

## Introduction

The treatment of wide-necked, fusiform and large aneurysms represents a challenge for the interventional neurosurgeon whose goal is to successfully embolize the aneurysm with a minimum of medical and neurological complications. The use of flow diverting stent represents a useful tool for safe and effective treatment of these complex aneurysms. In this study, we describe our clinical experience with the use of flow diverting stent at the Endovascular Neurosurgery Department of the Puerto Rico Medical Center.

## Methods

Retrospective review of prospectively acquired database of patients with intracranial aneurysms treated with flow diverting stents between January 2011 and January 2016. Clinical results and complications were analyzed.

## Results

A total of 23 patients were treated. There was a notable female predominance (21 women, 2 man). Age range was 44 years to 84 years old (mean = 63.7 years). Size of aneurysm ranged from 4.2mm to 36mm. None of the patients had history of aneurysm rupture. Coils (in addition to stent) were used in 2 patients. Locations of aneurysms were: cavernous carotid (9), carotid-ophthalmic (4), posterior communicating (4), supraclinoid internal carotid artery (ICA) (4), superior hypophyseal (1), and petrous ICA (1). Complications were: proximal stent migration (1), air embolism (1), femoral hematoma (2), ophthalmoplegia secondary to petrositis (1). The patients with stent migration and air embolism did not develop neurologic deficits. No deaths were recorded. Total occlusion was recorded in 33.3% of patients at 3 months by magnetic resonance angiogram and in 60% of patients at 6 months by diagnostic subtraction angiography.

## Conclusions

Our clinical experience in the treatment of complex cerebral aneurysms with flow diverting stents has shown to be effective with low morbidity and no significant permanent neurological complications. Flow diverting stents are an effective and safe option for the treatment of complex cerebral aneurysms.

## Learning Objectives

- 1) Characterize the aneurysms that benefit from treatment with flow diversion.
- 2) Describe the outcomes for aneurysms treated with flow diverting stents.

## References

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**Figure 2**



Embolization was done in 2 stages. First partial embolization was done with coils, then 3 overlapping flow diverting stent were placed in second procedure.

**Figure 3**



3-month post-embolization DSA shows reconstruction of right petrous ICA and resolution of aneurysm

**Figure 1**