

## Introduction

Anterior communicating artery (Acom) aneurysms historically have been managed by clip ligation or endovascular coiling. Expanding indications for flow diversion allow consideration of pipeline embolization as primary treatment modality for aneurysms of the Acom located eccentrically at the A1-A2 junction.

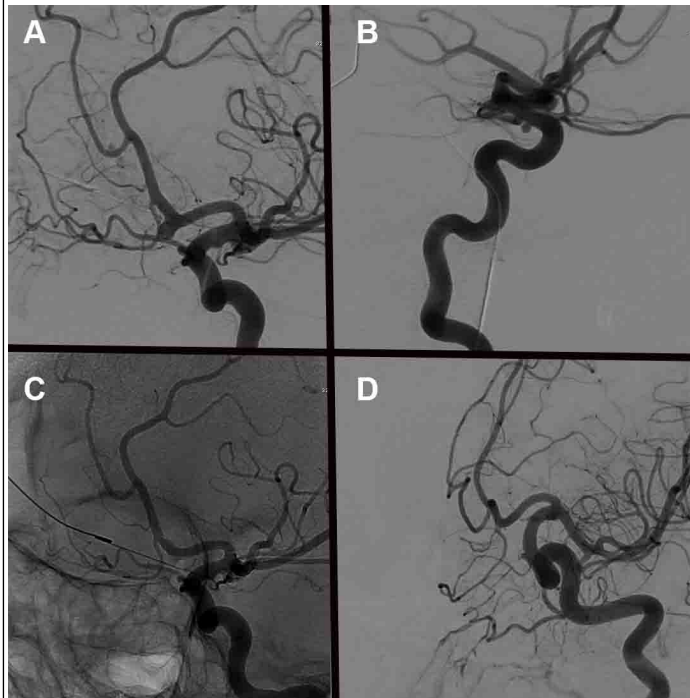
## Methods

Three patients with unruptured A1-A2 junction aneurysms were treated primarily with Pipeline flow diversion at a single institution. All patients underwent angiography 6 months after treatment.

## Results

The mean patient age was 63 years. One patient was female and two patients were male. Two patients had suffered prior subarachnoid hemorrhage from unrelated aneurysms. Average A1-A2 junction aneurysm size was 4.2 mm. All aneurysms emerged from the A1-A2 junction and minimally involved the anterior communicating artery. A single pipeline device was used in each case extending from ipsilateral A1 to A2. At 6 month followup angiography, all three aneurysms were excluded from the circulation. There were no peri-procedural complications.

### Imaging Course of Pipeline Flow Diversion For A1-A2 Aneurysm



Left ICA angiography depicting inferiorly projecting left A1-A2 junction aneurysm measuring 4.5x3.9mm (A and B).

Successful pipeline embolization of left A1-A2 junction aneurysm using a pipeline device measuring 2.5x14mm; flow stagnation present (C). Six month angiographic follow up demonstration complete occlusion of the aneurysm (D).

## Conclusions

Pipeline embolization is safe and effective as primary treatment of A1-A2 junction aneurysms. A single implanted device is likely to result in aneurysmal cure in a 6 month time frame.

## Learning Objectives

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

- 1) describe treatment considerations for Acom region aneurysms based on angiographic findings.
- 2) Identify angiographic features that make A1-A2 junction aneurysms favorable to primary pipeline embolization with a single device.

## References

1. Ravindran K, Enriquez-Marulanda A, Kan PTM, et al. Use of flow diversion for the treatment of distal circulation aneurysms: A multicohort study. *World Neurosurgery*. 2018; pii: S1878-8750(18)31540-7.
2. Cagnazzo F, Cappucci M, Dargazanli C, et al. Treatment of distal anterior cerebral artery aneurysms with flow-diverter stents: a single-center experience. *AJNR Am J Neuroradiol*. 2018; 39(6): 1100-1106.
3. Brouillard AM, Sun X, Siddiqui AH, et al. The use of flow diversion for the treatment of intracranial aneurysms: expansion of indications. *Cureus*. 2016; 8(1): e472.