



Endovascular Embolization Reduces Blood Loss During Surgical Brain Tumor Resection

DIVISION OF INTERVENTIONAL NEURORADIOLOGY

Presents a patient case treated by the team members of the division and physicians and staff of the UCLA Comprehensive Stroke Center

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PATIENT PRESENTATION

- 37 year old woman, who got MRI as part of work up for her cervical spine problems.
- MRI revealed a brain mass, suspicious for a brain tumor – meningioma, in the posterior fossa (back of her brain).

EVALUATION AND IMAGING

- Dedicated brain MRI confirmed the diagnosis of meningioma, in the left posterior fossa (Fig. 1.)
- As part of pre-surgical treatment planning the patient has seen our service and pre-surgical angiogram and possible embolization was recommended.
- The goal of embolization will be to reduce operative blood loss and reduce operative time.

INTERVENTION PERFORMED

- Diagnostic catheter angiogram showed increased abnormal delayed capillary contrast filling in the area of the tumor (Fig. 2 and 3A).

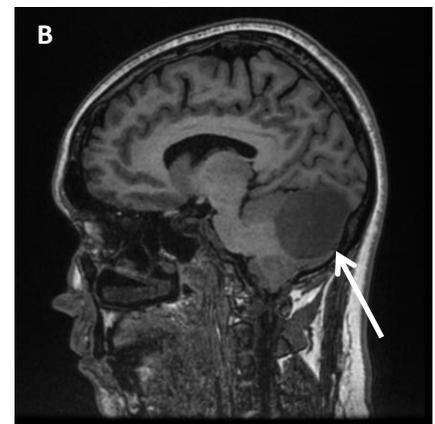
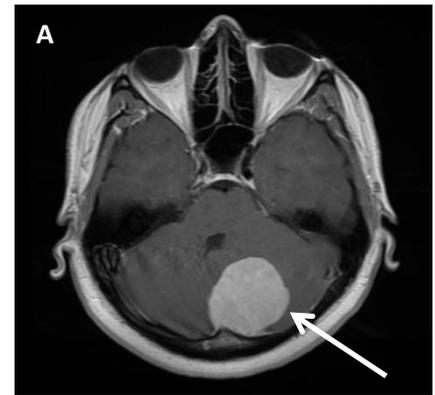


Figure 1. A. Contrast enhanced MRI, showing left paramedian enhancing mass, meningioma (white arrow)
B. Sagittal view, MRI, showing the meningioma (white arrow).

(over)

INTERVENTIONAL NEURORADIOLOGY



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

INTERVENTION PERFORMED (CONTINUED)

- We advanced a microcatheter into the left posterior meningeal artery off the vertebral artery feeding the tumor.
- Contrast injection showed increased abnormal tumor blush (Figure 2.).
- From this position, we injected and embolized the tumor using PVA embolic particles.
- After the embolization, the last control angiogram confirmed decreased contrast tumor staining, suggesting decreased blood flow in the tumor.

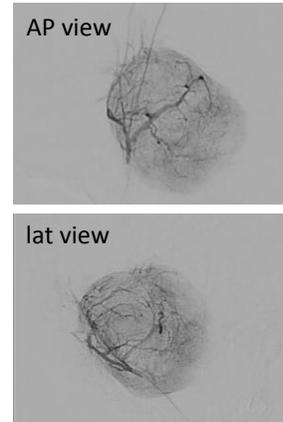


Figure 2: AP and lat view of the tumor contrast staining injected from the posterior meningeal artery feeding the meningioma.

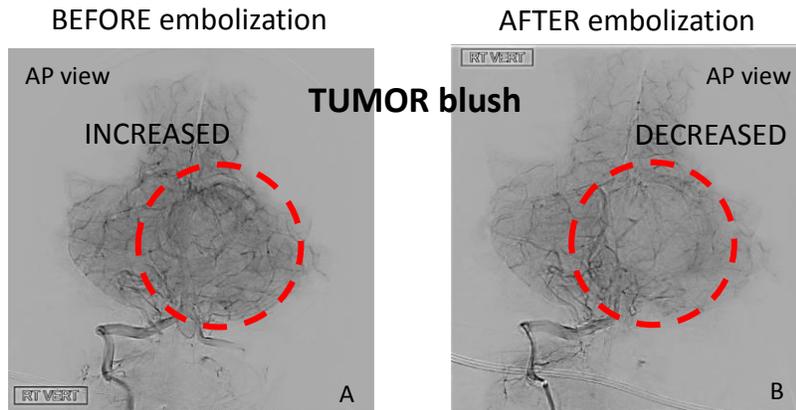


Figure 3: A. Pre-embolization angiogram, AP view, vertebral artery injection, showing posterior fossa angiogram. Somewhat increased contrast blush in the area of the meningioma. B. Post endovascular embolization using PVA, angiogram shows decreased contrast blush in the area of the tumor.

PATIENT OUTCOME

- The patient underwent successful resection the next day post-embolization with minimal blood loss.
- She was discharged home post-op day 3, neurologically intact at her baseline condition.

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



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