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Embolization of a Pancreaticoduodenal Pseudoaneurysm Associated With Median Arcuate Ligament Syndrome

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CASE PRESENTATION

A 45-year-old woman with no significant medical history presented to our institution with acute upper abdominal pain. On the initial presentation, her hemoglobin level was 7.5 g/dL.

Contrast-enhanced multidetector CT was performed (Figure 1). In the arterial phase, a 3-mm pseudoaneurysm of the inferior pancreaticoduodenal artery was detected, as well as stenosis at the point where the aorta leads into the celiac artery.

PROCEDURE DESCRIPTION

The patient was transferred to the angiography suite for coil embolization; emergency angiography confirmed the presence of the pseudoaneurysm (Figure 2).

Selective arterial embolization via a femoral approach was performed to treat the vascular lesion. The inferior pancreaticoduodenal artery was embolized with a 2- X 20-mm Interlock™-18 Fibered IDC Occlusion System through the superior mesenteric artery.

Digital subtraction angiography demonstrated incomplete occlusion of the pseudoaneurysm due to a retrograde flow to the celiac axis, by thin and twisting arterial branches (Figure 3). Then, double catheterization of the pseudoaneurysm, from both the cranial access (gastroduodenal artery and superior pancreaticoduodenal artery) and the caudal access (inferior pancreaticoduodenal artery) was performed by using 2.4-F torqueable Bern-shape Direxion™ Microcatheter.

Finally, a coil embolization of all the inflow vessels was achieved using the Interlock™ Fibered IDC Occlusion System.

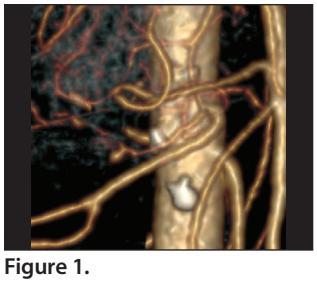

Figure 1.

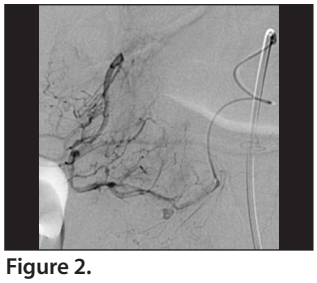

Figure 2.

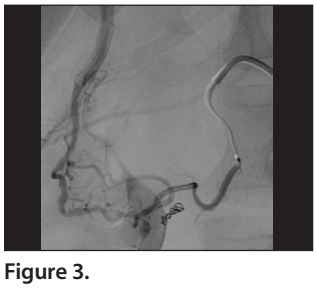

Figure 3.

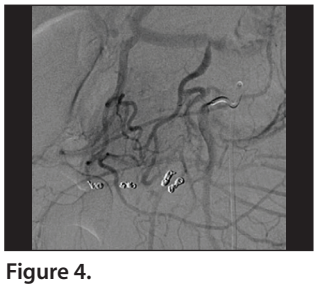

Figure 4.

FOLLOW-UP AND DISCUSSION

Final angiography demonstrated complete devascularization of the pseudoaneurysm (Figure 4). With the agreement of the vascular surgeons it was decided to surgically treat the celiac artery stenosis. The primary objective was to reduce the arterial inflow to the pancreaticoduodenal arch. Thanks to the trackability and flexibility of the torqueable Bern-shape Direxion, we could catheterize these tortuous and small arterial vessels. ■

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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).

Fibered IDC
Interlock Fibered IDC Occlusion System
IDC Interlocking Detachable Coil

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INTENDED USE/INDICATIONS FOR USE

The Interlock IDC Occlusion System is a modified interlocking detachable coil. The Interlock IDC Occlusion Systems are indicated for obstructing or reducing blood flow in the peripheral vasculature during embolization procedures. These devices are not intended for neurovascular use.

CONTRAINDICATIONS

None known.

PRECAUTIONS

Do not attempt to use the Interlock - 35 Fibered IDC Occlusion System with a soft-walled delivery catheter.
Do not advance the Interlock IDC Occlusion System if it becomes lodged within the catheter. Determine the cause of the resistance and replace the catheter and coil if necessary.

ADVERSE EVENTS

The complications that may result from a peripheral embolization procedure include, but are not limited to: complications related to catheterization (e.g., hematoma at the site of entry, clot formation at the tip of the catheter and subsequent dislodgement, nerve and vessel dissection or perforation, etc.), pain, hemorrhage, infection necessitating medical intervention, foreign body reactions necessitating medical intervention, emboli, ischemia, vasospasm, tissue necrosis, undesirable clot formation of the vasculature, recanalization, death, temporary neurological deficit.

Coils 18-Vortx Dia Strt Fig8 MultiLp CH

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INTENDED USE/INDICATIONS FOR USE

Boston Scientific's 0.018 Fibered Platinum Coils are intended for arterial and venous embolizations in the peripheral vasculature.
The Coil Pusher-16 is intended to be used in conjunction with a microcatheter to deliver and deploy 0.018 pushable occlusion coils.

CONTRAINDICATIONS

None known.

PRECAUTIONS

- The long-term effect of this product on extravascular tissues has not been established, so care should be taken to retain this device in the intravascular space.
- Do not advance the coil with force if the coil becomes lodged within the microcatheter. Determine the cause of resistance and replace the microcatheter and the coil when necessary.
- Replace the microcatheter if increased resistance is noted during coil delivery.

ADVERSE EVENTS

The complications that may result from a peripheral embolization procedure include, but are not limited to: complications related to catheterization (e.g., hematoma at the site of entry, vessel injury, etc.), death, emboli, foreign body re actions necessitating medical intervention, hemorrhage, infection necessitating medical intervention, ischemia, pain, recanalization, temporary neurological deficit, tissue necrosis,