Young Woman Saved after Multiple Failed Treatments

**PATIENT PRESENTATION**

- A young woman with children still in diapers had a subarachnoid hemorrhage (figure 1a) from a previously unknown aneurysm (figure 1B). This aneurysm was giant and incorporated both vertebral arteries and the basilar artery.
- She was treated at an outside institution with coils and placement of Neuroform stent (to keep coils from blocking the artery)(figure 2).
- Although a successful procedure, the aneurysm was not completely secured, and she had another hemorrhage which required retreatment with additional coils (figure 3).

**EVALUATION AND IMAGING**

- Because the previous stent and coils could not cure the aneurysm, followup was performed. This showed enlargement of the aneurysm and compaction of the coils, making the likelihood of brain stem mass effect and recurrent subarachnoid hemorrhage likely (figure 4).
- As part of pre-surgical treatment, a plan to do a surgical bypass above the aneurysm and block the vessels below was attempted, but the bypass could not be technically performed.
INTERVENTIONAL NEURORADIOLOGY

INTERVENTION PERFORMED

- Although not a standard treatment, we attempted and then were successful at traversing the previously placed Neuroform stent (figure 5). This allowed us to place a Pipeline Flow Diverter within the lumen to assure distal flow while excluding the aneurysm (figure 6).
- In figures 7a and 7B, we also had to occlude the other vertebral artery, which was also connected to the aneurysm. This prevents the aneurysm from filling from that artery, but the distal basilar artery still gets flow via the Pipeline device.

PATIENT OUTCOME

- After 6 months, the angiogram shows cure of the aneurysm, without any filling (figure 8).
- The patient was (and is) completely neurologically intact, happily enjoying her kids and family.

Division of Interventional Neuroradiology at UCLA – A Leader in Neurovascular Care and Research
- Invented the Merci retriever – the 1st endovascular device for acute stroke therapy
- Invented GDC and Matrix coils – the leading tool for aneurysm treatment around the world
- Developed Onyx liquid embolic material – the leading therapy for brain vascular malformations

Procedures provided by DINR for adult and pediatric patients

Acute Ischemic Stroke
- Acute Thrombectomy/Thrombolysis
- Extra/Intracranial Angioplasty/Stenting

Brain Hemorrhage, Aneurysm/AVM/fistulae
- Aneurysm coiling
- Stent/balloon assisted aneurysm coiling
- Flow diverter stent device embolization
- AVM/Dural fistulae embolization
- Venous Sinus Thrombectomy/Thrombolysis
- Direct transcatheter embolization

Chronic Occlusive Cerebrovascular Disease
- Extra/Intracranial Angioplasty/Stenting
- Venous Sinus Angioplasty/Stenting

Head/neck/orbit tumors & vascular malformations, epistaxis
- Endovascular embolization
- Direct percutaneous embolization

Figure 5: wire and catheter crossing previously placed Neuroform stent. Markers at ends of Neuroform stent seen (arrows)

Figure 6: Pipeline flow diverter placed inside of prior Neuroform stent. Arrows show ends of Pipeline

Figure 7a: as other vertebral (arrow) connected to basilar aneurysm, this was occluded with coils

Figure 7B: coils in place (arrow)

Figure 8: Six month followup angiogram showing complete eradication of aneurysm.