

Perdenser® Embolic Coil System, Perfiller® Hydrogel Embolic Coil System and Frepass® Disposable Microcatheter in Treatment of Ophthalmic Segment Aneurysms (OSAs)

The incidence of Ophthalmic Segment Aneurysms is 0.5%~8%^[1]. Once ruptured, it will result in subarachnoid hemorrhage (SAH)^[2]. In addition, while the aneurysms get larger, they will compress the optic nerve, resulting in impaired vision. Because of their close and complex anatomical relationship with neurovascular, dural and bony structures, the treatment of OSAs is more difficult and riskier than other aneurysms^[3, 4].

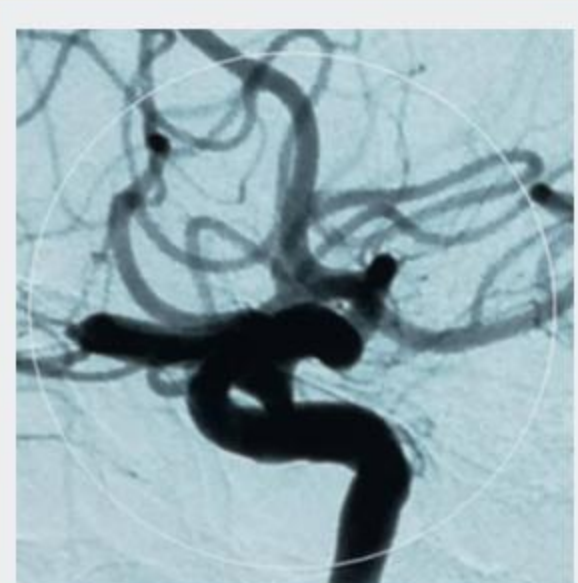
In recent years, with the development of interventional embolic materials and the more skilled techniques of physicians, interventional treatment may be safer for most patients than minimally invasive surgical treatment for unruptured aneurysms^[5]. Compared with surgical clipping, coiling rarely causes visual impairment^[6]. One study shows that the aneurysmal tamponade rate was more than 95% after treatment with stent-assisted coiling for paraclinoid aneurysms^[7]. However, in fact, individualized treatment should be used in interventional treatment of this segment of wide-neck aneurysms^[8]. The requirements for devices are also stringent.

Aneurysms with the diameter of less than 5mm are categorized as small aneurysms. Small aneurysms feature small size and thin wall, and most are wide-neck aneurysms, which are flat or oval. Compared with larger aneurysms, their condition will get worse after rupture and bleeding, with a higher disability rate^[9]. Interventional treatment of small aneurysms is difficult. Some papers have reported that the failure rate was 13.7% and the intraoperative rupture rate was 3.9%^[10].

In this article, we will introduce a successful interventional treatment of small ophthalmic segment aneurysms with Perdenser® Embolic Coil System, Perfiller® Hydrogel Embolic Coil System and Frepass® Disposable Microcatheter.

Patient information:

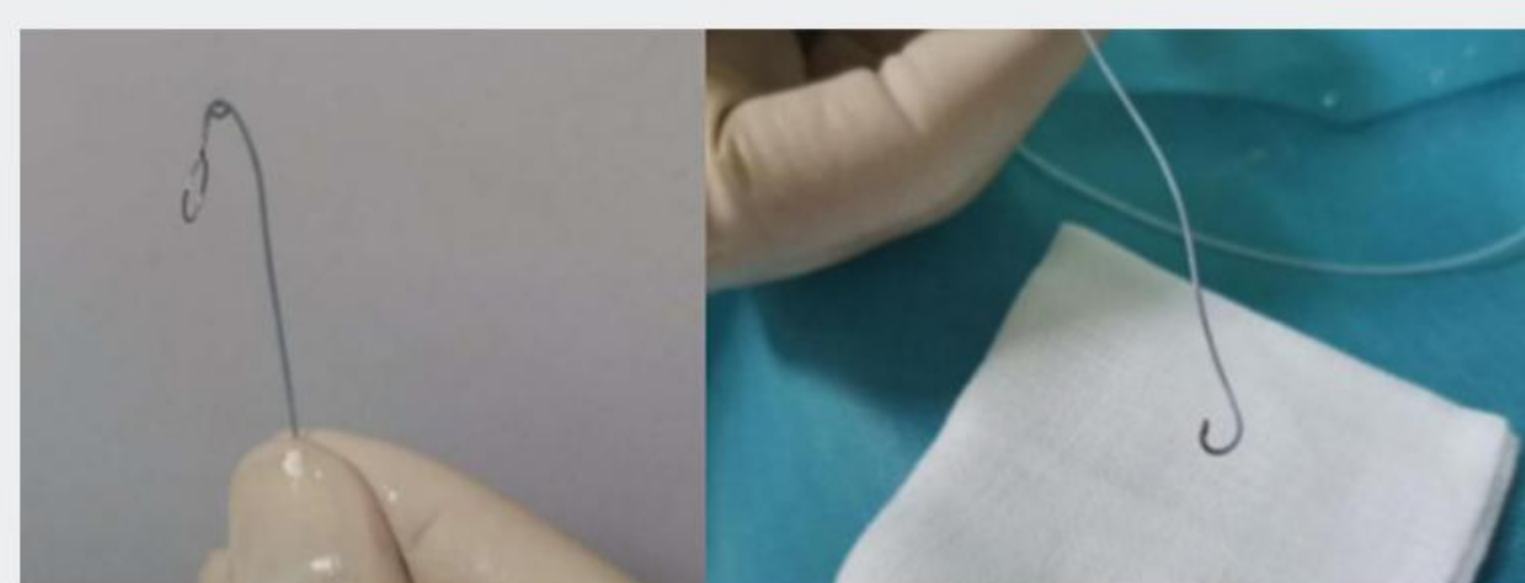
Male, 67 Y. The patient was admitted to the hospital because of aneurysm at the right internal carotid.



