Evaluation of Aneurysm Neck Remnants: A Multi-center Study of 626 Eendovascularly Treated Intracranial Aneurysms

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Introduction

Incomplete aneurysm occlusion may occur in up to 50% of patients undergoing endovascular treatment, with re-bleeding occurring in 1.2% of patients in ISAT. Critics of endovascular therapy cite these findings as a failure of endovascular techniques that subject the patient to continued potential risk of rupture. However, the clinical implications and rupture risk of residual aneurysms following endovascular treatment remains unclear.

Methods

We retrospectively identified 626 residual aneurysms (Raymond class II or III) after initial endovascular treatment. Aneurysms presenting as both ruptured (324) and unruptured (324) were included. We evaluated the risk of subsequent rupture of these treated aneurysms. Mean follow-up was 2.34 years (range 0-7.1 years).

Results

The average patient age was 58.0 years (range 19.4-90.3 years). The mean aneurysm size was 8.0 mm (range 1.4-35 mm). Four hundred seventy nine (76.5 %) patients were treated with primary coiling, while 147 (23.5%) were treated with stent-assisted coiling. One hundred eighty six (29.7%) patients underwent retreatment at the discretion of the treating physician. We observed 13 (2.07%) ruptures of residual aneurysms following endovascular treatment – 11 of these occurred in patients whose presenting aneurysm was ruptured, while 2 occurred in patients whose aneurysm was unruptured. One hundred forty eight patients went on to achieve a Raymond class I occlusion, 58 of which required re-treatment to achieve this result.

Conclusions

Determination of the long-term clinical significance of aneurysm neck remnants of endovascularly treated aneurysms is on-going. These results suggest that the risk of leaving neck remnants untreated is low but not negligible, especially in previously ruptured aneurysms. Treating small neck residuals can be hazardous, however. Therefore, the decision to treat these remnants should strike a balance between the risk of re-rupture and the potential

Learning Objectives

By the conclusion of this session, participants should be able to:

1. Describe the significance of neck remnants after endovascular treatment.

2. Evaluate the issues regarding observation of residual aneurysms compared to the risk of using additional devices and/or procedures to achieve Raymond class I occlusion.

References