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Optical frequency domain imaging (OFDI) evaluates of progressive native coronary artery stenosis in a patient with vasospastic angina.

Three months ago, a 46-year-old man became aware of chest pain at rest. His symptom was gradually getting worse and appeared not only at rest but also at effort. Although there were no abnormal findings on electrocardiogram and echocardiography, myocardial perfusion scintigraphy showed broad ischemic in the territory of left anterior descending coronary artery. His coronary angiogram before nitroglycerin injected revealed a 90% stenosis at seg6. However, the low dose Ach provocation test showed total occlusion at seg6. OFDI revealed a layered structure with the presence of multiple microvessels and macrophage accumulation, which seemed to be different from usual atherosclerotic plaque. It was thought that plaque erosion was formed by repeated coronary spasm with subclinical thrombus and healing progression occurred. Therefore, the main treatment was to control spasm by oral administration and anti-platelet drug, and we treated the stenosis using drug coating balloon without stenting. A previous paper reported the evidence of Ach-provoked coronary spasm at the site of significant organic stenosis. An another paper showed that Although Shin et al. reported that acute coronary syndrome may be triggered by spasm-related plaque erosion, there is no information on the features of coronary plaque components at the site of spasm. We experienced a case of progressive native coronary artery stenosis at the site of coronary spasm evaluated by OFDI.