

• 手术视频 •  
系列视频 3

# 局部麻醉下使用Pipeline血流导向装置辅助弹簧圈治疗未破裂椎动脉V4段夹层动脉瘤1例



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**【摘要】** 椎动脉夹层动脉瘤是自发性颅内夹层中最常见的类型。本研究报道一例 51 岁男性患者的右侧未破裂椎动脉 V4 段夹层动脉瘤, 在局部麻醉下成功采用 Pipeline 血流导向装置辅助弹簧圈栓塞治疗。术中患者生命体征平稳, 无不适主诉, 手术顺利完成, 术后未出现围手术期并发症。本案例证实, 局部麻醉下应用 Pipeline 血流导向装置治疗椎动脉 V4 段夹层动脉瘤具有可行性及安全性, 为类似病例的临床管理提供了参考。

**【关键词】** 椎动脉夹层动脉瘤; Pipeline 血流导向装置; 局部麻醉

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## Pipeline flow diverter-assisted coil embolization for the treatment of unruptured vertebral artery V4 segment dissecting aneurysm under local anesthesia: a case report

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**【Abstract】** Vertebral artery dissecting aneurysms are the most common type of spontaneous intracranial dissection. This paper reports a case of an unruptured vertebral artery V4 segment dissecting aneurysm on the right side in a 51-year-old male patient, successfully treated with pipeline flow diverter-assisted coil embolization under local anesthesia. During the procedure, the patient's vital signs remained stable, and no discomfort was reported. The surgery was completed smoothly without any perioperative complications. This case demonstrates the feasibility and safety of using the pipeline flow diverter for treating vertebral artery V4 segment dissecting aneurysms under local anesthesia and provides valuable insights for the clinical management of similar cases.

**【Keywords】** Vertebral artery dissecting aneurysms; Pipeline embolization device; Local anesthesia

椎动脉夹层动脉瘤是最常见的自发性颅内夹层, 据报道, 它在年轻人和亚洲人群中更常见<sup>[1]</sup>。椎动脉夹层动脉瘤破裂引起的蛛网膜下腔出血具有非常高的死亡率和致残率, 因此应该积极干预治疗<sup>[2]</sup>。

本研究报道一例 51 岁男性患者的右侧未破裂

椎动脉 V4 段夹层动脉瘤, 瘤体呈梭形扩张, 长径约 11.9 mm, 宽颈约 10.1 mm。经神经介入团队评估后, 决定在局部麻醉下行 Pipeline 血流导向装置辅助弹簧圈栓塞治疗。手术采用经股动脉入路, 在路图引导下精准释放 Pipeline 血流导向装置(4.0 mm × 35.0 mm)

覆盖夹层段,并辅以 1 枚弹簧圈部分栓塞瘤腔。术中患者生命体征平稳,无不适主诉,手术顺利完成,术后未出现围手术期并发症。本案例证实,局部麻醉下应用 Pipeline 血流导向装置治疗椎动脉 V4 段夹层动脉瘤具有可行性及安全性,为类似病例的临床管理提供了参考。术中患者生命体征平稳,无神经功能缺损主诉,支架释放位置理想,载瘤动脉通畅。术后即刻造影显示瘤腔内造影剂滞留明显减少,载瘤动脉及穿支血管血流通畅。

本案例证实,局部麻醉下应用 Pipeline 血流导向装置治疗椎动脉 V4 段夹层动脉瘤具有微创、安全及有效的特点。本研究为椎动脉 V4 段复杂夹层动脉瘤的个体化治疗提供了新的临床参考。

Vertebral artery dissecting aneurysms are the most common type of spontaneous intracranial dissection, with studies indicating a higher prevalence in young individuals and Asian populations<sup>[1]</sup>. Rupture of a vertebral artery dissecting aneurysm leading to subarachnoid hemorrhage is associated with a very high mortality and morbidity rate, making active intervention crucial<sup>[2]</sup>.

This study reports a case of a 51-year-old male with an unruptured vertebral artery V4 segment dissecting aneurysm on the right side. The aneurysm was fusiform in shape, with a maximum length of approximately 11.9 mm and a neck width of about 10.1 mm. After evaluation by the neurointervention team, it was decided to treat the aneurysm with pipeline flow diverter-assisted coil embolization under local anesthesia. The procedure was performed via the femoral artery approach, with the pipeline flow diverter (4.0 mm × 35.0 mm) precisely deployed under fluoroscopic guidance to cover the dissected segment,

and a single coil was used to partially embolize the aneurysm. During the procedure, the patient's vital signs remained stable, and no discomfort was reported. The surgery was completed successfully without any perioperative complications. Intraoperative imaging confirmed the optimal positioning of the stent, with patent parent arteries and no neurological deficits. Immediate postoperative angiography showed a significant reduction in contrast agent retention within the aneurysm, with restored blood flow in the parent artery and perforator vessels.

This case demonstrates the feasibility, safety, and minimally invasive nature of using the pipeline flow diverter for the treatment of vertebral artery V4 segment dissecting aneurysms under local anesthesia, providing valuable clinical insight for managing similar cases. This study offers a new clinical approach for the individualized treatment of complex vertebral artery V4 segment dissecting aneurysms.

**利益冲突** 所有作者均声明不存在利益冲突

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