TCTAP C-107

A Triple Vessel Disease Patient Including Two CTO Vessel Was Successfully Treated with Dual Bidirectional Approach

Shigeru Nakamura
Kyoto Katsura Hospital, Japan

[Clinical Information]
Patient initials or identifier number: Kyoto Katsura Hospital CTO case
Relevant clinical history and physical exam:
Case: 84 year old male
Present Illness
He had chest tightness in the early morning of 2013.6.8 in a home for aged.
Staff check SpO2 which was 80%. He was transferred to a hospital and diagnosed acute myocardial infarction and referred to our hospital.

Relevant test results prior to catheterization:
ECG showed II, III, aVF, V2-V6 ST depression.
CK was 1106, CK MB 90 Trop I 19ng/ml BNP 307

Relevant catheterization findings:
Proximal RCA occlusion, LAD ostium 90% stenosis, mid LAD occlusion, distal CX 0% stenosis of triple vessel disease.

[Interventional Management]
Procedural step:
LAD ostium and distal CX was dilated by balloon. During the procedure, RCA and mid LAD were CTO. Jeoprdized collateral from conus branch to LAD and RCA. IABP was inserted and kept CCU for several days. However the condition did not improved.
We attempted the CTO procedure of RCA and LAD.
To do the safety procedure, retrograde approach to the RCA is used via LAD septal branch. After successful recanalization, retrograde approach to LAD is used via PD septal branch after sucessfully open RCA vessel.

Case Summary:
Triple vessel disease patient including two CTO vessels was successfully treated with bidirectional approach at one time.
Strategy planning is the key to safty procedure.

TCTAP C-108

A CTO Case of LAD, Appeared Acute Occlusion Repeatedly Caused by Fibrinous Thrombus Occurred just After the Treatment by Modified-T Stent Technique

Hideki Nishimura
Eiju General Hospital, Japan

[Clinical Information]
Patient initials or identifier number: A. W
Relevant clinical history and physical exam:
Case
A 41-year-old man was admitted due to effort related chest pain for 2 months. In past history, although he had already suffered from chest squeezing as late twenties, any medical therapy or examination were not done because of disappearance of symptom by degrees. As a diagnosis of unstable angina was made on recent clinical course which chest pain occurred at rest. So, CAG was performed. The electrocardiogram revealed ST depressions in inferior leads and V4 to V6 lead.

Relevant test results prior to catheterization:
The echocardiography demonstrated normal findings without regional wall motion abnormality.
Relevant catheterization findings:
Baseline angiogram
1. LCAG showed significant arteriosclerotic lesions in proximal and mid LCX which diagnosed with vulnerable plaque and total occlusion at the bifurcation of LAD and first diagonal branch. Distal RCA was filled retrogradely from LCX. Beyond the total occlusion, the mid and distal LAD was filled retrogradely by collaterals from septal branch.
2. RCAG showed total occlusion at proximal and mid portion of RCA. Collaterals from Conus branch and RV branch, both connected to the distal septal branches beyond the CTO linked to the distal of LAD. Segment 4PD was also filled retrogradely by collateral from RV branch.

[Interventional Management] Procedure step:
Procedure
From the results of CAG findings, we planned to perform PCI to the lesions in the LCX considered as a culprit vessel with his and his wife’s consent and started to take 300 mg clopidogrel additionally. Guiding catheter was engaged after the weight adjusted dose of unfractionated heparin was administrated, we performed PCI for LCX firstly. After IVUS examination, we implanted DES in LCX. After stents implantation, post ballooning with non-compliant ballooon was performed. After ballooon dilatation, LCAG showed successful in TIMI 3 flow at LCX lesions without any complications. Following PCI for LCX, we started PCI for LAD. There was no suggestion of entry point of the CTO from the angiography, we decided to perform IVUS guided PCI. Under direct IVUS guidance, a Conquest pro guide wire with Corsair micro catheter advanced into CTO lesion toward to D2. After balloon dilatation in CTO, we tried the antegrade wiring with Crusade catheter. With a landmark of IVUS, a Conquest pro guide wire with Crusade catheter was advanced into distal LAD as confirmed by contralateral injection. After that, we performed IVUS examinations in both LAD and D2. From the IVUS findings, we planned to choose the modified-T stenting strategy for this bifurcation lesion. After stents implantation by conventional technique, we performed kissing balloon technique. It was no doubt in terms of technical procedure, but unbelievable phenomenon was occurred. The filling defects in stents were recognized obviously. From IVUS imaging, thrombus formation was strongly suspected. After IVUS examination, patient got nausea and blood pressure down. Therefore we inserted IABP via left femoral artery. After that, total occlusions both coronary arteries were detected CAG, suggesting that HIT must be occurred. Therefore we did actions not only administration of Argatroban but also reload with 300 mg of clopidogrel additionally before his consciousness was lost. After done of those, we performed various strategies of thrombectomy, ballooon dilatation, long inflation of perfusion balloon and IVUS examination to both coronary arteries. However, the filling defect was remained in both stents of LAD and LCX for some time. The material retrieved by thrombosuction had the formation which we had not ever seen yet. The color was yellow with transparent, the form was elastic and soft. It differed from the usual red thrombus obviously. Therefore we decided to exchange the ongoing system which might be affected by heparin to the new system. And we administrated 200 mg of hydrocortisone at once. After changing the system, CAG showed total occlusions in distal LAD and in stent of D2, and thrombogenicity in proximal stent of LCX. After that, we inserted guide wires to each coronary, and performed various strategies of mentioned above. After done of those, the filling defects in stents of LAD were gradually diminishing. We considered that the phenomenon of acute occlusion was got well, so decided to perform kissing ballooon technique again at the bifurcation of LAD. At last, we obtained good angiographical results without the filling defects.
The material retrieved by thrombosuction was diagnosed as fresh fibrous thrombus pathologically. At later, it was revealed that heparin-PF4 complex antibody was not present in patient.

