Negotiating a Calcified Angulated Circumflex Artery for Percutaneous Coronary Intervention Using the Venture™ Catheter to Enable Wire Placement

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INTRODUCTION: Dr. Mauricio Cohen is the Associate Cath Lab Director of Interventional Cardiology and Dr. Robert Kelly is the Instructor in Clinical Medicine and an Interventional Cardiologist at the University of North Carolina Hospital in Chapel Hill, North Carolina, USA.

PATIENT HISTORY: A 67-year-old male, with a history of ischemic cardiomyopathy (ejection fraction 15%) and previous coronary artery bypass surgery was referred for cardiac catheterization. The bypass grafts included a left internal mammary (LIMA) graft to the left anterior descending, a saphenous vein graft to the first diagonal artery, a vein graft to the ramus, and a vein graft to the obtuse marginal branch. The patient was a type II diabetic, with hypertension and hyperlipidemia and was experiencing increasing angina on exertion. A nuclear stress test showed lateral wall reversible ischemia.

CARDIAC CATHETERIZATION: The saphenous vein graft to the obtuse marginal was found to be 100% occluded, but the remainder of the anatomy was unchanged. Angiography showed extensive circumflex marginal disease with a calcified, severely angulated proximal vessel (Figure 1). A 6 French Extra Back-Up 3.75 guide catheter was selectively engaged in the left coronary artery. Because of the unfavorable angulation, multiple attempts to advance 0.014" guidewires were unsuccessful.

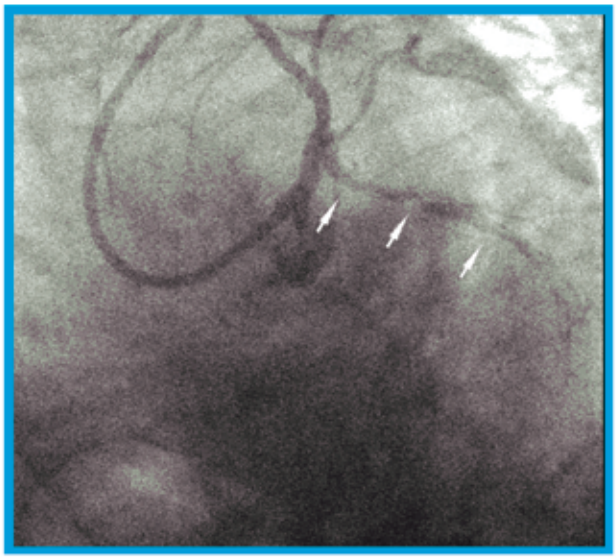

Figure 1
LAO Caudal view of diffusely diseased circumflex artery.

The Venture Wire Control Catheter was then advanced over a 300cm guidewire to the take-off of the circumflex artery. A combination of catheter rotation and tip deflection were employed with the guidewire just inside the Venture Catheter tip (Figure 2). Once the Venture Catheter was positioned at the proximal end of the circumflex, the guidewire was successfully advanced without difficulty beyond the culprit lesions (Figure 3).

Lesions were first pre-dilated with a 2.25 x 20mm rapid exchange Maverick® balloon catheter, and then with a 2.75 x 15mm Maverick balloon catheter. Three 2.5mm TAXUS® stents of varying lengths were deployed in the vessel. A good angiographic result with TIMI 3 flow was obtained (Figure 4). Minimal residual disease was seen in the proximal area of the vessel where it proved impossible to advance an 8mm stent into position.

CONCLUSION: The Venture Catheter enabled access to a very difficult-to-cannulate circumflex marginal artery, which was severely calcified and angulated, and it facilitated successful advancement of the guidewire across the target lesions. This device is a useful addition to the inventory of catheterization laboratories undertaking challenging interventional procedures.

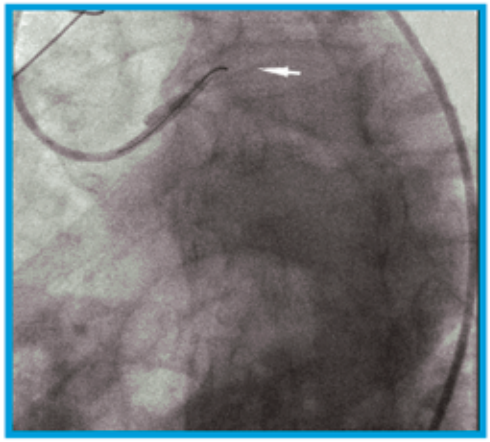

Figure 2
The Venture Catheter is positioned at the take-off of the circumflex artery to facilitate guidewire advancement.

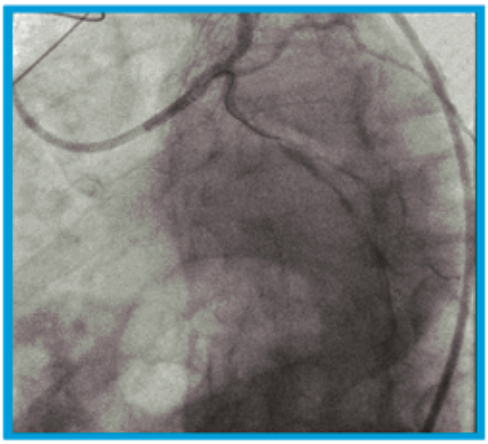

Figure 3
The guidwire is advanced through the Venture Catheter and across the lesions in the circumflex.

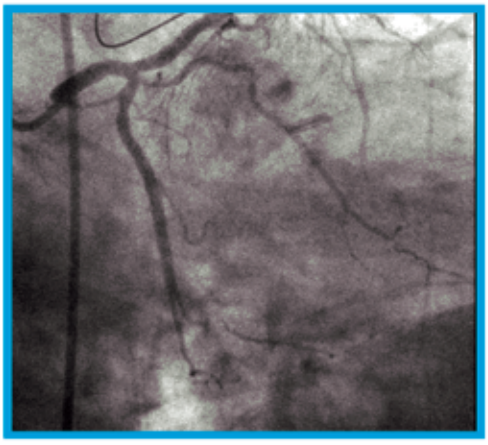

Figure 4
Final angiographic result following balloon dilation and placement of three drug-eluting stents.

Rx Only
Brief Summary: Prior to using these devices, please review the Instructions for Use for a complete listing of indications, contraindications, warnings, precautions, potential adverse events and directions for use.

Results from case studies are not predictive of results in other cases. Results in other cases may vary.

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