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Relevant clinical history and physical exam:
A 71 years old female, known to have stable angina and had previous PCI at mid RCA, proximal LAD, and ostium of LCX, admitted because of recurrent exertional chest pain for one month.

Relevant test results prior to catheterization:
Coronary CT angiography

Relevant catheterization findings:
Follow up CAG showed progression of distal RCA stenosis approximately 90% with heavy calcification through mid to distal RCA.

[Interventional Management]
Procedural step:
Elective PCI was attempted with 6 Fr JR 4 transradial approach. However, stent passage failed over and over, several times of balloon dilation with 2.0 x 20 mm Ikuzuchi (Kaneka Medix Corporation) and 2.5 x 20 mm Ryujin™ Plus (Terumo Europe N.V.) was done through mid to distal RCA repeatedly. In spite of multiple balloon dilation, 2.5 x 14 mm Zotarolimus coated stent (Resolute integrity®, Medtronic™) passage repetitively failed owing to proximal angulation and irregular calcification of the lesion. For the better support to approach the target lesion, we changed to femoral 7 Fr AR 1 guiding, however, there still was difficulty in passing stent through mid RCA. Accordingly, another 2.5 x 20 mm drug eluting stent coated with Everolimus (PROMUS™ Element™, Boston Scientific) was deployed at mid RCA. Furthermore, buddy wire with anchor balloon technique was attempted. Despite every endeavor, stent penetration was unsuccessful, what is more, repeated ballooning caused rupture of the balloon, consequently led to distal RCA dissection. To make it worse, while retrieving stent catheter, unexpanded stent was caught at proximal RCA without occlusion of RCA. As a result, only balloon catheter was evacuated. To regain the dislodged stent, we used a 5 Fr Heartrail catheter and a small balloon catheter, size of 1.25mm, when inflated to 10atm. After passage of the balloon through the peeled off stent, we cautiously inflated the balloon up to 10atm and trapped the stent with the balloon, then gently pulled out into the Heartrail catheter. Enclosed within the Heartrail catheter, dislocated stent was successfully removed. Furthermore, final attempt of PCI to distal RCA with 2.5 x 14-mm Resolute integrity® stent succeeded but with TIMI 1 flow at PD branch.

TCTAP C-135
Late Catch up Two Years After Sirolimus-eluting Stent Deployment in Left Main Coronary Artery
Yoshiaki Idemoto, Yoshinobu Murasato
Shinokukahashi Hospital, Japan

[Interventional Management]
Procedural step:
We expanded the lesion with NC trek 2.5/8mm and deployed Xience V 3.5/8mm. Following the procedure, we encountered difficulty with crossing the lesion because of proximal angulation. For the better support to approach the target lesion, we changed to femoral 8 Fr AR 1 guiding. Although the stent passage was in near total occlusion with a thrombus was and mRCA had total occlusion with a heavy calcification of the lesion. The OCT showed two layered zones, a superficial zone with high intensity along with a deep zone with low intensity. This suggests they were composed of different components.

In the present case, a late catch up was observed 5years after SES deployment in the LMCA. OCT findings suggested another matrix (for example:proteoglycan) accumulation and persistent peri-strut inflammation were the main mechanisms of the late catch up phenomenon.

TCTAP C-136
A Coronary Artery Aneurysm with In-stent Chronic Total Occlusion 4 Years After Implantation of Drug Eluting Stent
Mi-Hyang Jung, Keon-Woong Moon
St. Vincent’s Hospital, Korea (Republic of)

[Interventional Management]
Procedural step:
We expanded the lesion with NC trek 2.5/8mm and deployed Xience V 3.5/8mm. Follow up CAG showed progression of distal RCA stenosis approximately 90% in-stent restenosis in the previously treated LMCA.

Relevant catheterization findings:
A CAG showed 90% in-stent restenosis in the LMCA shaft. An SES 3.5/13mm stent was deployed in the lesion. There was no restenosis found in the 18-months follow up CAG. The patient was admitted again due to the recurrence of our angina in August, 2012.

Relevant catheterization findings:
A CAG showed 90% in-stent restenosis in the previously treated LMCA.

[Interventional Management]
Procedural step:
We expanded the lesion with NC trek 2.5/8mm and deployed Xience V 3.5/8mm. Following the procedure, we encountered difficulty with crossing the lesion because of proximal angulation. For the better support to approach the target lesion, we changed to femoral 8 Fr AR 1 guiding. Although the stent passage was in near total occlusion with a thrombus was and mRCA had total occlusion with a heavy calcification of the lesion. The OCT showed two layered zones, a superficial zone with high intensity along with a deep zone with low intensity. This suggests they were composed of different components.

