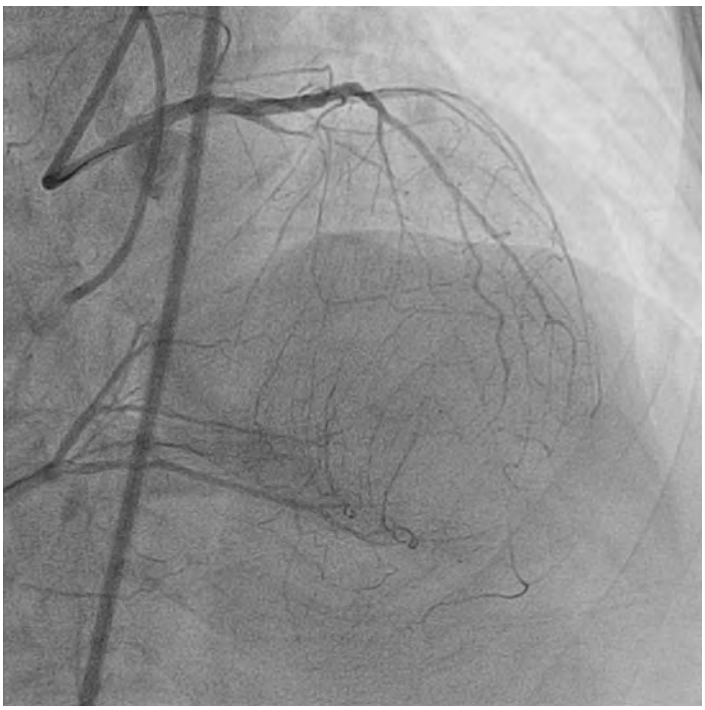
Wire Escalation Strategy Using coraFlex™ in PCI-CTO

CASE HISTORY

A 69-year-old man presented with fatigue and dyspnea on moderate exercise. Echocardiogram showed a left ventricular ejection fraction (LVEF) of 25%. Dual angiography revealed a proximal chronic total occlusion (CTO) in the proximal left anterior descending (LAD) artery, with an ambiguous proximal cap owing to a side branch. The occlusion was ~10mm with mild calcification. Septal collaterals from the right coronary artery (RCA) were also apparent. The J-CTO score was 1.



Baseline angiography

PROCEDURE

Access was obtained via the right radial artery. A 6F JR4 guide catheter was introduced and engaged the RCA. An 8F EBU 4 guide catheter was introduced in the right femoral artery and advanced to the left coronary artery (LCA). Dual angiography was performed. Given the short length of the occlusion, antegrade wiring was initially thought to be sufficient to cross the lesion. A workhorse guidewire and a coraFlex™ microcatheter were positioned in the LAD. The guidewire was exchanged for a Gladius® Mongo® and then a Pilot™ 200, as the wires kept engaging small side branches. After the Pilot™ 200 entered the extraplaque space, parallel wiring was attempted with a Gaia Next® 3 alongside the Pilot™ 200. However, this was unsuccessful and an antegrade dissection and reentry (ADR) wiring strategy was employed.

PHYSICIAN

Lorenzo Azzalini

MD, PhD, MSc, FACC, FSCAI

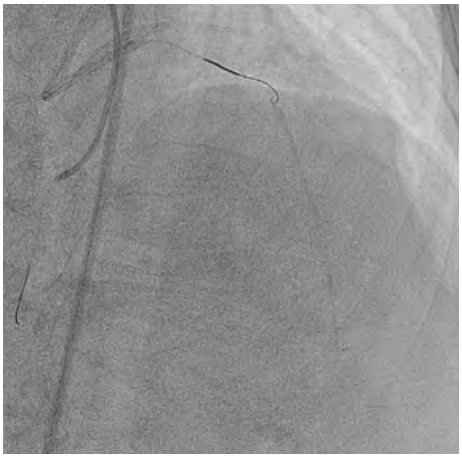
"The low profile of the coraFlex™ microcatheter enables its use with multiple devices in the guide catheter, and it has structural resistance to avoid kinking or damage. In this case, it helped achieve smooth crossing of the CTO."

