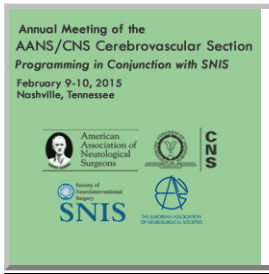

Frequency and Risk Factors for Delayed Recurrence Following Coil Embolization of Intracranial Aneurysms.

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Introduction

Although there is evidence that many aneurysms manifest changes in occlusion grade within the first 6 months following coil embolization and are predominantly stable thereafter,[1, 2] there are still some aneurysms that have delayed recurrences. It would be useful to know what factors predict delayed recurrence in order to decide which patients are most suitable for invasive angiographic studies after 6 months.

Methods

This is a single-center, retrospective review of 405 patients with 471 intracranial aneurysms treated with coil embolization. Atypical aneurysms were excluded. Recurrences were classified as occurring early (at the time of first angiographic follow-up) or late (at any other follow-up point).

Results

First, second, and final follow-up angiograms occurred at an average of 8.0, 21.8, and 56.2 months. Recurrences were more likely to occur early than late (17.83% vs 1.70%, $p<0.001$). When comparing aneurysms with delayed recurrence vs. aneurysms with adequate long-term obliteration, Raymond Roy Occlusion Class II at first follow-up (100% vs. 59%, $p=0.024$) and previous treatment (50% vs. 11%, $p=0.011$) were the only factors significantly associated with delayed recurrence. The Class II designation represented a change from the immediate post-coiling occlusion class in 75% of the delayed recurrences. Class II designation at the end of the procedure was not associated with delayed recurrence. No other patient, aneurysm, or treatment factors were significantly associated with delayed recurrence.

Conclusions

Early recurrence is much more common than delayed recurrence. Neck remnant at first follow-up (but not immediately after the procedure) as well as previous treatment are both risk factors for delayed recurrence. Aneurysms without these risk factors can likely be followed after the first follow-up with less frequent and/or less invasive

Learning Objectives

1) To understand the frequency of delayed recurrence of intracranial aneurysms after endovascular coil embolization.

2) To understand the risk factors for delayed recurrence.

References

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