

A difficult case to judge the indication of PCI in patient with angiographically ischemic but physiologically non-ischemic coronary narrowing

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A 56-year-old man associated with hypertension presented with current chest discomfort on exertion. The electrocardiogram was normal and the echocardiogram also showed normal left ventricular function. CT coronary angiogram revealed the mild to moderate stenosis on proximal left anterior descending artery (LAD), and he was admitted to our hospital to have detailed coronary examinations. Coronary angiography showed moderate stenosis with eccentric plaque on proximal LAD. To ensure that the coronary narrowing was culprit lesion for his symptom, we assessed the evidence of myocardial ischemia by fraction flow reserve (FFR) measurement under intravenous adenosine infusion (180 μ g/Kg/min). However, the FFR was 0.91, indicating that this lesion was not responsible for myocardial ischemia physiologically. We could not decide the therapeutic strategy for this coronary narrowing, therefore, we performed optical coherence tomography (OCT) to evaluate the lesion morphology and characteristics. OCT revealed copious amounts of lipid rich plaque and the presence of thin-cap fibroatheromas (TCFA). After we took all findings into consideration, we finally decided to perform PCI with drug-eluting stent in this case. After PCI, although we have been monitoring his symptom over time, he has never complained about chest discomfort even on strenuous exertion. Interventional cardiologists occasionally come across similar cases and hesitate to undergo or defer PCI. Intracoronary imaging assessment by OCT may help us to determine the therapeutic strategy in the cases with discrepancy between angiographical and physiological findings.