

Unstable Angina Caused by Honeycomb-Like Coronary Lesion

Identified with Use of Optical Coherence Tomography

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A 67-year-old man had angina and dyspnea for several weeks during exercise and rest, and he came to our hospital for coronary angiography. He had mild ST-segment variability, without necrosis markers. Cardiac ultrasonograms revealed moderate mitral regurgitation, preserved ejection fraction, and a posterior-wall infarction scar despite no history of infarction.

Coronary angiograms, which revealed no obvious culprit lesion, showed mild focal stenosis in the proximal right coronary artery, distal chronic occlusion of a small left circumflex coronary artery, and mild stenosis and haziness in the mid left anterior descending coronary artery (LAD) (Fig. 1). Suspecting thrombus in the mid LAD, we performed optical coherence tomography (OCT) (Fig. 2A). The OCT showed irregular honeycomb-like channels connecting the proximal and distal lumina, smooth appearance of the channels' inner surface and the separating septa, no visible fresh thrombus, and only a small plaque burden at the lesion site (Fig. 2B–E). We thought that the guidewire might have passed into a false lumen of a spontaneous dissection, so we advanced another guidewire, parallel to the first, to ensure entry into the distal true lumen.

Given the patient's clinical instability, we performed angioplasty and implanted a bare-metal stent. Afterwards, OCT confirmed good distal flow without residual stenosis and showed a well-apposed stent, mild intima prolapse through the struts (Fig. 3A), and almost complete collapse of the parallel channels (Fig. 3B). Two years later, the patient was asymptomatic and well.

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Comment

Lesions of this type were previously associated with recanalized thrombus.^{1,2} They were compared with Swiss cheese,¹ or, when channels were spread over a larger area,

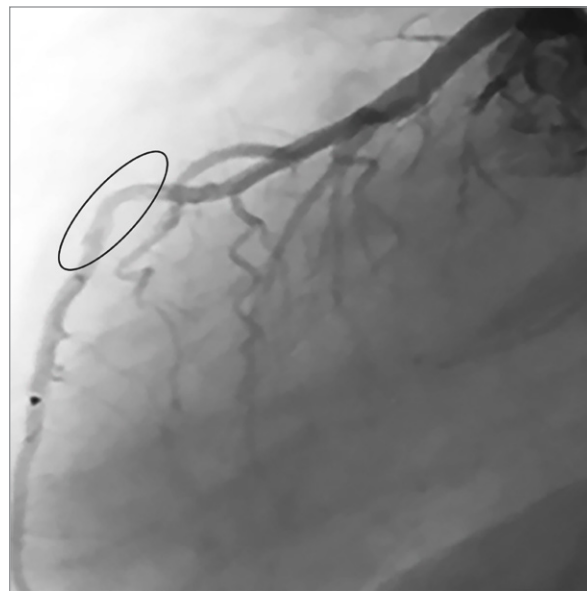


Fig. 1 Coronary angiogram (lateral view) shows slight haziness (outline) in the mid left anterior descending coronary artery.