Preoperative angiography showed an aneurysm in the ophthalmic segment of the internal carotid artery.



According to 3D-imaging, the aneurysm was 3.6 mm in diameter and 4.7 mm in width. It was a wide-neck aneurysm.



The Frepass® TJMC14 Disposable Microcatheter was made to J-shape with shaping mandrel.



Guided by the roadmap, the Disposable Microcatheter entered the aneurysmal cavity smoothly.

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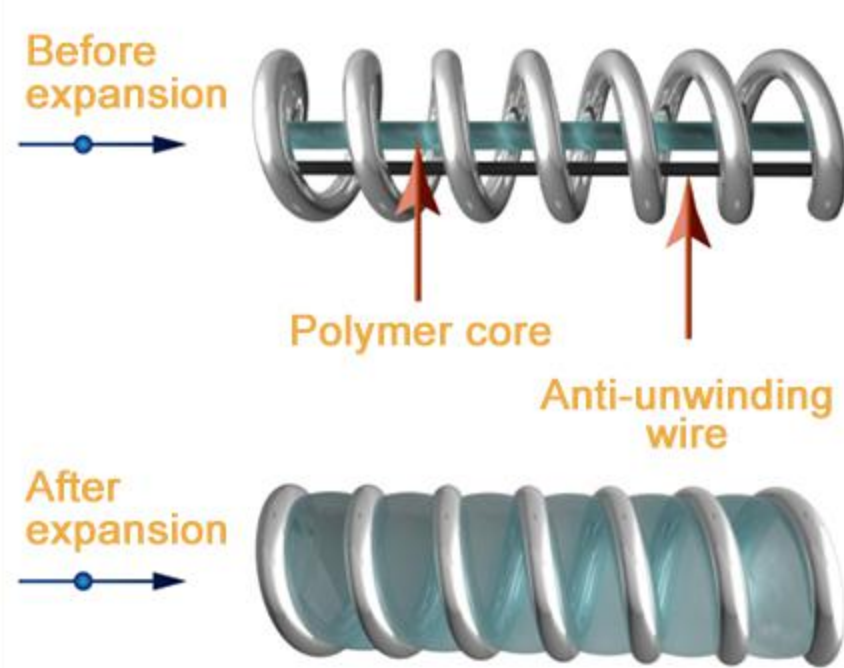
Postoperative multi-angle angiography showed that the aneurysm was densely embolized.



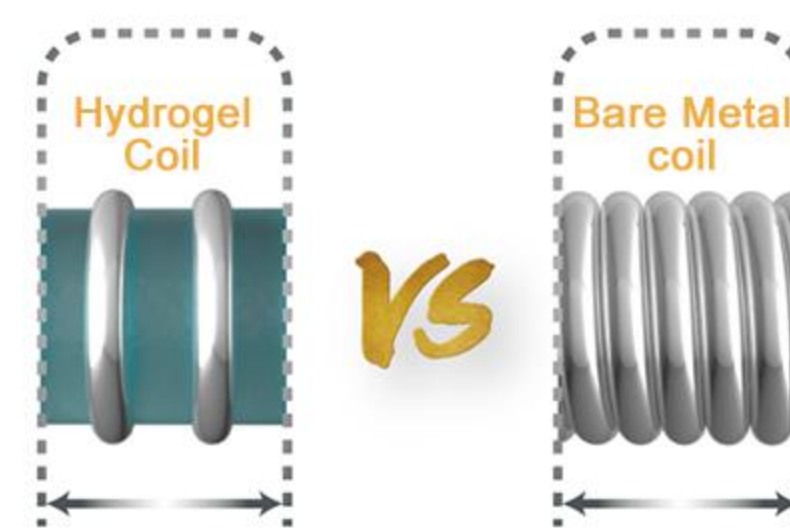
After the operation, the Disposable Microcatheter tip still maintained its preoperative angle.



- 2D-helix and 3D-complex structure, minimum loop diameter 1mm.
- Greater volume fill, denser embolization, lower recurrence rate.



- Dense and stable embolization avoid the compression to the coil caused by blood flow.
- A certain gap is added between the coils, less metal in the same length.
- Softer coils enhances safety and efficacy, suitable for finishing procedure.



- Implantation process is not time-limited.
- No pressure to adjacent coils nor aneurysmal wall.



New delivery system enhances crossability and pushability.

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