In the present case, a late catch up was observed 5years after SES deployment in the LMCA. OCT findings suggested another matrix (for example:proteoglycan) accumulation and persistent peri-strut inflammation were the main mechanisms of the late catch up phenomenon.
[Interventional Management]

Procedural step:
With an intention to treat this lesion under the guide of intravascular ultrasound (IVUS), we tried to pass the wire to the true lumen of LCX. After repeated attempts with the guide-wire going into a false lumen of the aneurysm, we were finally able to reach the true lumen of LCX and predilate it with Empira 2.5*14mm balloon at the in-stent restenosis (ISR) lesion. Since the diameter of the ISR lesion was very small, IVUS catheter failed to pass through. With the help of 5Fr Heartrail guiding catheter (Five-in-six system) and a balloon support, IVUS was inserted, which revealed a severe ISR and an aneurysm involving the proximal to mid portion of LCX. Zotarolimus-eluting stent (Resolute Integrity, 3*26mm, maximal inflating pressure of 12 atm) was successfully deployed at the proximal to mid LCX with deep intubation of 5Fr guiding catheter. Post-procedural IVUS showed full expansion and complete apposition of the stent. Final angiography showed TIMI 3 flow of LCX and a small amount of flow into the aneurysm. Post-PCI ECG showed normal sinus rhythm and the hospital course was uneventful. The patient was discharged with triple anti-platelet agents and follow up at the outpatient clinic.

Case Summary:
A drug-eluting stent (DES), which locally elutes antiproliferative drug, dramatically inhibits neointimal growth and reduces ISR. However, several studies have indicated that DES may delay healing of vascular injury, and has been theoretically associated with the development of coronary artery aneurysm. Because of the rarity of coronary aneurysm secondary to DES and the paucity of published data, management of this condition remains on a case-by-case bases. Our report adds another aspect to the currently available treatment strategies, and shows a patient whose complicated coronary aneurysm and ISR leading to SA block were successfully treated with a new DES implantation followed by triple antiplatelet agents.

An 83-year-old male visited emergency room for recurrent syncope. The initial electrocardiogram (ECG) showed SA block with the longest pause of 5.6 seconds. The patient had a prior history of non-ST segment elevation myocardial infarction requiring PCI in 2009. At that time, coronary angiography (CAG) revealed two culprit lesions; pLCX was in near total occlusion with a thrombus was and mRCA had total occlusion with a collateral blood supply from LCX. The patient underwent successful PCI with a sirolimus-eluting stent (SES) (Cypher, 2.5*23mm, maximal inflation pressure of 23 atm) at pLCX. Although the patient did not complain chest discomfort, ischemic involvement of SA node was highly suspected given his history of chronic RCA occlusion and a known collateral supply to SA node from LCX. Therefore, decision was made to perform CAG to further identify etiology of syncope secondary to sinus block. CAG demonstrated near total occlusion of the proximal and mid portion of the previous stent. Notably, CAG also identified a coronary artery aneurysm looking like a collateral vessel. With an intention to treat this lesion under the guide of intravascular ultrasound (IVUS), we tried to pass the wire to the true lumen of LCX. After repeated attempts with the guide-wire going into a false lumen of the aneurysm, we were finally able to reach the true lumen of LCX and predilate it with Empira 2.5*14mm balloon at the in-stent restenosis (ISR) lesion. Since the diameter of the ISR lesion was very small, IVUS catheter failed to pass through. With the help of 5Fr Heartrail guiding catheter (Five-in-six system) and a balloon support, IVUS was inserted, which revealed a severe ISR and an aneurysm involving the proximal to mid portion of LCX. Zotarolimus-eluting stent (Resolute Integrity, 3*26mm, maximal inflating pressure of 12 atm) was successfully deployed at the proximal to mid LCX with deep intubation of 5Fr guiding catheter. Post-procedural IVUS showed full expansion and complete apposition of the stent. Final angiography showed TIMI 3 flow of LCX and a small amount of flow into the aneurysm. Post-PCI ECG showed normal sinus rhythm and the hospital course was uneventful. The patient was discharged with triple anti-platelet agents and follow up at the outpatient clinic.