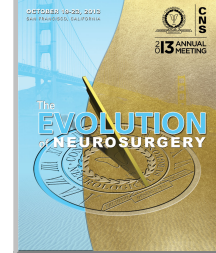


# Predictors for the Durability of Endovascular Treatment for Intracranial Aneurysms

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## Introduction

Endovascular coil embolization has become increasingly utilized for the treatment of intracranial aneurysms. Still, controversy exists regarding the long-term durability of this technique. The objective of this study is to assess the effect of aneurysm configuration on the durability of coil embolization.

## Methods

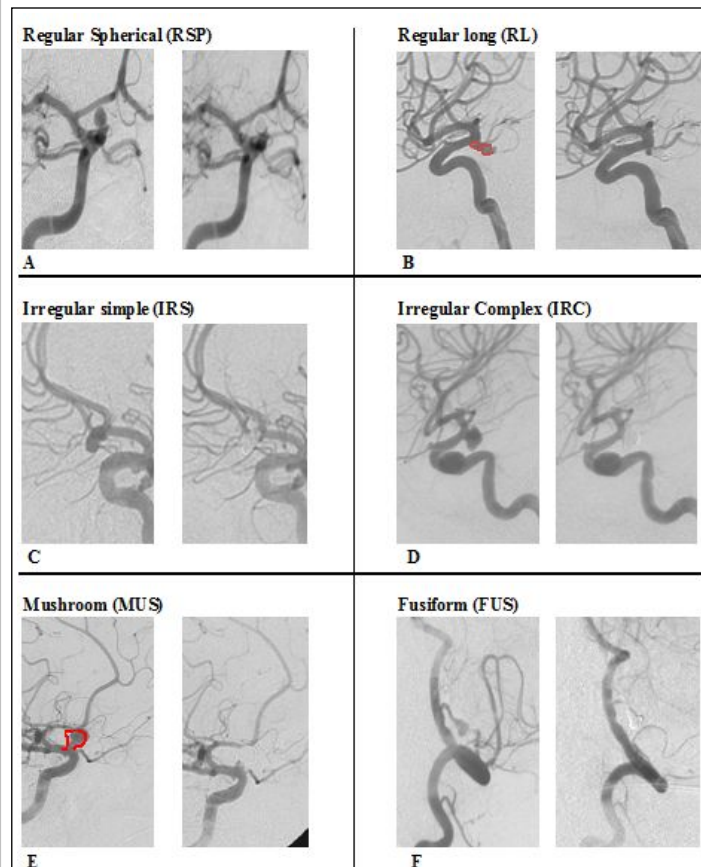
Retrospective analysis of all patients treated by coil embolization from August 2002 through September 2008 who underwent follow up angiography at least 3 weeks after embolization. Demographic data and aneurysm characteristics, including configuration, were recorded. Two endovascular specialists assessed aneurysm occlusion on initial and follow-up angiography, and graded using the Raymond Scale (RS). The influence of patient data and aneurysm configuration on the initial obliteration and occurrence of recanalization were examined.

## Results

The most frequent aneurysm configuration was the regular spherical (RSP), while the least common was fusiform. There were no differences in the distribution of aneurysm configuration with regard to age and sex. Based on the initial occlusion, RSP configuration was found to have the highest RS 1 rates (66.7%). Mushroom configurations were found to have the lowest rates (0%). Aneurysms that were initially RS 1 were more stable at follow-up than those in which only RS 2 or RS 3 occlusion could be achieved. As such, the initial RS did seem to influence durability. RSP aneurysms were most common and largely were unchanged on follow-up.

## Conclusions

Aneurysm configuration is an interesting factor for future studies exploring the natural history of endovascular treatment of aneurysms and developing more durable endovascular techniques.



Initial Occlusion				
Configuration	Number	RS 1	RS 2	RS 3
Regular Spherical (RSP)	54	36 (66.7%)	15 (44.1%)	3 (42.9%)
Regular Long (RL)	17	11 (17.5%)	5 (14.7%)	1 (14.3%)
Irregular Simple (IRS)	15	7 (11.1%)	6 (17.6%)	2 (28.6%)
Irregular Complex (IRC)	8	6 (9.5%)	1 (2.9%)	1 (14.3%)
Mushroom (MUS)	11	4 (6.3%)	7 (20.6%)	0 (0.0%)
Fusiform (FUS)	1	1 (1.6%)	0 (0.0%)	0 (0.0%)
<b>Totals</b>	<b>106</b>	<b>63</b>	<b>34</b>	<b>7</b>

Follow-Up Angiography				
Configuration	Number	RS 1	RS 2	RS 3
Regular Spherical (RSP)	54	35 (54.7%)	12 (52.2%)	7 (36.8%)
Regular Long (RL)	17	10 (15.6%)	5 (21.7%)	2 (10.5%)
Irregular Simple (IRS)	15	7 (10.9%)	4 (17.4%)	4 (21.1%)
Irregular Complex (IRC)	8	6 (9.4%)	1 (4.3%)	1 (5.3%)
Mushroom (MUS)	11	5 (7.8%)	1 (4.3%)	5 (26.3%)
Fusiform (FUS)	1	1 (1.6%)	0 (0.0%)	0 (0.0%)
<b>Totals</b>	<b>106</b>	<b>64</b>	<b>23</b>	<b>19</b>

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