

Successful Directional Coronary Atherectomy by a Bilateral Transradial Approach for a Lesion in the Proximal Left Anterior Descending Artery

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Background: Directional coronary atherectomy (DCA) has traditionally required an 8-Fr system via the femoral approach. However, the introduction of the ATHEROCUT® Mk2 enables the use of a 7-Fr system, allowing for a transradial approach and potentially reducing access-site complications. We report a case in which DCA was safely and effectively performed using a bilateral radial artery approach with a double-guiding system.

Case Presentation: A 60-year-old man with a history of hypertension, type 2 diabetes mellitus, and chronic kidney disease was referred for coronary intervention due to severe stenosis in the left anterior descending artery (LAD). Intravascular ultrasound demonstrated severe stenosis extending from the proximal to the mid-LAD with a fibrous plaque involving the left main trunk (LMT) to LAD. To avoid jailing of the left circumflex artery by stent implantation, DCA was performed to debulk the plaque from the LMT to the LAD, followed by drug-coated balloon (DCB) inflation. During the DCA procedure, a bilateral transradial approach with a double-guiding system was employed to visualize the coronary arteries. The mid-LAD lesion was treated with pre-dilatation using a cutting balloon, followed by drug-eluting stent implantation. The procedure was completed without complications. Final angiography demonstrated favorable results with no residual stenosis or flow limitation.

Conclusion: DCA via a bilateral transradial approach is a safe and effective strategy for complex coronary lesions, particularly those involving left main trunk bifurcation.