

Fractional flow reserve can predict unusual complication during percutaneous coronary intervention which was difficult to recognize with other modalities

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A 77-year-old gentleman with a history of chronic atrial fibrillation was admitted our hospital because of the detailed examination of syncope. Coronary angiogram (CAG) showed 90% stenosis of mid right coronary artery (RCA). Percutaneous coronary intervention (PCI) was performed according to the fractional flow reserve (FFR) examination. 2 bare metal stents were successfully implanted under the distal protection using filter wire. CAG and IVUS immediately after stent implantation showed acceptable results. However, FFR after stent implantation still showed < 0.75 . Although precise mechanism of low FFR was uncertain at that time, we finished the case because patient remained asymptomatic and his electro cardio gram (ECG) showed no ST-T change. Patient was treated medically with dual antiplatelet agents (DAPT) and continuous heparin infusion intravenously. Next morning, patient complained chest oppression and his blood pressure got $< 80\text{mmHg}$. ECG showed complete atrioventricular block (CAVB). Emergency CAG showed interatrial septal hematoma causing wire perforation. Fortunately, the hematoma was spontaneously perforated through the right atrium. Patient status got better after temporary pace maker lead was implanted. CAVB was also spontaneously resolved 1 week later. Repeat CAG after 10 days demonstrated hematoma resolution. FFR of distal RCA was improved up to 0.97. This case report demonstrates another important utility of FFR during PCI which can tell us the presence of invisible coronary perforation which get worse after the procedure.