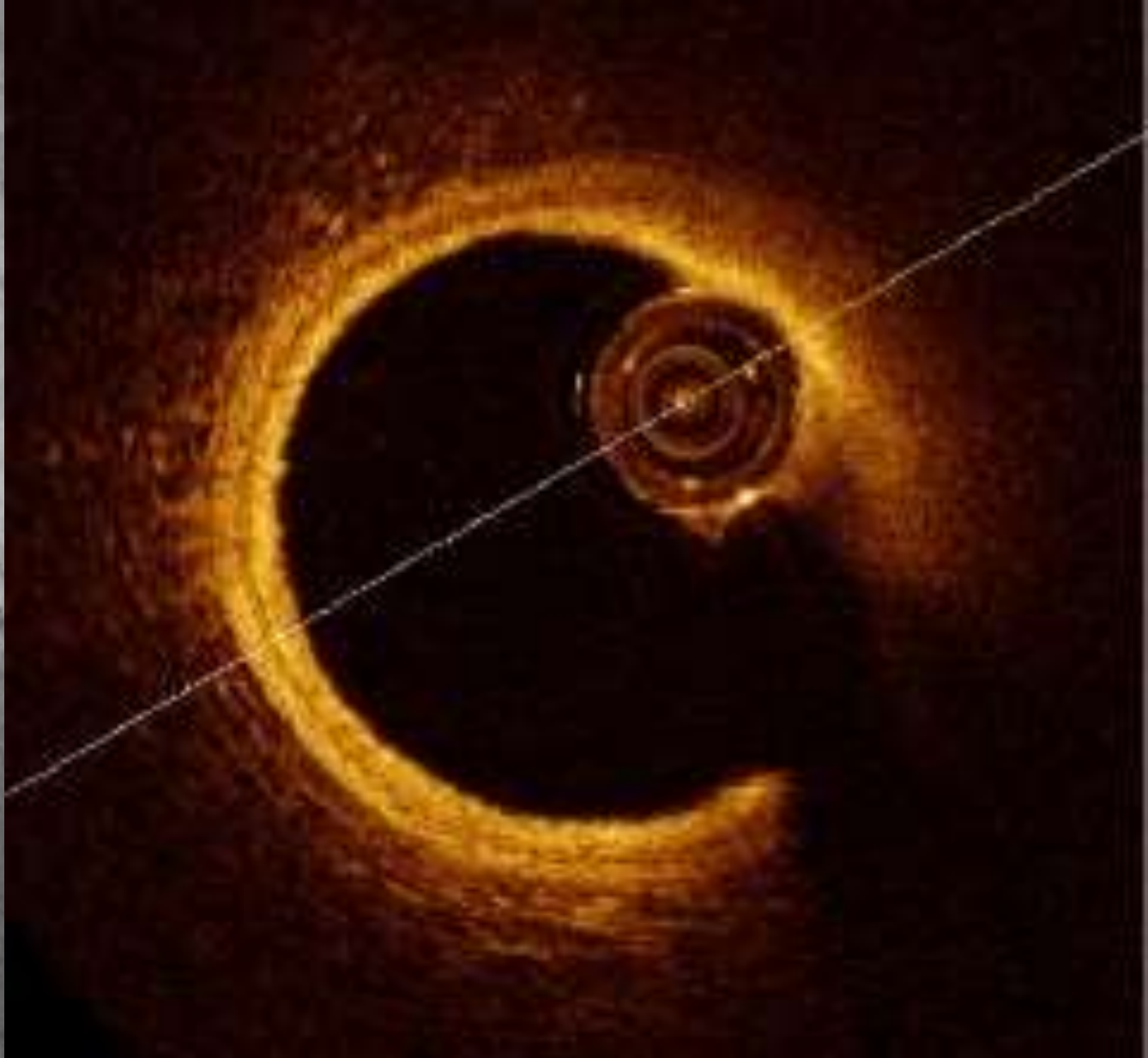
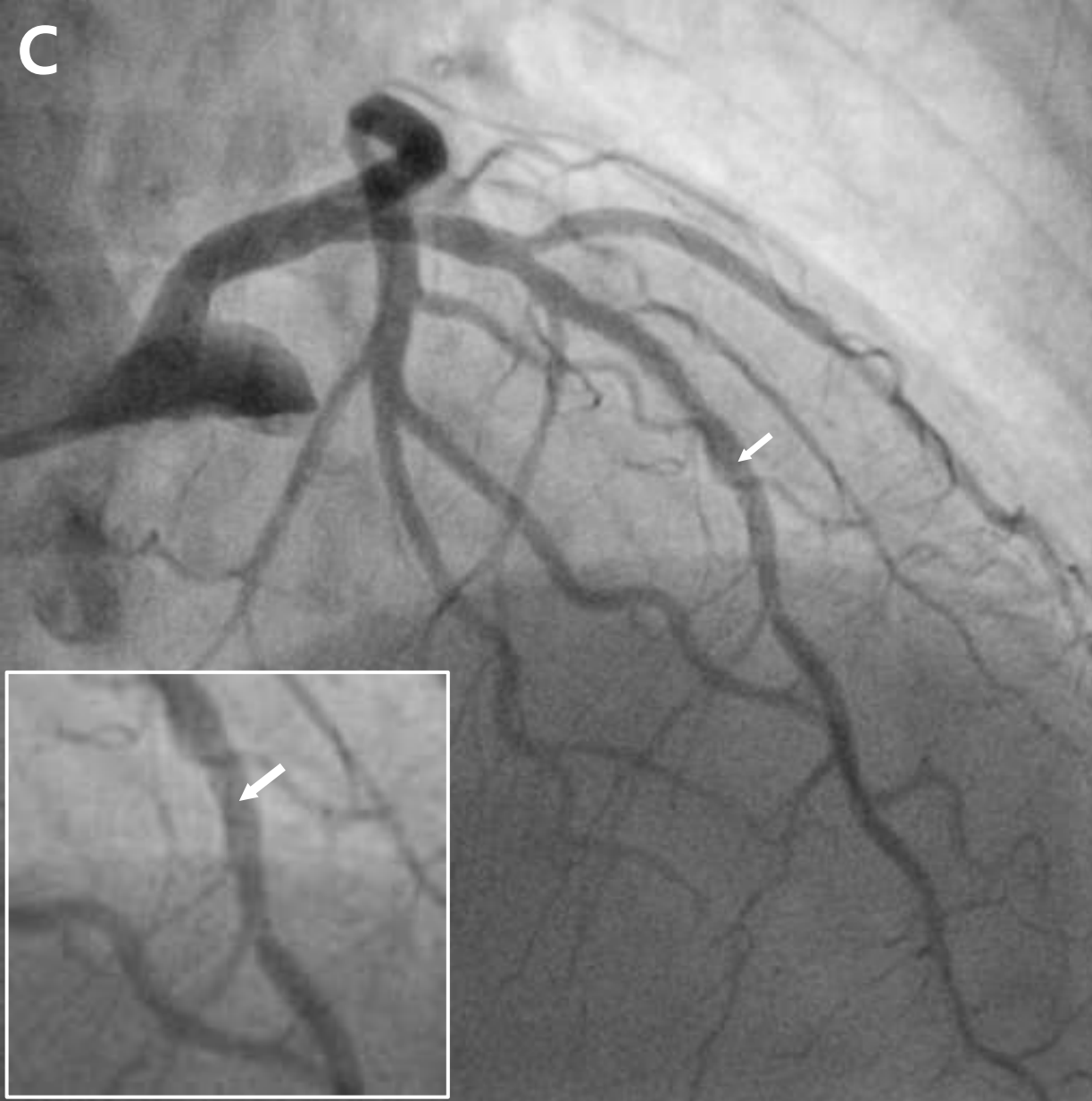
- 1. Thrombus**
- 2. Dissection**
- 3. Intra-mural hematoma**
- 4. Neointima**

