Boston Scientific
Advancing science for life™

CASE STUDY

Share Your Direxion Story

Embolization for Chest Wall Hemorrhage

Brian S. Geller, MD and Chris Stephens, MD – Gainesville, Florida

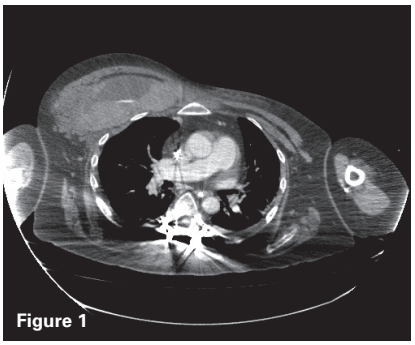


Figure 1

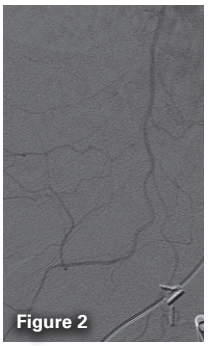


Figure 2

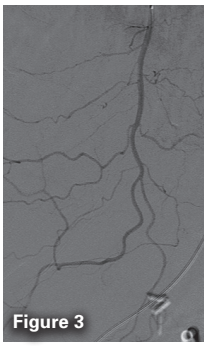


Figure 3

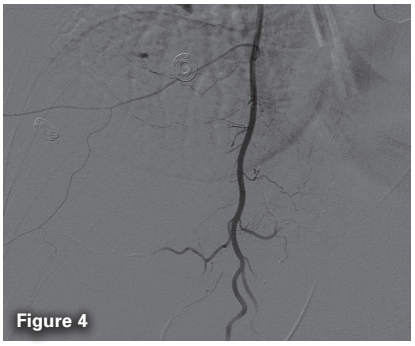


Figure 4

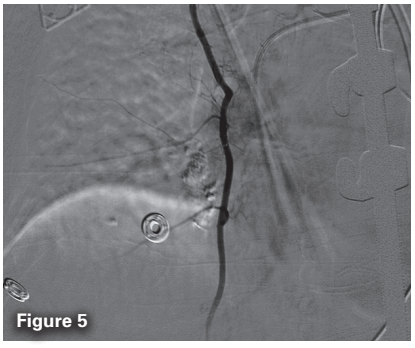


Figure 5

A 58-year-old woman was admitted to the hospital for sacral wound debridement. The patient had a history of hypercoagulability and was on anticoagulation medication before and after surgery. She presented to the interventional radiology department for treatment of a spontaneous chest wall hemorrhage several weeks after her surgery. After using standard techniques to access the right common femoral artery, a 5 F sheath was placed. Subsequently, a VERT catheter and a hydrophilic guidewire were used to cannulate the right axillary artery. An angiogram failed to show the source of bleeding (Figure 1).

The VERT catheter was retracted and, using a 0.021 inch Direxion Torqueable Microcatheter and Fathom 16 Guidewire, the thyrocervical trunk was cannulated. The following angiogram result was also negative. The VERT catheter was repositioned proximal to the internal mammary artery. The Direxion Microcatheter and Fathom-16 Guidewire were used to cannulate the right internal mammary artery. The angiogram showed a questionable blush (Figure 2).

> **“By starting with the 0.021 inch Direxion, this reduced overall procedure time and equipment cost.”**

