

Case Summary:

Excimer laser ablation and stent implantation under the distal protection of a filter device (Filterap; Nipro, Japan) was very effective to recanalize occluded RCA with massive plaque burden.

TCTAP C-027**Successful Rescue of Stuck Rotablator Burr Entrapment Using Kiwami Straight Catheter (Terumo)**

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[Clinical Information]**Patient initials or identifier number:**

A.O.

Relevant clinical history and physical exam:

A 62-year-old man was referred to our hospital for PCI in the RCA (#4AV) and LCx (#13). Because calcification of these lesions was strong, the use of rotablator was considered. He had a history of drug-eluting stent implantation in the LAD (#6, Xience 3.5 x 18 mm) in April 2012 and in the LAD (#8, Element 2.5 x 20 mm) and RCA (#2, Xience 3.0 x 15 mm) in May 2013.

Relevant test results prior to catheterization:

Electrocardiography showed sinus rhythm and no change in ST-T. Echocardiography showed regional wall motion abnormality of the septum wall.

Relevant catheterization findings:

CAG demonstrated stenosis with severe calcification in the RCA and LCx.

[Interventional Management]**Procedural step:**

Following PCI in the RCA, we performed PCI in the LCx. We selected a 7 Fr. EBU guiding catheter (Medtronic) and advanced a Runthrough Extra Floppy guide wire (Terumo). Although we inflated three sizes of compliant balloons (1.0 x 15 mm, 2.0 x 15 mm, and 1.5 x 15 mm) at the calcified lesion, IVUS showed inadequate debulking. Then we performed debulking with a rotablator RotaLink Plus 1.25 mm (Boston Scientific), which resulted in the rotablator burr stuck in a distal lesion. To rescue the stuck rotablator burr, first, we inserted a 7 Fr. EBU guiding catheter from the left femoral artery and tried to pass the lesion with a Runthrough Extra Floppy guide wire followed by a Finecross GT microcatheter (Terumo) but failed. Second, we used three strong wires (X-treme XT-R guide wire [Asahi Intecc], Gaia First guide wire [Asahi Intecc], and Conquest Pro guide wire [Asahi Intecc]) but failed again. Third, we cut off the drive shaft and sheath of the rotablator, inserted a 5 Fr. Heartrail ST01 straight catheter (Terumo) through the remaining rotablator system, and pushed the catheter tip into the lesion around the burr, which resulted in failure. Fourth, we tried to pull the rotablator burr by using a goose neck snare, which also ended in failure. Eventually, we inserted a 4 Fr. Kiwami straight catheter (Terumo) through the remaining rotablator system and pushed the catheter tip into the lesion around the burr. Simultaneously, we pulled the rotablator and finally succeeded in retrieving the entrapped rotablator burr.

TCTAP C-028**Mechanical Extraction of Massive Intracoronary Thrombus from a Super Dominant Right Coronary Artery in Lung Cancer Patient**

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Inje University Haeundae Paik Hospital, Korea (Republic of)*

[Clinical Information]**Patient initials or identifier number:**

A-S H. 0263114

Relevant clinical history and physical exam:

A 55-year-old woman was brought to the emergency department with severe substernal chest pain for one hour. The pain was associated with shortness of breath and diaphoresis. She had hypertension for 10 years, with no history of diabetes mellitus, hypercholesterolemia, or smoking. She had a stage IV lung cancer receiving the 6th cycles of chemotherapy with pemetrexed and cisplatin.

On physical examination, heart rate was 67beats/min and blood pressure was 95/60 mmHg.

Relevant test results prior to catheterization:

The initial electrocardiography showed sinus rhythm with ST-segment elevation in lead II, III, and aVF. The cardiac markers were elevated: troponin I was 212.65 ng/ml and CK-MB was 522.1ng/ml. Bedside transthoracic echocardiography revealed left ventricular ejection fraction of 35% and hypokinesis in inferior and inferolateral walls of left ventricle.