**Q8. What is the appropriate therapy in this condition?**

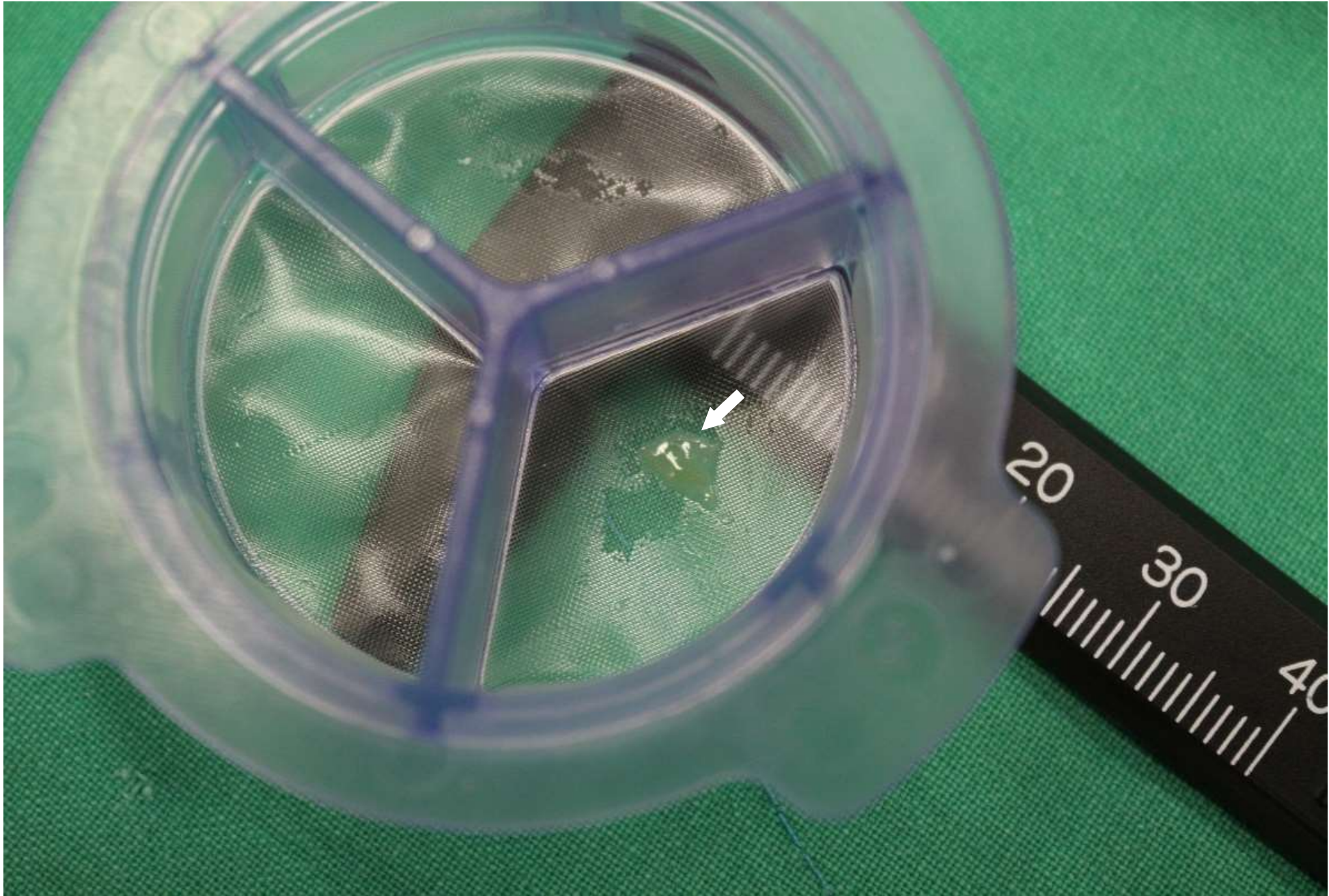
- 1. Let it alone without any change**
- 2. Recommend I.V. heparin infusion**
- 3. Intracoronary injection of glycoprotein IIb/IIIa inhibitor**
- 4. Intracoronary aspiration with suction catheter**