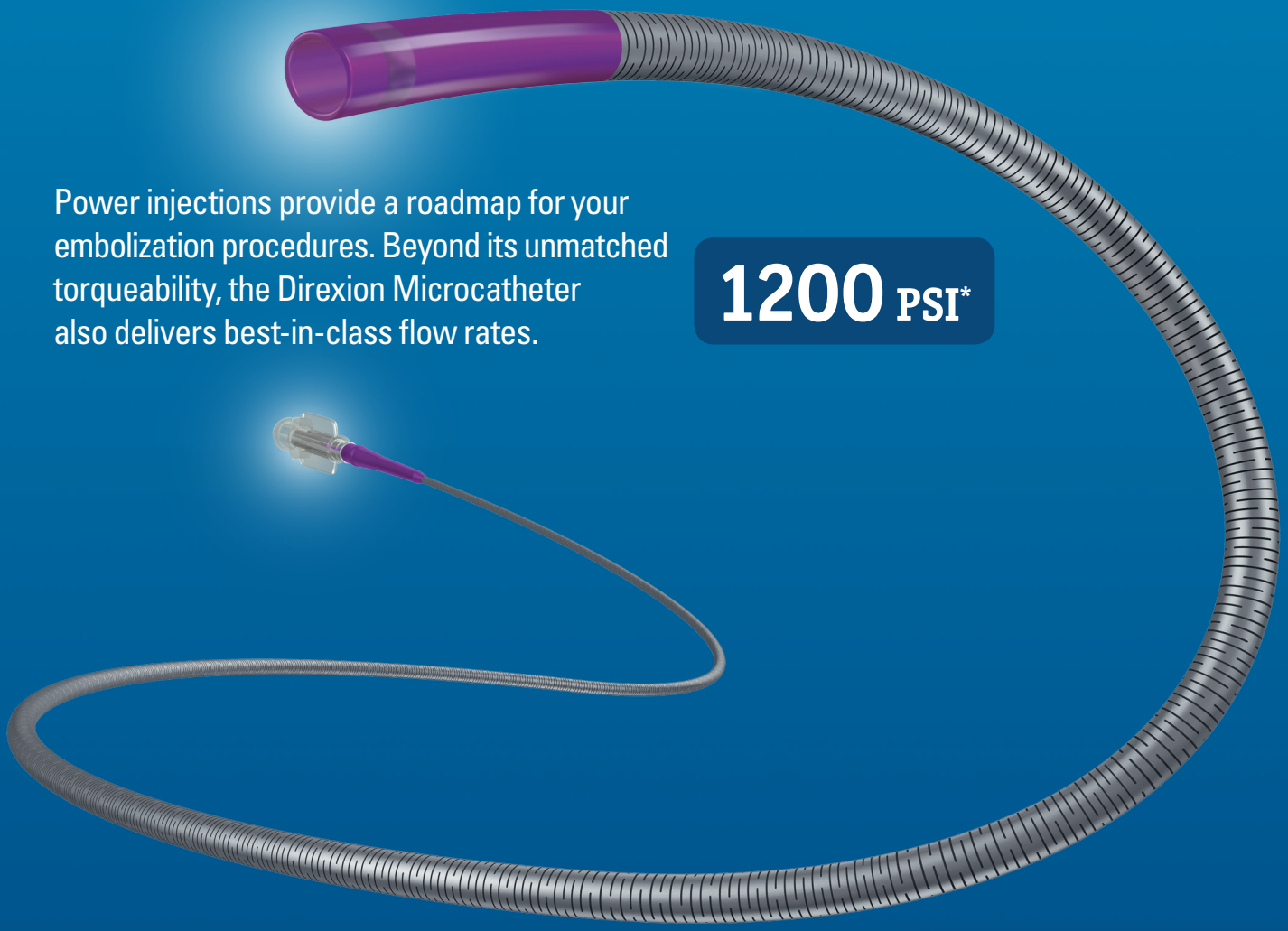
The Direxion Microcatheter was advanced below the level of the diaphragm. The angiogram showed active hemorrhage from a perforator vessel (Figure 3). Gelfoam slurry was instilled through the Direxion Microcatheter. A follow-up angiogram showed no further hemorrhage from that artery; however, two additional vessels were bleeding (Figure 4), which also responded well to gelfoam (Figure 5).

Based on the CT scan, it was originally thought that the treatment of this hemorrhage would require coil embolization; therefore, a 0.021 inch microcatheter would be required. I also thought that we would need higher flow rates to visualize the area of hemorrhage. **Normally, this would require starting with a 0.027 inch microcatheter and then exchanging for a 0.021 inch microcatheter for coil placement. By starting with the 0.021 inch Direxion Microcatheter, this reduced overall procedure time and equipment cost.**

Boston Scientific
Advancing science for life™

DIREXION™ Torqueable Microcatheter

CONTROL THE FLOW



Power injections provide a roadmap for your embolization procedures. Beyond its unmatched torqueability, the Direxion Microcatheter also delivers best-in-class flow rates.

1200 PSI*

Share Your Direxion Story

www.bostonscientific.com/Direxion

*1200 psi = 8,274 kPa

DIREXION™ DIREXION HI-FLO™

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 over-torque the microcatheter, and to relieve any tension before withdrawal 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 • Pseudoaneurysm • Stroke • Vascular thrombosis • Vessel occlusion • Vessel spasm • Vessel trauma (dissection, perforation, rupture) **REV AB**

Indications, contraindications, warnings and instructions for use can be found in the product labeling supplied with each device. Information for the use only in countries with applicable health authority product registrations. This material is not intended for use or distribution in France.