

A 37-year-old man with hypertension and a history of smoking presented with Canadian Cardiovascular Society (CCS) class III angina for four months. Electrocardiography demonstrated anterior Q waves, while transthoracic echocardiography revealed global hypokinesia with a left ventricular ejection fraction of 40%.

Coronary angiography demonstrated triple-vessel coronary artery disease with a chronic total occlusion (CTO) of the mid-left anterior descending artery (LAD), a CTO of the left circumflex artery, and a subtotal (99%) stenosis of the mid-right coronary artery (RCA). The distal LAD was supplied by septal collaterals.

A CTO PCI of the LAD was initially attempted using an antegrade wire escalation strategy through a 7F guiding catheter; however, the proximal cap could not be crossed. The strategy was converted to a retrograde approach through a septal-to-septal collateral channel using a Caravel microcatheter. After successful retrograde wiring of the distal cap with a Fielder FC guidewire, the retrograde wire was externalized into the guiding catheter. As the Caravel microcatheter could not cross the CTO segment, a Finecross microcatheter was advanced antegradely into the same guiding catheter, and the Tip-in technique was successfully performed using a ****single guiding catheter****, allowing antegrade advancement into the distal LAD.

Following wire conversion, sequential balloon dilatation was performed, and the LAD was reconstructed with overlapping drug-eluting stents. During the procedure, the patient developed chest pain, and angiography revealed an iatrogenic left main coronary artery dissection, which was immediately treated with drug-eluting stent implantation from the left main to the LAD. Closure of septal collaterals resulted in persistent ischemia, prompting PCI of the critical RCA lesion, restoring TIMI 3 flow and collateral perfusion.

The patient remained hemodynamically stable with an excellent final angiographic result. This case highlights the feasibility of a ****single-guide retrograde Tip-in strategy**** to successfully recanalize a complex LAD CTO after failed antegrade crossing while emphasizing the importance of rapid recognition and management of intraprocedural complications.