**After aspiration**



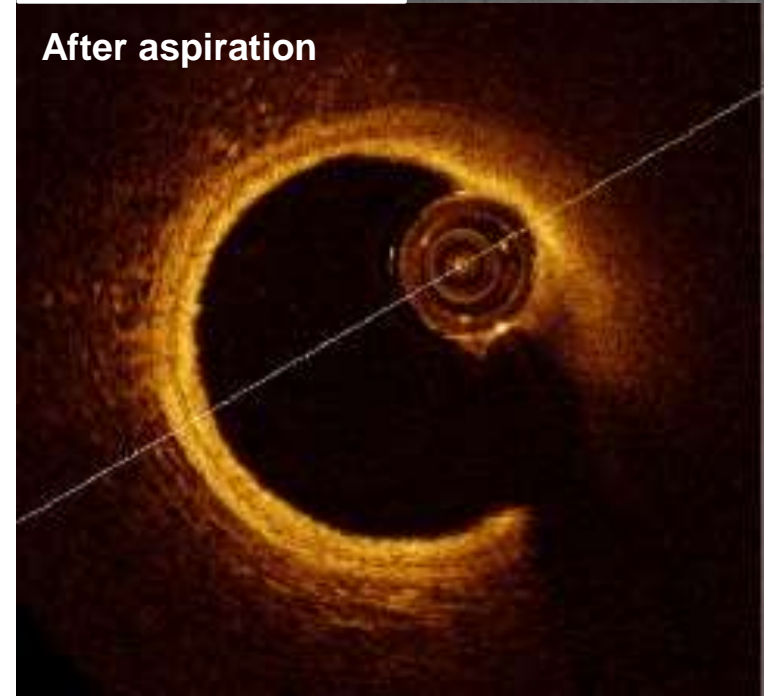
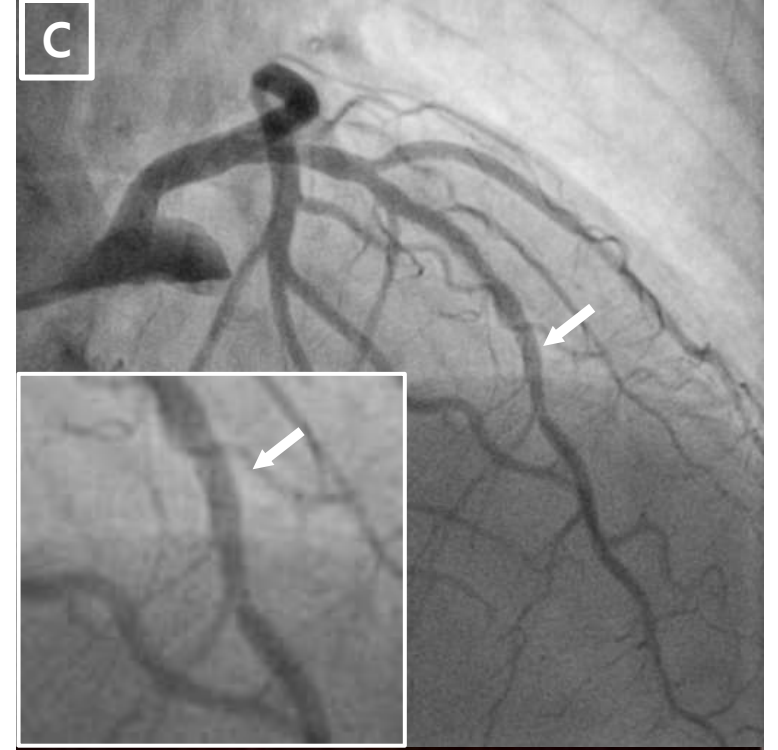
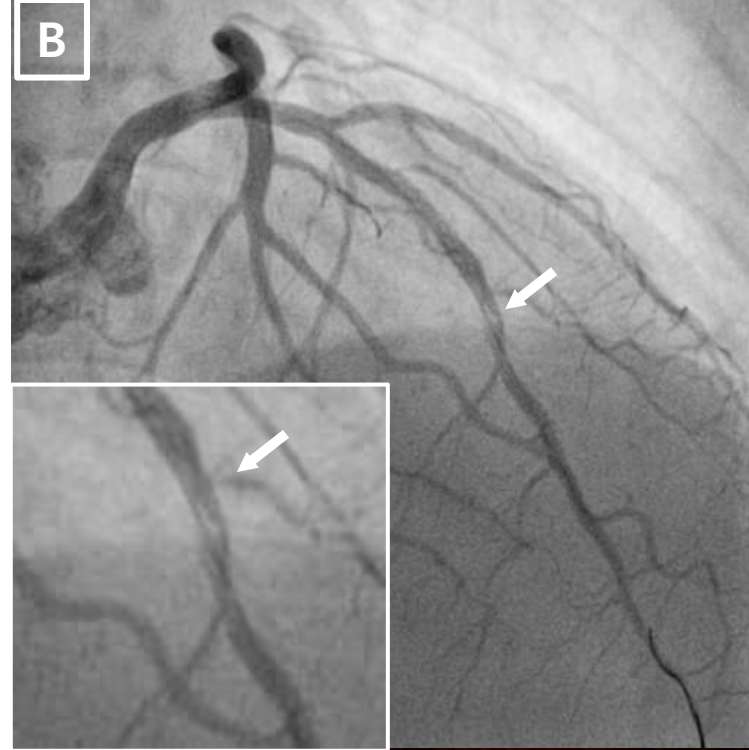
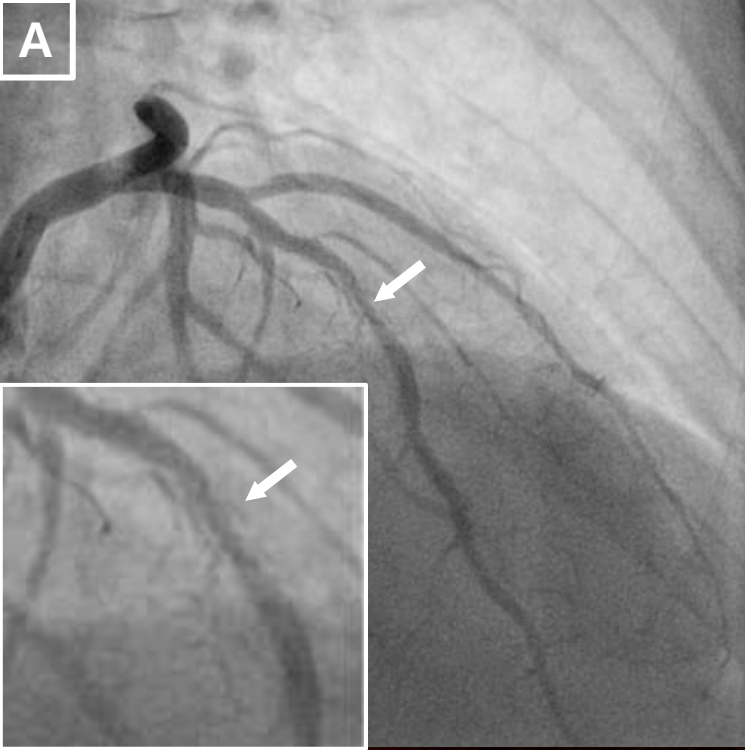
**After aspiration**

