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Delayed PCI in patients with heavy burden of organized thrombus presenting NSTEMI

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A 48-year-old male with no prior medical history presented with exertional chest pain that had persisted for one month. At a local clinic, his blood pressure was markedly elevated at 180/120 mmHg. His ECG showed T wave inversion in the inferior leads and ST-segment depression in the lateral leads. He was referred to our hospital for further evaluation.

The patient was admitted on the same day and underwent coronary angiography the following day. Angiography revealed total thrombotic occlusion in the mid-right coronary artery (RCA), with collateral flow from the septal branches of the LAD and the distal LCX to the PDA and PL branches. An initial attempt to recanalize the RCA failed due to the heavy burden of organized thrombus and the long lesion length.

Following 1 week of anticoagulation therapy, a second coronary angiography was performed. Contrary to expectations, the mid-RCA remained totally occluded with organized thrombus. We proceeded with a CTO-like strategy for revascularization. Using a Fielder XT-A wire supported by a Caravel microcatheter, we successfully advanced the wire into the distal RCA's true lumen. The Fielder XT-A was then exchanged for a workhorse wire, and sequential pre-dilation was performed using balloons ranging from 1.5 to 3.0 mm. However, coronary flow remained sluggish.

Intravascular ultrasound (IVUS) confirmed a large burden of organized thrombus. A Xience Skypoint 3.0×28 mm drug-eluting stent (DES) was deployed at the distal RCA segment with an underlying atherosclerotic lesion. Post-stenting, no-reflow phenomenon was observed. Despite the administration of a glycoprotein IIb/IIIa inhibitor, intravenous nicorandil, and nitrates, there was no improvement in flow. Repeat balloon dilatation with a 3.0×15 mm balloon also failed to restore adequate perfusion.

Subsequent IVUS revealed stent underexpansion. A 4.0×8 mm non-compliant (NC) balloon was used for adjunctive post-dilation, which successfully restored sluggish flow to the distal RCA. The procedure was concluded, and the patient was started on medical therapy including aspirin, a potent P2Y12 inhibitor, and a NOAC for 1 month with a plan for follow-up angiography.

At 1-month follow-up, repeat angiography showed near-complete resolution of the organized thrombus. However, a focal thrombotic stenosis remained proximal to the previously placed stent. A Xience Skypoint 3.5×15 mm DES was implanted, followed by adjunctive dilation with a 4.0×8 mm NC balloon. The procedure was completed successfully with optimal angiographic result.