

Penumbra Coil 400™

Physician Presentation



Procedural and operative techniques and considerations are illustrative examples from physician experience. Physicians' treatment and technique decisions will vary based on their medical judgment. Individual results may vary depending on patient-specific attributes and other factors. Product availability varies by country. Prior to use, please refer to the Instructions for Use for complete product indications, contraindications, warnings, precautions, potential adverse events, and detailed instructions for use. Please contact your local Penumbra representative for more information.

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Penumbra Coil 400

Penumbra has taken the advanced engineering of SMART COIL™ and used it to create the new range of large volume coils, specifically designed for large and giant aneurysms, fistulas, and vessel sacrifice.

Key Features:

- Large Volume Advantage
- Stretch-Resistant Ultra HD Fiber
- Instant Reliable Mechanical Detachment



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Clinical Benefits of Large Volume Coils

- **40% Reduction** in Procedure Duration^a
- **32% Reduction** in Fluoroscopy Time^a
- **36% Reduction** in treatment cost compared to .010 coils^a



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a. Berge J, Gariel F, Marnat G, Dousset V. PC400 volumetric coils minimize radiation, reduce procedure time and optimize packing density during endovascular treatment in medium sized cerebral aneurysms. J Neuroradiol. 2016 Feb;43(1):37–42. doi:10.1016/j.neurad.2015.10.002.

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Large Volume Advantage

Target® XL 360

One 12 mm × 45 cm coil



4.9% Packing Density^b

PC400™ Complex Standard

One 12 mm × 45 cm coil



10.1% Packing Density^b

b. Calculated using total volume of aneurysm (904.78 mm³), which provides a cumulative volume of 44.7 mm³ for Target XL 360 Soft coil and a cumulative volume of 91.2 mm³ for Penumbra Coil 400 Standard. Devices shown at same scale. Photographs taken by and on file at Penumbra, Inc. Bench test results may not be indicative of clinical performance.

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Large Volume Advantage

.020" (.508 mm) coil designed to be delivered through .025 –.027" (.635 – .686 mm) microcatheters

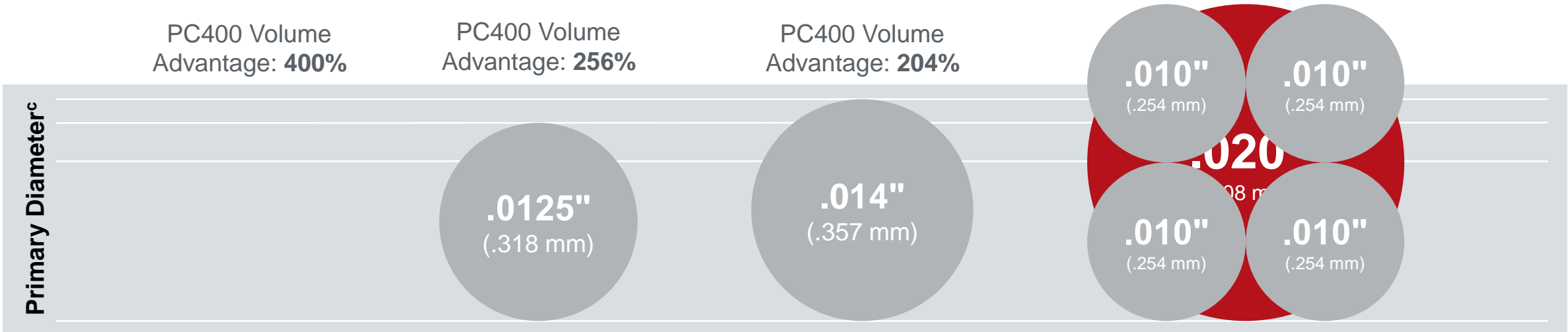
- PX SLIM[†] or minimum .025" (.635 mm) ID microcatheter

Potential cost savings with up to 400% volume advantage compared to 10-System coils^c