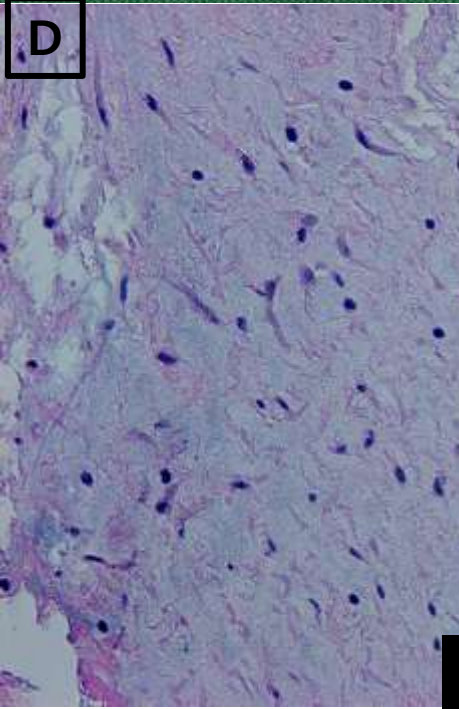
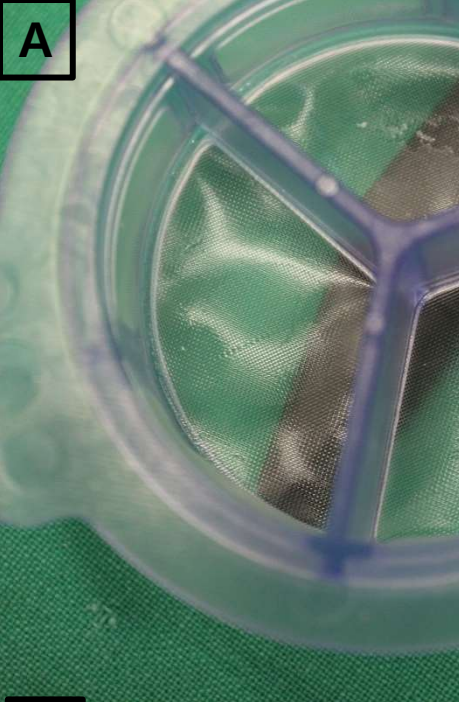


