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An 83-year-old male underwent coronary computed tomography angiography for evaluation of chest pain, which revealed a moderate stenosis in the left anterior descending artery (LAD). He was admitted for invasive coronary angiography, which confirmed a moderate LAD stenosis. Physiological assessment demonstrated an FFR of 0.92, a CFR of 3.2, and an IMR of 14, indicating no evidence of myocardial ischemia or coronary microvascular dysfunction. Medical treatment with rosuvastatin and ezetimibe was initiated and the patient had no chest symptoms during the follow-up.

Four months later, he presented to our emergency department with sudden-onset, persistent chest pain. High-sensitivity troponin T was positive, prompting urgent coronary angiography. The previously moderate LAD stenosis had progressed to a severe 99% stenosis. Optical coherence tomography revealed no plaque rupture, erosion, or luminal thrombus, while a signal poor, low attenuation region consistent with intraplaque hemorrhage was observed, suggesting that intraplaque hemorrhage was the mechanism underlying the acute progression.

This case highlights the clinical relevance of intraplaque hemorrhage as a potential driver of acute progression even in physiologically non-significant coronary stenosis. Further research is warranted to better identify lesions at risk and to develop strategies for predicting and preventing the occurrence of intraplaque hemorrhage.