Dr. Azzalini earned his MD from University of Padua in Italy, as well as a PhD and a MSc in Research Methodology at the Autonomous University of Barcelona in Spain. He completed cardiology training at the Hospital de Sant Pau in Barcelona, Spain, and interventional cardiology fellowship at the Montreal Heart Institute in Canada, and at the Mount Sinai Hospital in New York. Dr. Azzalini is currently Director of Interventional Cardiology Research at University of Washington Medical Center—Montlake.

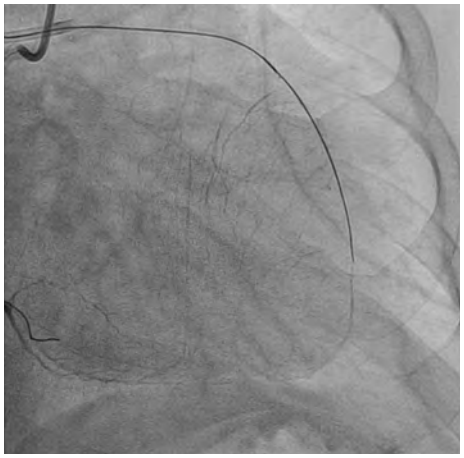
PRODUCTS USED

REFLOW coraFlex™

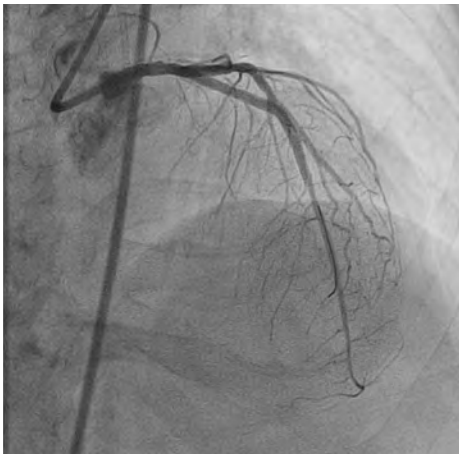
Wire Escalation Strategy Using coraFlex™ in PCI-CTO



Knuckled Gladius Mongo guidewire



Stingray balloon



Final angiography

A knuckled Gladius® Mongo® replaced the Pilot™ 200 guidewire in the coraFlex™ microcatheter and advanced beyond the distal cap of the CTO. A Stingray™ LP Re-entry System was introduced and positioned in the mid LAD. An Astato® XS 20 guidewire was used to reach the true lumen of the distal LAD ("stick and drive" technique). The distal wire position was confirmed by retrograde angiography. The Astato™ XS 20 was exchanged for a workhorse guidewire.

Predilatation of the LAD (distal to proximal) was performed with a 2.5x40mm balloon. Intravascular ultrasound (IVUS) revealed a distal vessel diameter of ~3mm. A 3.0mm noncompliant (NC) balloon was used to further predilate the proximal LAD. Two Onyx Frontier™ stents were implanted in an overlapping fashion: a 3x38mm stent in the mid to distal LAD and a 3.5x12mm stent in the proximal segment. Post-dilatation was performed throughout the LAD with a 3.0mm NC balloon, followed by a 3.5x8mm NC balloon in the proximal segment. IVUS showed good apposition but mild stent underexpansion in the proximal LAD. Additional post-dilatation was performed. Final angiography showed TIMI-3 distal flow, with no significant residual stenosis, perforation or thrombosis.

CASE CONCLUSION

This case highlights the importance of quickly switching to a more suitable technique in the CTO hybrid algorithm to achieve CTO crossing. Antegrade and parallel wiring were not successful, requiring use of ADR. Tools, such as the coraFlex™ microcatheter and Stingray™ balloon, are critical to achieving an efficient and safe procedure. The case was completed in 87 minutes.