CASE REPORT: New Way of Crossing in a Challenging Bifurcation Case using the Glider Balloon Catheter

A case-based discussion of the use of Glider™ Balloon Catheter in challenging anatomy.

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On September 29th, 2009, a 63 year old male presented complaining of chest pain.

- Stress testing indicated a reversible anterio-lateral ischemia.
- The patient had a history of stable angina and an elective PCI with a stent implantation in the proximal LAD on November 2008.
- Patient underwent angiogram on the same day at Vivantes Klinikum Friedrichshlain (Berlin, Germany). There was no significant in-stent restenosis of the LAD, but the first diagonal branch had a high grade de novo stenosis (see figure 1).

Vascular access was achieved through femoral access using a 6F support catheter. The first diagonal branch was wired through stent struts using a Floppy Extra Support wire (Abbott) with minor difficulty (Figure 2).

A 2.5x12mm Maverick balloon catheter (Boston Scientific) was initially selected to dilate the side branch ostium. However the catheter was unable to cross into the D1 branch.

A smaller balloon catheter with better crossing profile (1.5x12mm Apex Flex, Boston Scientific) was then used to attempt to cross, but also encountered difficulty.

To reduce the angulation of the side branch take-off, a second extra support guide wire (buddy wire) was placed into the D1 in the hope that it would assist with the crossing. Further attempts to cross with the Apex were unsuccessful.

Considering the recurrent angina and large amount of myocardium affected, restoring the diagonal branch was felt to be critical for this patient. As a last resort, the Glider™ balloon catheter (TriReme Medical) was used to cross through stent struts and tight lesions. The Glider™ has a torqueable shaft in combination with a skived tip, which allows more control in navigating through stent struts and sharp take-off angles. At the time I only had available a 3.0x4.0mm Glider™ which was used for this case. At first, the Glider™ encountered resistance at the D1 ostium. The catheter was then pulled back slightly, rotated and advanced. It successfully crossed to the D1 (Figure 3).
Two inflations in the D1 branch distal to the stent and one final inflation (half in the stent and half in the side branch) were performed (Figure 4).

The final angiographic results showed satisfactory restoration of D1 branch flow, without any need for additional treatment (Figure 5).

Comments
Difficulties in crossing through stent struts sometimes occur during revascularization procedures. In this particular patient, the combination of a culprit lesion with severe restenosis at the D1 ostium and an unfavorable take-off angle resulted in a challenging case for crossing with available balloons techniques. Several attempts with the best catheters in the category (Maverick and Apex Flex) were unsuccessful. The Glider™ catheter was able to cross with ease in this challenging situation. The ability to torque the Glider™ balloon catheter and steer the beveled tip gives the operator another dimension of control when encountering stent struts. Without the Glider™, this patient would have been referred to surgery. Since I started using the Glider™, it has bailed out several other cases with various scenarios in my practice. In my view, this is an essential product to have available in your tool box.