360 Degrees Out of Trouble
A Novel Wiring Technique Required in Management of Acute Occlusion of a Giant Coronary Aneurysm

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Giant coronary aneurysms in adults are rare (1). We describe the novel management of acute myocardial infarction caused by thrombotic occlusion of a proximal circumflex giant coronary aneurysm. A 360° loop of balloon/guidewire assembly within the aneurysm was required for successful intervention.

A 68-year-old white woman presented with an acute inferolateral myocardial infarction. Emergent angiography demonstrated thrombotic occlusion of a proximal circumflex giant aneurysm (Fig. 1). Extensive efforts ensued—all unsuccessful—to wire the occluded circumflex (Fig. 2). Dr. Myears used an over-the-wire 2.5/6 mm balloon for support and had to make a 360° loop with the guidewire/balloon assembly for sufficient backup to cross the obstructed outlet (Fig. 3). A PT2 guidewire (Boston Scientific, Maple Grove, Minnesota) sprang through this lesion into the distal vessel (Fig. 4). A Pronto aspiration catheter (Vascular Solutions, Minneapolis, Minnesota) surprisingly tracked the 360° loop, and a marked amount of thrombus was extracted. Dr. Myears was able to deloop the assembly, and additional thrombus was extracted. Despite therapeutic anticoagulation and tirofiban, repetitive thrombosis of the aneurysm occurred (Fig. 5).

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Dr. Parvathaneni felt that the risk was too great for emergent bypass, and thus, 3.0/19 mm and 4.5/12 mm overlapping Jomed Graftmaster stents (Jomed International, Helsingborg, Sweden) were deployed (during cardiopulmonary resuscitation) (Fig. 6). This led to an excellent result with trapped contrast.
outlining the external margins of the stents and the aneurysm. Her troponin peaked at 406 μg/ml. Her left ventricular ejection fraction was 40% (Fig. 7, Online Video 1). Her recovery was prolonged. Gratifyingly, her ejection fraction has normalized by echocardiogram, and she remains angina free and fully active 12 months after the procedure.

Giant coronary aneurysm management can be controversial. Some have felt that surgery is clearly indicated because of the possibility of progressive enlargement, thrombosis, or rupture (2,3). More recently, covered coronary stenting has played a role in treatment (4). This case demonstrates a new technique for crossing the thrombosed outlet of a giant coronary aneurysm. This is the first report of the use of an intraluminal 360° instrumentation loop to cross an occlusion.

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REFERENCES


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APPENDIX For the supplemental video, please see the online version of this paper.