- Long lengths up to 60 cm can lead to fewer devices used

May lead to shorter procedure time

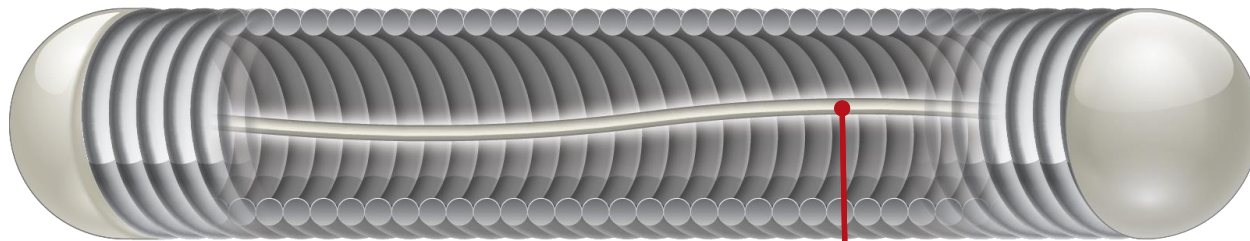
- May result in less exposure to radiation



c. Data on file at Penumbra, Inc. Based on cylindrical volume calculation ($V=\pi r^2h$) of .020" coil vs. .010" coil.

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Stretch-Resistant Ultra HD Fiber



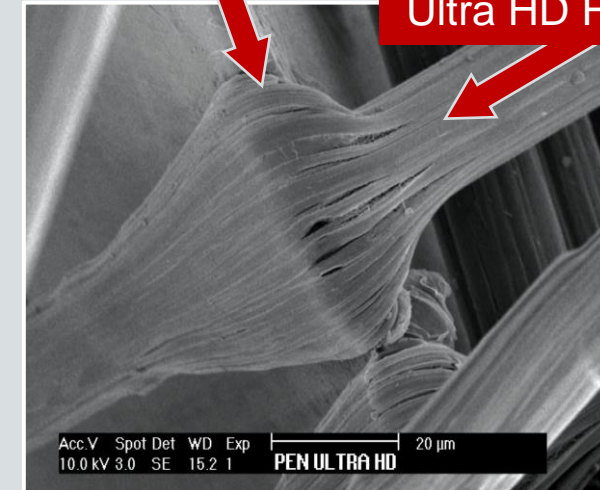
Ultra HD Fiber

- 3 × stronger and more flexible than polypropylene, a common stretch-resistant material

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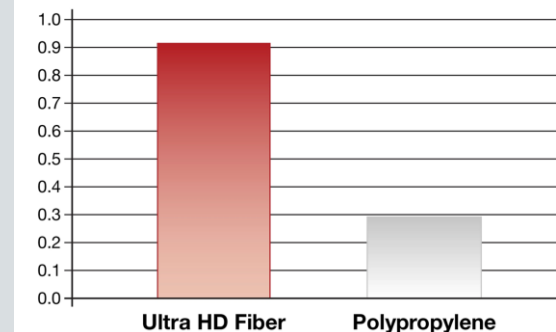
Razor Blade Edge

Ultra HD Fiber



Photograph taken by and on file at Penumbra, Inc.

Breaking Force (lbf)



