

Delayed Coil Migration After Stent-Assisted Coiling of a Previously WEB-Embolized MCA Aneurysm

Jason J. Sims¹ · Bhageeradh Mulpur² ·
Nicolas K. Khattar^{3,4} · Sean Himel^{3,4} ·
Adam A. Arthur^{3,4}

© The author(s)

Abstract :

Delayed coil migration is a rare complication after endovascular treatment of intracranial aneurysms, particularly following staged embolization with devices such as the Woven EndoBridge (WEB) and adjunctive stent-assisted coiling. We present the case of a 78-year-old woman who experienced delayed coil migration months after retreatment of a right MCA aneurysm, culminating in ischemic stroke and subsequent aneurysmal rupture. This case highlights the need for long-term imaging surveillance in patients with recurrent aneurysms and previously deployed intraluminal devices.

Keywords: Coil migration; Aneurysm; MCA; WEB device; Stent-assisted coiling; Subarachnoid hemorrhage

1. Introduction

Delayed coil migration following endovascular aneurysm embolization is rare and poorly characterized. Most reports focus on intraprocedural migration, while delayed events—occurring days to months later—are underreported. Migration may reflect aneurysmal remodeling and instability, necessitating further research into its pathophysiology and surveillance.

J.J. Sims
jsims@uthsc.edu

¹ University of Tennessee Health Science Center, College of Medicine, Memphis, TN, USA

² Huntsville Hospital Health System, Huntsville, AL, USA

³ University of Tennessee Health Science Center, Department of Neurosurgery, Memphis, TN, USA

⁴ Semmes-Murphey Neurologic and Spine Clinic, Memphis, TN, USA

2. Case Presentation

A 78-year-old woman with vascular risk factors presented with transient left hemiparesis and dysphasia. MRI revealed an 11 mm unruptured right MCA aneurysm. Angiography confirmed a 10.8 x 9.8 x 8.5 mm MCA bifurcation aneurysm with a 3.5 mm neck. A 10 mm WEB SLS device was deployed, leaving a small neck remnant.

At 6-month follow-up, angiography revealed a 9.6 x 7.7 x 3 mm recurrence. She underwent retreatment with stent-assisted coiling. A 6-month post-retreatment angiogram showed mild coil compaction with a 2 mm neck remnant (WEB occlusion scale B). The patient was placed on aspirin monotherapy with 18-month follow-up planned.

Seven months later, she presented with acute left hemiparesis while traveling. Imaging revealed a distal M3 MCA stroke due to coil embolization. She improved on dual antiplatelet therapy. Eighteen-month angiography demonstrated a recurrent 7.6 x 4.4 x 2.9 mm aneurysm. Five days later, she suffered a fatal aneurysmal rupture (Hunt Hess 5, modified Fisher 4 SAH).

3. Discussion

Delayed coil migration occurs in 0.3% of coiling cases(?), with most cases asymptomatic and detected on follow-up imaging. This case is notable for symptomatic migration with infarction followed by rupture.

Use of WEB devices, while effective, can limit retreatment options. Stent-assisted coiling improves stability but may not prevent delayed migration, especially in dynamic aneurysms. Vigilant long-term imaging may be critical.

4. Conclusion

Delayed coil migration is a rare but serious complication. It may signal progressive aneurysmal remodeling and risk of rupture. Enhanced surveillance is warranted in complex or retreated aneurysms.

Conflict of Interest

Dr. Adam A. Arthur reports consultancy, research support, and equity with multiple device companies. Dr. Nicolas K. Khattar is a consultant for Imperative Care. All other authors declare no conflicts. None of the relationships influenced clinical decision-making.

Ethics Statement

This case study was deemed exempt from IRB review by the University of Tennessee Health Science Center, as no PHI was included and fewer than five patients were involved.

Author Contributions

All authors contributed to the drafting, revision, and approval of the final manuscript.