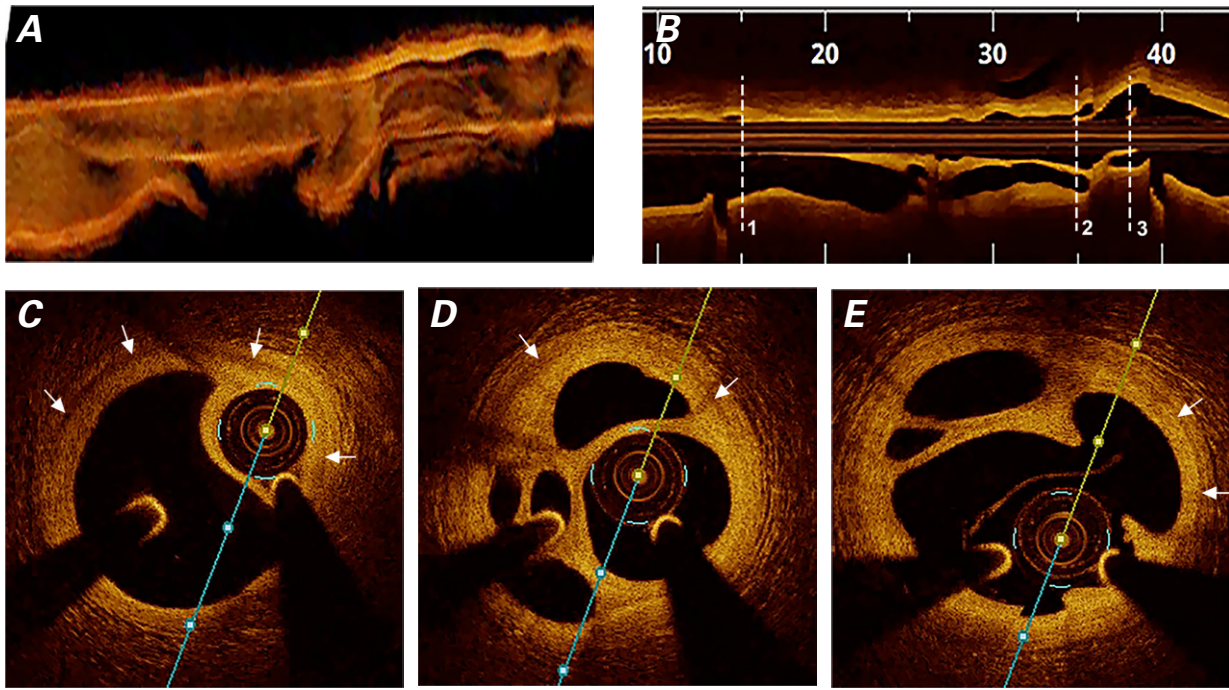


Fig. 2 Optical coherence tomograms at the lesion site show the intracoronary honeycomb-like structure. **A)** Three-dimensional reconstruction shows multiple irregular channels. **B)** In longitudinal mode, dotted lines mark the respective levels of the cross-sections. **C)** At level 1, the probe passes through a microchannel and seems to become embedded in the vessel wall. Arterial media uniformly surround the structure (arrows) with a thin intima that suggests a low atherosclerotic burden, also evident at **D)** level 2 and **E)** level 3. Supplemental motion image is available for [Figure 2B–E](#).

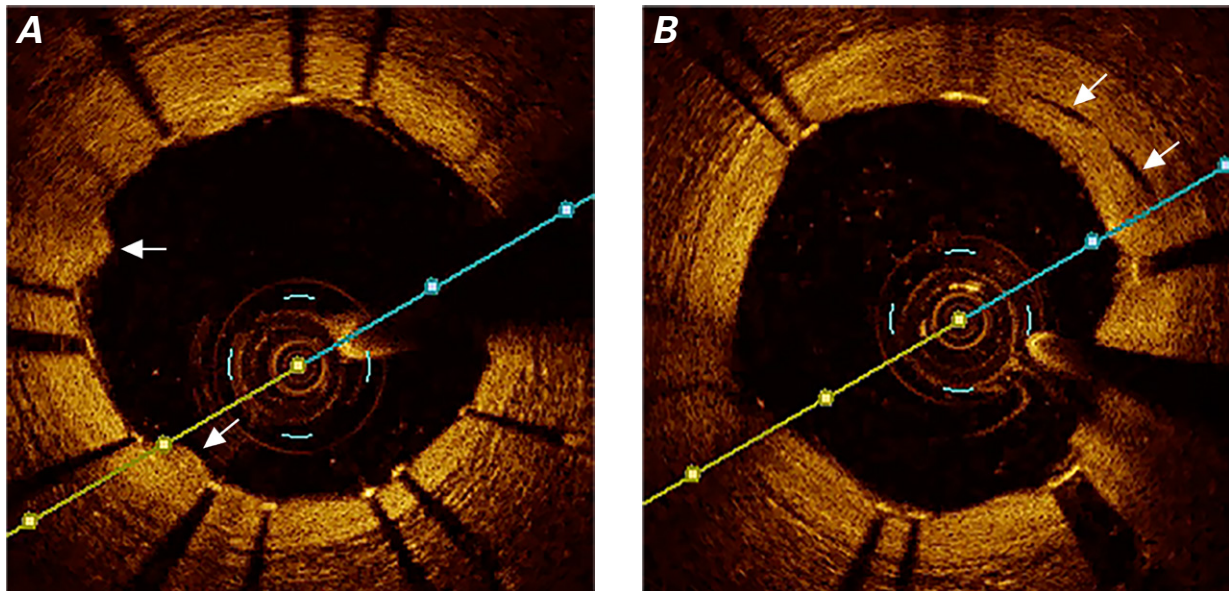


Fig. 3 Optical coherence tomograms after stenting show **A)** mild intima prolapse through the stent struts (arrows) and **B)** collapsed microchannels (arrows).

with a honeycomb—a term coined by Toutouzas and colleagues.²

In our patient, the small plaque burden at the lesion site seen on coronary angiography suggested an organized coronary embolus, but OCT revealed a recana-

lized thrombus. This rare case highlights the need to recognize the limits of angiography and to use complementary imaging methods, especially when angiographic appearance is discordant with clinical status.

References

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