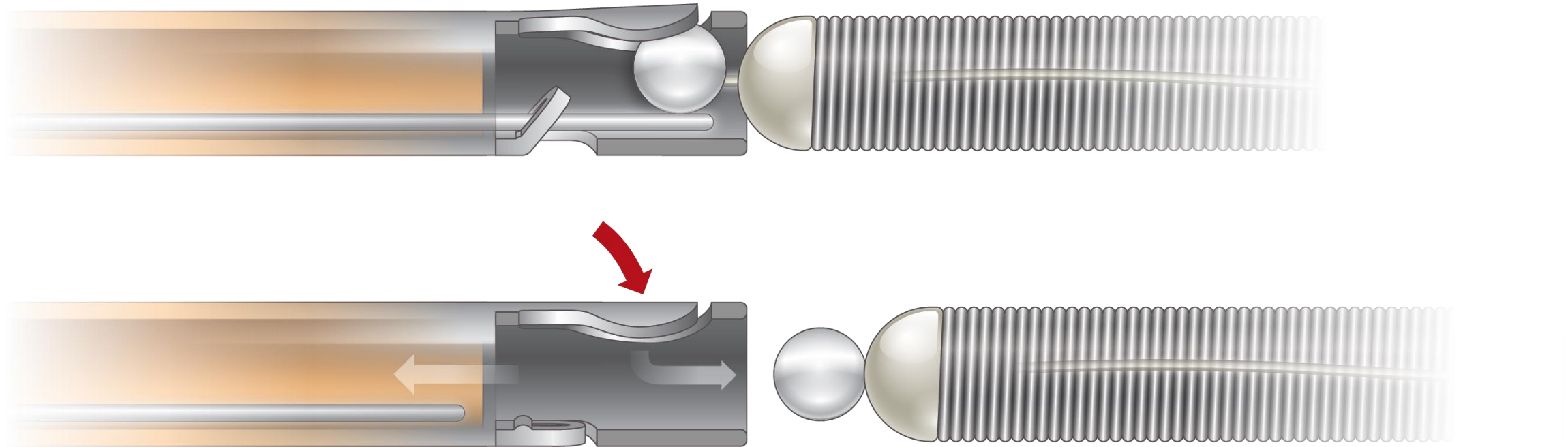
Tests performed and data on file at Penumbra, Inc. Bench test results may not be indicative of clinical performance.

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Instant Reliable Mechanical Detachment

- Micromachined coil release tip



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Instant Reliable Mechanical Detachment



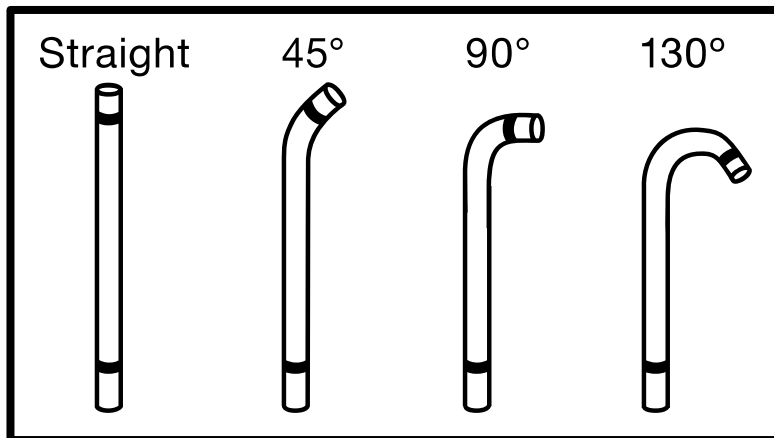
Video taken by and on file with Penumbra, Inc. Bench test results may not be indicative of clinical performance.

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PX SLIM Delivery Microcatheter

- Specifically designed to deliver PC400, POD400™, and PAC40™ coils
- .025" (.635 mm) ID
- 150 cm length
- 2.6 F (.87 mm) distal OD / 2.95 F (.98 mm) proximal OD



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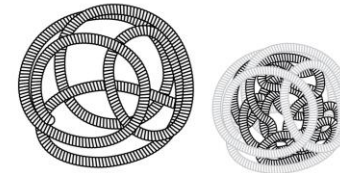
Procedural and operative techniques are illustrative examples from physician experience. Physicians' treatment and technique decisions will vary based on their medical judgment. Individual results may vary depending on patient-specific attributes and other factors. Product availability varies by country. Prior to use, please refer to the Instructions for Use for complete product indications, contraindications, warnings, precautions, potential adverse events, and detailed instructions for use. Please contact your local Penumbra representative for more information.

