Coiling a Type II Endoleak With a 2-RO, 155-cm Direxion™ Microcatheter
BY YING WEI LUM, MD

CASE DESCRIPTION AND DISCUSSION
A patient presented with a type II endoleak with a long and tortuous feeding vessel, which we believed to be the inferior mesenteric artery (Figures 1 and 2). After we initially gained access with a SIM1 diagnostic catheter and advanced more distally with a 0.021-inch (0.53-mm), preshaped, 2-RO-tip Direxion™ Microcatheter, we ran out of length because the 100-cm SIM1 catheter would not allow us to reach the target. We switched out the entire system, using only a 300-cm-long, 0.014-inch (0.36-mm) Fathom™ Guidewire. The Fathom™-14 Guidewire provided plenty of support for the exchange, and we did not need to open an additional device such as a long sheath. We advanced a longer, 4-F (1.33-mm) nontapered, angled diagnostic catheter into the inferior mesenteric artery and then reinserted a 155-cm Direxion™ Microcatheter, one of the longest microcatheters on the market. We needed every last centimeter of the 155-cm length, as we used the Direxion™-Fathom™ combination to access the target endoleak site and prepare for coil embolization (Figure 3).

We deployed six Interlock™-18 Coils precisely into the aneurysm sac, with help from the two radiopaque markers on the Direxion™ Microcatheter, and left the last coil to trail out into the feeding vessel as an anchor (Figures 4 and 5). To keep cost in mind, we finished the embolization with a few small VortX® Diamond 0.018-inch (0.46-mm) pushable coils to finish packing the coil nest.

The flow to the endoleak site drastically diminished (Figures 6–8), and we feel strongly that the Dacron fibers on the Interlock™-18 Coils will continue to thrombose and create a complete occlusion.
CAUTION: Federal law (USA) restricts this device to sale by or on the order of a physician. Rx only. Prior to use, please see the complete “Directions for Use” for more information on Indications, Contraindications, Warnings, Precautions, Adverse Events, and Operator’s Instructions.

INTENDED USE/INDICATIONS FOR USE: The Direxion and Direxion HI-FLO Torqueable Microcatheters are intended for peripheral vascular use. The pre-loaded Fathom and Transend Guidewires can be used to selectively introduce and position the microcatheter in the peripheral vasculature. The microcatheter can be used for controlled and selective infusion of diagnostic, embolic, or therapeutic materials into the vessel. CONTRAINDICATIONS: none known.

WARNINGS:
• Never advance or withdraw an intravascular device against resistance until the cause of resistance is determined by fluoroscopy. Movement of the microcatheter or guidewire against resistance may result in damage or separation of the microcatheter or guidewire tip, or vessel perforation. • This Direxion Microcatheter family is not intended for use in the coronary vasculature or neurovasculature. • The Direxion HI-FLO Microcatheter is not designed for the delivery of embolic coils. • Use of excessive force to manipulate the microcatheter against resistance can cause a fracture in the nitinol shaft. Take care not to overtorque the microcatheter, and to relieve any tension before withdrawing by rotating the microcatheter in the opposite direction. PRECAUTIONS: This device should be used only by physicians thoroughly trained in percutaneous, intravascular techniques and procedures. Do not introduce the microcatheter without guidewire support as this may cause damage to the proximal shaft of the catheter. Because the microcatheter may be advanced into narrow sub-selective vasculature, repeatedly assure that the microcatheter has not been advanced so far as to interfere with its removal. ADVERSE EVENTS: The Adverse Events include, but are not limited to: • Allergic reaction • Death • Embolism • Hemorrhage/Hematoma • Infection • Pseudaneurysm • Stroke • Vascular thrombosis • Vessel occlusion • Vessel spasm • Vessel trauma (dissection, perforation, rupture)

RENEGADE™ HI-FLO MICROCATHERET
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INTENDED USE/INDICATIONS FOR USE: The Renegade STC 18 Microcatheter, Renegade Fiber Braided Microcatheter, and the Renegade HI-FLO Microcatheter are intended for peripheral vascular use. The microcatheter can be coaxially tracked over a steerable guidewire in order to access distal, tortuous vasculature. Once the sub-selective region has been accessed, the microcatheter can be used for the controlled and selective infusion of diagnostic, embolic, or therapeutic materials into vessels. Diagnostic, embolic, therapeutic agents to be used in accordance with specifications outlined by the manufacturer. CONTRAINDICATIONS: None known. WARNING: The Renegade STC 18 Microcatheter, Renegade Fiber Braided Microcatheter, and the Renegade HI-FLO Microcatheter are not intended for use in the coronary vasculature or the neurovasculature. PRECAUTIONS: This device should be used only by physicians thoroughly trained in percutaneous, intravascular techniques and procedures. Never advance or withdraw an intravascular device against resistance until the cause of the resistance is determined by fluoroscopy. Movement of the microcatheter or guidewire against resistance may result in separation of the microcatheter or guidewire tip, damage to the microcatheter or guidewire tip, or vessel perforation. Because the microcatheter may be advanced into narrow sub-selective vasculature, repeatedly assure that the microcatheter has not been advanced so far as to interfere with its removal. ADVERSE EVENTS: The Adverse Events include, but are not limited to: • Vessel trauma • Embolism • Hemorrhage/Hematoma • Vasospasm • Infection • Air embolism • Allergic reaction

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