Relevant catheterization findings:

The left coronary angiography showed minimal atherosclerotic change in the mid segment of left anterior descending artery without visualization of the LCX. There were no collateral flows to the LCX.

The right coronary angiography revealed relatively large right coronary artery (RCA) and total thrombotic occlusion in the mid segment.

[Interventional Management]**Procedural step:**

We thought that the RCA was the culprit vessel, and a 6 Fr Judkins right (JR) guide catheter was engaged to perform percutaneous coronary intervention (PCI) via right radial artery. We were concerned about massive intracoronary thrombosis because under the poor left ventricular systolic function, no-reflow phenomenon or thrombus propagation to the distal coronary artery after revascularization could lead to fatal results. Thrombus aspiration was tried with coronary thrombosuction device (Thrombuster II, Kaneka Medix, Knankawa, Japan), but it was not seem to be effective because of the extremely large thrombus burden.

We decided to extract massive thrombus directly using the 6 Fr JR guide catheter instead of thrombosuction device because the diameter of the right coronary artery was large enough for 6 Fr guide catheter to advance into the lumen. The JR catheter was deeply positioned into the mid segment, and thrombus aspiration was done carefully for several times. After these procedures, all of the system were removed from the sheath and flushed. Remnant thrombus was aspirated using a 5 Fr daughter catheter (Heartrail, Terumo) and the coronary thrombosuction device.

Massive fresh red thrombus was extracted and the final coronary angiography revealed complete recovery of coronary flow and the super-dominant RCA with its posterolateral branches to supply the lateral wall of the left ventricle corresponding of the territory of LCX appeared. The patient received intracoronary abciximab (250µg/kg bolus, 10µg/min for 12hrs) subsequently. Dual antiplatelet therapy including aspirin and clopidogrel, and intravenous unfractionated heparin were continued for 8 days.

At day 8, the repeated coronary angiography was performed. Minimal remnant thrombus was seen in the large RCA but not in the distal branches. Significant luminal stenosis was not observed, and which was confirmed by intravascular ultrasonography (Atlantis SR Pro, Boston Scientific).

TCTAP C-029**Stenting out of Stent**

*Chih Hung Lai, Tse-Min Lu
Shuang Ho Hospital, Taiwan*

[Clinical Information]**Patient initials or identifier number:**

Mr. Tseng, 68 year-old male. Three weeks ago, he received primary PCI due to inferior wall STEMI in other hospital. At that time, the coronary angiography revealed STEMI (culprit vessel: RCA) and CAD with DVD. A bare metal stent (3.0x28 mm) had been put in middle segment of right coronary artery (RCA). This time, he was admitted due to persistent chest tightness and short of breath. We repeat the coronary angiography again.

Relevant clinical history and physical exam:

Three weeks ago, he received primary PCI due to inferior wall STEMI.

Relevant test results prior to catheterization:

At that time, the coronary angiography revealed

LAD-P: CTO

LCX-P: 20% stenosis

RCA-M: AMI

A bare metal stent (3.0x28 mm) had been put in middle segment of right coronary artery (RCA).

This time, he was admitted due to chest tightness and short of breath. We repeat the coronary angiography again.

Relevant catheterization findings:

The angiography showed a stenosis in the middle segment of RCA, just proximal to the previous stent.