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Complete embolisation system
specifically designed for large
and giant aneurysms, fistulas,
and vessel sacrifice

Penumbra Coil 400

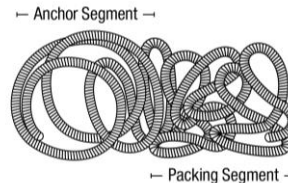
Frame and Fill Aneurysms and Vessels



Versatile Coils with Big Advantages
32 mm × 60 cm max size

POD400

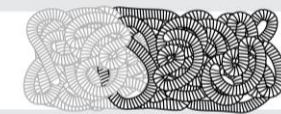
Vessel Sacrifice



Designed with Precise Anchoring Segment
3-6 mm sizes

PAC400

Pack Behind POD400 or PC400 Backstop







Designed for Dense Occlusion
7-60 cm lengths

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Ordering Information

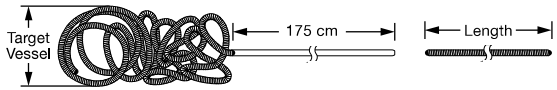
Frame			Fill			Fill / Finish					
COMPLEX STANDARD			COMPLEX SOFT			COMPLEX EXTRA SOFT			CURVE EXTRA SOFT		
											
Catalog Number	Secondary Diameter (mm)	Length (cm)	Catalog Number	Secondary Diameter (mm)	Length (cm)	Catalog Number	Secondary Diameter (mm)	Length (cm)	Catalog Number	Secondary Diameter (mm)	Length (cm)
4002C0720	7	20	4002C1348	13	48	4004C0306	3	6	4006C0202	2	1
4002C0820	8	20	4002C1450	14	50	4004C0310		10	4006C0203		2
4002C0830		30	4002C1557	15	60	4004C0408	8	4006C0204	3		3
4002C0925	9	25	4002C1660	16	60	4004C0412	12	4006C0303	4		4
4002C0935		35	4002C1857	18	60	4004C0509	9	4006C0304	2	2	
4002C1030	10	30	4002C2060	20	60	4004C0513	13	4006C0305	3	4	
4002C1040		40	4002C2260	22	60	4004C0610	10	4006C0306		6	6
4002C1135	11	35	4002C2457	24	60	4004C0615	15	4006C0308		8	8
4002C1145		45	4002C2860	28	60	4004C0710	10	4006C0406		4	4
4002C1235	12	35	4002C3260	32	60	4004C0715	15	4006C0408	4	8	
4002C1245		45				4004C0720	20	4006C0410		10	10
						4004C0815	15				
						4004C0820	8	20			
						4004C0925	9	25			
						4004C1030	10	30			
						4004C1135	11	35			
						4004C1235	12	35			
						4004C1335	13	35			

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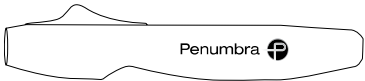
POD400 Coil

Vessel Sacrifice



Catalog Number	Product	Target Vessel (mm)	Length (cm)
400POD3	POD400 Coil 3 mm	3	20
400POD4	POD400 Coil 4 mm	3 – 4	30
400POD5	POD400 Coil 5 mm	4 – 5	30
400POD6	POD400 Coil 6 mm	5 – 6	50

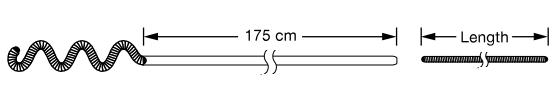
Detachment Handle



Catalog Number	Product
DH1	Detachment Handle

PAC400 Coil

Pack Behind POD400 Backstop



Catalog Number	Product	Length (cm)
400PAC7	PAC400 Coil 7 cm	7
400PAC10	PAC400 Coil 10 cm	10
400PAC15	PAC400 Coil 15 cm	15
400PAC25	PAC400 Coil 25 cm	25
400PAC35	PAC400 Coil 35 cm	35
400PAC40	PAC400 Coil 40 cm	40
400PAC50	PAC400 Coil 50 cm	50
400PAC60	PAC400 Coil 60 cm	60

PX SLIM Delivery Microcatheter

	Straight	45°	90°	130° (J)
Catalog Number	Tip Shape	Length (cm)		ID (in)
PXSLIMSTR	Straight	150		.025 (.635 mm)
PXSLIM045	45°			
PXSLIM090	90°			
PXSLIM130	130°			

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Penumbra Coil System – Intended Use

The Penumbra Coil System is intended for the embolization of:

- Intracranial aneurysms.
- Other neurovascular abnormalities such as arteriovenous malformations and arteriovenous fistulae.
- Arterial and venous embolizations in the peripheral vasculature.