TCTAP C-109
A Case of Successful Cracking of Calcified Fibrous Cap of Totally Occluded Left Anterior Descending Artery by Using Cutting Balloon
Hidetami Ohy, Osamu Katoh
Kansai Heart Center, Japan

[Clinical Information]
Patient initials or identifier number: H.H.

[Relevant clinical history and physical exam]
66-year-old male presented with dyspnea on effort and was referred to our hospital for a second attempt to recanalisze the LAD CTO. He had past history of hypertension, dyslipidemia and diabetes mellitus.

[Relevant test results prior to catheterization]
ECG showed slight ST-T abnormality in precordial leads.
Echocardiography showed normal left ventricular systolic function.
MDCT showed calcified fibrous cap.
Scintigraphic study showed antero-septal and apical reversible ischemia.

[Relevant catheterization findings]
CAG showed proximal LAD was totally occluded immediately after diagonal branch without stump, which was supplied by collateral flow from PL branch of RCA.
First attempt for LAD CTO at previous hospital failed because a Conquest pro wire could not penetrate calcified proximal cap at all one month ago.

[Interventional Management]
Procedural step:
PCI was performed using right femoral artery with 8-French system and contralateral injection was performed using left radial artery with 5-French diagnostic catheter. An 8 Fr guiding catheter (Hyperion SPB3.75) was engaged in the LCA. Miracle 3g and GAIA 3rd wire could not penetrate proximal cap despite the support of double lumen catheter (Crusade) or real-time IVUS guidance (Atlantis pro). IVUS from diagonal branch revealed that proximal end of CTO was fully covered with thick calcified fibrous cap. Therefore, 2.5mm cutting balloon (Flextome) was dilated over the proximal cap in expectation of modifying the calcified cap. But, there was no damage in the proximal cap by IVUS finding. Fortunately, after several times dilatation with 3.0mm cutting ballooon up to 12atm, IVUS revealed longitudinal crack created in the middle of proximal cap without dissection. Subsequently, GAIA 3rd wire succeeded in entering to the CTO body through the created crack under real-time IVUS guidance. However, GAIA 3rd wire advanced into the false lumen and failed to enter to the distal true lumen. And then, IVUS-guided parallel wire technique was taken as next strategy, balloon dilatation with 2.0mm balloon over the GAIA 3rd wire was performed to deliver the IVUS catheter. IVUS revealed the GAIA 3rd wire was located in the subintimal plane at the proximal part and extra- vessel at the distal part of the CTO lesion. Owing to integrated interpretation of IVUS and angiography, parallel GAIA 1st wire succeeded in advancing to the intimal plane and reaching to the distal true lumen. Final angiogram showed restoration of antegrade TIMI3 flow of both LAD and diagonal branch after implantation of two DES (Xience Prime).

TCTAP C-110
Successful Retrograde PCI to RCA CTO via Severe Tortuous Epicardial Channel by Using Suoh’s Wire
Haengnam Park
Kansai Medical University, Japan

[Clinical Information]
Patient initials or identifier number: M.T.

[Interventional Management] Procedure step:
1. Retrograde approach
GC: 7F Launche EB3.75
Corssor: GW: Sion → Sion black → XTR → Suoh → UB3
Sion could not advance septal channels
Next, we try to cross the proximal AV channel, but we could not select.
Finally, Sion advanced the distal AV channel, but wire advanced the proximal AV channel due to stretch the tortuous part of collateral channel.
Sion black also advanced only advanced proximal channel, XTR could not stretch the tortuous part.Suoh could advanced into RCA.
2. Antegrade
GC: 8F Launche Salish → ALISH
Corssor: GW: XTA → GAIA 1st → GAIA 2nd
Reverse CART was perfomed by 2.5mm balloon,and wire externalized by Dio support Finally Xience®3.5*38mm implanted