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Fractional flow reserve guided PCI in patient with exercise induced broad ischemia and anigographically intermediate stenosis

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A-71-year old man with exertional chest discomfort and dyspnea was consulted to our hospital. Computed tomography angiography demonstrated LAD and RCA stenoses with calcification. Invasive CAG showed intermediate stenosis in mid segment of LAD and RCA (in quantitative coronary angiography, 49% and 43% stenosis, respectively). Since stenoses were not significant, we finished procedure. However, his cardiac or lung function was normal, and symptom could not be explained by other findings. Therefore, we performed exercise stress myocardial perfusion imaging (MPI). MPI revealed broad ischemia in anterior and infero-posterior wall, and transient ischemic dilatation during exercise. Because of discrepancy between QCA and MPI, again we performed CAG and measured fractional flow reserve (FFR) in LAD and RCA. FFR values of LAD and RCA were 0.62 and 0.70, respectively. Drug-eluting stents were deployed in both LAD and RCA. MPI were repeated after PCI, and it revealed completely resolved exercise-induced ischemia. We should measure FFR even though stenosis is not angiographically significant if patient has typical and unexplained symptom on exertion.

