1057 **A case of stent thrombosis caused by stent underexpansion due to severe calcification of the LAD, successfully treated with stent ablation using rotablation**

Wakana Teranaka1, Munemitsu Otagaki1, Haengnam Park1, Takafumi Naruko1

[1]The Second Department of Internal Medicine, University of Osaka, Japan

The patient was a man in his 70s. In X-13, he underwent coronary artery bypass surgery (LITA-LAD, RITA-LCX14, SVG-4PD) at another hospital. In X-6, LITA occlusion was found, and percutaneous coronary intervention (PCI) was performed on the LAD, and a 2.75 x 16 mm drug eluting stent was implanted in the seg7 proximal using rotational atherectomy (RA). However, 7 months later, in-stent restenosis (ISR) was found in the LAD, and PCI was performed using a drug-coated balloon (DCB). Stents were also placed in seg14 and seg9, but the details were unknown. The patient underwent cervical spine surgery at our orthopedic department, and it was decided that he would visit our cardiology department as an outpatient from X-3. In X, he was rushed to the hospital complaining of chest pain, and Coronary Artery Angiography (CAG) was performed with a diagnosis of non-ST-segment elevation myocardial infarction(NSTEMI), revealing ISR in seg9, and PCI was performed on the same site. However, three month later, the patient visited the hospital complaining of chest pain. At that time, CAG was performed with a diagnosis of NSTEMI, and severe stenosis of seg7 mid and ISR of seg14 were found. Since there was flow delay in the LAD, PCI was performed on seg7 mid. Intravascular ultrasound (IVUS) findings at that time showed that the previously placed stent in seg7 proximal had poor expansion due to severe calcification lesion. Cardiac rehabilitation was then performed, and during the same hospitalization, PCI was also performed on the ISR of seg14, and the patient was discharged. However, 2 weeks after discharge, the patient was transported again with complaining of chest pain, and ECG showed ST elevation at precordial leads. Therefore CAG was performed with a diagnosis of ST-segment elevation myocardial infarction (STEMI), and a completely occluded lesion was found from the stent edge of seg7 proximal. Immediately PCI was performed for stent thrombosis lesion at segment 7. Although the flow temporarily improved with thrombus aspiration, minimal stent area site could not be sufficiently expanded by balloon expansion.

Debulking was required to resolve the stent underexpansion due to calcification outside the Seg7 stent. In procedure, stent occlusion occurred a few times, so an intra-aortic balloon pumping (IABP) was placed on the day to only improve the flow. After confirming that there was no re-elevation of myocardial enzymes, PCI was performed the following day. Optical Coherence Tomography (OCT) showed the circumferential, severely calcified lesion on the outside at minimal stent area site. So the decision was made to perform rota ablation, including the stent ablation. At 1st , Rota ablation was performed with 2.0mm size burr, however residual calcification was observed by the OCT, so we decide to size up to 2.25mm rotaburr.

After 2.25mm burr's rota ablation, partial loss of the stent and calcified plaque reduction were observed by the OCT. Subsequently sufficient lumen expansion using cutting balloon was achieved. Finally DCB was coated on the lesion and the procedure was completed successfully.

The patient has not had any chest pain episodes since then.

Coronary stent underexpansion is an important problem and limitation of PCI, adversely affecting both short- and long-term patient outcomes.

Herein we report a successful rota ablation of an under-expended stent struts, including a literature review.