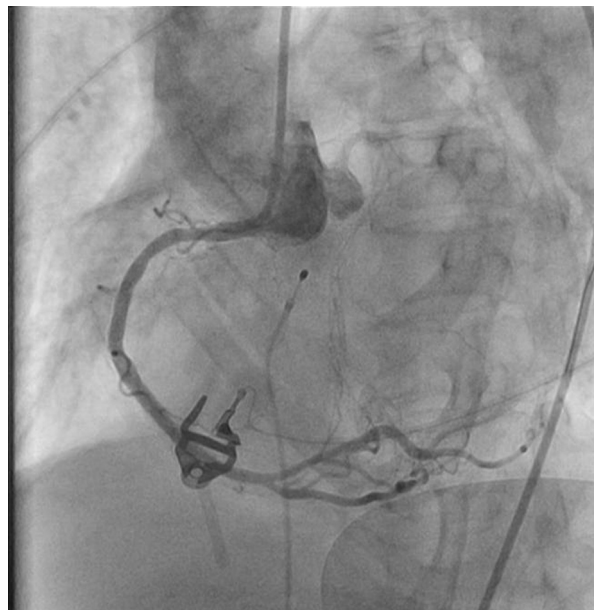


[Interventional Management]**Procedural step:**

The angiography showed a stenosis in the middle segment of RCA, just proximal to the previous stent. (Figure 1)

We decided to direct stenting of proximal to middle segment of RCA (with a little overlapping with previous stent). However, the stent just stened outside the previous stent in the overlapping area. (Figure 2)

We did the rewiring the the overlapping area and dilated the junction with balloons (1.25mm, 2.0mm, 3.5mm sequently). However, no-reflow was noted after dilations. The IVUS was used to check the cause of no-reflow. And it revealed many thrombi near the proximal stent. After thrombolysis, the flow improved to TIMI III flow. (Figure 3)

**Case Summary:****Conclusion:**

- (1) Due to the poor endothelization of a recent stenting, it is easier to wire outside the stent structure. So, carefully wiring, especially in the patient had received PCI recently.
- (2) The previous residual thrombus may be the cause of this no-reflow.
- (3) IVUS is useful in finding the cause of no-reflow.

TCTAP C-030**Successful Management of the Refractory Thrombus in Primary PCI**

Yue Li

The First Hospital of Harbin Medical University, China

[Clinical Information]**Patient initials or identifier number:**

HXH

Relevant clinical history and physical exam:

The patient, a 42-year old male patient, with a long history of heavy smoking, was admitted with acute myocardial infarction of the anterior wall. He did not experience angina on effort or at rest previously.

Physical examination showed normal temperature, pulse 96 beats/min and blood pressure 160/100 mmHg. Auscultation revealed no cardiac murmurs or lung rales.

Relevant test results prior to catheterization:

Electrocardiogram (ECG) showed sinus rhythm and ST elevation in leads V1-V5, and TNT test was positive. Transthoracic echocardiography showed hypokinesis of the anterior wall and left ventricular ejection fraction of 54%.

Relevant catheterization findings:

The angiogram showed total occlusion in the proximal left anterior descending artery (LAD) with heavy thrombus burden, whereas no stenosis in the left circumflex artery (LCX) or right coronary artery (RCA) was found.

[Interventional Management]**Procedural step::**

Left main was engaged with a 6Fr BL 3.0 guiding catheter (Terumo, Japan), and a 0.014" Runthrough NS guidewire (Terumo, Japan) was advanced into the distal LAD. Initially we performed thrombus aspiration several times with Export aspiration catheter (Medtronic, USA) in the proximal LAD, but thrombus burden was remained. Then a 2.5×15mm Ryujiin balloon (Terumo, Japan) was predilated at the proximal LAD lesion with 6 atm, and Export Aspiration catheter aspirated was used again. In the proximal LAD, there was still a large thrombus burden and unable to restore coronary flow. was not restored. Then 'Mother in Child' technique was used to retrieve thrombus. Subsequently, a 5 Fr Heartrail guiding catheter (Terumo, Japan) was introduced through the 6Fr BL3.0 catheter and advanced through the Runthrough NS wire connected with extension wire to the proximal LAD. Then the wire was withdrawn and the 5 Fr guiding catheter was carefully advanced under vacuum (generated by a 20 cc syringe) until flow stopped. A large amount of thrombotic materials was retrieved. Then the angiogram showed that thrombus disappeared and about 40% stenosis was found in the proximal LAD, and thrombolysis in myocardial infarction (TIMI) 3 flow was obtained. So no stent was implanted.