Potential Adverse Events

Possible complications include, but are not limited to, the following:
acute occlusion, air embolism, allergic reaction and anaphylaxis from contrast media, aneurysm rupture, arteriovenous fistula, coagulopathy, coil herniation into parent vessel, death, device malfunction, distal embolization, emboli, embolic stroke and other cerebral ischemic events, false aneurysm formation, hematoma or hemorrhage at access site of entry, incomplete aneurysm occlusion, infection, intima dissection, intracranial hemorrhage, ischemia, myocardial infarction, neurological deficits including stroke, parent artery occlusion, peripheral thromboembolic events, post-embolization syndrome, premature device detachment, recanalization, renal failure, respiratory failure, revascularization, thromboembolic episodes, vessel spasm, thrombosis, dissection, or perforation.

POD System – Intended Use

For POD Coils with nominal sizes ≤ 6 mm: The POD System is intended for the embolization of:

- Intracranial aneurysms.
- Other neurovascular abnormalities such as arteriovenous malformations and arteriovenous fistulae.
- Arterial and venous embolizations in the peripheral vasculature.

Potential Adverse Events

Possible complications include, but are not limited to, the following:
acute occlusion, air embolism, allergic reaction and anaphylaxis from contrast media, aneurysm rupture, arteriovenous fistula, coagulopathy, coil herniation into parent vessel, death, device malfunction, distal embolization, emboli, embolic stroke and other cerebral ischemic events, false aneurysm formation, hematoma or hemorrhage at access site of entry, incomplete aneurysm occlusion, infection, intima dissection, intracranial hemorrhage, ischemia, myocardial infarction, neurological deficits including stroke, parent artery occlusion, peripheral thromboembolic events, post-embolization syndrome, premature device detachment, recanalization, renal failure, respiratory failure, revascularization, thromboembolic episodes, vessel spasm, thrombosis, dissection, or perforation.

PENUMBRA SMART COIL System – Intended Use

The PENUMBRA SMART COIL System is intended for the embolization of:

- Intracranial aneurysms
- Other neurovascular abnormalities such as arteriovenous malformations and arteriovenous fistulae
- Arterial and venous embolizations in the peripheral vasculature

Potential Adverse Events

Possible complications include, but are not limited to, the following:
acute occlusion; air embolism; allergic reaction and anaphylaxis from contrast media; aneurysm rupture; arteriovenous fistula; coagulopathy; coil herniation into parent vessel; death; device malfunction; distal embolization; emboli; embolic stroke and other cerebral ischemic events; false aneurysm formation; hematoma or hemorrhage at access site of entry; incomplete aneurysm occlusion; infection; intima dissection; intracranial hemorrhage; ischemia; myocardial infarction; neurological deficits including stroke; parent artery occlusion; peripheral thromboembolic events; post-embolization syndrome; premature device detachment; recanalization; renal failure; respiratory failure; revascularization; thromboembolic episodes; vessel spasm, thrombosis, dissection, or perforation.

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Penumbra Delivery Microcatheters – Intended Use

The Penumbra Delivery Microcatheters are intended to assist in the delivery of diagnostic agents, such as contrast media, and therapeutic agents, such as occlusion coils to the peripheral and neuro vasculature.

Potential Adverse Events

Possible complications include, but are not limited to, the following:
acute occlusion; hematoma or hemorrhage at access site; death; intracranial hemorrhage; hemorrhage; infection (at access site); distal embolization; ischemia (cardiac and/or cerebral); embolus (air, foreign body, thrombus, plaque); aneurysm perforation; false aneurysm formation; neurological deficits including stroke; vessel spasm, thrombosis, dissection, perforation or rupture; air embolism; emboli.

