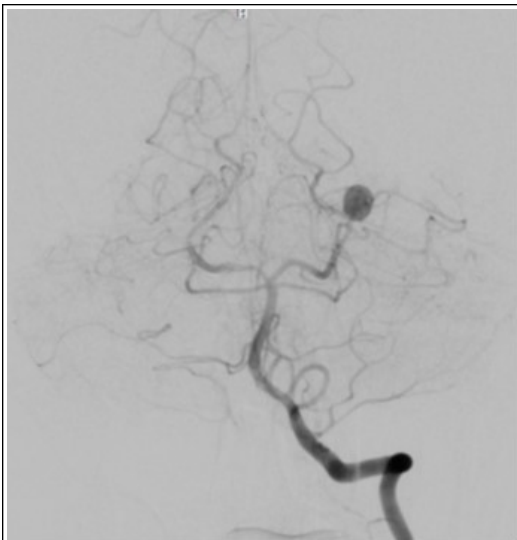


Introduction

The treatment of IAs has always garnered great attention and controversy. Newer devices have allowed safe endovascular therapy of complex and previously untreatable lesions. We present a large cohort of patients who presented with complex aneurysms and were treated at a single institution in a middle-income country.



Complex P2/P3 aneurysm treated with "LEO baby" Stent (Balt, Montmorency, France)

Methods

Patients with complex, unruptured aneurysms treated by a single surgeon in Bogotá, Colombia between June/2007 and June/2016 were enrolled.

Complex aneurysms were defined as a neck-to-dome ratio above 1.5, multilobulated or distal location (P2/P3, A3, M3 segments or beyond). Complete patient demographical data, aneurysm location and morphology and treatment modality were recorded, treatment success was determined using the modified Raymond-Roy Classification (mRROC). Clinical and angiographic follow-up was obtained at least 18 months after treatment.

Intraoperative and 30-day postoperative morbidity/mortality as well as recurrence rates were obtained.

Multi-variate analyses were performed to determine which variables had impact on patient outcome and lesion recurrence.

Results

One-Hundred and Sixty-Two patients with 232 aneurysms were enrolled and followed for an average of thirty-two (32) months (Range 18.5–62). All aneurysms were treated with either stand-alone coiling (22%), balloon-assisted coiling (15%), stent-assisted coiling (51%) or flow-diversion devices (12%).

Intraoperative morbidity was 3.5%, 30-day morbidity was 2.9%.

There were no procedure-related deaths at 30 days.

mRROC class I was obtained on 182 aneurysms (78.4%) on immediate post-operative angiogram.

On 18-month follow-up, 82% of RROC Class I aneurysms were angiographically excluded.

Ten lesions (4.3%) required additional treatment. No cases of SAH were recorded.

Smoking, BMI above 30 and mRROC had statistically significant impact on lesion recurrence.

Conclusions

Although complete lesion occlusion was relatively low (78%) the complexity of the lesions might explain this finding. However, long-term results are similar to those reported in the literature. The fact that high BMI and Smoking had a statistically significant impact on outcome warrants the question of whether preoperative weight control and smoking cessation should be indicated in unruptured aneurysm treatment. Nevertheless, even if patients ceased smoking and controlled their weight before treatment, one cannot ascertain if this would impact outcomes. Although we present a significant case series with interesting results, we believe our findings must be confirmed via large, randomized trials.