



Three-Dimensional Intraarterial Vaso Computed Tomography Depiction of Pipeline Flex with Shield Technology Flow Diverter Stent in Ruptured Blister Aneurysm of Supraclinoid Internal Carotid Artery

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Abstract

Blister aneurysms are intracranial arterial lesions originating at nonbranching sites of the dorsal supraclinoid internal carotid artery and basilar artery.¹ Among different treatment options, the use of flow-diverting devices is gaining popularity and has the potential for becoming the standard of care.²

Keywords

- ▶ Vaso CT
- ▶ pipeline flex
- ▶ flow diverter

Radiological evaluation of flow diverter braid expansion and vessel wall apposition during procedure has become useful in preventing life-threatening complications. Incomplete coverage of an aneurysm neck, kinking, or incomplete expansion and malapposition of a stent carries a significant risk for thromboembolic events.^{3,4}

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Radiological evaluation of flow diverter braid expansion and vessel wall apposition during procedure has become useful in preventing life-threatening complications. Incomplete coverage of an aneurysm neck, kinking, or incomplete expansion and malapposition of a stent carries a significant risk for thromboembolic events.^{3,4}

We present a case of ruptured blister aneurysm of right supraclinoid ICA treated by pipeline flex device with shield technology (▶ **Figs. 1** and **2**) in Philips Azurion 7B 20/15 Clarity IQ Biplane cathlab (Philips healthcare, Netherlands).

The injection protocol used for intraarterial Vaso computed tomography was as follows:

- Total volume of contrast used—55 mL
- Dilution of contrast—10% (10 mL iohexol 350 mg +90 mL normal saline)
- Acquisition time—20 seconds, X-ray delay—2 seconds, PSI-300.

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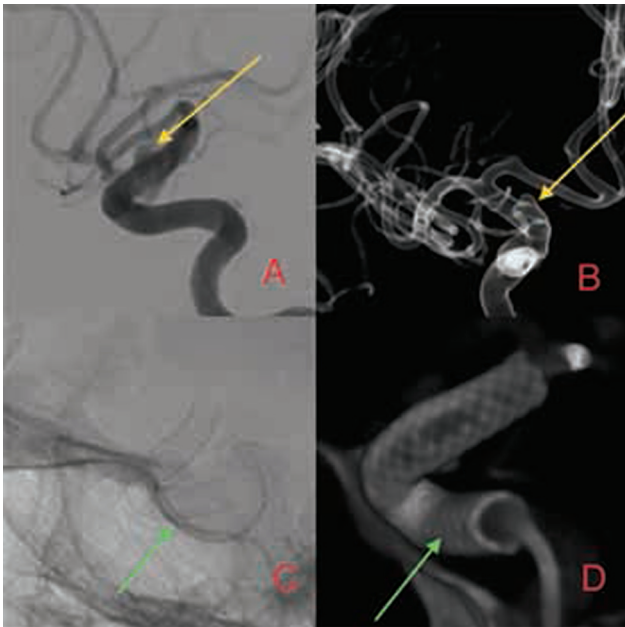


Fig. 1 (A) Lateral angiogram. (B) Three-dimensional rotational angiogram of right internal carotid artery (ICA). Yellow arrow in parts (A) and (B) denotes blister aneurysm in supraclinoid segment of right ICA. (C) Single shot image of flow-diverting device Vaso computed tomography. Green arrow denotes deployed flow diverter with full coverage of the aneurysm neck.

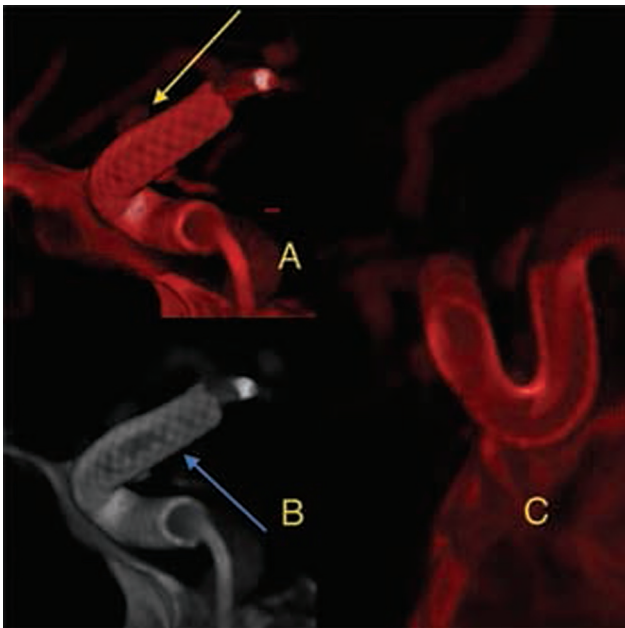


Fig. 2 Intraarterial Vaso computed tomography images (A-C). (A) Yellow arrow denotes the blister aneurysm. (B) Blue arrow denotes deployed flow diverter. (C) Three-dimensional virtual longitudinal sectioning of the device depicting wall conformation.

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Conflict of Interest
None declared.

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References

- 1 Rouchaud A, Brinjikji W, Cloft HJ, Kallmes DF. Endovascular treatment of ruptured blister-like aneurysms: a systematic review and meta-analysis with focus on deconstructive versus reconstructive and flow-diverter treatments. *AJNR Am J Neuroradiol* 2015;36(12):2331-2339
- 2 Peitz GW, Sy CA, Grandhi R. Endovascular treatment of blister aneurysms. *Neurosurg Focus* 2017;42(06):E12
- 3 Ansari SA, Aoun SG, Bendok BR. Cone beam computed tomography in the neurointerventional room: beyond vessels. *World Neurosurg* 2012;77(5-6):659-661
- 4 Tsuruta W, Matsumaru Y, Hamada Y, Hayakawa M, Kamiya Y. Analysis of closed-cell intracranial stent characteristics using cone-beam computed tomography with contrast material. *Neurol Med Chir (Tokyo)* 2013;53(06):403-408