

# Are Well-Developed Coronary Collaterals Functionally Sufficient for Chronic Total Occlusion Ischemic Territory Perfusion?

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## OBJECTIVE:

To examine whether the “well-collateralized chronic total occlusion (CTO) territories” are ischemic or not, using fractional flow reserve (FFR) measurement across the CTO segment.

## METHODS AND RESULTS:

Among CTO cases done between May 2008 until May 2014, we selected 19 cases that best showed well-developed coronary collateral channels (CCC) of > 1.5-2mm in size. After crossing CTO segment with dedicated wires, a low profile small balloon dilatation was done only in a way that permits passage of FFR pressure wire while maintaining a severe stenosis into CTO segment. After successful recanalization of CTO lesion, FFR measurement was then repeated and comparison between pre-and post- FFR was performed.

Among those 19 patients, 14 were males (73.7%), 5 were females (26.3%). The mean age was 66.8±9.3. Target CTO lesion was LAD in 13 patients (68.4%) and RCA in 6 patients (31.6%). The CTO lesion was approached antegradely in 16 patients (84.2%) and retrogradely in 3 patients (15.8%). Pre-stenting measurement of FFR showed mean FFR value of 0.55±0.09 with a minimum value of 0.38 and the maximum value of 0.69. Post-stenting FFR showed mean FFR value of 0.89±0.077 with a minimum value of 0.74 and a maximum value of 1.01 ( $P < 0.001$ ).

## CONCLUSIONS:

Our study showed that, even the well-developed coronary collateral channels do not provide sufficient perfusion for CTO ischemic territory, showing that may be all CTO cases do benefit from revascularization.

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