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Successful treatment of recent myocardial infarction with huge thrombus: 2 stage strategy guided by OFDI images

A 51 year old man who had a history of type 2 diabetes, current smoker was referred to our hospital due to recent myocardial infarction. On admission, the electrocardiogram showed ST elevation in inferior leads with abnormal Q wave and the echocardiogram showed severe hypokinesis of infero-septal left ventricular wall motion with 44% ejection fraction. Coronary angiography (CAG) revealed total occlusion at distal right coronary artery (RCA) with grade 2 collateral artery from left coronary artery. We performed ad-hoc percutaneous coronary intervention (PCI) for distal RCA. After the crossing guide wire, we performed balloon dilatation with 1.5mm semi-compliant balloon catheter and TIMI grade 2 antegrade coronary flow was obtained. Optical frequency domain imaging (OFDI) after the balloon dilatation showed mural huge red thrombus. We performed excimer laser coronary angioplasty (ELCA) for the purpose of vaporizing thrombus with 0.9 mm laser catheter. Everolimus-eluting stent (Xience alpine 3.0 mm × 28 mm) was deployed after ELCA without slow flow phenomenon. OFDI revealed well-expanded stent struts and trapped red huge thrombus between the struts and vascular wall. Stent malapposition was confirmed at proximal to mid portion of the stent. Although, malapposition was confirmed by OFDI, we did not perform the post dilatation considering the occurrence of balloon dilatation induced distal embolism. After the PCI, continuous intravenous heparin infusion had been administered 2 weeks in addition to dual antiplatelet therapy (acetylsalicylic acid and prasugrel). On day 14 of hospitalization, re-PCI was performed for the purpose of in-stent balloon dilatation. OFDI showed stent malapposition and red thrombus which was confirmed at first session clearly disappeared. Balloon dilatation was performed with 3.5mm non-compliant balloon and final CAG showed optimal result. Final OFDI revealed well-expanded and apposed struts. In cases of acute coronary syndrome with huge thrombus, 2 stage strategies may be effective to prevent distal embolism.