**Q9. What is the aspirated material?**

- 1. Thrombus**
- 2. Coronary plaque**
- 3. Foreign body**
- 4. Neointima**







## Images in Cardiovascular Medicine

### In Vivo Demonstration of Frail Neointimal Tissue Embolization After Angioplasty With a Drug-Coated Balloon Confirmed by Optical Coherence Tomography and Histology

Sungsoo Cho, MD; Hoguen Kim, MD; Jung-Sun Kim, MD; Byeong-Keuk Kim, MD; Yangsoo Jang, MD; Myeong-Ki Hong, MD

A 60-year-old woman experienced exertional chest pain. She underwent percutaneous coronary intervention with a drug-eluting stent (Nobori, Terumo Corporation, Tokyo) at the midportion of the left anterior descending artery. In the 3-month follow-up angiography, there was an in-stent restenosis at the midportion of the left anterior descending artery, which was also the site of a previous stent implantation (arrow, Figure 1A). In optical coherence tomography, neointimal hyperplasia proliferation with a heterogeneous pattern was observed with a minimal lumen area of 1.7 mm<sup>2</sup> (asterisk, Figure 1A). Angioplasty with a drug-coated balloon (Sequent please; B. Braun, Melsungen, Germany) was performed at the in-stent restenotic lesion. After angioplasty with a drug-coated balloon, there was a contrast-filling defect in the distal portion of the left anterior descending artery in coronary angiography (arrow, Figure 1B), and some tissue material was attached on the coronary vascular wall in optical coherence tomography (asterisk, Figure 1B). Removal of the abnormal tissue material was successfully performed with an aspiration suction

catheter; disappearance of the contrast-filling defect was confirmed by angiography and optical coherence tomography (Figure 1C). The aspirated material from the distal left anterior descending artery grossly appeared to be whitish and transparent tissue debris (white arrow, Figure 2A). Pathological findings indicated definite neointimal tissue (not thrombi), because the specimen was composed of loose tissue containing scattered short spindle cells in the myxoid stroma (Figure 2B). The cause of such neointima tissue embolization might be explained by the angioplasty having involved frail components of neointimal tissue that consisted of loose myxoid stroma on pathological examination. This report has described an in vivo demonstration of neointimal tissue (not thrombi) embolization after a drug-coated balloon, an extremely rare phenomenon that was confirmed by optical coherence tomography and histological findings.

#### Disclosures

None.

